

# Market Insights 2020: Fulfilling The Promise Of Enterprise XR



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## 1. Introduction

The long sought-after case studies are here. Businesses are seeing (and talking about) enterprise XR success. Take motion capture from Nvidia and Unity: it saved HTC \$100,000 dollars in 15 minutes. Visualization helped Bell Helicopters halve its research and development time. One delegate at the 2019 VRX Conference & Expo reported their investment in XR had been “paid off a thousand times.”

The technology barrier itself is largely gone. Many of the platforms, programs and hardware, even in enterprise XR, are plug and play. Now, it’s about cultural shift – getting tech into users’ hands and having them use it. But it is about more than just persuasion. The tech may plug and play, but what is it plugging into? With a smorgasbord of tech to choose from, which use case works best?

Featuring insights from leading industry experts on the latest developments in XR, this paper will give you the top trends impacting the users and developers of the most exciting tech in the enterprise space. With tips on how to initiate your own enterprise XR program, or extend existing projects, this paper is a must read for anyone looking to get ahead of the market.

I hope you find these insights valuable.



**Kathryn Bloxham**  
*Events Director & Head of Innovation*  
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## 2. Top Three Trends Driving Enterprise XR Adoption Today: From Experiment To Ecosystem

### 2.1 First mover advantage is still a powerful position

According to Joel Breton, President, Sixense Studios at Sixense Enterprise Inc., the XR market is still a ‘big blue ocean’ – that is to say, enterprise XR remains a largely underexploited resource as far as both end users and developers are concerned. Compared to mobile gaming, for example, where thousands of apps are released every month and obliterated by competitors, the enterprise XR market still presents a wealth of opportunity for early adopters and emerging developers.

“It’s a very, very good time to be working in immersive,” Breton states, but warns against trying to embrace every possibility all at once: “We have to get laser focused on one use case and deliver it in a meaningful way to the marketplace. Go where your passion is, go where your company’s expertise lies and go all the way.”

### 2.2 Move at the speed of user understanding

*“A lot of our struggles come from clients being older and struggling with technology in general – which is not always the case. I wanted to do more studies on elderly people who can’t travel. There’s a lot of potential there for creating positive brand loyalty.”*

**Jae Lake, Lead VR Specialist, Expedia**

“The bottom line is, is it easy to use? If the technicians don’t want to use this stuff, it doesn’t matter how good our ROI is. They have to want to use it and continue to use it,” says Kellin Bershinsky, Senior Engineer, Immersive Technology Specialist at Ball Aerospace.

Enterprise XR is a sector where development is possible at pace, but something as simple as cumbersome hardware can derail usage. Environments, accessories and use cases must continue to closely mirror today’s real world needs to ensure uptake at scale tomorrow.



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### 2.3 A device is only as useful as its content, creators and supporters

It is increasingly clear that enterprise XR cannot exist in isolation. To function successfully it has to slot seamlessly into an ecosystem that supports its power, connectivity and processing needs.

Beyond infrastructure, there is a growing need for supporting technologies. The commercial benefits of investing in facial recognition, such as that used to enhance product recommendations by L'Oréal and Nivea, are limited without AI-based data computation and high-quality optics. Now, it's time to generate use cases, supported by data analytics and strategy to realize enterprise XR's full potential.

*"Devices are not just self-contained. They have to act in concert with existing capability or infrastructure."*

*"The device itself is only as useful as the applications you have on it. If you believe that content is the fundamental thing that drives ecosystems, we should be listening first and foremost to those content creators to tell us what we should be building."*

*"Ultimately, it will be the intelligence of the masses that guides us."*

**Charlie Han, Product Lead, HoloLens, Microsoft**



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### 3. Technology Innovations Optimize The Enterprise XR Experience

Enterprise XR is not a standalone tech solution. To achieve the highest possible adoption, it relies on an ecosystem of supporting technologies, peripherals and solutions providers. Understanding the mix needed to support your own, distinct XR needs is vital.

#### 3.1 Answering the connectivity question

Emerging 5G networks offer a boost to XR adoption. High-power connectivity allows greater use of VR and AR environments in and out-of-home. It allows for a more overall cohesive connection between the power, hardware and content needs. In some cases, enterprise users might need to adjust their attitude.

For example, there is a suggestion that to prevent mobile comparison shopping, retailers limit in-store connectivity. But this is anathema to delivering a great XR experience: “If you go to Nordstrom or Walmart, they don’t currently offer good WIFI connection. IoT is trendy but you cannot rely on connected devices. Everything has to be done on device. We are so dependent on CPU/GPU resources and bandwidth,” explains L’Oréal’s US Director of Augmented Beauty, Michael Haddad.

*“We’re trying to fix a problem that’s very ad hoc and expensive with something that’s more cloud-based and streamlined. It’s taking away the complexity and reducing the barrier to entry,”*

**Vankayala Anderson, Machine Learning Engineer, BMW Research Silicon Valley**



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### 3.2 Accessories – It’s about what you know

While AR assimilates reasonably seamlessly into existing tech and enterprise experiences, VR remains constrained by often cumbersome form factors.

Unlike in the consumer market where streamlining and style are critical, in enterprise, hardware that most closely mimics current applications and tools is more likely to be adopted. Hardware and software that integrates easily with existing systems will continue to trump innovative but unnatural interfaces – “XR can be so much fun but you have to put a product person’s head on. How often will they use this?” commenters wonder.

The need to integrate with existing systems is why, for the foreseeable future, peripheral XR packages will remain largely bespoke, specific to organization and use case. However, lack of scale should deter neither end users nor developers from entering this space. There is ample opportunity to make a viable business case.



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## 4. Four Enterprise XR Applications to Boost Productivity and Drive Revenues

As enterprise XR moves into the mainstream, it's no longer the preserve of the tech or innovation departments. It has real potential to deliver results across all aspects of your organization and in every sector.

### 4.1 Training and collaboration

“How do you put people in scenarios that you can't in the real world and change their behavior?” asks Kyle Daughtry, Immersive technology System Architect at ExxonMobil. “Or bring people from across the world together in a room?” As a training tool, you cannot argue with the value that VR delivers: “With VR training, Lincoln Electric and Cleveland Ohio University have a 42% certification rate increase over people starting with book training before moving to virtual welding,” Breton reveals.

Enterprise XR training isn't limited to the complex, dangerous or expensive. Walmart uses it for its 17,000 employees and Amazon deploys it on some of its seasonal workers to assess their forklift truck experience quickly and safely.

Healthcare continues to lead the way in exploring training advances, as well as moving into the collaborative space. “We're seeing systems that can be used for team training or how to handle a complex procedure as a group.” says Walter Greenleaf, Medical VR/AR Expert at Stanford University. Sustainability is also a factor: “If we're able to utilize the power of virtual collaborative environments, we can drastically reduce our carbon footprint,” Bershinsky adds.



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## 4.2. Using VR for timely interventions in worker guidance and safety

Enterprise XR becomes training-plus when it comes to using it for worker guidance and safety. ExxonMobil uses VR to enhance ‘Just in Time’ learning in its ‘Working at Heights’ module. Donning a VR headset just before they’re about to embark on a task gives instant reinforcement. Research has found that without constant reinforcement, workers will forget 50% of information within an hour, 70% within a day and 90% after a week.

The more ‘real’ the training the better, so the sophistication of the VR experience is essential: “I’m trying to understand their situational awareness and how they’re going to react. If I can just turn to the right and teleport 100 yards, what I’m gaining in stress is gone,” warns Daughtry.

## 4.3 Help collaborators and employees visualize projects better

Enterprise XR as a design and visualization tool, which helps everyone from product designers to data analysts to end consumers understand new concepts, is another of the system’s unique benefits.

“Simplifying communication is where we see XR making a big difference. A thousand questions are answered and you can move forward,” Bershinsky insists. Speed is also a key factor: “We can build virtual mock-ups earlier than we can physical so we can move all decisions upstream, lessening impact on cost and schedule,” adds Skanska’s Director of Innovation and VDC, Hal Jones.

The point of entry for using visualization need not be high and a ‘two-tier’ approach is common. A basic experience is appropriate for public services where questions may be asked if it looks like too much is spent on visualization. But, when it comes to public outreach or demonstrating a fully immersive experience, it’s time to ‘Hollywood it up’.

*“The bigger value comes in the beginning when you’re designing and getting feedback. The push is going to be to combine XR, MR, AR, IoT and digital twins.”*

**Scott Aldridge, Senior Manager, Innovation and Disruptive Technologies, CDM Smith**

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#### 4.4 Use enterprise XR to open up new channels of communication

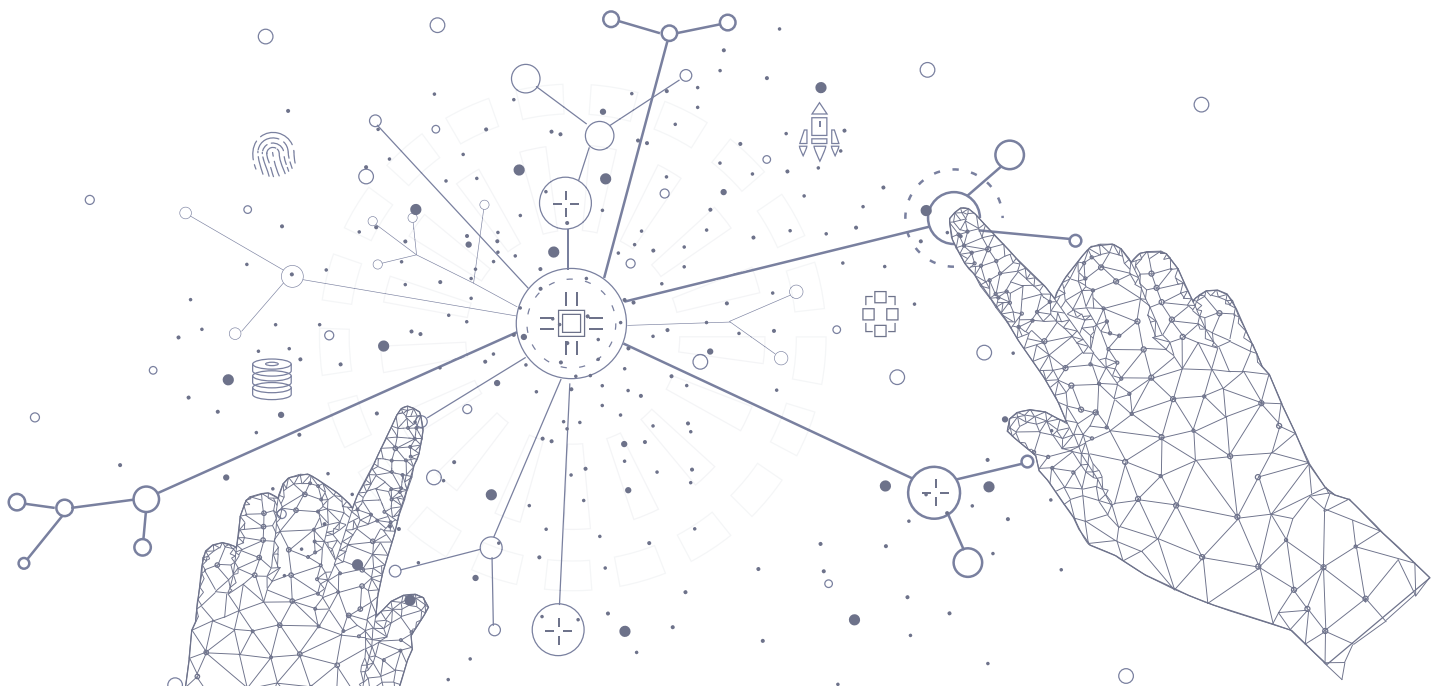
A common theme uniting the most promising enterprise XR use cases centers around its potential to improve communication. This includes product marketing and sales who want to know how best to engage consumers long term. Increasingly, VR and AR are at the intersection of omnichannel campaigns delivering immersive experiences that resonate with customers.

Nivea (Beiersdorf)’s Senior Global Digital Innovation Manager, Jasper Krog, explains that AR can broaden communication, particularly on-shelf, at point of sale and in-home, driving up both conversion and repeat purchase. “AR is the next level of storytelling, it’s product experience. The biggest reach for us is not influencer marketing, it’s not TV, it’s not social. Nor is it the three together. It’s simply our products. Nothing is as visible as our products.”

From expanding the limited space on-pack to extending sponsorship properties, smart mirrors and in-home point of sale – “It’s a whole ecosystem,” Krog insists.

*“The risk is that we try and solve the problem individually by brand and strive to be different. We end up confused when what you really want to be is clear and simple. There’s no agreement in marketing about how to use this platform,”*

**Anne Stephens, Vice President Global Category Expansion, ABInBev**



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## 5. Looking To The Future

### 5.1 Usability is a question of compromise

Form factor is one of the biggest challenges to VR adoption, predominantly in the consumer space but also in enterprise. Enterprise XR users complain that unwieldy hardware has been a dealbreaker. Processing power needs, thermal dissipation and connectivity all conspire to create tech that, as one speaker put it “people don’t envy”. This may change over the next five years.

Experts suggest AR and MR will surpass VR in three to five years and that components and functionality will evolve for more comfort, the inclusion of haptics and combine AI, IoT, 5G, cloud and edge computing.

The use of edge cloud and persistent cloud anchors will allow developers to offload a lot of the processing power from the unit while hardware size depends on thermal dissipation caused by smaller form factors – “you don’t want to burn someone’s face off” said another of our expert panelists. Moving computing to the cloud will determine just how compact XR hardware can become.

*“As consumer headsets become more capable, we will see some strong ecommerce plays. Customers aren’t as afraid of VR as much as they were.”*

**Michael McCune, Senior Manager, Architectural Visualization, Walgreens**

### 5.2 Room for improvement in the XR supply chain

It’s not just XR hardware challenge in improving the overall experience. Optics – that is, the quality of the image rendering – and environment are increasingly sophisticated and one of the fundamental differences between VR and AR, but more progress is needed.

Image capture still with a long way to go, the media tool chain is almost entirely missing along with editing tools and a distribution pipeline. But the startup community is making inroads and, with a pipeline in place, the inflection point is fast approaching.

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## 6. Conclusion

A year ago, executives were still seeking use cases to prove to leadership that enterprise XR was worth the investment. Twelve months on and those use cases are much clearer. The universe is expanding beyond the rarefied environments of healthcare and heavy industry into a wide range of sectors. Enterprise XR is going mainstream.

There is still a lot of work to do. Experts point to gaps in both the hardware and connectivity supply chain. They highlight the need for the three major stakeholders in XR – developers, consumers and creators – to work together to build an ecosystem so the technology can fully deliver on its promise.

But critically, enterprise XR has proven its value over and over again. The sector is, as many stakeholders have commented, “at an inflection point”. Users can still benefit from first mover advantage, while developers still have space to experiment and expand. The next twelve months will see rapid growth and those able to take advantage of the surge will ride the crest of the wave.

*“Just understand where the market is. Build something where you’re going to get the revenue.”*

*“You have an opportunity to make your mark. It’s a really nice spot to get in ahead of everyone else, but also be able to see success to keep yourself sustainable.”*

**Sean Liu, Director Product Management, Oculus VR**



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## Essential Themes:

### Discover Solutions

Find the right solution and its applicability to your unique problem. Discover how your company measures up against your own and other industries

### Prove the Value

Uncover how XR champions, innovation departments, business heads and HR get budget sign off and the process you need to take

### Boost Adoption

Gain valuable techniques for alleviating social anxiety, improving collaboration, and approaching change management

### Unlock ROI and Scale

Learn about XR's distinct security and sustainability measures, how pipelines should be built and what the future looks like

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