For years, extended reality (XR), the umbrella term used to describe all environments that combine real and virtual worlds, has been hyped as the future of human-machine interaction. While XR, including virtual reality (VR), augmented reality (AR), and mixed reality (MR), has yet to achieve mass adoption on the consumer level, enterprise leaders and startups alike are adopting these immersive technologies to transform the way people work and collaborate.
Why is this Happening?

**Improved hardware**

Advancements in processing power, visual quality, cost, and the comfort of standalone systems, have eliminated the need for external computing devices, promising a more user-friendly experience. Additionally, cross-standard initiatives like the OpenXR consortium and OpenVR SDK are hoping to reduce market fragmentation and enable developers to create experiences that are compatible with all headsets.

**Advent of digital twins**

Manufacturers like GE and Artic Wind are leveraging their industrial IoT ecosystems, along with real time analytics, machine learning, and simulation technologies to create virtual replicas of physical systems and structures. These “living” digital models, or digital twins, enable engineers to visualize processes, monitor performance, and troubleshoot assets virtually.

**The Rise of Remote Work**

Remote work is the new norm. More and more, modern employees are utilizing connected communication technologies and flexible work hours to work from home and collaborate remotely. This growing trend is reflected in the surge of tele-conferencing solutions on the market; a global market anticipated to exceed $20 billion USD by 2024.
What’s on the Horizon?

Virtual collaboration

Companies like Volkswagen and Cisco are investing in virtual co-working spaces designed to enable collaboration amongst remote teams. With the evolution of life-size 3D avatars, spatial audio chat, flexible hand-based tools that allow users to manipulate virtual objects, and photorealistic graphics, designers and engineers will soon be able to create and review concepts or 3D replicas in full fidelity with colleagues and clients across locations.

Immersive analytics

The application of XR technologies and sensors to visualize and analyze data in the context of physical or virtual realities has given rise to the field of immersive analytics. The eventual convergence of immersive analytics and digital twin technologies will lead to interactive 3D models of physical systems that allow designers, engineers, and business stakeholders to monitor and evaluate performance in realtime.

Immersive behavioral change

Increasingly, XR is being used to help drive behavior change in various sectors. Walmart, for example, has started to introduce VR into their training to help employees develop empathy for customers and deliver better customer service. Meanwhile, healthcare institutions like Cedars-Sinai are experimenting with VR goggles to improve patient outcomes through cognitive behavioral therapy and mindfulness techniques.
Smashing’s Recommendations

1. Examine your workflows

To ensure that XR solutions are of business value and not just novelty, it’s important to begin by examining current workflows and identify opportunities to improve efficiencies or better contextualize resources and interactions. For example, what are some labor intensive processes that could be improved via virtual collaboration or on-demand analytics via AR technologies on the line?

2. Prepare your data

Before fully converting your data or processes for XR technologies, go digital first. Move towards a cloud model so that data is available across the organization. Consolidate existing data and make sure they are structured in compatible formats for hardware agnostic technologies. Establish common standards and protocols to govern changes and access.

3. Don’t forget the humans

XR technologies can be a powerful tool, but it’s important to understand what end-users need before implementing solutions. Explore the psychology of collaboration spaces and understand how environmental factors and behavioral traits influence collaboration both in physical and virtual realities. Furthermore, don’t just mimic app and web interfaces in XR. Take the time to understand how XR environments shape user behavior and expectations and design experiences accordingly.
Dig Deeper

- What’s the difference between VR, AR and MR?
- 3 reasons why VRs killer app will be collaborative
- How to develop for virtual reality environments
- Digital twins: the final frontier of VR?
- Feasibility of an immersive digital twin (PDF)

About Smashing Ideas

Founded in 1996 and headquartered in Seattle, WA, Smashing Ideas is a design and innovation agency with deep expertise in creating highly engaging digital experiences. They partner with the Global 500 to create connected smart products, apps, websites, and content management systems that make a positive impact on user engagement and their clients’ bottom line. To learn more, visit smashingideas.com.

Get In Touch

hello@smashingideas.com
+1 206.378.0100
smashingideas.com