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Digital

The Dynamic World of XR and AI

Empowering users through the synergy of Extended Reality and Artificial Intelligence

2025

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Introduction

2025 will be the starting year of a wider adoption of Extended Reality (XR).

Historically, we were waiting for this moment where the users will be truly empowered by XR, and with AI we see that the moment is there!

Within this PoV, we explore the history of XR and highlight current innovative possibilities offered by this rapidly evolving “new” digital channel, that will empower a lot of end-users!

1. History of XR

The history of Extended Reality (XR) begins in the 1960s with visionary Morton Heilig, who created the Sensorama in 1962. This device offered a multi-sensory experience, immersing users in vibrant visuals and sounds, sparking curiosity about virtual worlds. In 1968, Ivan Sutherland invented the "Sword of Damocles," the first head-mounted display. Although it was bulky and required a computer, it laid the groundwork for future developments in virtual reality.

As the 1980s arrived, Jaron Lanier founded the organisation VPL Research and popularised the term "Virtual Reality." His work on VR products, including data gloves and the EyePhone HMD, inspired many. However, the 1990s were challenging, with attempts to commercialise VR facing setbacks.
In 1991 Sega announced a VR headset, but it was never released. Sony followed with the PlayStation VR in 1995 and struggled due to limitations in technology.

The 2000s saw steady research in VR and augmented reality (AR), focusing on training and simulation applications. Then, in 2012, the tide turned with the Kickstarter campaign for the Oculus Rift, reigniting interest in VR. By 2016, consumer VR headsets like the Oculus Rift and HTC Vive became available, allowing people to explore virtual worlds. That same year, Pokémon GO captivated millions, showcasing the possibilities of AR as players interacted with virtual creatures in their real environments.

The onset of the COVID-19 pandemic in 2020 accelerated the adoption of XR technologies for remote work, virtual gatherings, and online education, highlighting their value in connecting people during challenging times. Major tech companies like Meta, Apple, Nvidia, Google, and Microsoft began investing heavily not only in XR but also in AI, complementing their vision of a metaverse where people could interact and create in a shared digital space. By merging the advances of AI with XR, these organisations seek to deliver ever more immersive, personalised, and intelligent experiences, laying the groundwork for the next wave of digital innovation.

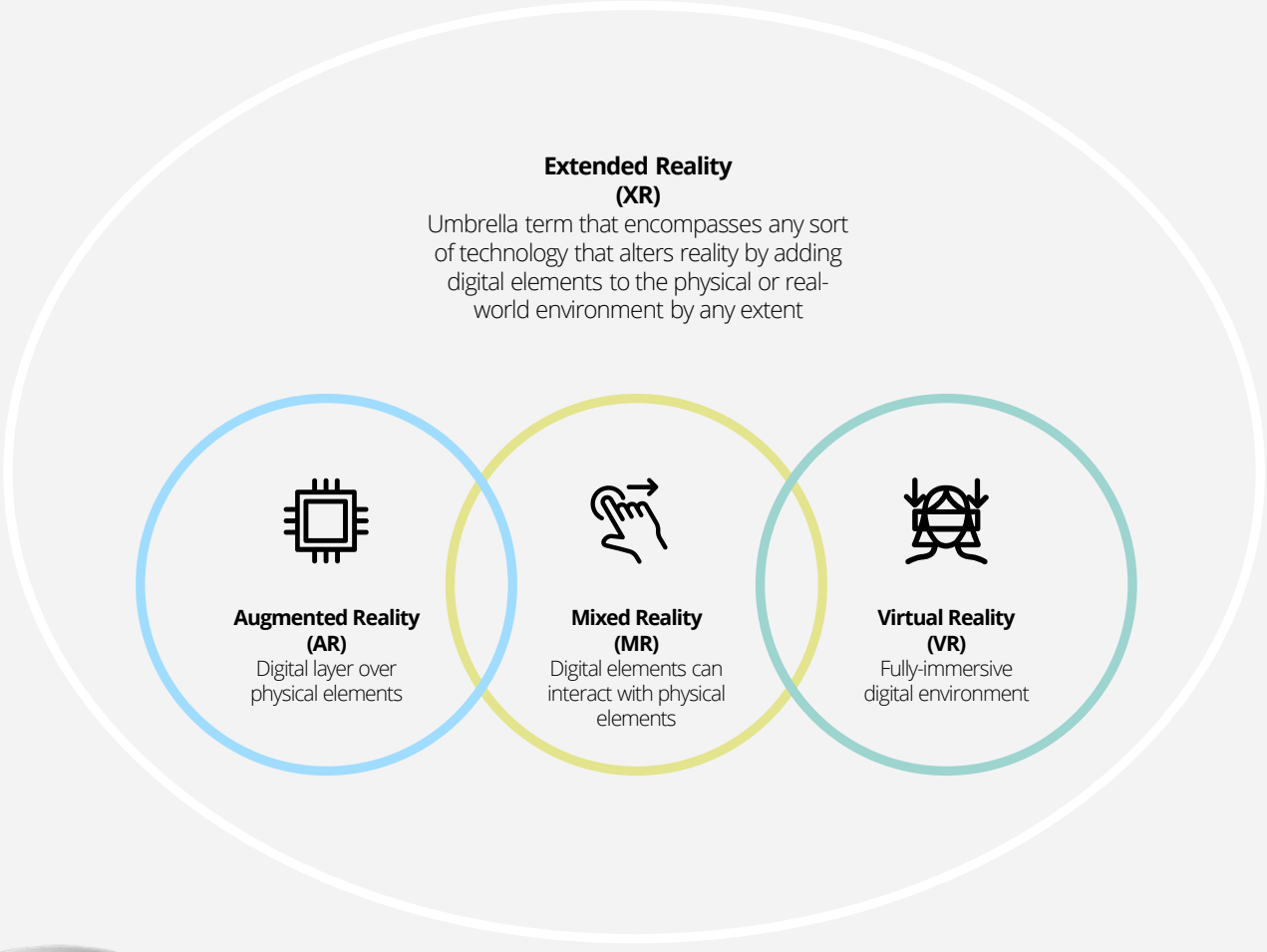
Thus, the journey of Extended Reality continues to unfold, filled with innovation and creativity, transforming how we engage with the world and each other. The story of XR is ongoing, promising exciting possibilities for the future.

2. What is XR?

Extended Reality (XR) is an umbrella term that encompasses all immersive technologies, including Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). XR combines the physical and digital worlds, allowing users to interact with digital content in real-time.

Virtual Reality (VR) transports users into entirely simulated environments. Augmented Reality (AR) overlays digital elements onto the physical world. Mixed Reality (MR) merges them both, allowing virtual and real objects to interact seamlessly in real time.

XR is increasingly leveraged across multiple enterprise domains, including operations, training, collaboration, and marketing/customer engagement. XR is transforming user experiences, empowering people to engage with information in immersive and interactive ways.



3. The possibilities of XR with Operation

Extended Reality (XR) is increasingly being used across various industries to enhance operational efficiency and effectiveness. In this context, technologies such as Virtual Reality (VR) and Augmented Reality (AR) offer valuable tools for everything from maintenance tasks to real-time support. Here are a few examples:

1. Maintenance and repair

Augmented Reality (AR) overlays digital information onto physical equipment. Technicians can use AR glasses or mobile devices to view step-by-step instructions, diagrams, or even 3D models in real time. This guidance accelerates diagnostics, boosts accuracy, and minimizes downtime.

2. Remote Support

XR solutions also enable remote support by allowing experts to see exactly what field workers see as they perform tasks. In industries such as healthcare and utilities, specialists can offer immediate guidance and solutions, helping prevent costly delays and increasing safety.

By leveraging these XR applications, organizations can streamline operations, reduce costs, and deliver better outcomes for both customers and stakeholders.

4. The new way of learning with XR

XR is transforming learning within enterprises by providing immersive and interactive training experiences for employees.
This includes technologies like VR and AR, which make onboarding and skill development more effective and engaging. Users will have more focus, the content is way more sticky. Also, at the end the user is more confident to practise what they have learned when they do learnings via XR technology.

Learning with VR, employees can be introduced to their roles in a safe, simulated environment. They can practise scenarios they might face on the job, such as dealing with difficult customers or operating machinery, without any real-world consequences. This hands-on experience helps them build confidence and prepare for their actual duties. With AR glasses or mobile devices, employees can see step-by-step instructions while performing tasks. This real-time guidance makes it easier to learn complex procedures, reducing mistakes and increasing efficiency.

XR also facilitates ongoing professional development. Employees can access virtual training modules at their own pace, learning new skills and refreshing existing knowledge whenever they need. This flexibility allows companies to keep their workforce up to date with the latest practices and technologies.

Moreover, XR can enhance collaboration among teams, especially in remote settings. Virtual meetings can create shared spaces where employees can interact and brainstorm together, regardless of their physical locations.

XR is revolutionising learning in enterprises by making training more immersive, efficient, sticky, and collaborative. With the right strategy it can help cut costs on materials and resources, while also accelerating the path to competency, improving employee engagement, and boosting knowledge retention. It empowers employees to develop their skills effectively while also driving organisational success.

5. Unlocking new experiences

XR is enhancing the customer experience in various ways, making interactions more engaging and personalised. This includes technologies like VR and AR, which businesses are using to connect with their customers effectively.

In retail, AR allows customers to try products virtually before buying them. For example, furniture stores offer apps that let shoppers see how a sofa would look in their living room using their smartphone camera. This helps customers make better purchasing decisions, reducing the chances of returns.

VR creates immersive shopping experiences, allowing customers to explore virtual stores from the comfort of their homes. They can browse products, attend virtual fashion shows, or even participate in events, making shopping more exciting and interactive.

Travel and tourism companies use XR to showcase destinations. Customers can take virtual tours of hotels or attractions, helping them choose their next holiday spot without having to leave home. This immersive preview can inspire confidence and excitement about their travel plans.

In the automotive industry, AR apps let customers customise vehicles virtually, choosing colours, features, and accessories. This interactive experience helps them visualise their ideal car, enhancing satisfaction and engagement.

Additionally, XR can improve customer service. Businesses can use AR to provide real-time assistance, guiding customers through complex processes or helping them troubleshoot issues with products.

XR is transforming the B2B & B2C landscape by creating more engaging, personalised, and interactive experiences for customers. This not only enhances satisfaction but also builds stronger connections between brands and their audiences.

6. AI accelerates the power of XR

Artificial Intelligence (AI) plays a crucial role in accelerating the development and effectiveness of XR technologies. By combining AI with XR, businesses can easily create more immersive, personalised, and interactive experiences.

One of the key ways AI enhances XR is through personalisation. AI can analyse user preferences and behaviours to tailor experiences to individual needs. For example, in a virtual shopping environment, AI can recommend products based on a customer's previous choices, making the experience more relevant and engaging.

AI also improves the realism and creation of virtual environments. In VR, AI can generate lifelike characters and dynamic scenarios that respond to user actions, creating a more immersive experience. Similarly, in AR, AI can recognise objects in the real world, for example using techniques like object detection, and overlay appropriate digital content, making interactions feel seamless and natural.

Another important aspect is the use of AI for real-time data analysis. AI can process vast amounts of data and provide insights during XR experiences. For instance, in a training simulation, AI can assess a user's performance and offer feedback, helping them learn and improve more effectively.

AI can facilitate better interactions in XR environments. With natural language processing, users can communicate with virtual characters or interfaces using voice commands, making the experience more intuitive and user-friendly.

Ultimately, AI acts as a powerful accelerator for Extended Reality by enhancing personalisation, realism, and interaction. As these technologies continue to evolve together, they promise to create even more engaging and transformative experiences in various sectors, from entertainment to education and beyond.

Conclusion

In conclusion, XR is significantly improving various aspects of business and learning. In operations, it enhances training and maintenance, making processes more efficient and safer. In the enterprise learning space, XR provides immersive training experiences that help employees develop skills effectively. For customers, XR creates engaging and personalised shopping experiences that make decision-making easier and more enjoyable. Additionally, AI empowers XR by personalising interactions, generating realistic environments, and enabling intuitive communication.

Together, these advancements are transforming how businesses operate, how employees learn, and how customers engage with brands, paving the way for a more connected and innovative future.

The adoptive future of XR is just starting, 2025 will be the year for XR.

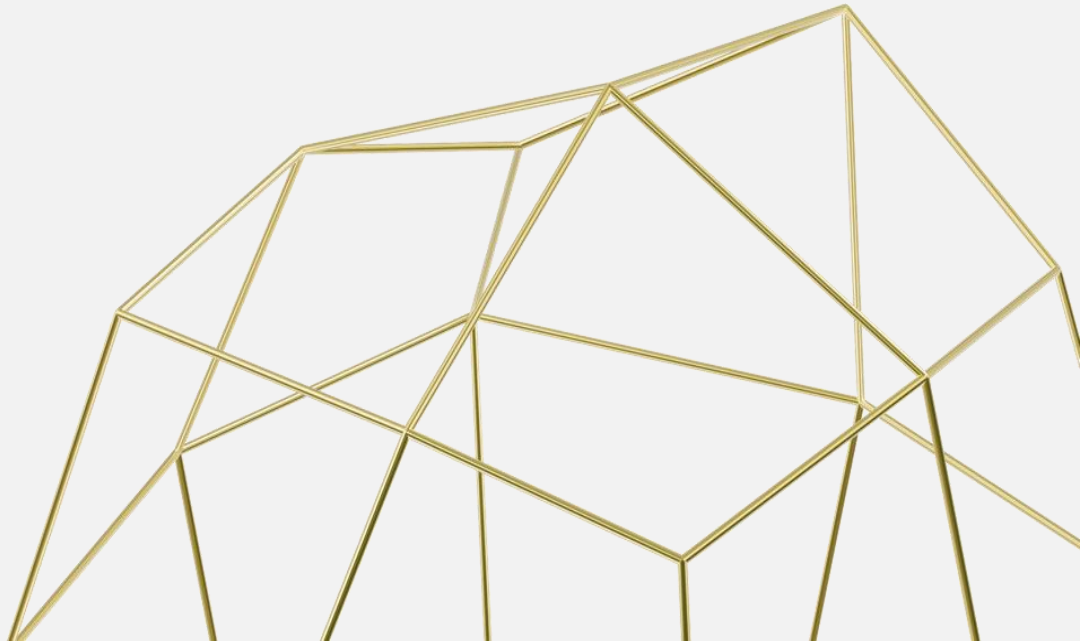
Deloitte is ready to support your XR potential!

Deloitte offers a comprehensive approach to XR through its XR Experience Labs, where businesses can explore innovative solutions tailored to their needs. The labs provide an environment for organisations to define their XR strategy, ensuring alignment with business objectives and goals.

In the XR Experience Labs, Deloitte collaborates with clients to create specific use cases that demonstrate how XR can add value in various areas, such as training, customer engagement, and operations. By understanding the unique challenges and opportunities faced by each organisation, Deloitte helps to identify the most effective applications of XR technology.

Once the strategy and use cases are defined, Deloitte works on developing customised XR solutions. This includes leveraging cutting-edge technologies and integrating AI to enhance the immersive experience, ensuring that the solutions are not only innovative but also practical and scalable.

By partnering with Deloitte, organisations can harness the full potential of Extended Reality, transforming their operations and enriching customer experiences while staying ahead in an increasingly digital world.



Authors

Rinse Mallée

Sr. Manager
Experience Engineering lead
(Mobile, Web, Unlimited Reality)

+ 31620308224

rmallee@deloitte.nl

Bob van den Berg

Lead Creative Technologist

+31882880409

bovandenberg@deloitte.nl

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