

the immersive, experience-centric future of work

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Key takeaways

AR/VR is a game-changer for many industries to **boost productivity and innovation**

AI-powered devices, mixed and extended reality, AI-enabled deep automation and digital humans are poised to **reimagine the workplace and the way we work**

A cross-functional, multi-technology, and all-of-enterprise approach is key to maximising the benefits of immersive technologies

The **worldwide AR/VR head-mounted display market** is projected to reach

35.6 million units by 2028, a 5-year CAGR of 39.4%

Stay current on the trends and issues needed to meaningfully adopt these technologies

Introduction

Throughout the course of human history, work—and by extension, the workplace—has been central to how human beings organise and collaborate to create shared value and shape societal development. The 2020-2022 pandemic years highlighted the critical role of immersive technologies in ensuring operational continuity in workplaces where physical presence was limited or not possible. For example, AR/VR technologies enabled innovative solutions for remote training, helping to bridge knowledge gaps in industrial workplaces and smart manufacturing processes by providing training to unskilled or temporary workers to perform complex maintenance operations.

One industry that is ripe for immersive tech is healthcare, and studies have shown training in AR/VR can improve knowledge retention 2-3x more than traditional learning methods. Training in VR can also be less expensive compared with reserving an actual operating room and using actual tools and equipment as well as medicines and materials.¹

Johns Hopkins in the United States made medical headlines for using AR in the operating room. Surgeons used AR headsets to perform back surgeries on a living patient. The headsets projected images on the see-through display showing the patient's bones, muscles, and connective tissue from CT scans. The technology brought important and relevant information to the surgeons as needed, and it kept surgeons engaged with the patient throughout the surgery.

Many industries are teeming with opportunities for AR/VR and other advanced technologies to maximise their employees' contribution to the digital economy. Technologies such as AI-enabled digital assistance, enterprise-wide intelligent automation and integration, feature-rich, and interactive immersive environments promise to amplify the potential of tomorrow's digital enterprises by revolutionising the workplace and the way we work.



Productivity gains

Business teams using code generation copilots will achieve 70% success rate in streamlining jobs with task/workflow automation, replacing low-code and IT-supported development by 2024.



New experiences

60% of A2000 will upgrade hardware and software technologies to increase worker retention with personalised work experiences and enhanced collaboration by 2025.



Workforce augmentation

By 2028, half of large businesses will use prompt engineering to prototype AR/VR simulations, reducing development time from weeks to hours and creating precision training.

Source: IDC FutureScape: Worldwide Future of Work 2024 Predictions — Asia-Pacific (excluding Japan) Implications

Revolutionising the workplace and workspace

Businesses must evolve to meet the demands of a new era driven by technological advancements, shifting workforce demographics, and new employee expectations for:

- **Enhanced collaboration and communication**
- **Enhanced learning and training**
- **Enhanced employee engagement and satisfaction**
- **Greater efficiency, flexibility, and adaptability**
- **An environment that encourages innovation**

Immersive interfaces and environments play a critical role in the future of work where:



Virtual meeting spaces help employees feel more present and engaged, and enable them to work anywhere and anytime.



Interactive learning and simulations provide realistic or precision training that is critical for complex areas, such as emergency response, incident reporting and management, medical procedures, machinery operations, and industrial maintenance.



Smart and interactive environments leverage technologies such as the Internet of Things (IoT) and AI/ML for greater data-driven intelligence to create smarter, more responsive and engaging workspaces.

The introduction of new immersive devices and interfaces are set to supercharge worker capabilities, paving the way for a new breed of digital enterprises.

Your new productivity partner: AI-powered devices

The disruptive effect of GenAI as a major new workload is ushering in accelerated deployment of new AI-ready hardware and software infrastructure, which promise to bring AI-enabled capabilities to every device and endpoint in the organisation. The AI PC is the poster child for this disruptive evolution that promises to amplify human capabilities by fundamentally transforming the paradigm of personal computing.

THE AI PC

IDC defines AI PCs as personal computing devices that have new, specific system-on-a-chip (SoC) capabilities designed to run Generative AI tasks locally. Leveraging newly integrated neural processing units (NPUs), this latest crop of PCs can run AI workloads that have typically run in the cloud. This segment is poised to redefine the PC market, and IDC forecasts that the NPU-equipped AI PC sub-segment is expected to register a CAGR of 42.7% worldwide for the 2023-2027 period, while the non-NPU PC segment is expected to grow at -14.9% annually over the same period.²

Among the first manifestations of this new generation of AI devices is the Microsoft Copilot+ PC, unveiled in May 2024, which integrates advanced AI capabilities directly into the personal computing experience. Leveraging machine learning and natural language processing, Copilot+ serves as an intelligent assistant that can understand context, anticipate user needs, and perform complex tasks autonomously. This integration aims to enhance productivity by automating routine tasks, providing insights, and enabling more intuitive interactions with technology. Lightweight large language models (LLMs) will increasingly find their way into personal computing devices, assisting and enhancing users' experiences across a host of specific capability areas.

Mixed reality: the next frontier

Rich, interactive virtual spaces represent the next generation of the internet, and a new paradigm for how people interact and generate content to unlock the true potential of the digital universe. Devices that enable us to experience these immersive environments in all their richness will be at the forefront of our journey to this future.

The arrival of the Apple Vision Pro has thrown the spotlight on mixed reality (MR), spurring the transition from a virtual reality primarily for consumers and gaming, to a blended reality with new possibilities. The Apple device is more than an AR headset. It introduces a new type of computational paradigm that seamlessly blends the real physical world with digital content to enable users to interact with digital objects as if they are present in their physical surroundings. While the Vision Pro is a prominent exemplar of this new modality of spatial computing, other tech giants with products such as Microsoft Holo Lens, Meta Quest Pro, and Sony PlayStation VR are jostling to share the spotlight, demonstrating a shared belief in the immense potential of immersive technologies to shape our future.



Devices that enable us to experience these immersive environments in all their richness will be at the forefront of our journey to this future.

According to IDC projections, the worldwide AR/VR head-mounted display (HMD) market will reach 9.7 million units in 2024, 44.2% higher than 2023 levels. By 2028, total volumes are expected to touch 35.6 million units, resulting in a five-year CAGR of 39.4%.³

Immersive technologies have already proven their utility in training and simulation use cases, and Apple's entry into the extended reality (XR) B2B market will foster an innovation ecosystem critical to driving realisation of complex workplace use cases. Immersive technologies will also play a crucial role in defining and operationalising digital humans.



Augmented vision

The worldwide AR/VR head-mounted display market is expected to reach 9.7 million units in 2024, 44.2% higher than 2023. By 2028, total volumes are expected to touch 35.6 million units, resulting in a five-year CAGR of 39.4%.



Mixed reality

The Apple Pro Vision is more than an AR headset. It marks the arrival of a new type of computational paradigm that seamlessly blends the physical world with digital content to enable a new experience.

Source: IDC's Worldwide Artificial Intelligence PC Forecast, 2023–2027

Transforming the future of work

AI devices and immersive technologies are not the only innovations reshaping the future of work as future work models evolve into hybrid, highly automated, intelligent digital workspaces premised on delivering superlative experiences.

This vision of the future workplace expands the art of the possible across the "who" (engaged workers), "how" (technology), and "where" (reimagined workspace) through an integration of digital technology enablers, such as bionic interfaces, generative and predictive AI, and intelligent automation.

AI-enabled deep automation: Deep automation is premised on viewing an enterprise as a living organism where most functions are extensively automated with a focus on higher-level decision making, constantly adapting, and evolving to thrive in an ever-changing business environment. This is achieved through the integration and orchestration of different technologies such as AI/ML, robotic process automation (RPA), large language models (LLMs), business process management (BPM), low-code/no-code platforms, and everything as a service (XaaS) model, among others, to create a self-adjusting organisation that can rapidly adapt to and profit from changing business conditions through optimised decision-making in complex scenarios, such as fraud detection and prevention, risk assessment, production optimisation, and inventory management.

Digital humans: The future workplace will also feature a seamless blend of physical and digital humans. These next-generation avatars will possess a striking visual realism, appearing almost indistinguishable from humans with lifelike facial expressions and body language. Equipped with advanced conversational abilities, they will engage employees and customers alike in natural, spoken dialogue, leveraging speech recognition and synthesis technologies, and augmented with emotional intelligence to foster empathetic interactions. Continuously learning and adapting from user engagements, they can refine their responses and tailor interactions to individual preferences. Their presence in the workplace promises to enhance engagement, efficiency, and overall user experience within the corporate environment.

Visualising an immersive, intelligent workspace

Taken together, these technological innovations represent a significant reimagination of the way we will work in the future — in an immersive, intelligent and dynamic space unbounded by time or physical place (see Figure 1).

Figure 1

Visualising the future of immersive work environments

Enhanced engagement, learning and training



- New employees on their first day of work put on **MR headsets pre-loaded with knowledge captured from their predecessor**.
- **AI embedded into the MR displays seamlessly guide** them along the tasks, enabling them to be productive from Day 1.
- New employee gets **trained quickly on complex tasks**, accelerating learning processes.

Enhanced collaboration and communication



- Employees, in different remote locations, **meet in a fully immersive VR environment**.
- One worker initiates a holographic whiteboard session from his home office. **Collaborate in a virtual factor-floor setting, manipulating 3D models and brainstorm ideas**.
- **AI assistants** pop up with data insights, summarising points and scheduling follow-ups.

Greater operational efficiency



- **Workers** wearing extended reality glasses expertly navigate a complex and time-critical repair on an industry machine.
- With the help of **natural language commands**, the AI assistant, which overlays holographic instructions and real-time data on workers' field of view, enabling the task to be completed with precision and efficiency.
- Diagnostic routines are automatically activated to ensure that the fix works while the **embedded AI reactivates workflows** involving the just-repaired asset to **minimise disruption**.

Increased visualisation and control



- System administrators with reading glasses seamlessly stream an aggregated **visualisation of critical IT operations**.
- **Predictive AI suggestions** on recommended actions are also given.
- **Bionic integrations** allow workers to **execute complex commands** and operations by simply thinking them.

Source: IDC, 2024

Next steps

As we step into this exciting future of work defined by seamless human-machine collaboration and supercharged workplace experiences, there are a few steps enterprises can take to prepare for this future reality:

1

Adopt a human-first strategy towards workplace transformation

Create an empowered cross-functional taskforce with a charter to identify innovative workplace technology that will help eliminate mundane, repetitive and low-value tasks. The strategic goal is to better amplify human capabilities and employees' potential for more rewarding, high-value activities (e.g., augmenting human creativity with GenAI in product and service co-design).

2

Start by identifying the right use cases

Leverage expert advice on developing business plans or ROI models to demonstrate value. Look for vendors who can orchestrate across an ecosystem of partners across hardware, software and services to support complete use cases.

3

Cultural readiness and stakeholder buy-in

Assess if the organisational culture is conducive to the adoption of new technologies and innovative practices. Evaluate the level of support from key stakeholders, including leadership and employees. If necessary, enlist the support of qualified external partners to plan and drive change management initiatives to establish the right organisational culture.

4

Technology infrastructure requirements

Conduct an "as-is" inventory check of existing hardware, software, and network capacity and capabilities, and estimate the gap in requirements necessary to handle increased data loads and real-time processing necessary to meet the demands of the emerging tech powered use cases.

5

Set specific goals and measure your progress against desired outcomes

Workplace evolution is a continuous journey that spans a multitude of dimensions and demands the consistent support of key stakeholders across the organisations. To ensure unwavering ongoing support over the journey, it is important to set and track measurable business and operational goals (e.g., cost reduction, profitability, productivity enhancement, and experience improvement) over different time horizons.

6

Develop strategic partnerships with key technology vendors

Collaborate with partners that bring specialised knowledge and experience to accelerate the organisation's learning curve for new technologies. Find a partner that can help plan and incorporate new technologies into the overall IT adoption roadmap.

7

Regulatory and compliance

Take time to understand and evaluate the organisation's readiness to comply with relevant data protection and privacy regulations. Seek partner support to identify industry-specific regulations that apply to technologies and constructs such as AI, Digital Workers, AR/VR and other emerging technologies to develop a comprehensive strategy (spanning corporate, legal, HR and technology aspects) to navigate the complexity.

Appendix

¹ IDC Perspective, Improving and Enhancing Training, Therapy, and Information Sharing in Healthcare with AR/VR; IDC Doc #US51909724

² IDC's Worldwide Artificial Intelligence PC Forecast, 2023–2027; IDC Doc# US50237123.

³ IDC's Worldwide Augmented and Virtual Reality Headset Forecast Update, 2024–2028: CY 2Q24.



About IDC

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