XR TODAY

XR Transformation:

Challenges, Use Cases, and the Role of AI

TECH TELLIGENCE

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EXECUTIVE SUMMARY

Augmented reality (AR), virtual reality (VR), mixed reality (MR), which incorporates interactive AR and VR, and the broad umbrella of Extended Reality (XR) have slowly gained traction within the corporate space.

The introduction of new devices such as the Apple Vision Pro, which went on sale in early 2024, and the latest evolution of devices, including the Meta Quest 3 and 3s, the HTC VIVE Focus Vision, the Pico 4 Ultra, along with many others, have amplified the interest and opportunities for businesses to deliver meaningful outcomes with XR technology.

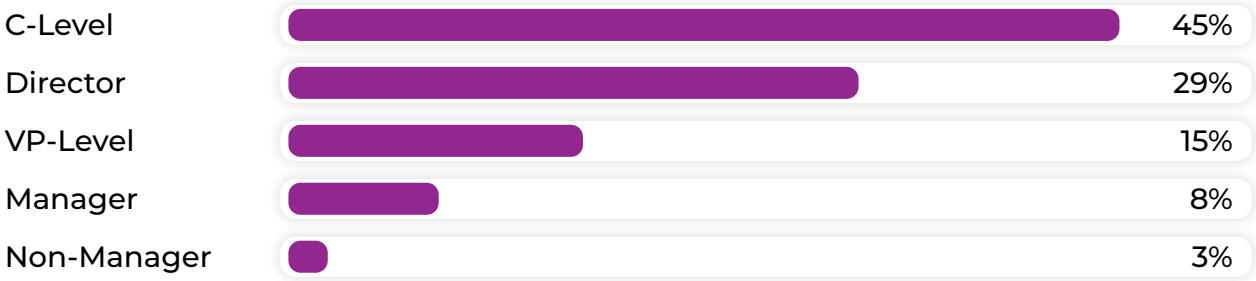
Simultaneously, the combination of XR and artificial intelligence (AI) potentially accelerates the creation of AR and VR scenes, simplifies XR device deployment, and amplifies the value of usage analytics.

This XR Today report, in collaboration with Kevin Kieller, Co-Founder and Lead Analyst, enableUC, provides a detailed snapshot of the adoption, successes, challenges, feedback related to XR+AI, and perspectives on the future of XR technologies.

Respondent Demographics

The findings featured in this report stem from a survey of XR Today's top community members and readers, including over 200 industry professionals.

Seniority Levels



Geographic Distribution

58%
United States

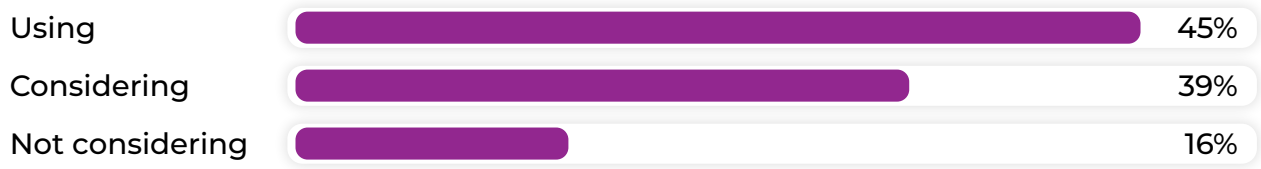
39%
United Kingdom

Organization Size

1-20 employees | 21-100 employees | 101-250 employees | 251-500 employees | 501-1000 employees | 1001-10,000 employees | 10,000+ employees

Key Findings

Are you currently using or considering using XR devices (AR, VR, or MR) in your organization?



Most Organizations Embracing or Considering XR Technologies

The survey results indicate a strong interest in Extended Reality (XR) technologies within organizations. With 45% of respondents already using XR devices, it's clear that many businesses are committed to investigating the value of Augmented Reality (AR) and/or Virtual Reality (VR) in enhancing their operations.

Additionally, 39% of respondents are considering the use of XR devices, showing a significant portion of organizations are looking to explore the potential benefits of integrating these technologies into their workflows. This interest suggests a growing awareness of XR's capabilities and a desire to leverage them for competitive advantage. The fact that 84% of organizations have adopted or are contemplating adoption indicates that XR is seen as a viable area for innovation.

However, just over 15% of respondents are not considering the use of XR devices, due to barriers such as cost, lack of expertise, or uncertainty about the return on investment, as detailed below. These organizations may require additional case studies, success stories, and specific ROI analyses before deciding to pilot XR technologies. auto-generated coaching and positive recognition opportunities.

What are the reasons your organization is not using XR currently? (Select all that apply)

High Cost and Technical Complexity are Major Barriers

Respondents indicate that cost is the most significant barrier preventing organizations from adopting XR technologies (38%). This suggests that while there is interest, the financial investment required is a major consideration. Organizations may need to see more affordable solutions or clear ROI to justify the expense.

Technical complexity (34%) is another critical hurdle, highlighting the need for expertise and robust support from vendors to simplify implementation and integration. Simplified, user-friendly solutions could help lower this barrier and encourage adoption.

For those who have not identified an XR use case (21%), it is difficult to justify any investment of time or capital. XR not being a top priority (20%) can be driven by anticipation of less return as compared to other initiatives and is likely impacted by the recent shift to investing heavily in artificial intelligence initiatives.

For which use cases are you using XR? (Select all that apply)

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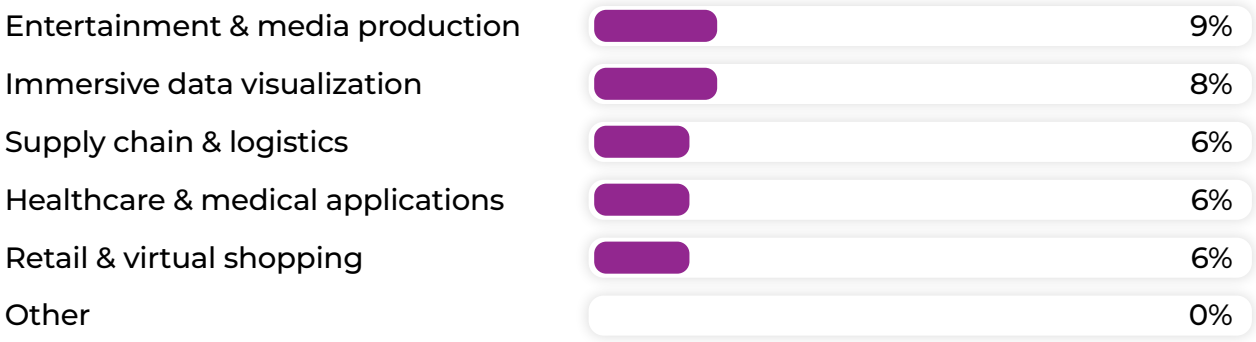


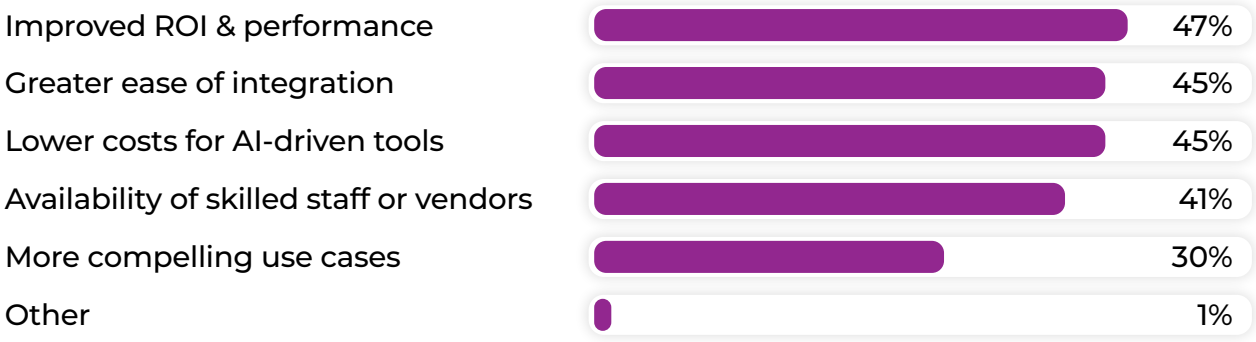
Training, Collaboration, and Customer Experience Lead Use Cases

Training (36%) is the most common use case for XR technologies, indicating that organizations see significant opportunities in using XR for skill development and employee training. This is followed by collaboration (30%) and education (30%), suggesting that XR is also being leveraged to enhance teamwork and provide immersive learning experiences.

Customer experience enhancement (26%) and product design and prototyping (22%) are also popular use cases, highlighting XR's potential to improve customer interactions and streamline the design process. Remote expert assistance (21%) and marketing and sales presentations (18%) further demonstrate the versatility of XR in providing remote support and creating engaging presentations.

Virtual events and conferences (17%), onboarding new employees (12%), and digital twins (11%) are emerging use cases, reflecting the expanding possibilities of XR technologies in different business areas.

What factors would most likely influence an increase in your investment in AI-enhanced XR technology? (Select up to 3)



ROI, Integration Ease, Cost Drive Investment

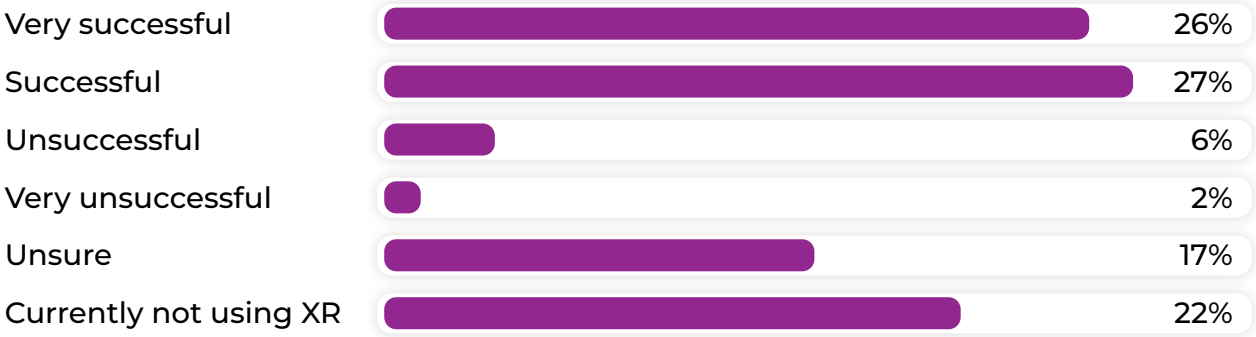
Responses indicate that improved ROI and performance (47%) are the primary factors driving increased investment in AI-enhanced XR technology. Organizations are keen on seeing tangible benefits and returns from their investments, making it essential for vendors to demonstrate clear performance improvements and financial gains from AI-enhanced XR solutions.

Greater ease of integration (45%) and lower costs for AI-driven tools (45%) are equally important factors. This indicates that organizations seek seamless integration of XR technologies into their existing systems and processes, along with more affordable solutions. Simplifying the adoption process and reducing costs can significantly encourage organizations to invest more in these advanced technologies.

Availability of skilled staff or vendors (41%) is another critical factor, underscoring the importance of having the right expertise to effectively implement and manage AI-enhanced XR technologies. Building a skilled workforce or partnering with knowledgeable vendors can help organizations overcome technical challenges and fully leverage the potential of XR.

More compelling use cases (30%) also play a significant role in driving investment. Organizations are looking for clear, impactful applications of AI-enhanced XR technology that align with their specific business needs and goals. Providing practical examples and success stories can help illustrate the value of these technologies and encourage wider adoption.

Overall, how successful has your XR (AR, VR, or MR) use been?



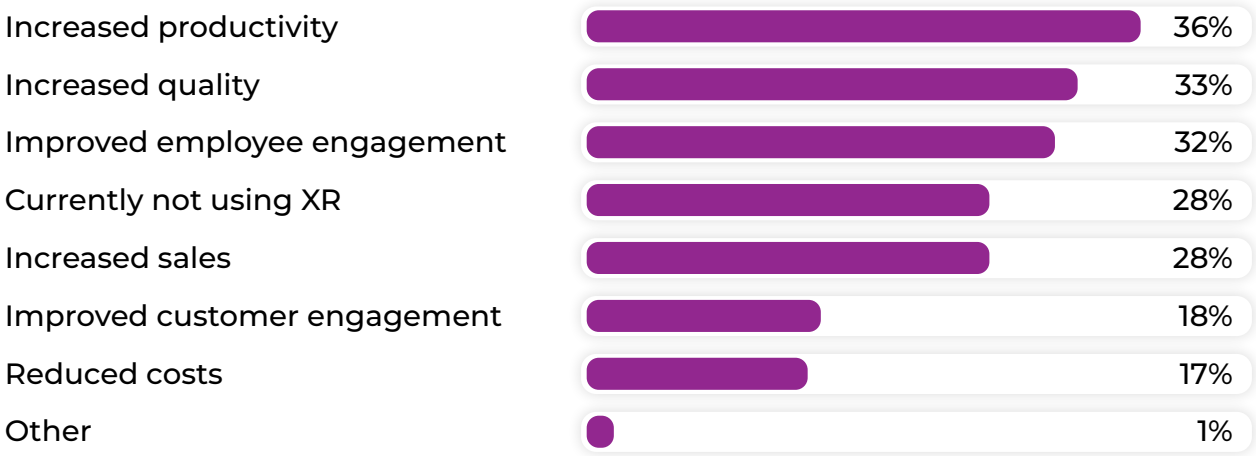
XR Users Report Success

A majority (53%) of organizations using XR technologies consider their adoption to be successful. With 27% of respondents rating their XR use as successful and 26% as very successful, it's clear that many organizations are experiencing positive outcomes. These results highlight the potential benefits of XR technologies in various applications, from training and collaboration to customer experience enhancement and product design.

A significant percentage of respondents (17%) are unsure about the success of their XR initiatives. This uncertainty may stem from a lack of clear metrics for measuring success or incomplete implementation. It is important to establish guidelines for evaluating XR pilots/projects so that organizations gain a clearer understanding of the effectiveness of their XR initiatives.

The survey also reveals a small percentage of respondents who consider their XR use to be unsuccessful (6%) or very unsuccessful (2%). Common challenges are explored later in this report.

What outcomes did you observe from your XR (AR, VR or MR) initiatives to date? (Select all that apply)



XR Boosts Productivity, Quality, and Engagement

Increased productivity (36%) is the most commonly observed outcome from XR initiatives, indicating that these technologies are effectively enhancing work efficiency and output.

This is followed closely by increased quality (33%) and improved employee engagement (32%), suggesting that XR is also playing a significant role in improving the accuracy and reliability of work, as well as making tasks more engaging and enjoyable for employees.

Increased sales (28%) and improved customer engagement (18%) highlight XR's potential to impact business outcomes directly. By providing immersive and interactive experiences, XR technologies can enhance customer interactions and drive sales growth.

Additionally, reduced costs (17%), often associated with remote support or training initiatives, further supports the potential financial benefits of adopting XR technologies, as organizations can streamline processes and achieve cost savings.

Overall, the survey results indicate that XR initiatives are yielding positive outcomes across various metrics, from productivity and quality to sales and customer engagement.

What obstacles, if any, have you encountered as part of your XR deployment/management?

High Costs, Technical Complexity, and User Resistance Represent Significant Challenges

Responses highlight several key obstacles encountered during XR deployment and management. One of the most frequently mentioned challenges is the **high cost of implementation**. This includes the initial investment in hardware and software, as well as ongoing maintenance and content creation costs.

High-quality XR hardware can be expensive, limiting its use to a wider audience. Organizations with limited budgets may struggle to justify the expense despite the potential benefits of XR technologies.

Other significant obstacles are **technical complexity and compatibility issues**. Developing high-quality XR content requires professional skills and creativity, and a lack of relevant experience within teams can result in substandard content quality.

Additionally, **ensuring that XR devices are compatible with existing IT infrastructure and software** can be a challenge. Technical errors, device compatibility, and integration into existing programs are common concerns that need to be addressed to ensure smooth deployment and usage.

User resistance and training are also notable challenges. Employees may struggle to get to grips with XR technology, leading to resistance and pushback. The time and resources required to train employees on using XR effectively can be significant, and some users may find the learning curve steep.

Additionally, XR collects large amounts of user data, raising **privacy and security concerns.** Prolonged exposure to XR can lead to psychological problems, including disorientation and motion sickness, which can further impact user adoption and effectiveness.

Finally, **infrastructure and scalability issues** are mentioned as barriers to XR deployment. Ensuring stable connections and performance, especially in wireless environments, can be difficult. Managing and distributing XR content, along with ensuring sufficient bandwidth for large-scale deployments, are additional hurdles.

Organizations may also face challenges related to **vendor lock-in, regulatory hurdles, and a lack of trained personnel** to handle the setup, maintenance, and troubleshooting of XR systems.

What lessons have you learned from your XR deployments (i.e., purchasing, deploying or managing XR)?

Clear Goals, Training, and Adaptability Key Lessons

Several key lessons have been learned from XR deployments. One crucial lesson is the **importance of setting clear goals** and having a **well-defined plan for deployment**.

Successful XR implementation requires **thorough preparation**, including defining business needs and goals, developing a detailed deployment plan, and involving end-users early in the process. This helps ensure that the selected technology meets actual application scenarios and avoids resource wastage.

Training and user support are also emphasized as vital components for successful XR deployment. Providing comprehensive training to users on how to use XR devices and applications, setting up support systems to address user questions and issues promptly, and encouraging continuous engagement with users to gather feedback are essential steps. These measures can help improve user proficiency and acceptance, ultimately leading to more effective use of XR technology.

Another important lesson is the need for **adaptable infrastructure and scalability**. Ensuring that the XR solution can be integrated seamlessly with existing IT infrastructure, software applications, and workflows is critical.

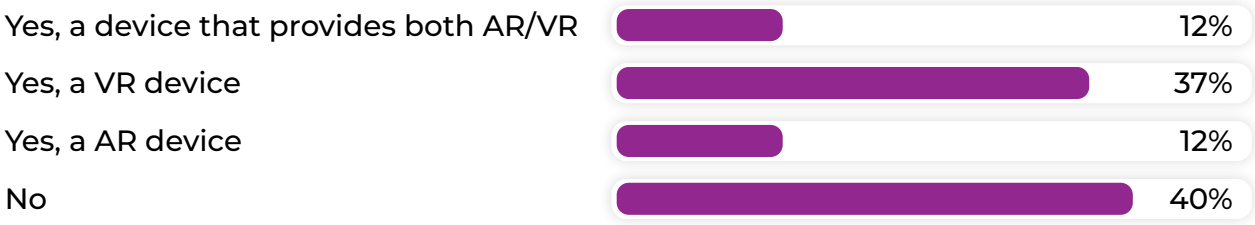
Additionally, organizations should consider the **long-term costs of maintaining and upgrading the XR technology** and plan for future scalability and expansions.

Adopting a gradual deployment approach, starting with a small-scale pilot and accumulating feedback before comprehensive promotion, can help reduce risks and costs.

Lastly, the survey responses highlight the significance of **documenting the deployment process and prioritizing user experience**. Keeping detailed documentation of configurations, troubleshooting steps, and user guides can aid in maintaining the XR system.

Prioritizing **intuitive and comfortable user interfaces** and setting up channels for users to provide suggestions and report issues easily can further enhance the overall user experience.

Have you purchased a personal AR, VR, or MR device?

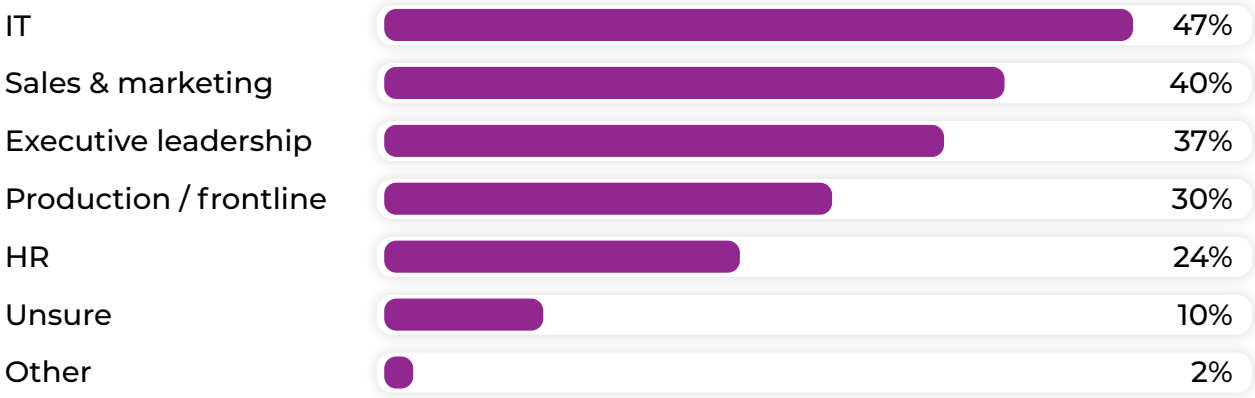


An Opportunity for Further Ideation?

While personal AR and VR devices are most often associated with entertainment or fitness (e.g., Supernatural) use cases, the fact that 61% of respondents have purchased a personal device potentially creates an opportunity for further experimentation and ideation related to business XR use cases.

Given the wide variety of XR gaming applications, it is often in this realm that new interaction methods and experiences are first introduced. Respondents with access to a personal XR device may be inspired to apply unique new concepts in a corporate setting.

Which areas of your business do you see driving interest in XR (AR, VR, or MR)? (Select all that apply)



IT and Sales Lead XR Interest

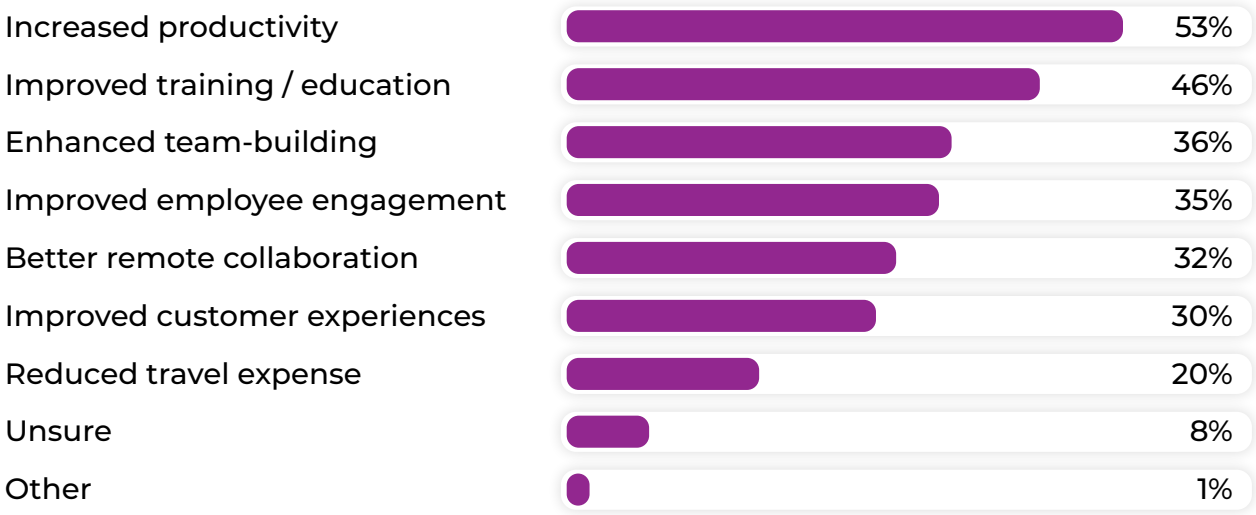
IT departments (47%) are the primary drivers of interest in XR technologies within organizations. This is not surprising, as IT teams are typically responsible for evaluating and implementing new technologies. Their focus on XR indicates that they recognize the potential for these technologies to enhance various business processes and improve efficiency.

Sales and Marketing departments (40%) also show significant interest in XR, likely due to the potential of these technologies to create immersive and engaging customer experiences to drive sales. XR can be leveraged for virtual product demonstrations, interactive marketing campaigns, and enhanced sales presentations, making it an attractive tool for these teams.

Executive leadership (37%) plays a crucial role in driving XR adoption, as their support and strategic vision are essential for the successful implementation of new technologies. Their interest suggests that many leaders see XR as an asset for achieving business goals and staying competitive in the market.

Production and frontline teams (30%), along with HR (24%), also show interest in XR, highlighting its potential for improving training, onboarding, and operational efficiency. XR can provide immersive training experiences, streamline production processes, and enhance employee engagement, making it a valuable tool for these areas.

What outcomes do you believe future XR (VR, AR, or MR) initiatives will help achieve? (Select all that apply)



Anticipated Boost to Productivity, Training, and Collaboration

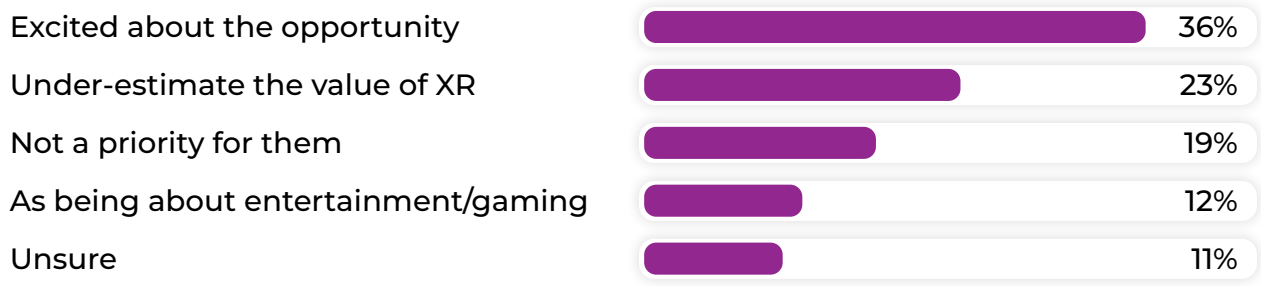
A majority of organizations believe future XR initiatives will significantly boost productivity, with 53% of respondents indicating this outcome. This suggests that companies are optimistic about the potential of XR technologies to streamline workflows, reduce task completion times, and enhance overall efficiency in various business processes.

Improved training and education are also highly anticipated outcomes, with 46% of respondents highlighting this benefit. XR technologies can provide immersive and interactive learning experiences, making training more engaging and effective. This can lead to better knowledge retention and skill development, ultimately benefiting both employees and the organization.

Enhanced team-building experiences (36%) and improved employee engagement (35%) are additional key outcomes that organizations expect from future XR initiatives. These technologies can foster better collaboration, strengthen team bonds, and make work more enjoyable and interactive. This, in turn, can lead to higher job satisfaction and increased employee retention.

Better remote collaboration (32%) and improved customer experience (30%) also stand out as anticipated benefits. XR technologies can facilitate seamless communication and collaboration among remote teams, while also providing customers with immersive and personalized experiences. Additionally, reducing travel expenses (20%) through virtual meetings and events is another notable benefit, helping organizations save costs and reduce their carbon footprint.

How do you believe most leaders in your organization view XR?



Excitement and Underestimation Coexist

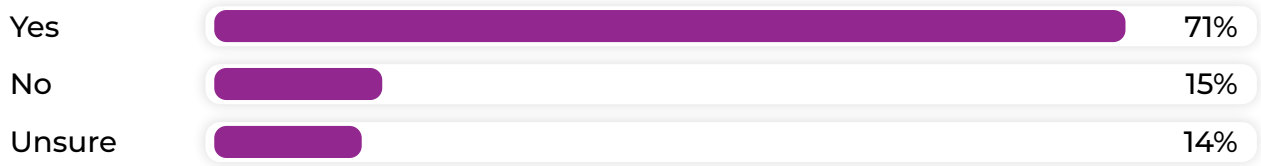
Results reveal a mixed perception of XR technologies among organizational leaders. A significant portion, 36%, are excited about the opportunities that XR presents. This enthusiasm suggests that many leaders recognize the potential benefits of XR in various business applications, such as training, collaboration, and customer experience enhancement.

However, 23% of respondents believe that their leaders underestimate the value of XR. This underestimation may stem from a lack of awareness or understanding of the technology's capabilities. Case studies and pilot initiatives may help illustrate the tangible benefits of XR technologies.

Understandably, 19% of respondents indicate that XR is not a priority for their leaders. This might be due to competing priorities, resource constraints, or skepticism about the return on investment. Organizations should consider the long-term strategic advantages of XR and ensure they have a clear view of how it might drive business growth and innovation within their specific context.

Additionally, 12% of respondents mention that their leaders view AR and VR primarily as entertainment or gaming technologies. This perception can limit the exploration of XR's broader application in a business setting. Providing examples of the diverse use cases for XR beyond entertainment may help shift this mindset and encourage a more strategic consideration related to the potential of XR.

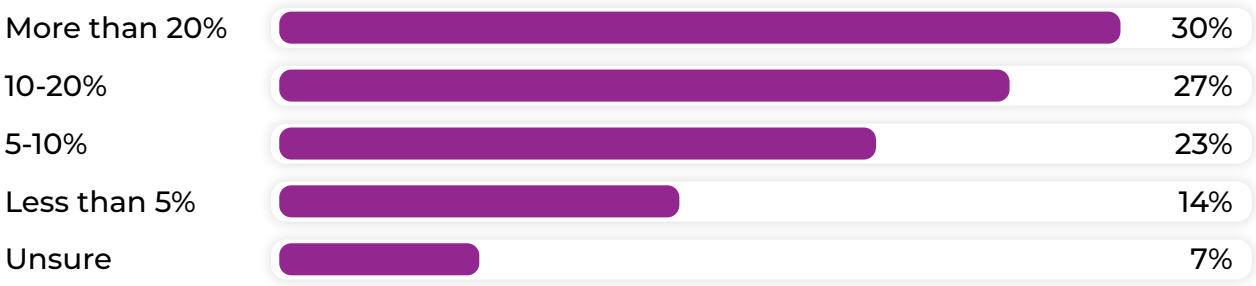
Do you see artificial intelligence (AI) as driving or simplifying the deployment of XR technologies?



AI Assists with XR Deployment

Respondents hold a strong belief that artificial intelligence (AI) is driving or simplifying the deployment of XR (AR, VR, or MR) technologies, with 71% affirming this view. This indicates a widespread recognition of AI's role in enhancing and streamlining the implementation of XR solutions. AI's capabilities, such as digital scene creation, data analysis, automation, and personalization, are likely seen as key factors that contribute to the successful deployment and integration of XR technologies.

What percentage of your IT budget is currently allocated to XR technology (AR, VR, or MR)?



Budget Allocations Reveal Varying Levels of Commitment and Exploration

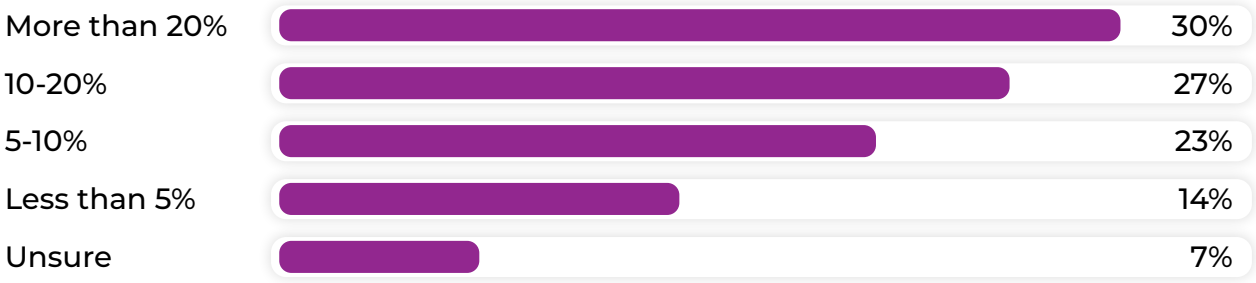
A significant portion of organizations are allocating a notable percentage of their IT budgets to XR technologies. The most common allocation falls within the 5-10% range, with 29% of respondents indicating this budget allocation. This suggests that many organizations are making a moderate investment in XR technologies, likely aiming to explore and leverage their potential without committing excessive resources.

Following closely, 27% of respondents allocate 10-20% of their IT budgets to XR technologies. This indicates a more substantial investment, reflecting a stronger commitment to integrating XR into their business processes. Organizations in this range may have identified specific use cases and benefits that justify a higher level of investment in XR.

Interestingly, 23% of respondents allocate less than 5% of their IT budgets to XR technologies, indicating a cautious or exploratory approach to XR adoption. Alternatively, smaller organizations, which are over-represented in this group, simply may not be able to focus on multiple technology areas due to budget or resource constraints. (Note that 55% of organizations with between 1 and 20 employees selected this response.)

A smaller but noteworthy segment, 14%, allocates more than 20% of its IT budget to XR technologies, demonstrating a significant commitment to these technologies. (Note that no respondents from very large organizations with over 10,000 users fell into this group.) These organizations likely see XR as a strategic priority and are investing heavily in harnessing its benefits. technologies and encourage wider adoption.

Do you plan to increase your investment in XR technology in the next 12 months?



Strong Plans to Increase XR Investment

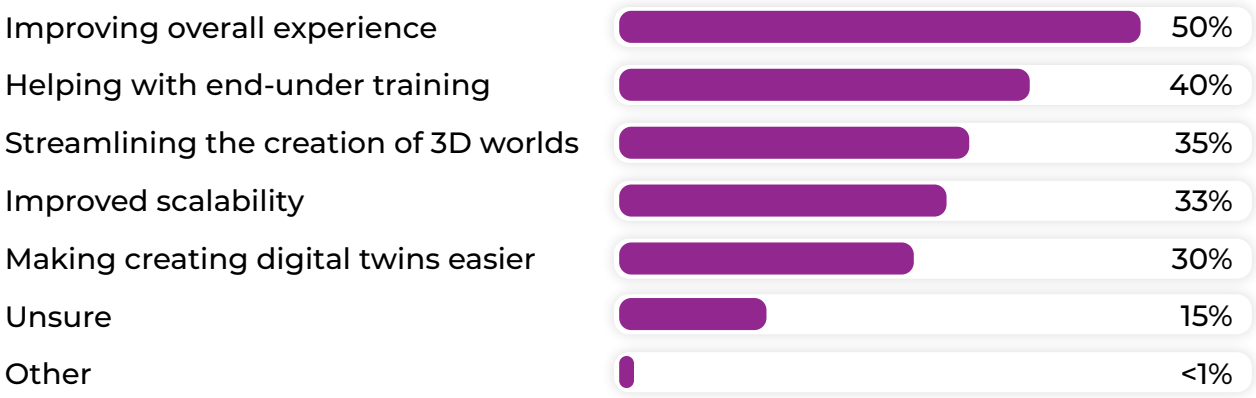
Results indicate a strong intention among organizations to increase their investment in XR technology over the next 12 months. A combined total of 66% of respondents plan to increase their investment, with 38% expecting a moderate increase and 28% planning a significant increase. This may suggest organizations have concluded pilot deployments that demonstrated the value and potential of XR technologies and are thus willing to allocate more resources to enhance their capabilities in this area.

However, 19% of respondents do not anticipate any change in their XR investment, which could indicate a satisfied status quo, a continuing pilot phase, or possibly other competing priorities.

A smaller percentage, 7%, plan to decrease their investment in XR. This could be due to various factors such as budget constraints, lack of perceived value, or challenges faced during implementation.

With respect to company size, it is a greater percentage of larger organizations (80%), those with over 500 employees, that plan to increase their XR budget. While only 37% of small organizations, those with 20 or fewer employees, plan to increase their XR budgets.

How do you expect AI to improve your use of XR technologies in your organizations? (Select all that apply)



AI Likely to Enhance XR Experience, Training, and Customization

A significant portion of respondents (50%) expect AI to improve the overall experience of XR technologies. This suggests that AI's capabilities, such as enhanced personalization, adaptive interfaces, and intelligent content delivery, are seen as critical factors in creating more immersive and engaging XR experiences. The seamless integration of AI can lead to a more intuitive and responsive user interface, ultimately enhancing user satisfaction.

Helping with end-user training related to XR is also a key expectation, with 40% of respondents highlighting this outcome. AI-driven training solutions can provide personalized learning experiences, real-time feedback, and adaptive training modules, making it easier for employees to acquire and retain new skills. This can lead to more effective and efficient training programs, ultimately benefiting the organization.

Streamlining the creation of custom 3D worlds (35%) and improving scalability (33%) are other significant outcomes expected from AI integration. AI can automate and simplify the process of creating complex 3D environments, making it more accessible for organizations to develop custom XR solutions. Additionally, AI's ability to optimize and manage resources can enable organizations to scale their XR initiatives more effectively, ensuring consistent performance across different platforms and devices.

Making the creation of digital twins easier (31%) is another anticipated benefit of AI integration. Digital twins, which are virtual replicas of physical objects or systems, can be enhanced with AI to provide real-time data analytics, predictive maintenance, and advanced simulations. This can lead to more accurate and efficient monitoring and management of assets, ultimately driving better decision-making and operational efficiency.

Is there any additional feedback about your XR journey that you would care to share?

The survey participants provided comprehensive feedback related to their unique XR journey. A summary of the key themes from the feedback is provided below:

Positive Experiences and Excitement:

- Many respondents express excitement about the potential and future of XR technologies.
- There is a sense of positive anticipation and recognition of the transformative impact XR can have on businesses.

Challenges and Considerations:

- Achieving a fully immersive experience in XR remains a challenge. The need to convincingly replicate real-world sensory input and create intuitive user experiences across different platforms is highlighted.
- Privacy and security concerns are mentioned, particularly regarding the large amounts of user data collected by XR technologies.

A Strategic and Collaborative Approach Required:

- Successful XR deployment requires consistent updates, cross-functional teamwork, and user-centered design. Involving a multi-disciplinary team, not just IT, is emphasized.
- The importance of integrating XR with existing business strategies and goals is noted, along with the need for dedicated support teams and continuous user feedback.

Educational and Inclusivity Efforts Needed:

- Respondents suggest the need for more educational resources, training materials, and standardized metrics to measure XR deployment effectiveness.
- Ensuring XR technology is accessible to users with disabilities and exploring partnerships with educational institutions for employee development are recommended.

CONCLUSION

by Kevin Kieller, Co-Founder and Lead Analyst enableUC

Most organizations (84%) are interested in exploring XR technologies, 45% have already deployed, and 39% are considering.

For those that have deployed XR, a majority (53%) of organizations using XR technologies consider their adoption to be either very successful or successful. Results indicate that XR initiatives are yielding positive outcomes across various metrics, from productivity and quality to sales and customer engagement.

The positive results explain a combined total of 66% of respondents who plan to increase their investment in XR, with 38% expecting a moderate increase and 28% planning a significant increase.

The positive results are amplified by a strong belief that artificial intelligence (AI) is driving or simplifying the deployment of XR (AR, VR, or MR) technologies (71%): 50% believe AI will improve the overall experience, 40% expect AI will expedite end-user training, 35% say AI will streamline the creation of 3D worlds, 33% expect AI to simplify scalability.

The future of XR appears bright, with the majority (52%) of respondents expecting XR to improve productivity, 46% believing XR will help provide improved training and education, 36% expecting XR to deliver enhanced team-building experiences, and 35% projecting XR will deliver improved employee engagement.