2022 | SIXTH EDITION

XR Report

RISE OF WEB3 TECHNOLOGIES TO ACCELERATE XR

PERKINSCOIE

Executive Summary

When we published our first XR survey report in 2016, major media outlets were still skeptical about whether XR, or Extended Reality, would live up to the hype, and industry respondents cited a lack of compelling content, user experience issues, and high costs as the biggest barriers to widespread adoption.

Fast forward to 2022, and while those challenges certainly haven't dissipated, one thing has become eminently clear: Accelerated by the pandemic and the emergence of NextGen technologies like Web3 and the metaverse—XR has hit the mainstream.

Yet new audiences, technologies, and products bring new challenges. When we add in a economic volatility that has at least temporarily affected many in the tech industry, the question becomes: What does the future have in store for XR?

Our new survey of 150 XR industry leaders, conducted in July 2022, paints a picture of an industry moving forward with a more tempered—perhaps pragmatic—sense of optimism as companies seek to deliver on the hype to an increasing number of XR consumers in the aftermath of sky-high growth and spending.

For instance, while more than half (52%) of respondents believe that XR investment in 2023 will be higher than in 2022, 83% said as much about 2022 in last year's survey. That's not to say the industry isn't still poised to grow: 98% expect their XR spending to increase either moderately or greatly in the next year, while NextGen technologies—which go hand in hand with XR—are already an investment focus for nearly all those we surveyed.

When asked about the relationship between the two technologies, most survey respondents (88%) agreed or strongly agreed that XR is the gateway to NextGen technology and that NextGen depends wholly on XR. A majority (88%) also agreed that the development of NextGen experiences will drive adoption of XR hardware.

"XR allows us to build NextGen technologies by integrating immersive experiences that are critical for its success," said a senior vice president of an established tech company.

52%

of respondents believe the pace of XR investment will be higher in 2023 than in 2022

Past surveys have shown a lack of quality content to be a major roadblock to mass adoption, pointing to a disconnect between content developers and consumers. This year's results show that progress has been made in that area, even though industry insiders still think there's room for improvement. Meanwhile, consumer awareness became a significant issue this year, perhaps as a result of more XR experiences, products, and technologies to introduce to a burgeoning consumer base.

Despite some claims that advancements in these areas will help improve equity and inclusion, respondents agreed that the first beneficiaries of immersive and NextGen technology will be high-income individuals and working professionals.

In addition to the 150 XR industry leaders we surveyed, this report is informed by a spring 2022 focus group of top industry executives. In the following report, we analyze their insights along with the survey findings and include key takeaways to help readers understand the current immersive technology environment.

Key Findings

- While the vast majority (98%) of those surveyed expect to see increased growth in immersive tech spending over the next 12 months, growth expectations have tempered in 2022 compared with 2021.
- NextGen technology is already an investment focus for nearly all respondents, and it's seen as both symbiotic with and dependent upon XR. A substantial 54% of respondents are developing or investing in Web3, while 50% are doing the same in the metaverse. Nearly half (49%) expect to see widespread adoption of such technologies within five years.
- Development of more immersive and interactive content is still seen as an area where companies can improve. However, it appears that notable strides were made relative to content over the past year.
- In our 2021 XR Survey, workforce development and training was a major focus for immersive technology, as 76% of respondents expected slight or significant growth in the sector's immersive technology use from 2021 to 2022. Similarly, most respondents (72%) in 2022 think that immersive technology in this area will increase over the next year compared with last year, with respondents anticipating plenty of future workforce development and training opportunities for XR as well as NextGen.
- Both XR and NextGen tech have work to do when it comes to inclusivity. Higher-income, well-educated, and tech-savvy populations are seen as the near-to-medium-term beneficiaries of advancements in both.

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Section 1: XR and NextGen Investment Landscapes

INDUSTRY EXECUTIVES SHARE A MORE TEMPERED OUTLOOK ON IMMERSIVE TECHNOLOGY INVESTMENT AND SPENDING.

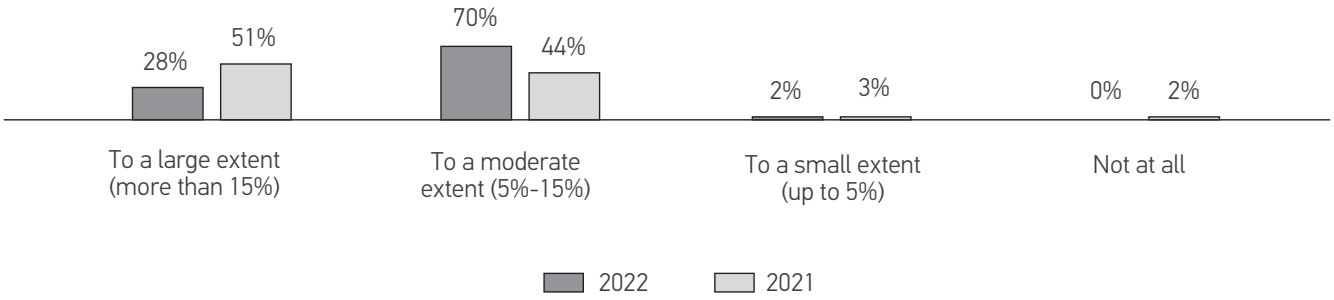
In the past decade or so—particularly in 2021—investors poured billions of dollars into the XR industry. Now, amid uncertain market conditions, industry leaders appear less focused on large new investments and are reevaluating their priorities.

For instance, having invested in XR for better remote collaborations and trainings during the past few years, most industry leaders (70%) plan to increase spending on such technology only "to a moderate extent" (vs. 51% who planned to increase spending "to a large extent" in 2021).

This is part of a broader trend. When asked to what extent immersive tech spending will increase over the next 12 months, fewer than a third (28%) of respondents chose "to a large extent" (i.e., by more than 15%)—a significant change from last year, when more than half (51%) said their organizations would increase their immersive technology spending more than 15% or to a large extent. Meanwhile, 36% said the pace of investment would be slightly higher in 2023, while another 32% said it would remain the same; in 2021, respondents were more optimistic, with 83% saying the pace of investment in immersive technology would increase.

According to data from Pitchbook, that optimism was (and continues to be) justified. The total value for XR deals in 2021 was nearly $7 billion, a significant increase over 2020 when deal value was estimated at about $5.5 billion. In the first half of 2022, VR deals totaled just over $5 billion, though the full effects of the downturn remain to be seen.

» *In the next 12 months, to what extent does your organization plan to increase spending on immersive technology solutions for better remote collaborations and trainings? (Select one option.)*



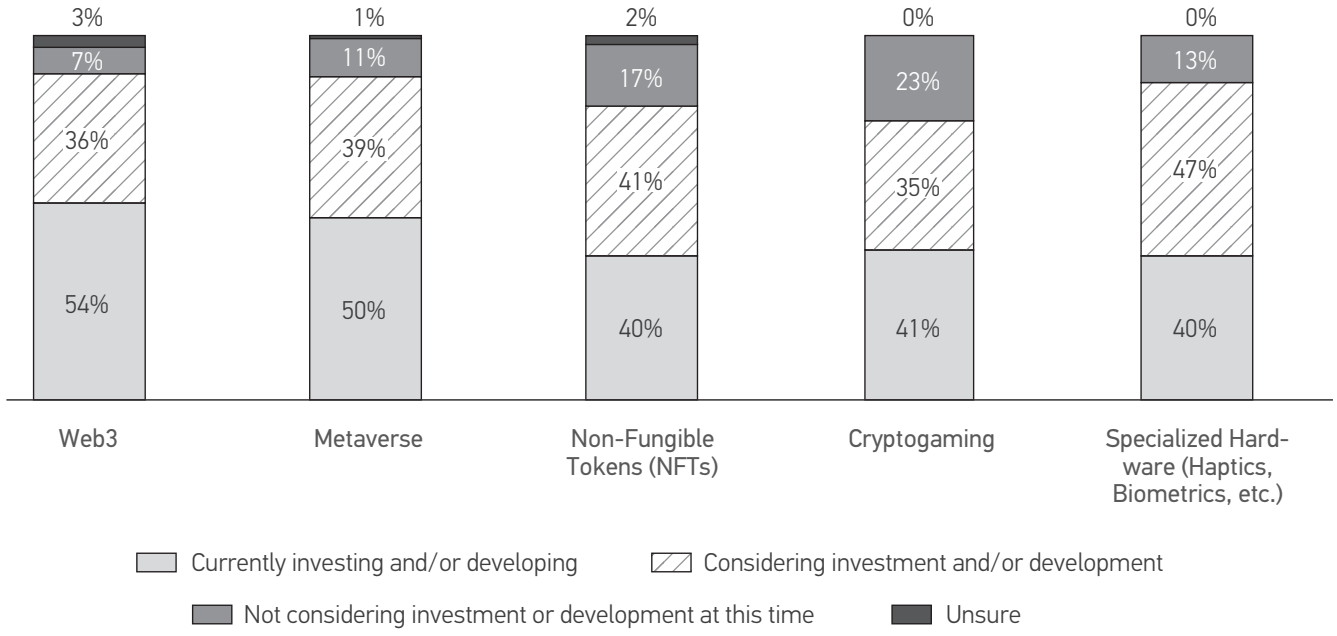
Those who planned to increase their immersive technology spending are also planning to diversify their post-pandemic monetization strategies in a number of ways. The most popular strategies include charging for additional features or in-app purchases (38%), product placements (36%), and the sale of products or subscriptions (36%). Respondents gave similar responses to the same question last year, indicating that no tried-and-true path to generating revenue with immersive technology has emerged. This finding further supports the likelihood of a less robust spending outlook, particularly as the bear market heightens the importance of revenue and profitability.

INVESTMENT IN NEXTGEN TECHNOLOGIES

Nearly all respondents are already investing in NextGen technology, with Web3 and the metaverse most popular among those surveyed. Currently, 54% are investing in or developing Web3 technology, and 50% are involved with the metaverse, an immersive version of the internet.

For instance, major luxury brands are using NextGen and immersive technologies not only to promote but also to sell their products, like in the first-ever Metaverse Fashion Week in March 2022. Some research suggests that luxury goods, NFTs, and metaverse gaming might make up to 10% of the market in less than a decade. Other industries, from banking to entertainment, will be similarly affected.

» *Please indicate your organization's status when it comes to investment and development in the following NextGen technologies.*



Our survey respondents agreed that these two technologies are intrinsically linked. During a presurvey focus group, a chief technology officer of a startup said, "XR and NextGen are in a symbiotic relationship where both brands of technology stand to gain from each other."

And a senior vice president of an established technology company noted "XR allows us to build NextGen technologies by integrating immersive experiences that are critical for its success."

Section 2: Barriers to Mass Adoption

One needs to look no further than Meta's Super Bowl ad to realize that, in many ways, XR has already hit the mainstream. Costs have gone down, and according to one projection, consumers will collectively use 70 million VR headsets worldwide by 2026—up from 26 million in 2021.

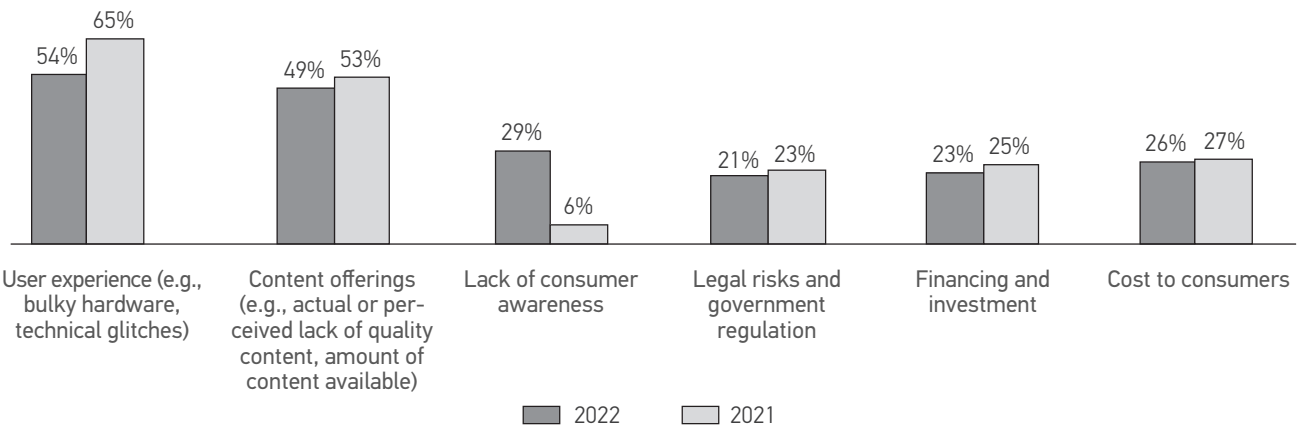
Part of that has to do with quality, too. Though roughly half of respondents named user experience (e.g., bulky hardware and technical glitches) and content offerings (e.g., lack of quality content) as top barriers to mass adoption, respondents expressed less concern on these fronts than they did in 2021, indicating they perceive the industry is making substantial progress.

"Widespread adoption for immersive technology might not look the same as it does for other technologies. XR might be more similar to Xboxes than smartphones—while they aren't as ubiquitous as smartphones, Xboxes are common enough that consumers can buy them in most retail stores," said Ronald Koo, co-chair of the Interactive Entertainment industry group at Perkins Coie.

But as the industry takes off, new challenges will come to the fore: namely, educating and attracting new consumers. Nearly a third of respondents (29%) cited a lack of consumer awareness as a top barrier, up from 6% last year.

As consumers grow more skeptical of companies' abilities to protect their data, it is not surprising that respondents named improved data security and the protection of personal information (57%) as the biggest factor that would increase mass adoption among consumers. This was followed by developing infrastructure that enables immersive technology (52%) and improving the affordability of software, hardware, and content (51%).

» *What are the top barriers to mass adoption of immersive technology (outside of gaming and entertainment)? (Select top two options.)*



As for enterprises, respondents listed infrastructure that enables the use of immersive technologies (47%) and wide-scale immersive technology adoption by government agencies (47%) as the top factors that would improve broad adoption.

While infrastructure was also a major concern for enterprise adoption last year, respondents also listed the development of more accessible software to meet the needs of all users and government funding as some of the bigger obstacles, neither of which was top of mind this year.

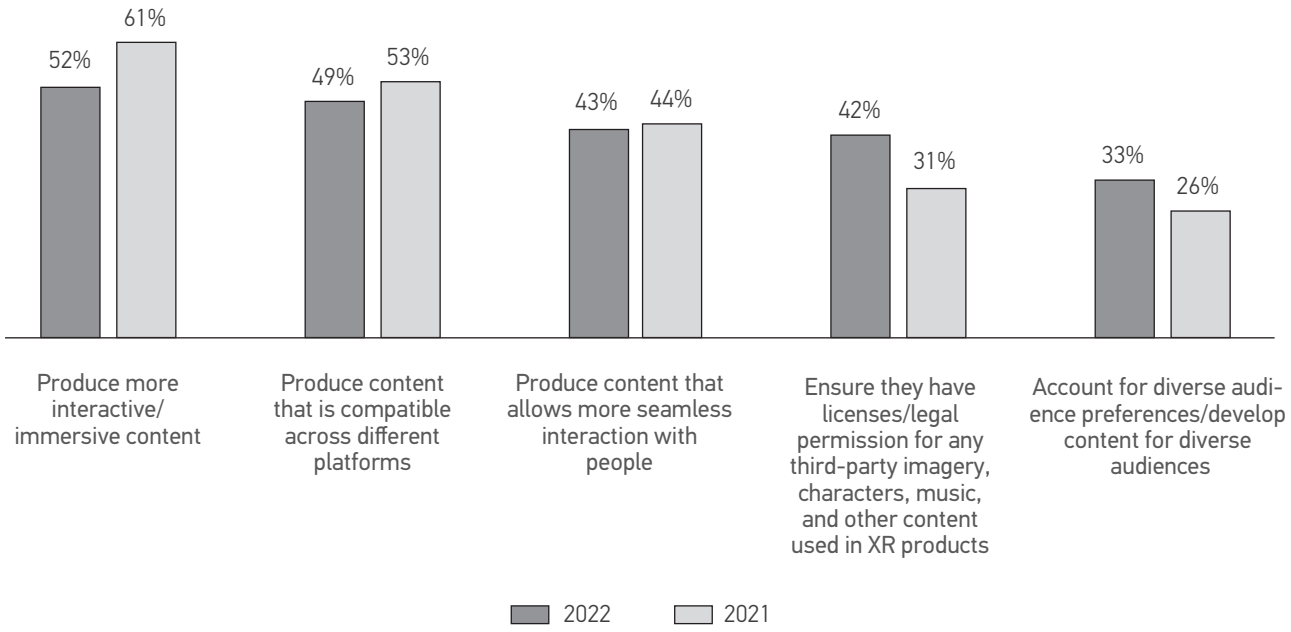
Section 3: How Can Content Improve?

As noted above, a lack of quality XR content remains a top barrier to mass adoption. One reason: a disconnect between what developers and consumers consider compelling content. Fortunately, however, the gap appears to be narrowing, which could indicate that companies are conducting more market research and trying to better understand what their consumers are looking for.

For instance, though 43% of respondents agreed or strongly agreed that developers do not understand what makes compelling content from a consumer standpoint, this is down nearly 10 percentage points from last year, when 52% said as much.

Forty-six percent of respondents also agreed or strongly agreed that consumers don't understand or don't know where or how to find compelling content. Though this decreased from 64% last year, a percentage this high still underscores concerns about consumer awareness.

» *In which of the following ways, if any, can existing immersive technology content be improved across industries by content developers? Please finish this sentence with any statements that you believe are true: Content developers should _____ . (Select all that apply.)*



So how can developers improve immersive technology content?

Our respondents' top recommendations were the same as in 2021: Produce more interactive and immersive content (52%) as well as content that is compatible across platforms (49%).

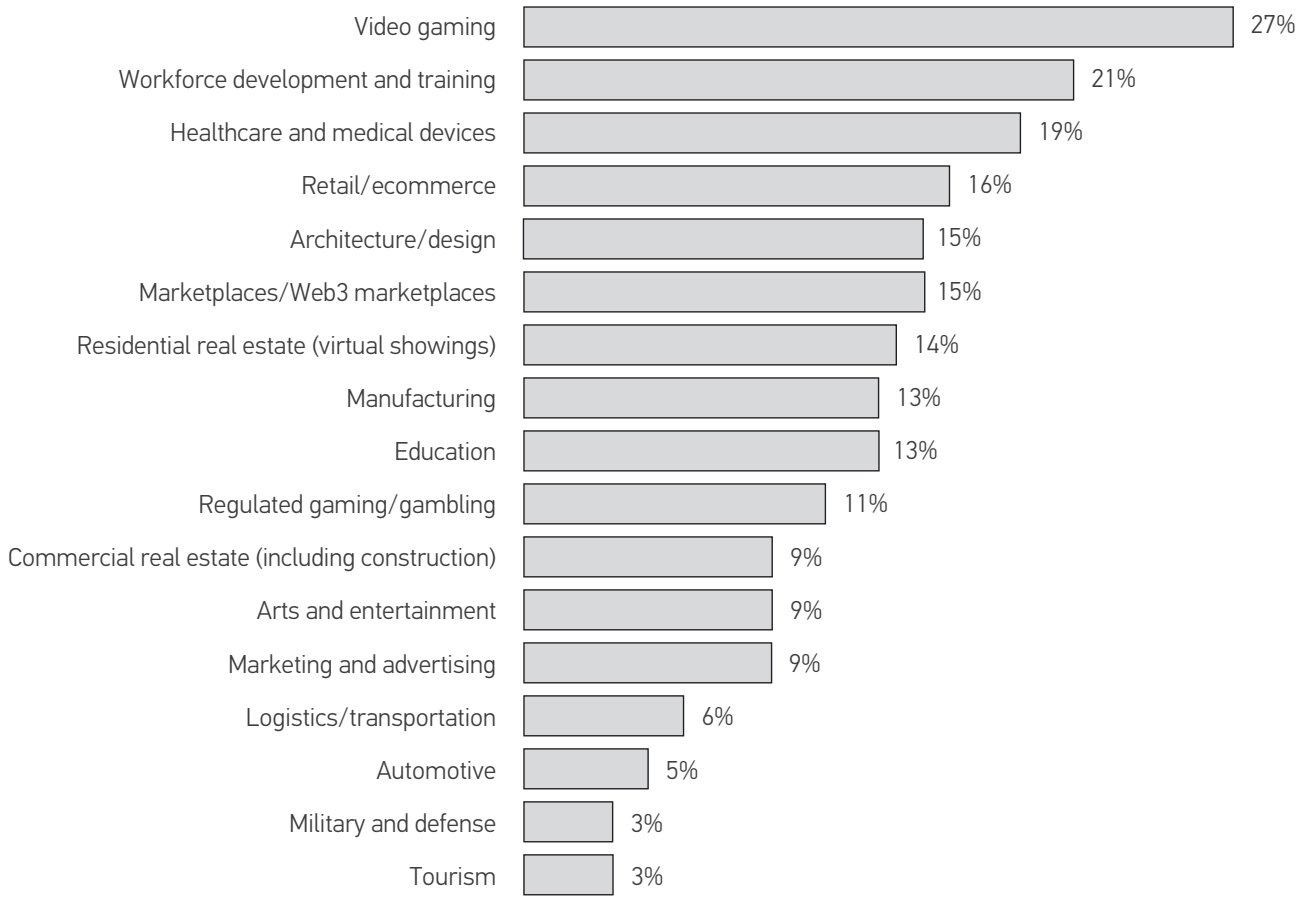
The bar will always be high for what consumers consider good content, but companies can make strides by implementing effective feedback loops to collect, analyze, and act on customer feedback.

Section 4: Industry-Specific Outlooks

As remote and hybrid work become more common, organizations are looking for new ways to train and collaborate with employees from their homes. It follows, then, that workforce development and training was the sector most changed by immersive technology since the outbreak of the pandemic, aside from gaming and entertainment (which were long the original applications of XR technology).

Other industry sectors have seen significant advancements in incorporating immersive technology, too. For example, doctors and health systems are using immersive technology to aid in surgeries and other procedures. And in the manufacturing space, companies are using XR to accelerate prototyping and product development.

» *In which sectors has the use of immersive technology most changed since the outbreak of the pandemic? (Please select up to three options.)*



Workforce development and training, marketing and advertising, and healthcare and medical device industries are all expected to see significant growth in immersive technology over the next 12 months.

"Healthcare seems poised to take some big steps forward," said the leader of a nonprofit industry trade association that represents the XR industry. "Workforce training has been the trendsetter, in my opinion."

Education was an area that respondents identified last year as one that would significantly increase its immersive technology use (45%), but as schools have opened up this year, that figure has dropped to 37%.

For respondents investing in or developing NextGen technology, the top industries they are focusing on include entertainment and gaming (32%), marketplaces/Web3 marketplaces (32%), and workforce development and training (26%).

> *"Healthcare seems poised to take some big steps forward. Workforce training has been the trendsetter, in my opinion"*
>
> *— leader of an XR industry association*

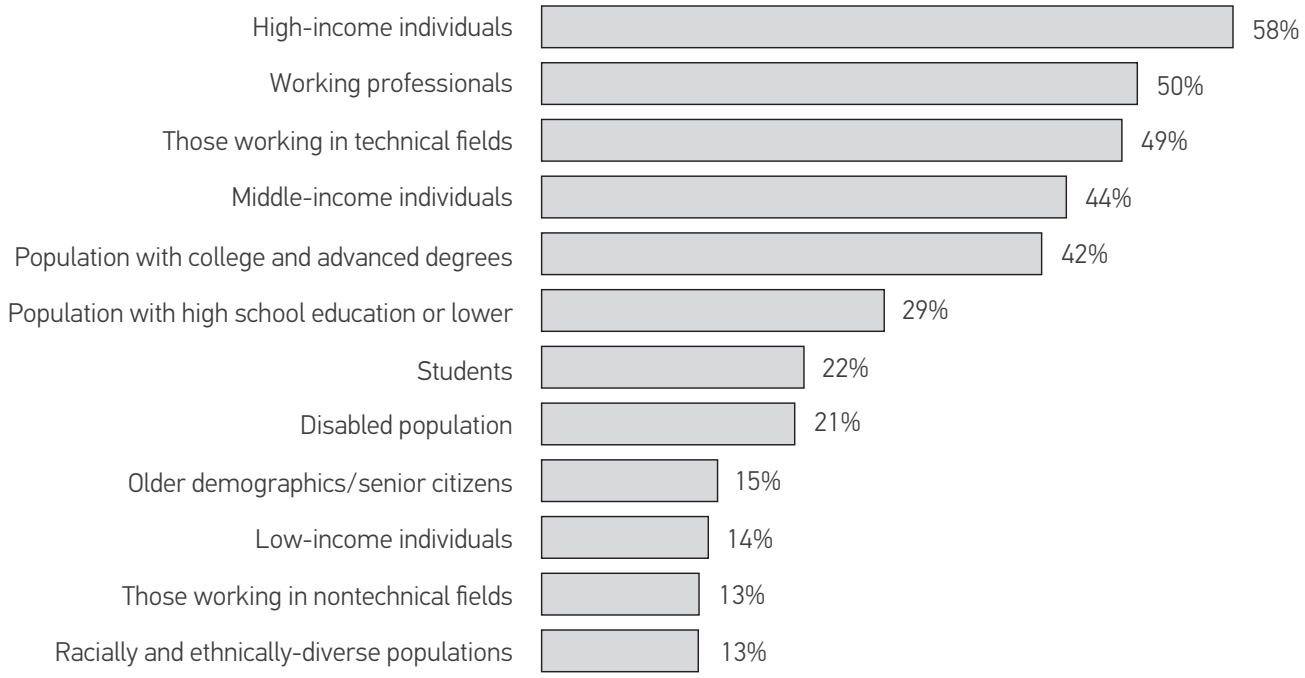
Section 5: Who Benefits Most From Immersive and NextGen Technologies?

The industry has claimed that immersive and NextGen technologies, and particularly the metaverse, will advance inclusion and equity. Some think that the fashion industry's entrance into the metaverse will involve more women, while others see the potential for NextGen technologies to break down traditional barriers that affect underrepresented communities.

But our survey—along with other reporting—suggests that may not be the case, at least not yet.

When asked who is poised to benefit the most from NextGen technology over the next five years, survey respondents agreed that the beneficiaries included high-income individuals (58%), working professionals (50%), and people working in technical fields (49%).

» *Within the next five years, which groups do you think will benefit the most from advancements in NextGen technology? (Please select all that apply.)*



Respondents' views on the beneficiaries of XR technology are similar, too. Most (62%) agreed that high-income individuals will benefit the most from the technology, followed by working professionals (50%) and those in technical fields (47%). This view from industry insiders is surprising in some ways—if immersive and NextGen technologies are being used for workplace development and training, for instance, the tech could be used at all levels. And some industry insiders are optimistic about the technology's potential to boost diverse voices.

78%

agree that there is proportionate venture capital funding for diverse and female-founded startups in the technology space

"The creation of immersive experiences … offers great opportunity to have more diverse voices involved. I say this because one does not necessarily need to have a background in computer science to succeed in XR. Creatives are needed to design the spaces … and that means the potential for more diverse people contributing to the creation of XR," said the leader of a nonprofit industry trade association representing the industry.

At the same time, new technology tends to be used by higher-income individuals first before the cost decreases, making it more accessible for mass consumption.

On a brighter note, even as industry experts see this technology benefiting high-income consumers first, they do not necessarily feel that diverse or female founders are being excluded from access to investment. Of our respondents, 53% of whom hail from minority or female-owned organizations, nearly half (45%) agreed that funding for such founders is proportional to their white male peers, while 33% strongly agreed.

Methodology and Demographics

In May and June 2022, Perkins Coie engaged key decision-makers in the immersive technology industry including AR, VR, and MR (collectively called XR) to take part in an online focus group regarding trends and developments as well as the outlook for the year ahead. Participants included executives from leading global software and technology firms in the consumer and enterprise space.

Key takeaways from those conversations were used to shape an online survey of 150 XR industry executives in July 2022. Like our 2021 XR survey, respondents indicated they represented an organization best described as an established technology company (78%), followed by a startup (8%), investor (7%), adviser or outside consultant (4%), or policymaker/government official (3%).

Respondents identified their affiliation as:

- C-suite (64%)
- Engineer / Producer (19%)
- Senior Vice President / Vice President (11%)
- Consultant / Lawyer (4%)
- Marketing / Business Development (1%)

There are two reasons why percentages may not add up to 100% in certain questions. First, in questions where multiple selections were possible, the number of responses may exceed the number of participants, thus adding up to more than 100%. Second, rounding issues in single-response questions may result in the total percentage equating to slightly more or slightly less than 100%.

ABOUT PERKINS COIE LLP

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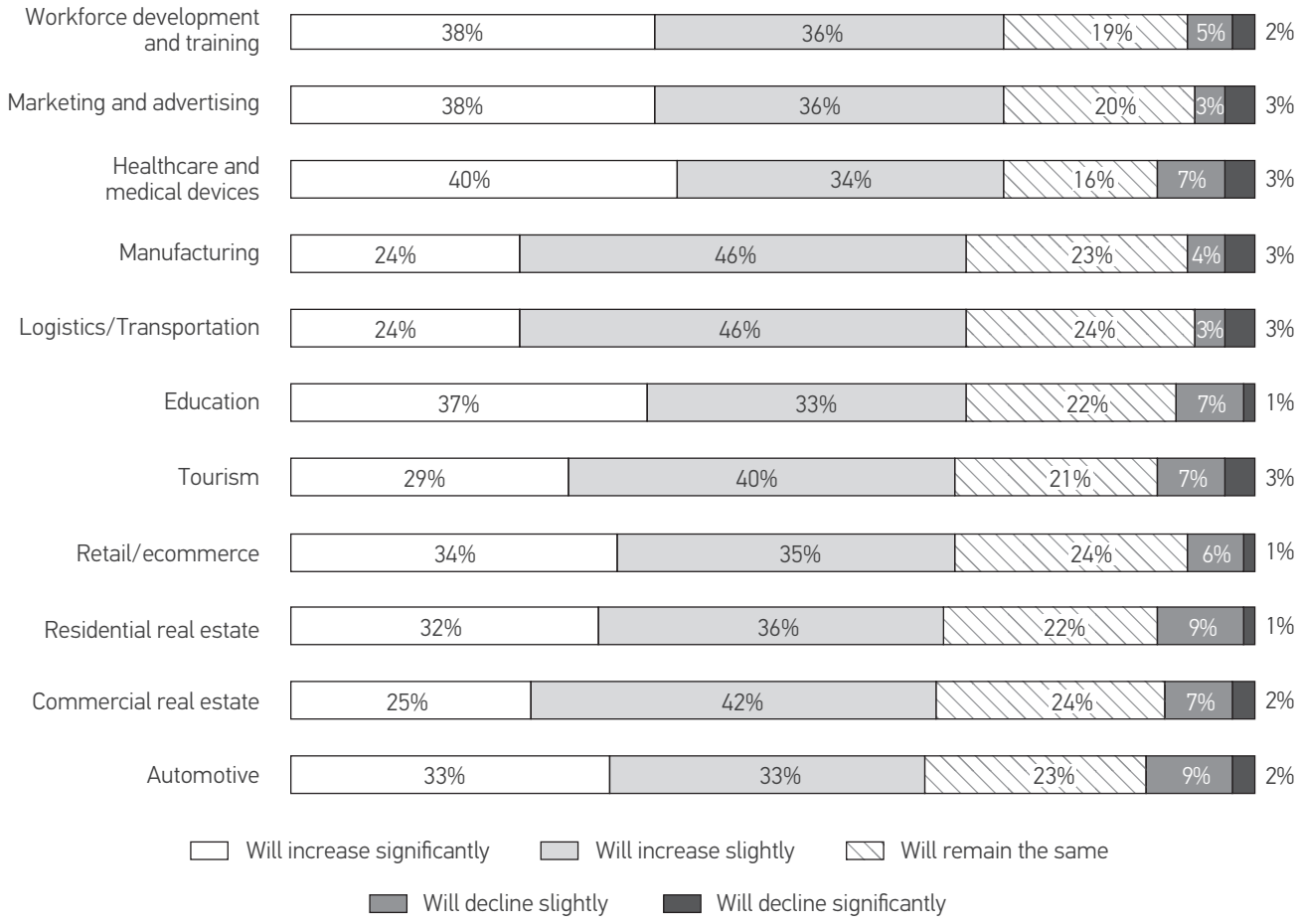
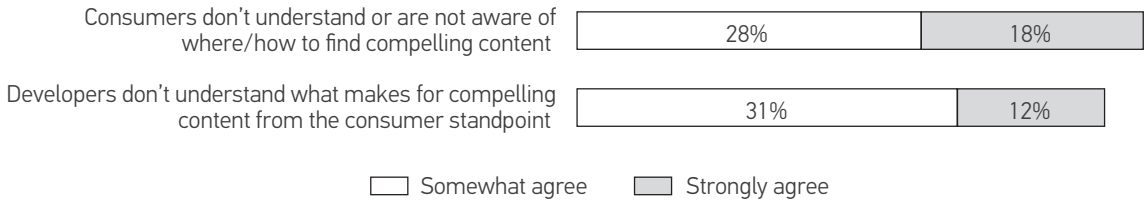
Additional Findings

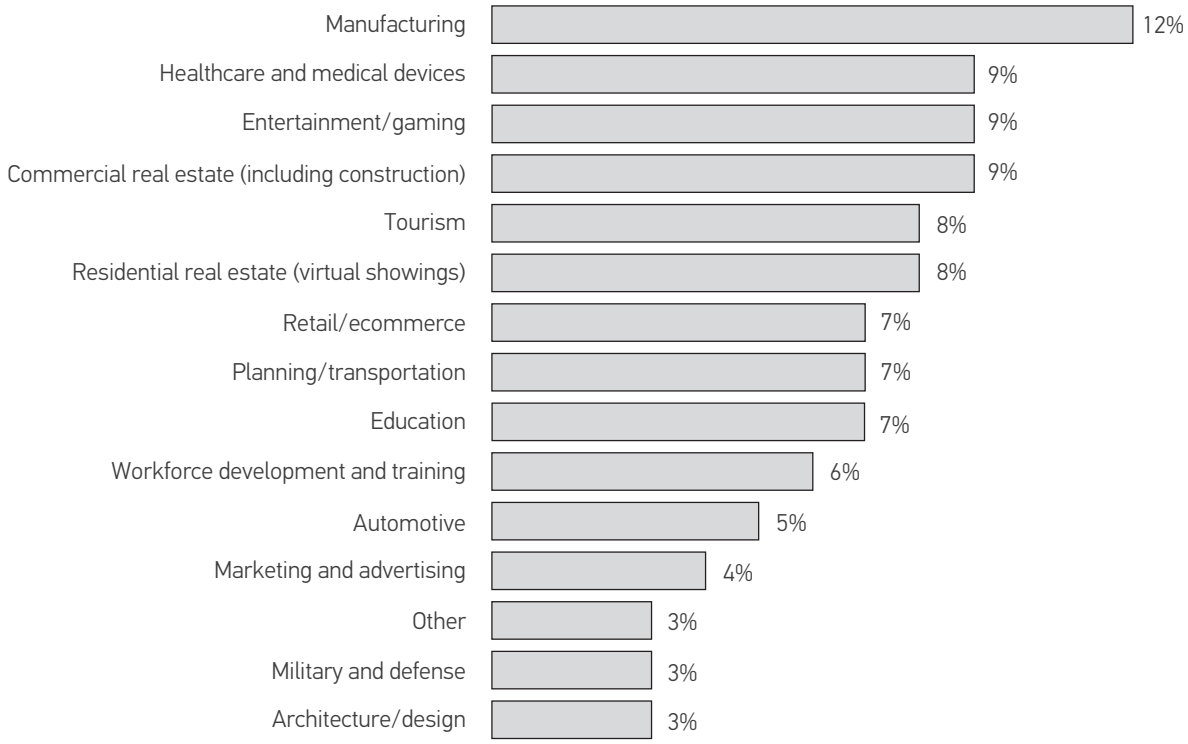
» *How do you believe each of the following sectors will fare in terms of immersive technology usage over the next year (2022 –2023) compared with the previous year?*



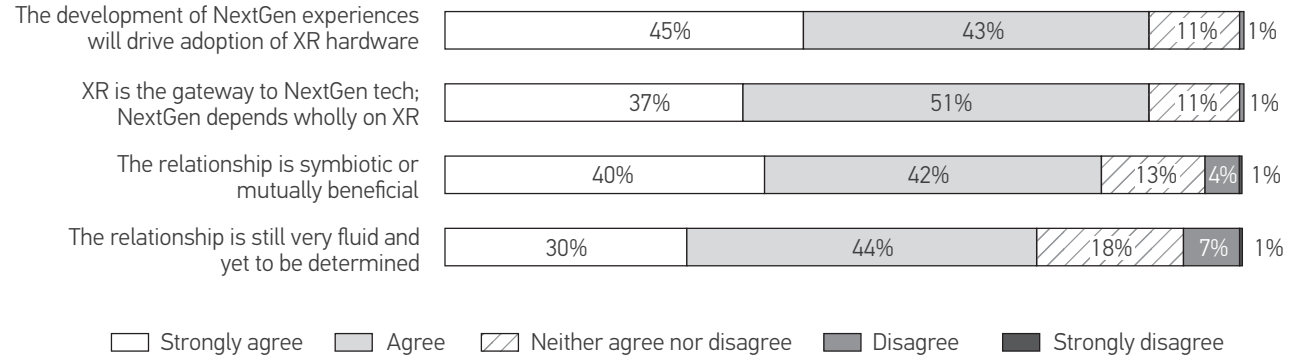
» *To what extent do you agree with these statements?*



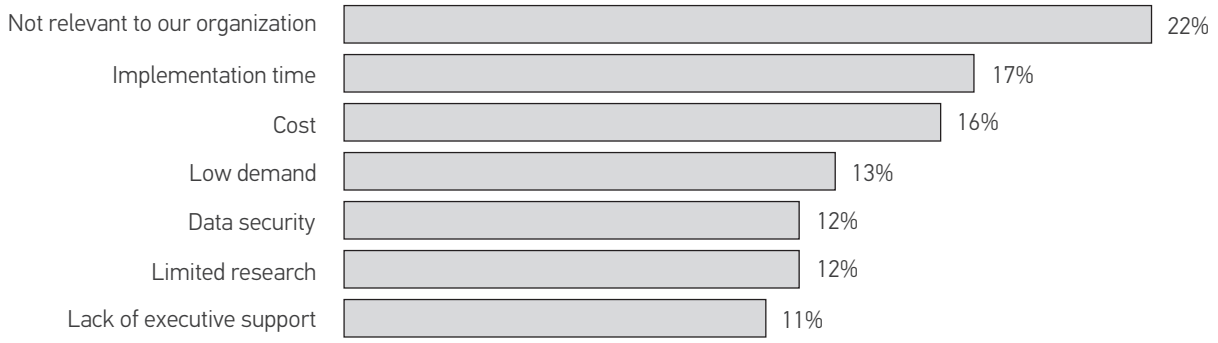
» *In which of the following industries is immersive technology content most limited? (Select one option.)*



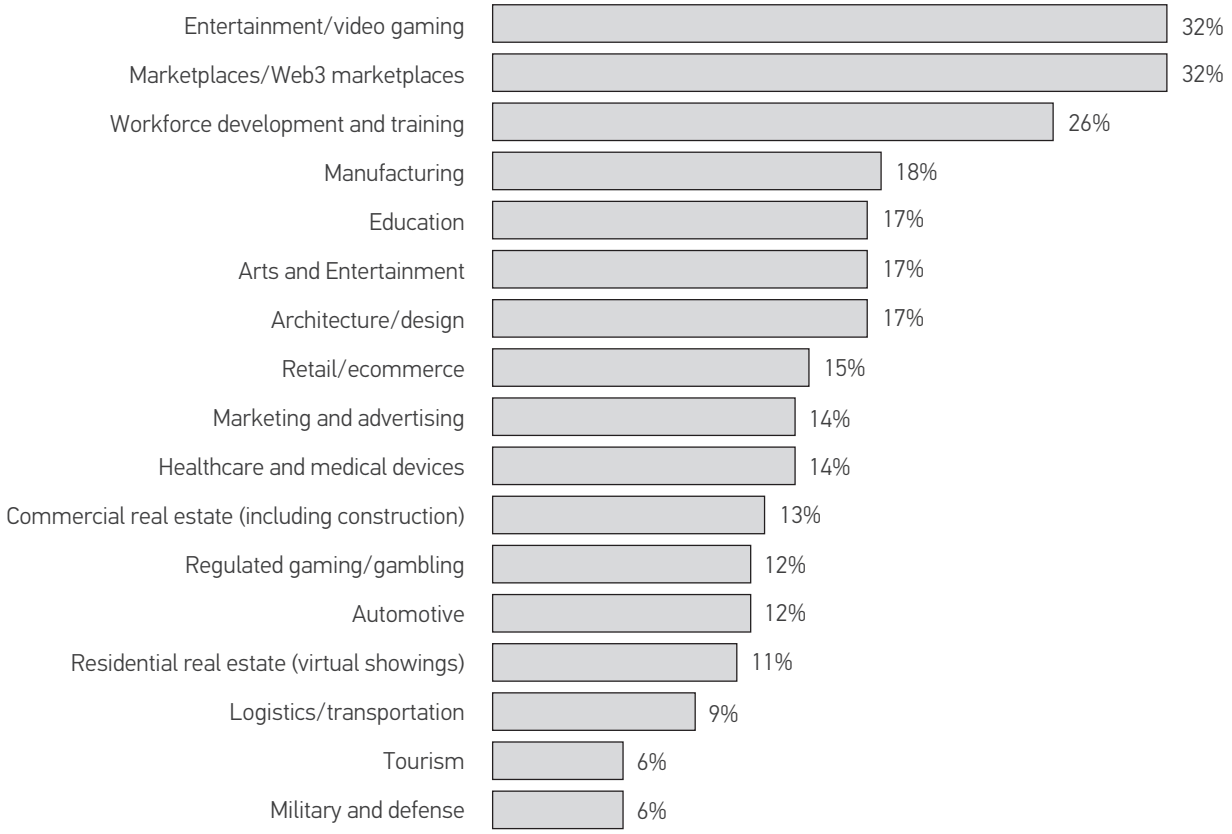
» *Which of the following best describes the relationship between XR technologies and NextGen technologies, like Web3 and Metaverse?*



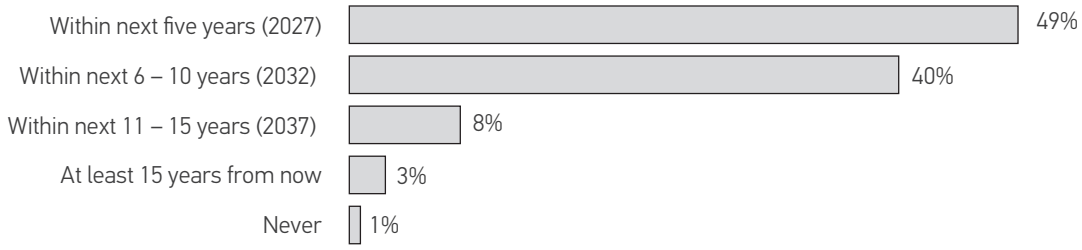
» *You indicated that your organization is not considering investment or development of certain NextGen technologies at this time. What are the reasons behind this decision? (Please select all that apply.)*



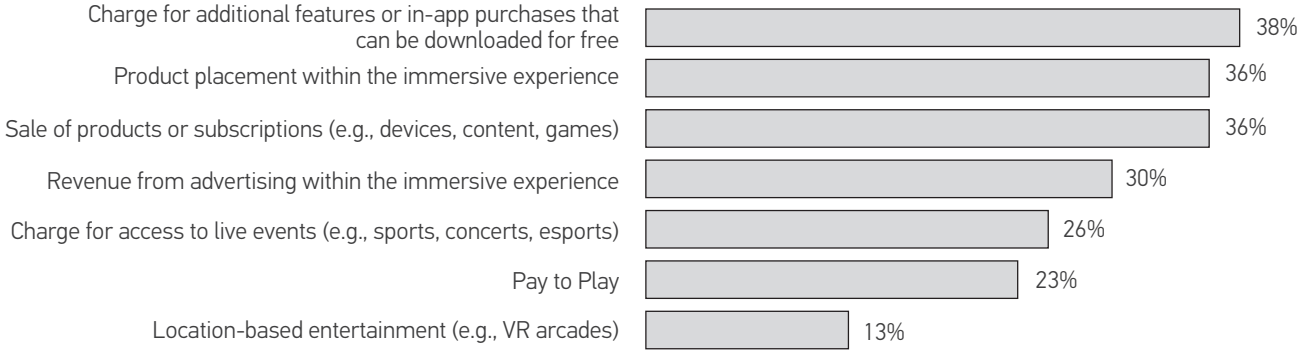
» *You indicated that your organization is currently considering investment/development of certain NextGen technologies. In which sectors do you plan to focus? (Please select all that apply.)*



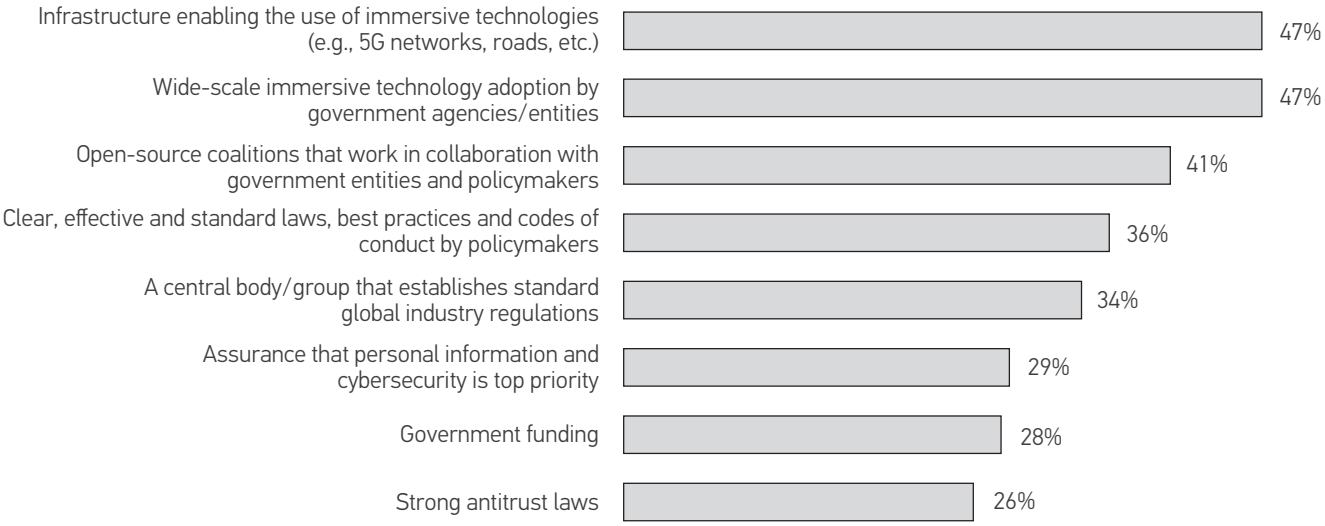
» *What do you believe will be the timeline for NextGen to experience widespread adoption?*



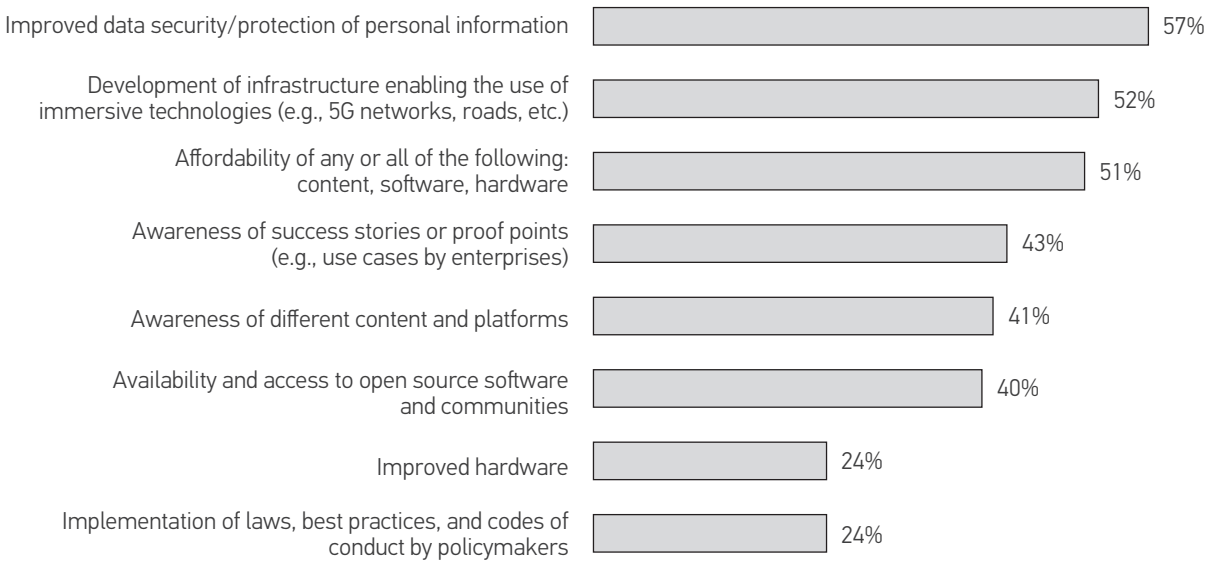
» *For respondents who indicated their organization does not plan to increase spend on immersive technology solutions for better remote collaborations and trainings in the next 12 months: In which of the following ways do you plan to diversify monetization strategies for immersive technology after the pandemic? (Select top two options.)*



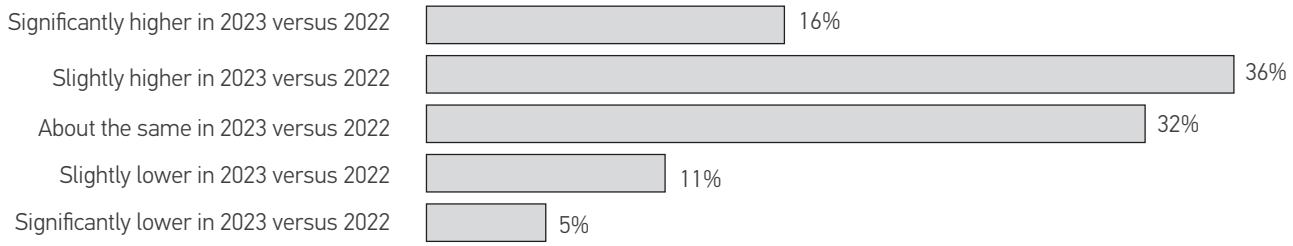
» *Which factors are key in increasing development and adoption of immersive technology by enterprises? (Select all that apply.)*



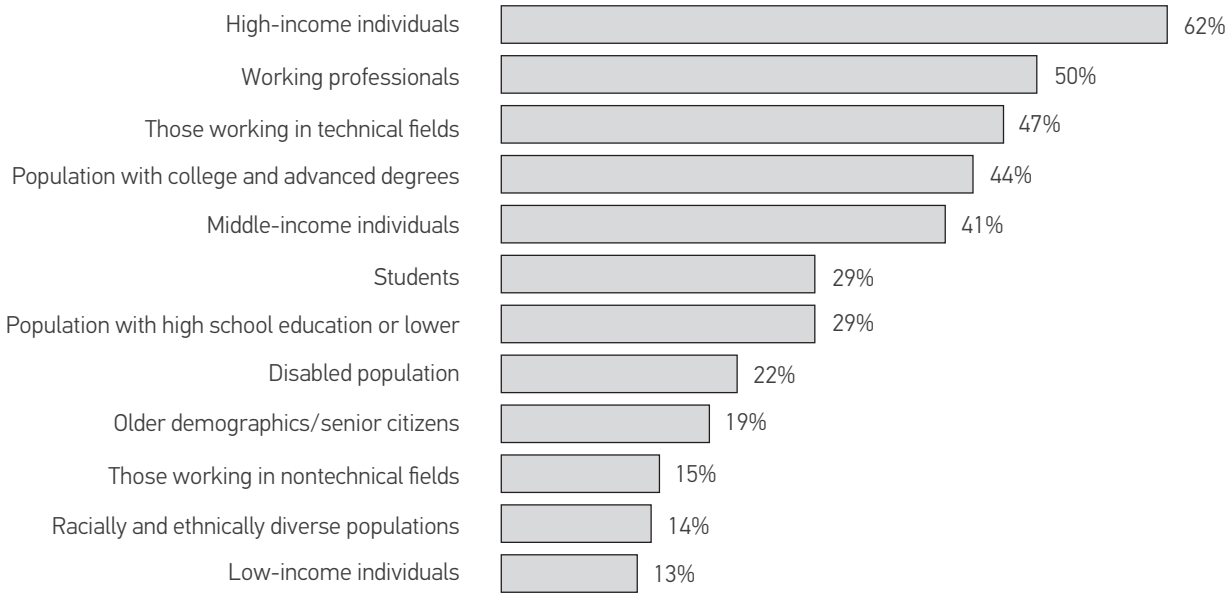
» *Which factors are key in increasing adoption of immersive technology by consumers? (Select all that apply.)*



» *What do you believe the pace of investment by businesses will be in immersive technologies will be in 2023 as compared with 2022? (Select one option.)*



» *Which groups will benefit from advancements in XR technology? (Please select all that apply.)*



» *Please indicate your agreement with this statement: There is proportionate venture capital funding for diverse and female-founded startups in the technology space.*