

XR Association Response to European Commission Call for Evidence on Virtual Worlds (Transparency Register No.: 743246749855-04)

The XR Association (XRA) is pleased to respond to this call for evidence. XRA is a non-profit trade association representing companies across the XR ecosystem including headset manufacturers, technology platforms, component and peripheral companies, internet infrastructure companies, enterprise solution providers, and corporate end-users. We are a global industry association, and our members include everyone from creatives and developers to start-ups and large platforms.

XRA’s mission is to promote the responsible development and adoption of XR technologies (augmented, virtual, and mixed reality and future immersive technologies), and foster positive societal outcomes globally. In furtherance of this mission, we continually convene stakeholders, develop best practices and research, and advocate on behalf of our members and the greater XR industry. Among the stakeholders we regularly consult are academics, research institutions, privacy and consumer advocates, think tanks, scientists, and lawmakers in addition to industry representatives from across the spectrum. We value diverse perspectives and believe that the most effective way to address the challenges associated with XR and virtual worlds is to synthesize a multitude of viewpoints. To that end, in 2022 XRA launched a special project – the [Future of XR Advisory Council](#) – to gather experts from a wide variety of disciplines to tackle some of the toughest and most important policy questions attending XR development and adoption. Some of the topics the Council is addressing include privacy; children and youth; diversity, equity, and inclusion; accessibility; safety and wellbeing; norms and behavior; and interoperability.

In addition to our own initiatives, XRA actively participates in a multitude of others internationally, including the World Economic Forum’s (WEF) Metaverse Initiative; the Khronos Group’s Metaverse Standards Forum; the Institute of Electrical and Electronics Engineers (IEEE) Global XR Ethics Standards Working Group; and the Business at the Organisation for Economic Co-operation and Development (OECD-BIAC) Project on Data Privacy in the Metaverse and Immersive Technologies.

XRA’s objective is to help foster the development of an open, interoperable, safe, and people-empowering system of virtual worlds in line with our shared U.S.-EU values of individual freedom, human dignity, and marketplace competition. Nearly a decade ago, the World Economic Forum observed, that we were “on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another.” This “Fourth Industrial Revolution,” they said, “is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.” How apropos to virtual worlds. The impact of XR technologies will be a powerful one. Fortunately, organizations like XRA and bodies like the European Commission are actively engaged in addressing important challenges today – before virtual worlds become a part of everyday life. With the cooperation of like-minded partners, we can enable a system of virtual worlds that betters society.

Enabling Conditions

If we are to achieve the objective of open, interoperable virtual worlds that feature innovative applications across industry and society and that can be safely and confidently used by people and businesses alike, as the call for evidence describes, we must ensure that the proper conditions are established to enable this kind of development.

Social and Ethical Frameworks

Among the most basic considerations must be social and ethical frameworks – and chief among the concerns within those areas are individual privacy, the security and safety of users including children, and the opportunity for people of all abilities to benefit from the technology. To that end, XRA has published a series of guides (XRA Developers Guides) to introduce XR developers to topics that can enhance user comfort and safety. The first guide of the series, [“Guidance for Culture, Conduct, and Content in XR Environments,”](#) offers design guidance for creating respectful, safe, and inclusive immersive experiences.

Privacy and Security: XR technologies present some unique privacy and security challenges when dealing with personal data, and the XR Association is engaging with civil society, academia, government, policy institutes, and corporations to address them. Security-by-default, user education, clear and easy-to-understand privacy policies, and user control of data are important guiding principles for our members’ work and products. With that in mind, in 2022 XRA published an infographic, [“Into the Digital World,”](#) to clearly illustrate for the ordinary XR user how immersive technology uses various types of data to produce the virtual experience.

Young People: There is great potential for XR experiences to benefit young people in education, healthcare, social development and more. Ensuring their safety and security in immersive spaces is a top priority, and the XR industry has an important role to play by developing products that respect young people’s wellbeing from the outset. The industry should also provide parents and guardians the knowledge and tools they need to support their children’s use of XR technology for safe, positive, and age-appropriate experiences. XRA members have taken a variety of steps on guidance and solutions for parental control, age ratings, and online safety. XRA will publish a second infographic in Fall 2023 to raise XR users’ awareness of tools and options that are available on XR hardware and software to control and customize their children’s immersive experiences, as well as their own.

Relatedly, XRA has published a Developers Guide on [“Designing Immersive Learning for Secondary Education”](#) which offers a set of industry-backed best practices for creating XR programs to fit the classroom. This guide describes how developers can create comfortable and safe learning environments for both teachers and students by implementing inclusive features to help eliminate barriers to learning.

Accessibility: Finally, XR can promote social cohesion and integration as it offers people with disabilities and impairments new ways of experiencing the world. Virtual worlds can help people with limited mobility explore rugged terrain in far-off places; allow the hearing

impaired to easily engage in conversations both socially and in the workplace; and assist individuals with cognitive difficulties or neurodivergence in practicing interactions in safe, low-stakes environments. Regional disparities can also be mitigated, with XR tech facilitating communication and collaboration between people across the world. In short, many varieties of virtual bridges can be built. XRA’s Developers Guide on [“Accessibility and Inclusive Design in Immersive Experiences”](#) offers a set of industry-backed best practices for creating accessible platforms and implementing features and applications that are inclusive, give users control over their experiences, and reflect input from people with disabilities at all stages of development.

Application of Current Law

Although XR technology does present certain unique questions around privacy and digital identities in particular, many policy and legal issues pertaining to XR are already covered by the General Data Protection Regulation (GDPR), the Digital Services Act (DSA), the Digital Markets Act (DMA), and the forthcoming EU AI Act. Collectively, these regimes provide a strong framework for regulating XR technology, even where XR may present new facts that impact previously accepted standards. Policymakers should work with industry associations and companies as XR continues to develop in order to understand the novel issues which may arise, and to make sure existing frameworks are durable and forward-looking.

Opportunity, Competition, and Regulation

Industry, Manufacturing, and Education

As the call for evidence explains, “the first wave of the Internet developed mostly in an uncoordinated and unregulated manner, leading to a more closed ecosystem with the prevalence of proprietary systems and gatekeepers.” With the development of virtual worlds, we have the chance to apply lessons learned from the past and to expand partnerships. XRA and its members support openness and opportunity, and we value collaboration. Indeed, many European industry stakeholders are already using XRA members’ technologies to advance their objectives and create new opportunities.

For nearly a decade, BMW has been using HTC Vive’s headsets which, when combined with video game engine technology, have helped revolutionize the way BMW designs its vehicles. German industrial manufacturing giant, Siemens, uses Microsoft HoloLens technology in its eHighway initiative to improve safety on Europe’s open roads. Similarly, French auto manufacturer, Renault, has modernized its engine quality control processes using Microsoft virtual technologies. Using Meta Quest (formerly Oculus) VR headsets, French aerospace leader, Airbus, developed its Virtual Engine Run-Up program for engine technicians and mechanics to train on checklist procedures related to engine and ITS systems. With respect to more immediate impact in the lives of ordinary people, XRA member Unity Technologies partnered with French banking group BNP Paribas to build a digital twin of Paris in an effort to help real estate clients explore parts of the city in an immersive, true-to-life 3D environment during the global pandemic.

In the education and professional development space, XRA member Meta is partnering with France Immersive Learning, an association focused on bringing together stakeholders to support the deployment of immersive technologies and document how immersive technologies can contribute to higher education, professional training, and skills development in various sectors. This partnership is part of a larger program of independent research funded by Meta across Europe. XRA member Google also offers an array of consumer-oriented immersive apps available throughout Europe. Google Lens, for example, enables users to instantly translate text from physical objects like menus or signs across all official European languages. What's more, European product managers and engineers played a major role in developing this product.

These are just a few of many examples of the ways in which XRA members and European entities and consumers are partnering to advance businesses, improve products, create opportunities, and empower people in both their professional and personal lives.

Standards and Interoperability

Virtual worlds will involve a constellation of technologies, platforms, and products and it will take a range of companies large and small, civil society, the public sector, and millions of individual creators to build them. What's more, this system won't be built, operated, or governed by any one company, institution, or country. There will be opportunities for countless contributors to create an ecosystem that enhances the human experience. Thus, interoperability, cross-industry collaboration, transparency of process, and open dialogue on key policy questions are crucial.

As discussed above, XRA and its members are actively participating in multiple, international initiatives to develop the standards which will ensure that XR technologies and virtual worlds are imbued with humanitarian values and accessible to all. These standards will address issues including data portability and data privacy; the ease and security of financial transactions; intellectual property rights; and user agency and choice. If developed properly, standards will help foster an environment where small and medium-sized enterprises can thrive alongside the big players. We therefore encourage the Commission to focus on enabling innovation and technology advances while the XR industry is still nascent.

Digital Infrastructures and Connectivity

Given the recent launch of the exploratory consultation on the Future of the Electronic Communications Sector and its Infrastructure, and a debate which has arisen linking this to the XR industry, we would like to take this opportunity to raise our concerns about conflating the growth of XR technologies with this telecoms funding discussion.

As illustrated in this paper, virtual technologies are already a part of today's digital economy, thus contributing to Europe's movement towards its 2030 Digital Decade targets. However, the full uptake of XR will be gradual as the development of virtual worlds will increasingly involve new technologies and devices, protocols, partnerships, innovations, and discoveries. Indeed, we do not expect a near-term explosive increase in traffic on digital

networks, and we believe that current fixed and mobile infrastructure will be sufficient for the foreseeable future. Looking further ahead, Europe’s impressive roll-out of Fiber to the Home (FTTH) networks will serve as the cornerstone of access technology, and, if accompanied by an extension of gigabit capacity within the end-user premises, will be sufficient to supply demand for virtual worlds and other internet services for decades to come.

Finally, we are concerned that the current debate often overlooks the interplay between telecoms operators and content application providers (CAPs), with the online content developed by the latter underpinning the customer acquisition and revenue models of the former. We would urge against the design of any interventions which could discourage investment in new XR use cases in Europe. Indeed, it is XRA’s firm view that collaboration and an impartial diagnosis of the opportunities and challenges ahead will pave the way for a robust ecosystem of users, developers, industries, governments and regulators, civil society and others.

Looking Ahead

In sum, the XR Association shares the European Commission’s commitment to the development of virtual worlds that respect human dignity and empower people. Like yours, our vision for the future of XR is one of openness and opportunity. As an organization that represents the full spectrum of contributors to the XR industry - both large and small, domestic and international – we are grateful for this chance to join the conversation and we look forward to working with the Commission going forward.