Immersive Technologies Briefing Document

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Understanding immersive technologies

Immersive technologies aim to create digital experiences that are more interactive, engaging and realistic, with a greater degree of sensory immersion and spatial interaction, compared to other online experiences.

Immersive technologies differ in the use cases and the experiences they offer. Virtual reality (VR) describes computer-generated simulations of three-dimensional environments where users with connected devices like headsets, goggles, or gloves can interact with the environment and with one another. Other immersive technologies, like mixed or augmented reality, allow users to see and hear the physical world with a digital layer, and often integrate digital objects seamlessly into real-world contexts. For example, in medical training, mixed reality can simulate surgical procedures by overlaying virtual anatomy over a physical training mannequin. In industrial contexts, immersive technologies can support dynamic virtual versions of physical places or objects, known as "digital twins". These digital twins can model complex systems, to enable dynamic, real-time design and collaboration, such as enabling distributed workforces to co-design complex equipment and experiment with potential product changes before execution.

Immersive technologies could facilitate access to experiences that are otherwise expensive, dangerous or out of reach for many people. Achieving the diverse benefits however relies on enablers that are not evenly distributed, including connectivity and computational power.

The case for anticipatory governance and policy

Immersive technologies present opportunities to transform industries, provide individualised learning solutions, safer training and testing, remote and customised health care delivery, enriched entertainment and access to cultural treasures as well as foster human connections. At the Global Forum on Technology (GFTech) inaugural event on 6 June 2023, speakers highlighted such use cases, including examples of providing education in resource-constrained environments. Notwithstanding, it was also raised that these technologies magnify concerns regarding privacy and data use, security and safety, disinformation and trespassing ethical boundaries and related impacts on societal cohesion and individuals' mental health. In addition, the risks of deepening divides and environmental impacts were also highlighted at the event. New devices capitalising on advancements in computing capabilities, artificial intelligence-enabled computer vision and photogrammetric techniques widen the applications of immersive technologies and enhance their appeal along with their potential economic and social effects. As policymakers seek to better understand how these technology developments will apply, evidence gathering and analysis can help to explore policy implications and potential solutions to seize the opportunities and manage the risks.

Focus group on immersive technologies

Launched in November 2023, the focus group on immersive technologies brings together 41 experts from 19 countries. The group includes academic, industry, technical, and policy stakeholders to collect and contribute evidence that informs strategic dialogue and international cooperation on immersive technologies. It seeks to contribute insights and share good practices for the human-centric governance of these technologies, with the aim of informing approaches to policy issues stemming from the technology and associated business models.

The focus group has scoped the below sets of challenges and opportunities posed by immersive technologies.

Opportunities and benefits to be unlocked	
Economic opportunities	Societal benefits from improved service delivery and access
Convergence with artificial intelligence and other digital technologies	Environmental benefits through energy and resource-use efficiency gains
Expected needs of immersive technology ecosystems	The role of international cooperation

Challenges and risks to anticipate and manage	
Responsible corporate engagement ensuring human rights	Security, safety and well-being
Minimising latency	Environmental impact
Accessibility and inclusion	Fragmented cooperation and lack of interoperability
Limited skills and lack of digital literacy	

Planned GFTech activities

1. Building an early foundation for policymakers to grasp the responsible development of immersive technologies, providing them with a comprehensive overview of the related policy opportunities and challenges.
2. Mapping policy tools and approaches for immersive technologies, to identify and characterise best practices in their design and implementation and explore possible gaps.
3. Convening expert panels and workshops as spaces for multistakeholder dialogues to delve deeper into the technology, with a broader audience that spans OECD Member countries and non-members, consider policy issues through the values-based vision and cross-cutting lenses of the forum.

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Contact info.gftech@oecd.org for questions