

## **Think tank La villa numeris**

### **Response to European Commission call for Consultation on Competition in Virtual Worlds and Generative AI**

La villa numeris thanks the Commission for the opportunity to provide the input to the consultation and address the concerns of the growing European immersive technology market.

Immersive technologies, such as enabling virtual reality, hold significant economic and social potential, but Europe trails behind North America and Asia in this sector as major players dominate due to the substantial financial backing and strategic focus in their respective countries.

The technologies are the foundation behind immersive experiences and encompass a range of devices like smartphones, computers, VR headsets, and smart projection rooms. These complex technologies usually include multiple technological building blocks, like advanced hardware, sensors, microprocessors, communication standards, cloud computing, blockchain, and AI.

However, leveraging the technological advancement also requires integration of various aspects like cybersecurity, interpretability and depends on such factors as CSR commitment, security or technological neutrality. European companies recognize that these diverse requirements will ultimately lead to the development of standards and norms facilitating the incorporation of all these constraints into the fundamental structure of the technologies on offer. To address this, European stakeholders require a cohesive strategy on Virtual Worlds.

The answers provided by the Think Tank La villa numeris are based on the recently published [White Paper](#) entitled “Creating European immersive technology champions”. It provides a more in-depth analysis of European immersive technology market.

#### **Extended answers to Survey on competition in Virtual Worlds (Questions 1, 2, 3, 5, 6)**

##### **I. Entry barriers and obstacles to growth in Virtual World markets (Response to Question 1)**

Democratizing immersive technologies is a critical priority aiming to broaden accessibility among both end-users that have yet to fully grasp their potential benefits. This entails not only technological advancements but also concerted efforts from public authorities and industry stakeholders to ensure widespread adoption and utilization.

Several entry barriers and obstacles to growth for European companies developing technology in virtual world markets can include:

1. **Market Fragmentation:** At the moment European market is fragmented, with various platforms, devices, and content distribution channels. Connecting all European stakeholders on a large scale is essential for leveraging significant technological potential of immersive technologies. Synergies in both B-to-B and B-to-C sectors, need to be identified. Examples of the initiatives of partnerships and collaborative efforts could be taken as seen in AI development. Suggestions may include co-constructing a virtual universe and pooling equipment.

2. **End-User Adoption Challenges:** The broader use of immersive technologies remains limited with a significant gap between individual and business adoption rates. Many companies advocate for simpler devices and increased accessibility to encourage widespread adoption in everyday life. However, limited availability, high costs, and a lack of user-friendly options hinder end-user adoption.
3. **Compatibility and Interoperability:** Limited compatibility and interoperability can be a significant barrier for European companies. Lack of standardization in hardware and software interfaces may limit the reach of the products and increase development costs. There is a need to define specific European cross-industry standards, while encouraging companies to become interoperable for fostering collaboration and innovation. It is also important to create the right set of rules to facilitate smooth data transfers.
4. **Corporate Understanding:** The industrial sector's reluctance to embrace immersive technologies poses a substantial barrier to growth. Large companies often view these technologies as niche or cultural novelties rather than recognizing their broader potential. Emphasis on promoting immersive technologies primarily in the cultural sector exacerbates this misunderstanding. The narrow focus and shortcomings of grasping the strategic importance of immersive technologies risk leaving European companies ill-prepared to compete with global counterparts, particularly from non-European countries.

Overcoming these barriers require strategic planning, investment in research and development, institutional collaboration with industry partners and stakeholders, and adaptation to evolving market dynamics.

## II. Main drivers of competition for Virtual World platforms, enabling technologies of Virtual Worlds and services based on Virtual Worlds (Response to Question 2)

Competition for virtual world platforms is shaped by various factors, primarily stemming from the stronghold US and Asia have on immersive technologies:

1. **Competition from Global Players:** European companies face competition from well-established global players, particularly from the US and Asia. These companies often have larger budgets, established market presence, and access to a broader range of resources, making it challenging for European entities to compete. Efforts to democratize immersive technologies by tackling challenges of limited equipment availability, affordability issues, and negative perceptions would help to increase competitiveness of European market both locally and globally.
2. **Technological Barriers and High Development Costs:** Developing immersive technologies requires advanced components. European companies seek to develop solutions that uphold technological sovereignty, however collaboration with non-European tech entities is deemed necessary due to financial and technological constraints. It raises concerns about the potential loss of sovereignty and dependence on other countries. Europe must identify critical elements in the value chain and promote indigenous technological development to increase technological autonomy and mitigate dependencies on non-European solutions.
3. **Regulatory Barriers:** As application of immersive technologies is growing it is certain that concerns related to privacy, data security and content moderation will arise.

European companies may encounter regulatory barriers in the future that could impede their ability to develop products and compete with non-European companies. Therefore, it is important to address these issues right now while regulatory framework is still under the development.

- 4. Protecting European Citizens' Data:** Ensuring data security and safeguarding citizen identity in virtual environments will become crucial concerns. The reliance on non-European devices, particularly from the US and China, raises questions about the security of European citizens' data, underscoring the importance of regulatory frameworks and the establishment of trusted third parties to guarantee identity and identification in virtual worlds in line with European values.

### **III. Current key players for Virtual World market (Response to Question 3)**

At present, several key players have a central role in the virtual world market landscape, each contributing to the advancement of either platforms, technologies or services within this sector. On a technological side, Meta's Oculus platform is the most significant player in virtual reality hardware, offering Oculus Rift and Quest headsets. Another two major non-European actors are HTC Vive and Apple. From the European standpoint LYNX and VARJO could be considered key players in the virtual reality hardware market. Meanwhile Dassault Systemes is another European company offering developing software for 3D.

### **IV. Potential new entrants and products or services in Virtual World market in the next five to ten years (Response to Question 5)**

Immersive technologies have significant potential across various of industries, enhancing training, production methods, service planning, and customer experiences and the application is expected to grow significantly in the next five to ten years:

- In the energy sector, immersive technologies will be possibly employed for training in technical and safety procedures, as well as for environmental transition projects such as housing renovation and decarbonization.
- In the transport sector, virtual reality will aid in designing infrastructure efficiently, simulating driving scenarios, and adapting transport planning based on virtual projections of specific regions.
- The military sector already uses immersive technologies for organizing operations, training, and improving decision-making processes. Additionally, augmented and virtual reality technology like headsets will provide additional information for decision-making e.g., in aviation.
- The healthcare sector will employ immersive technologies for simulating complex operations.
- In commerce, immersive technologies will improve customer experiences by allowing potential buyers to test products virtually, enabling sellers to observe consumer behavior and personalize their production accordingly.

The growing scope of the application of immersive technologies across the wide range of sectors entails increasingly diverse landscape of stakeholders beyond just technology developers and companies. It extends to end-users such as government authorities, public institutions, and law enforcement agencies. This broadening adoption implies that almost every

entity, whether public or private, will find themselves engaging with immersive technologies. This trend underscores the transformative potential of immersive technologies and highlights the importance of collaboration and coordination among stakeholders to leverage their benefits effectively across various domains.

**V. Basing technology incorporated into Virtual World platforms, enabling technologies of Virtual Worlds and services on open standards and protocols agreed through standard-setting organisations, industry associations and groups of companies (Response to Question 6)**

European companies recognize the benefits of open standards and protocols in fostering interoperability, compatibility, and collaboration among different stakeholders. Open standards would help to provide a common framework for developers to build upon, enabling the rapid development and deployment of new features and functionalities. With this, European companies would be able to facilitate integration with other systems and platforms. The adoption of standards will have to be agreed upon through standard-setting organizations, industry associations and collaborative efforts among companies to ensure consistency and reliability.