

Call for Contributions - Competition in 'virtual worlds' and generative artificial intelligence

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Introduction

1. Video Games Europe is the voice of the video game industry in Europe representing major European and international video game companies and national trade associations across the continent. We very much welcome the opportunity to reply to DG COMP's call for contributions on competition regarding 'virtual worlds' and generative AI as two emerging technologies. Both technologies are of high relevance for the video games sector.
2. The video games sector has deployed 'virtual worlds' and AI related technologies in different forms for decades to innovate and enhance user experiences.
3. Therefore, Video Games Europe supports DG COMP's aim of increasing its knowledge in these areas by way of this call for contributions. In particular, we fully acknowledge the important role of DG COMP in ensuring a consistent application of competition law across the European Union that enables innovation to continue to flourish to the benefit of EU consumers.
4. Video Games Europe also appreciates the Commission's approach as explicitly stated in this call for contributions – i.e. providing questions for orientation only, and providing the freedom to choose what aspects to focus on. We would like to take this opportunity by providing a focused contribution from the video games perspective.
5. In summary, the video games sector is vibrant and competitive, and its development of virtual worlds and its use of AI represent innovations that benefit consumers. These innovations are emerging, with new technologies and business models, and consumer expectations, continually evolving. Against such a background, to the extent a need for regulation is identified, it should be carefully considered, proportionate to the need, and the outcome of extensive engagement with all stakeholders, especially industry, to ensure that new regulatory measures in such nascent areas do not hold back innovation or limit the diversity of technologies and models, which would ultimately be to the disbenefit of consumers. The below sections set this out in more detail, starting with 'virtual worlds' and its relation to video games, followed by a few considerations on generative AI.

'Virtual worlds' and video games

6. To better understand the relevance of this technology for our industry, a short view on the historic connection between the concept of 'virtual worlds' and video games may be helpful: the origins of this notion might go back to 1974, with the creation of *Mazewar*, the first networked multi-player game. In the mid-late 1990s/early 2000s, with increased access to the Internet, MMORPG (massively multiplayer online role-playing game¹) titles such as *UltimaOnline* (1997), *EVEOnline* (2003), *World of Warcraft* (2004) or *The Elder Scrolls Online* (2014) became popular.

¹ MMORPGs are distinguished from single-player or small multi-player online RPGs by the number of players able to interact together, and by the game's persistent world (usually hosted by the game's publisher), which continues to exist while the player is offline and away from the game.

7. Beyond MMORPGs, the breadth and availability of such permanent, immersive, and shared experiences have increased in recent years: the online platform *Roblox* (2006), games such as *Fortnite* (2017), and *Animal Crossing: New Horizons* (2020) have become increasingly popular.
8. Despite this historic connection, more recently the notion of a 'virtual world' or 'metaverse', terms which are often used to describe environments that are not limited to a classic game experience – but serve other user cases, including communication, e-commerce, or education.

Competition in 'virtual worlds'

9. The call for contributions defines 'virtual worlds' as "*a simulated, immersive environment – in its ultimate form amounting to a persistent, always on world that operates in real time and is accessible everywhere*".
10. From the perspective of video games as an industry that develops technical solutions that are at least partly used to create such an environment, we would like to point out that 'virtual worlds' is not currently a fully and clearly defined concept. There are many different forms of such experiences, different solutions, and the borders to other concepts (such as video games) are fluid. This dynamism will likely increase within the coming years, due to technical developments leading to a variety of new and unique experiences. Therefore, we believe there are significant challenges in having a definition of a concept that is constantly evolving.
11. Having said that, we fully appreciate that the Commission wants and needs to understand how competition related to 'virtual worlds' is playing out. The following (without prejudice to market definition) is a non-exhaustive list of some of the main drivers of competition in that space:
 - Talent and innovation;
 - Access to proprietary technologies;
 - Access to IP rights;
 - Access to data;
 - Developments in AI;
 - Connectivity and net neutrality;
12. A high-level comment on the level of competition in this area (from the perspective of an association with members that are directly competing with each other): this space is characterised by vibrant competition, with technology evolving rapidly, with both immersive experiences being created by all kinds of market operators, both big and small, and the challenge in predicting what services or experiences become most adopted. As there continues to be innovation in technologies and business models in this space, it would be too early to identify which kind of technical solutions and services will attract consumer interest in the medium or long term.
13. The significant investment, versatility, diversity and dynamism of this technology results in a competitive environment characterized by constant change. Therefore, a regulatory approach (i.e. going beyond existing competition law) would risk limiting innovation in this area.

Standards & Interoperability of ‘virtual worlds’

14. One specific observation regarding standards: historically, ‘virtual worlds’ seemed to have been largely built with proprietary technologies. More recently, however, we note that there is a trend towards open standards and interoperability. Collaboration through standard-setting organisations or industry alliances could become more prevalent,² and Video Games Europe welcomes such multilateral initiatives.
15. We therefore encourage the European Commission to support international standardisation efforts, such as ‘The Metaverse Standards Forum’, as well as other related initiatives within the OECD and other international organisations such as the ITU and ISO. At the same time, given the nascent state of virtual world experiences and services, mandating or legislating interoperability could have significantly negative unintended consequences on the development and attractiveness of such services. On standardisation, the diversity of business models, both open and closed, can exist alongside each other, and therefore, allowing competition between these is critical in driving competition especially in fast-evolving areas. Any potential standards or regulation should not seek to engrain a specific model as a standard.

Competition in video games

16. Although video games are not in focus of this consultation, we would like to take this opportunity to provide some facts on this dynamic sector. In general, our sector sets itself apart from other tech sectors, also in terms of numbers of competitors: according to the latest data available to us, in 2021, there were over 5,500 companies active in the European Union (including both developer studios and publishers).³
17. As regards new entrants, in 2021, approximately 500 new video game development companies started business in the European Union, when compared to the numbers from 2019.⁴
18. Companies such as Roblox, have reduced the barriers to entry for developers of immersive user-generated experiences. Roblox has 2.4 million developers who have produced more than 4.4 million active immersive experiences, from gaming to social hangouts, to concerts, sports, fashion shows, education, and entertainment. Epic Games is another example of a company which has shown sustained growth and generated significant investment in ‘virtual worlds’ as a medium.

Generative AI

19. Artificial intelligence, in different forms, has been of high significance for the video games sector. For example, the ability to program a game to *play* against a human is key in ensuring quality single player experiences.

² Multistakeholder platforms such as the [Metaverse Standards Forum](#) are positive initiatives aimed at promoting common standards and interoperability.

³ Source: EGDF report 2021, available [here](#).

⁴ Source: EGDF report 2019, available [here](#).

20. The evolution of generative AI and its application within the games industry is still in the early stages. Companies are experimenting with such systems in the production of content for video games. Generative AI systems will likely allow for faster creation of assets for video games – from 3D models, dialogue and textures to sound effects: this offers game developers a wider variety of content. In addition, it allows for development of such content in a shorter period of time. In particular, the ability to generate assets in seconds with the use of AI tools represents a substantial leap in terms of productivity. Where these tools are made available to users, they also help to lower the barrier to entry into game development, and widening access to the industry as a whole.
21. VGE notes that at present the creation of generative AI systems involves significant expense and expertise involved in the creation of foundational generative AI systems, video game companies will mostly not be creators or owners of them, but will instead be customers of generative AI systems from specialist firms.

Competition in generative AI

22. As regards the elements necessary to build such systems, this includes:
- Algorithms: the model architecture influences how well a system can understand, learn, and generate content. State-of-the-art architectures often incorporate advanced techniques such as attention mechanisms, deep neural networks, and transfer learning.
 - Data: the better the training, the better the outcome. Training needs to be diverse, representative, and extensive enough to capture the variations and patterns present in the target domain. The quality and quantity of data significantly impact the system's performance and generalization capabilities, thus it is important that data is available broadly as well as accessible on reasonable terms.
 - Training infrastructure and process: adequate infrastructure, including processing capacity, is essential for efficiently training models on extensive datasets. Distributed computing setups can be employed to accelerate training times and handle complex model architectures. The current landscape of available compute capacity providers at European and international level that generative AI developers can leverage is significant and likely to further increase in the years to come.
 - Bias mitigation: considering and actively working to mitigate biases in training data and model outputs will help prevent unintended consequences and contribute to ensuring fair and unbiased outputs from generative AI systems.
 - Skills: ensuring a continued competitive labour market with highly talented and skilled individuals will be key to ensuring new start-ups to flourish and the sector to continue its growth path. Otherwise, this will be a significant barrier for companies to enter and grow within the field.
 - Regulation: regulatory frameworks should focus on establishing the guardrails to ensure safety and security of systems, while enabling the growth of new services and opportunities within the sector.
23. Generative AI systems benefit from the availability of relevant data. Video Games Europe believes that the current legal framework for Text and Data Mining (as set out in Article 4 of the 2019 Copyright Directive) is fit for purpose. We also caution against legislative initiatives

to modify the nascent legal framework introduced by the 2019 Copyright Directive without a prior thorough and extended impact assessment.

24. With regard to the broader regulatory context, we believe that the recently agreed AI Act's impact should be properly implemented and assessed before any further specific regulation is proposed.
25. Finally, a more specific observation as regards the impact of competition in the video games sector: generative AI tools further lower barriers to entry as such tools can significantly reduce the production timeline and resources needed to develop high quality video games. This may become increasingly more accessible to smaller market players, which ultimately will result in a further competitive stimulus in this already very competitive sector.

Concluding remarks

26. The video games sector is vibrant and competitive, and its development of virtual worlds and its use of AI represent innovations that benefit consumers. These innovations are emerging, with new technologies and business models, and consumer expectations, continually evolving. Against such a background, to the extent a need for regulation is identified, it should be carefully considered, proportionate to the need, and the outcome of extensive engagement with all stakeholders, especially industry, to ensure that new regulatory measures in such nascent areas do not hold back innovation or limit the diversity of technologies and models, which would ultimately be have a negative effect on consumer welfare.
27. In view of the current rapid entry and growth of (the number of) players throughout the virtual worlds and generative AI ecosystems it will be particularly important to ensure the regulatory framework applicable to these two technologies actually facilitates a diverse set of commercial arrangements that enable concrete services to be built around them and for those to further develop, innovate and flourish in the coming years.
28. The EU antitrust framework as consistently applied by DG COMP has proven itself effective in dealing with fast moving technological areas. In addition, with the DMA, the European Commission has also been given a new tool kit for enforcement in digital markets. The DMA, along with the EU Merger Regulation, and Regulation 1/2003, are potent tools available to address any potential arising concerns. Therefore, we caution against further specific changes to competition law for this fast-moving sector.
29. Video Games Europe appreciates the openness shown by DG COMP in inviting submissions on these topics. Our sector has significant experience in the context of immersive and cutting-edge experiences, and we are open to assist the European Commission with our experience to the extent possible.
30. We are also available to provide further information, if helpful. For example, we would be willing to contribute to the workshop planned for the second quarter of 2024, as referred to in the call for contribution.

Brussels, March 2024



About Video Games Europe:

Since 1998, Video Games Europe has ensured that the voice of a responsible games ecosystem is heard and understood. Its mission is to support and celebrate the sector's creative and economic potential and to ensure that players around the world enjoy the benefits of great video game playing experiences. Video Games Europe represents 19 European and international video game companies and 13 national trade associations across the continent. Europe's video games sector is worth approximately €24.5bn, and 53% of Europeans are video game players. We publish a [yearly Key Facts](#) report with the latest data on Europe's video games sector.

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