Official Journal
of the European Union

EN
C series

C/2024/5723

17.10.2024

P9_TA(2024)0032

Virtual worlds – opportunities, risks and policy implications for the single market

European Parliament resolution of 17 January 2024 on virtual worlds – opportunities, risks and policy implications for the single market (2022/2198(INI))

(C/2024/5723)

The European Parliament,

— having regard to Article 24 of the EU Charter of Fundamental Rights and the United Nations Convention on the Rights of the Child as elaborated upon in its General Comment No. 25 on children's rights in relation to the digital environment,

— having regard to Rule 54 of its Rules of Procedure,

— having regard to the opinion of the Committee on Culture and Education,

— having regard to the report of the Committee on the Internal Market and Consumer Protection (A9-0397/2023),

A. whereas the world is undergoing an unprecedented transformation marked by digitalisation, which is imprinting profound changes in all spheres of our economic, political and social life;

B. whereas digitalisation brings with it a wealth of opportunities in fields such as medicine, culture, education, the economy, security and law enforcement and has the potential to contribute to solving global problems related to poverty and inequality, sustainability as well as to democratise processes and access to education and knowledge; whereas it also offers new possibilities to advance the transition process towards more sustainable and just societies if guided in the right direction by appropriate policies; whereas addressing the digital divide, which currently affects 46 % of Europeans, still requires significant investment;

C. whereas the digital transformation also entails significant challenges that might lead us to review the concepts and norms that have hitherto underpinned our economic and social progress while keeping intact our fundamental core principles and values such as cultural policies and copyright law; whereas excessive market concentration has been observed in the digital economy; stresses the need to reduce technological dependencies on non-EU countries by moving towards a European approach to virtual worlds, including both larger and smaller operators at various levels of the value chain;

D. whereas in the EU, awareness of both the potential of emerging technologies and the challenges posed by the accumulation of power by digital giants has triggered the need to re-establish a level playing field in the digital market, leading to political and legislative action; whereas the EU institutions have made the green and digital transitions a priority area of action and policy formulation, establishing rules in line with EU values, principles of equity and fair competition, and fundamental rights, while ensuring strategic autonomy and independence;

E. whereas the transition to Web 4.0 and the development of virtual worlds may be a significant part of the future of digitalisation and may be one of the significant potential building blocks for the completion of the digital single market; considers that digitalisation, integral to Web 4.0, should be harmoniously integrated into the Digital Single Market without creating barriers; acknowledges that while virtual worlds can complement the real world as an additional tool, they should not replace it and should not lead to exclusion of consumers;

F. Whereas virtual worlds pose significant risks in various domains, such as mental health, competition, data protection, and consumer protection, including for vulnerable groups such as minors, the elderly, and people with disabilities; whereas further research in this field is also needed; whereas virtual worlds also present multifaceted challenges that include but are not limited to user-generated content, intellectual property rights, cybersecurity measures and fundamental human rights; whereas the experience of virtual worlds can pose challenges to women; according to the European Institute for Gender Equality (EIGE), one in 10 women have experienced some form of cyber violence since the age of 15; whereas the UN Special Rapporteur on Violence Against Women has stated that new technologies 'will inevitably give rise to different and new manifestations of online violence against women'; considers that the imbalance between the online consumer and trader might be exacerbated in virtual worlds; underlines that technologies must not be designed to manipulate consumers' behaviour; notes the growing number and variety of products, including financial products, linked to virtual worlds such as buying virtual assets, avatars, and others; highlights the need to have targeted studies and extended consultation with experts in different fields, from economy to psychology to neuro-specialists, in order to develop a legislative framework fit for the purpose; welcomes the work of the industry in this regards while underlining that more can be done;

General principles

1. Welcomes the Commission communication of 11 July 2023 entitled 'An EU initiative on Web 4.0 and virtual worlds: a head start in the next technological transition' (COM(2023)0442); underlines that any strategy must be sustainable and human-centric, while protecting the values of the European Union;

2. Notes the challenges associated with the absence of a universally recognised or agreed definition of virtual worlds, which also leads to a lack of policy coordination at the national level and above; acknowledges the Commission's efforts to define virtual worlds in a way that is aligned with consensual characteristics such as immersivity, synchronicity and persistence;

3. Underlines the need to make a clear difference between the existing digital instruments, and other possible emerging technologies, based on research, strong scientific studies and technical specificities, while exploring the need for standardisation of the sector;

Internal market and consumer protection

4. Observes that, although the European Commission's communication does not yet indicate the need for precise legislative action, it is nevertheless important to make a careful assessment of all the issues relating to the development of virtual worlds and their effective coverage by existing legislation; underlines that a true digital single market can contribute decisively to the development of virtual worlds and strengthen the EU's ability to compete globally; considers that a clear, comprehensive, regulatory framework is of vital importance, particularly when the technology reaches maturity, to ensure a level playing field that harnesses the full potential of virtual worlds and enables their economic growth;

5. Welcomes the latest regulatory developments in this regard, such as the Digital Services Act (Regulation (EU) 2022/2065 ([1])), the Digital Markets Act (Regulation (EU) 2022/1925 ([2])), and the Data Act (2022/0047(COD)) that is about to be endorsed by the Council and the European Parliament; notes also the proposal for an artificial intelligence act, and cyber resilience act and the ongoing negotiations thereon; considers that the Commission should conduct regular checks on the adequacy and consistency of the legislative framework of the digital single market, to address new opportunities, risks or other issues that may arise with virtual worlds and where necessary, put forward legislative proposals; believes that the outcome of such checks should be made public;

6. Welcomes the Commission's commitment to monitor the development of virtual worlds; invites the Commission to draft a report on this subject every two years and to forward it to Parliament and the Council; asks the Commission to pay attention to the potential emergence of problems in the Web 4.0 that already exist in the Web 3.0, such as the proliferation of disinformation, spread of illegal content, digital identity theft, cybercrime, infringement of intellectual property rights, cyberterrorism, misuse of personal data, manipulative behavioural or addictive design of digital services, fraud, online terrorist content, sexual abuse of minors and cyberbullying, among others, and to consider relevant existing, such as the Digital Services Act, and forthcoming legislation which aim to address these issues;

7. Points to the significant economic potential of virtual worlds, and the growing needs for investment in the necessary infrastructure and in related research, innovation, and re- and up-skilling; stresses that the overall costs of such investments should aim to have a neutral impact on final consumer prices; acknowledges the need to increase available resources at EU-level to fulfil these objectives; highlights the role of virtual reality (VR), augmented reality (AR), and mixed reality (XR) as crucial technologies for the development and growth of virtual worlds, providing users with immersive and interactive experiences, while also noting that industrial applications and consumer use present different challenges and require differentiated approaches; notes also the development of some AI models such as generative AI can play a crucial role in creating and enriching virtual environments; in this regard, call on the Commission to closely monitor also the rapid development of this technology and its impact in the digital ecosystem;

8. Signals also the potential positive impact that these developments could have on employment, including the creation of new jobs in domains such as virtual world architecture or content creation; stresses the need to invest in reskilling initiatives to educate the existing workforce in the EU, paying specific attention to under-represented groups in this sector; highlights the importance of investing in and promoting the development of appropriate skills to ensure the supply of talented and skilled workers fit for these jobs in the EU, as well as of creating appealing conditions to retain EU talent, attract foreign talent, and promote entrepreneurship and innovation in the territory of the EU;

([1]) Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act), OJ L 277, 27.10.2022, p. 1.

([2]) Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), OJ L 265, 12.10.2022, p. 1.

9. Signals the positive as well as the negative potential impact of the new technologies and products on consumers, on their health, on their social and economic life; highlights the potential of virtual worlds in industrial and professional settings, in particular for training and prototyping, while acknowledging broader impacts on workers; stresses the need to ensure compliance with labour rights and a high level of worker protection;

10. Recalls that while most companies that are leading the development of virtual worlds are established outside the EU, there exists a vibrant, evolving ecosystem within the EU; emphasises the need for the EU to take the lead in shaping virtual worlds as ecosystems that respect and promote EU values, fundamental rights, and the highest level of consumer protection; signals the importance of fostering a level playing field that promotes the expansion of European small and medium-sized enterprises and the emergence of competitive European companies, as well as decentralised and interoperable ecosystems;

11. Underlines the necessity of creating an appropriate policy framework and engaging in international dialogues in particular with like-minded non-EU countries for coordinated approaches to virtual worlds; stresses the importance of raising European citizens' awareness about responsible usage in these digital domains;

12. Acknowledges that multiple virtual worlds have been developed by different undertakings in the absence of open and common standards, regulations and interoperable platforms; underlines that these virtual worlds are currently being developed by a limited number of undertakings that have the resources and funds necessary to develop them; considers that interoperability and open standards can contribute to the prevention of quasi-monopolies or abuses of dominant position to the detriment of consumers and to European businesses, especially SMEs;

13. Welcomes the Commission's commitment to engage with existing multi-stakeholder internet governance institutions to develop common governance standards and rules; and encourages the Commission to support ongoing multi-stakeholder initiatives currently developing standards, including those of consumer associations and other civil society organisations; recommends a comprehensive study on interoperable virtual worlds; highlights the potential represented by the creation of European data spaces for the development of virtual worlds;

14. Stresses the need to ensure that virtual worlds are open, inclusive, and accessible, contributing to the greater participation of people with disabilities in the new digital environment; signals the potential of virtual worlds to increase the participation of people with disabilities in different activities such as virtual tourism; warns of the potential challenges that users with disabilities will face in interacting with virtual worlds, arising from inadequate accessibility features or designs that do not cater to their specific needs; calls on the Commission to monitor the fitness of the European Accessibility Act ([3]) and Web Accessibility Directive ([4]) in ensuring accessibility in virtual worlds . stresses also the need to recognise the specific needs and rights of children;

15. Believes that the debate over the need for the identification of users in virtual worlds should be a priority area in the development of virtual worlds and that there should be a profound reflection on the possible configuration of this digital environment, bearing in mind that, in some cases, anonymity may be preferable; points out that anonymity in the digital environment is always possible under a username (alias), and calls on the Commission to assess the potential use of the European Digital Identity (eID) and wallet in virtual worlds;

16. Reiterates the importance of protecting users' personal data and privacy; points out that the General Data Protection Regulation ([5])might not be sufficient to address all the challenges posed to data protection in interconnected virtual worlds; calls, while ensuring an innovation-friendly environment, for special attention to be paid to the data protection implications of user-generated content, as well as the processing of sensitive data such as biometric and behavioural data, emotional reactions and haptic information;

17. Underlines that participation in the virtual world is voluntary and calls for the Commission to consider installing the right to permanent deletion so that consumers can ask for their data and profile to be erased from any applications, online games and virtual environments;

([3]) Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services, OJ L 151, 7.6.2019, p. 70.

([4]) Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies, OJ L 327, 2.12.2016, p. 1.

([5]) Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1.

18. Considers that particular attention should be given to addictive design and dark patterns in these virtual environments; warns of the potential health issues that may arise from interacting with virtual worlds, such as addiction, cyber sickness or disturbances in sleep patterns; emphasises the special vulnerability of minors and young people to these health problems, including potential impacts on their cognitive development, and underscores the need for age-appropriate design and parental control measures to safeguard them; also considers that research on the impact of technologies that imply direct and permanent modifications to the body is needed;

19. Recalls the potential of virtual worlds and immersive education to promote children's rights online with regards to their education, empowerment, participation and play, and that it can offer unique experiences that can help minors develop their appetite for learning through, for example, learning through play; notes that this engagement can help them develop skills in collaboration, communication, critical thinking, innovation, and confidence; stresses the opportunity to address the EU's skills gap and train future talent; underlines the necessity of educational programmes to help children and young people adapt to technological changes and to adopt a healthy and balanced approach combining traditional social interaction with the time spent in the virtual environment, also giving parents the necessary tools to supervise and make informed decisions when allowing or involving their children in the virtual environment;

20. Notes the need for research on the impact of virtual reality and other technologies on cognitive and behavioural development; underlines the possible risks inherent to early exposure and excessive screen time, which might affect their well-being and proper cognitive, physical, psychological, and social development; insists on the implementation of information campaigns on responsible screen use; highlights the need for educators to be trained appropriately to ensure they have the necessary digital skills and literacy; calls on the Commission to encourage initiatives where universities, engineering schools and industry players partner to assess the skills gaps, co-design roadmaps and strengthen public-private cooperation for the benefit of the EU's youth; underlines the importance of extending the highest level of protection afforded to minors in other offline and online environments to virtual worlds against various risks, including but not limited to abuse, harassment, bullying, and exposure to violent, sexist, racist or pornographic content; stresses the need to recognise the specific needs, vulnerabilities and the rights of children in virtual worlds; underlines the importance of designing and operating online services and products accessed mostly by children that are safe for children by design and default;

21. Notes that virtual worlds will generate high-resolution images, graphics, and video to enable immersive user experiences, further requiring high-performing infrastructure; notes that, in particular, next generation mobile networks, as well as efficient Wi-Fi connections, such as Wi-Fi 6, with low latency and high bandwidth will be key, as will technologies such as edge computing; reminds of the European Court of Auditors report from January 2022 estimating the total cost of deploying 5G in all EU Member States to be between 281 and 391 billion euros by 2025, including the construction of new 5G infrastructure and the modernisation of existing infrastructure;

22. Notes with concern that growing use of virtual worlds could also exclude certain groups of people who lack basic skills or resources to participate in this environment, but also people living in rural and remote areas, such as outermost regions; emphasises that fostering digital literacy and access to quality and affordable internet is a precondition for any EU-level framework on virtual worlds; calls on the Commission to conduct an evidence-based assessment of how to ensure that the infrastructure needed and devices needed to support the development and functioning of virtual worlds, and the transition from Web 3.0 to Web 4.0 are delivered to consumers, including in remote areas and lower-income households; highlights that a true single market for telecoms is key in this regard; warns of the dangers of financial transactions involving cryptocurrencies, particularly fraud and scams, which might be exacerbated in virtual worlds; recalls also that the irreversibility of many cryptocurrency transactions also means new channels for the parallel economy with victims of fraud having little or no recourse of possibility of recovering lost funds; welcomes the European Union Markets in Crypto-Assets (MiCA) regulation ([6]), aimed at establishing a legal framework for cryptocurrencies and digital assets;

Sustainability

23. Points out that the production of the devices needed to access virtual worlds requires resources such as rare earths and other mineral raw materials; welcomes in this regard the presentation of the Commission proposal for a regulation establishing a framework for ensuring a secure and sustainable supply of critical raw materials (COM(2023)0160);

24. Notes the potential for virtual worlds and Web 4.0 to make a positive contribution to the fight against climate change and for environmental sustainability, for example by facilitating remote working, thereby reducing commuting and associated carbon emissions; notes that network infrastructures that enable digital solutions and new business models play a crucial role;

([6]) OJ L 150, 9.6.2023, p. 40.

25. Considers that the development and deployment of virtual worlds should take into account the impact on the environment; highlights the importance of raising consumers' awareness about the environmental impact and sustainability of these new technologies, including electronic waste; notes that, according to the International Energy Agency, electricity consumption by large data centres currently accounts for 1-1,5 % of global electricity use points out that data centre electricity consumption may increase in the event of large-scale adoption of virtual world technologies; recalls the need to use, accelerate and incentivise technological advances to reduce the energy consumption and environmental footprint of the activities related to the production, use and development of virtual worlds, such as advanced recycling techniques and renewable energy sources;

°
° °

26. Instructs its President to forward this resolution to the Commission, the Council, and to the parliaments and governments of the Member States.