

Europe's way into virtual worlds

Bitkom's Feedback to the European
Commission's Call for Contributions
»Competition in Virtual Worlds«

What entry barriers or obstacles to growth do you observe or expect to materialise in Virtual World markets? Do they differ based on the maturity of the various markets?

There are possible barriers to entry at various levels. At the technological level, a lack of interoperability can be a hurdle. The key question is therefore how systems in Virtual Worlds and their ecosystems can be made interoperable. The entire chain from the underlying tech stack to the applications must be considered. This is because interoperable Virtual Worlds open access to Virtual Worlds for large companies as well as small companies, established companies as well as companies just entering the market.

Furthermore, incomplete reference structures for diverse actors within the field lead to reduced creativity, coordination and compatibility.

A further entry barrier is the skills shortage of many employees, particularly when it comes to key technological and creative skills for Virtual Worlds. This skills gap can be a disadvantage for small and medium-sized enterprises and, in a global comparison, also for Europe.

Another barrier to entry is a lack of financial support. The capital market does not usually invest in long-term projects. And public funding programmes are usually limited to cultural and human resources, while resources for scaling and marketing are needed the most. Another obstacle is that the application process for public financial support is too complex and time-consuming.

A lack of awareness of the opportunities and possibilities that Virtual Worlds already offer today, is another barrier to entry. Too many still see Virtual Worlds as a nice to have. Too few have already had concrete experience with them.

This lack of awareness is partly reflected in the fact that the wide variety of use cases for virtual worlds is not recognised. They open new opportunities in both the B2C and B2B sectors. And both areas work differently in terms of barriers to entry and barriers to growth. While in the B2C area, companies are in contact with end consumers in a similar way to today's B2C Internet, B2B Virtual Worlds are about the exchange between companies, and Industrial Virtual Worlds are primarily about the exchange of machine data.

As far as the maturity of the market is concerned, it is not yet very mature overall. On the user side – both in terms of end customers and business customers – there is a lack of awareness of the possibilities of Virtual Worlds. On the provider side, most technology companies are only just entering the market, with many smaller providers joining them. At the same time, some players are scaling back their activities due to high growth expectations that could not be realised so quickly. The market is therefore not very mature, but very dynamic. This makes it even more important for Europe to be actively involved in this phase of shaping and developing Virtual Worlds, as it offers huge opportunities for European industry including small and medium-sized companies.

What are the main drivers of competition for Virtual World platforms, enabling technologies of Virtual Worlds and/or services based on Virtual Worlds (e.g. access to data, own hardware or infrastructure, IP rights, control over connectivity, vertical integration, platform and payment fees)? Do you expect that to change and, if so, how?

The main drivers are Virtual Worlds that are open and interoperable. This is because all players and companies that are interested can then participate in building the Virtual Worlds. The development of virtual World will only succeed if companies of all sizes collaborate to boost innovation and speed up to path towards the virtual Worlds. In this area, open initiatives to create an open, interoperable metaverse can be taken up, for example, within the framework of the Metaverse Standards Forum, the World Economic Forum's initiative on the metaverse or international standardization (CEN/CENELEC or ISO/IEC).

What are the current key players for Virtual World platforms, enabling technologies of Virtual Worlds and/or services based on Virtual Worlds, which you consider or expect to have significant influence on the competitive dynamics of these markets?

As an association that operates pre-competitively, we cannot be specific about individual companies. What we can say, however, is the following: Virtual worlds will only work if offers, services and technologies interact at different levels. Five levels can be identified here, with no single company currently dominating across all these levels. The first level is that of enabling technologies, which includes both hardware and graphics engines. This is followed by the second level: operating systems. The third level is the app stores, some of which are currently open and enable side loading, for example.

Both operating systems and app stores already fall within the scope of the Digital Markets Act which provides sufficient tools to address competition concerns that could potentially arise. Therefore, we do not see the need for further regulation specific to these aspects. The Virtual Experience Distribution Platforms are the fourth level above this. The final level is the end services, the actual apps, which are provided by many small, medium-sized and large providers.

Depending on the area of application of the Virtual Worlds – for example in the consumer sector, in the enterprise sector or in the industrial sector – different manufacturers and providers play a role across all five levels.

In addition to these five levels, there are the necessary basic technologies, such as for cloud computing, hosting and data transfers, as well as key technologies from the fields of 3D modelling, artificial intelligence and digital currencies or cryptocurrencies. On top of this, there are also companies that use Virtual World Services and are often

actively involved in shaping them, for example in the industrial sector. These are also part of the Virtual Worlds cosmos. After all, no one can build Virtual Worlds alone.

Do you expect existing market power to be translated into market power in Virtual World markets?

The Virtual Worlds markets are currently still at a very early, immature stage. It is difficult to predict which companies will stick with this market, even if their sometimes high expectations are not fulfilled or not as quickly as desired, which companies will exit the market, and which will enter it. Once again, it is important to emphasise how diverse the entire ecosystem is, and that Virtual Worlds only work if all five levels (see answer to question 3) are served.

The fact that the market is still at such an early stage is a chance for European players (including small and medium-sized companies as well as new entrants) to play a role in the emerging Virtual Worlds.

Do you expect potential new entrants in any Virtual World platforms, enabling technologies of Virtual Worlds and/or services based on Virtual Worlds in the next five to ten years and if yes, what products and services do you expect to be launched?

The market is not yet very mature. In the coming years, new players are expected to enter the market in a wide variety of areas and from different sectors. In the gaming sector, we can expect more and more immersive gaming experiences, often with a social aspect. Larger gaming studios will also increasingly enter the market. Virtual worlds will also become more important for media companies, which will either create their own Virtual Worlds or cooperate with existing distribution platforms for concerts or movies. Another key area will be the education sector, with offerings such as virtual classrooms or educational games. Offerings in Virtual Worlds for fitness and mental health will also become increasingly important. There will also be specialised Virtual Worlds for non-consumer use cases. Corporate training, healthcare, industrial applications and digital twins will play an important role in these enterprise and industrial Virtual Worlds. As an enabler of Virtual Worlds, generative AI will become increasingly important to design Virtual Worlds and fill them with content, to create personalised content, to support navigation through Virtual Worlds and to moderate Virtual Worlds.

Most of these areas are currently still underfunded. More funding from institutions and investors is needed for their development.

Do you expect the technology incorporated into Virtual World platforms, enabling technologies of Virtual Worlds and services based on Virtual Worlds to be based mostly on open standards and/or protocols agreed through standard-setting organisations, industry associations or groups of companies, or rather the use of proprietary technology?

Currently, many parts of Virtual Worlds are not yet characterised by open standards and protocols. However, the goal should be Virtual Worlds that are open and interoperable so that integration is possible across all necessary layers. This will also help to make Virtual Worlds more democracy-friendly and user-friendly.

Even if the Virtual Worlds as a whole are often still closed, there are already established solutions for some of their underlying basic technologies, for example in the areas of Augmented and Virtual Reality, 3D data, but also Industry 4.0. Forums such as the Metaverse Standards Forum or the European and International Standardization Bodies are already established places where metaverse stakeholders work together to make standards fruitful for Virtual Worlds. When it comes to creating new standards for the metaverse, unilateral European approaches should be avoided. Instead, it is important to support international approaches such as the Joint Standardisation Evaluation Group for the metaverse of ISO and IEC and to secure the European vision of an interoperable metaverse within its framework. The ISO and IEC structures, for example, enable participation of all stakeholders, increasing legitimacy, trust, and related adoption. The past has shown that successful standards have usually emerged bottom-up, from industry and users.

Which data monetisation models do you expect to be most relevant for the development of Virtual World markets in the next five to ten years?

Various business models are possible and yet to be developed. Many of the established monetisation models that currently exist on the internet will also co-exist in Virtual Worlds. After all, Virtual Worlds are in many ways a 3D extension of the existing internet. Some areas are likely to become more relevant. For example, the offering and selling of virtual goods and virtual services is likely to become much more important than it is today. There will also be new revenue opportunities through the licensing of content in Virtual Worlds (from 3D objects to music).

Various other business models are yet to be developed. Therefore, innovation should not be hindered via premature regulation. Especially, we should pay attention to not regulate Virtual Worlds stricter than today's internet and work with the regulatory framework at hand applicable on today's internet.

What potential competition issues are most likely to emerge in Virtual World markets?

As described above, the market is still premature. It is therefore too early to make assumptions about possible competition issues at this stage. De jure, with regulations such as the Digital Services Act and the Digital Markets Act, the European Union has laid the basis for ensuring that competition in Virtual Worlds will continue to be guaranteed in the future.

Do you expect the emergence of new business models and technologies to trigger the need to adapt certain EU legal antitrust concepts?

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Do you expect the emergence of new business models and technologies to trigger the need to adapt EU antitrust investigation tools and practices?

The instruments for controlling market power exist and the existing European regulatory framework with the General Data Protection Regulation, Digital Services Act, Digital Markets Act, AI Act, Net Neutrality Regulation and the Unfair Commercial Practices Directive is fit for purpose in virtual worlds, too. They are robust and future proof.

Moreover, an all-encompassing metaverse regulation could hardly do justice to all the very different Virtual World use cases from the areas of consumer, enterprise and industry. In particular, B2B use cases of the industrial metaverse, for example, must be considered differently than B2C use cases of the consumer metaverse. A regulatory approach that is orientated towards the B2C environment could hinder B2B use cases – i.e., precisely those use cases where Europe has a particularly good starting position.

It will therefore be crucial to keep the entire Virtual Worlds system in mind in any regulatory considerations and not to pick out individual specific sectors and areas of application. The entire holistic ecosystem must be considered.

For Europe to be sovereign in Virtual Worlds, it must be involved in shaping them from the outset and also make up for the omissions in digitalisation that have been made in recent years. As experience shows that companies in Europe must make do with less financial resources and human capital than in other regions of the world, it must be in Europe's interest to play an active role in developing Virtual Worlds through innovation partnerships and interoperability. The aim should therefore not be regulation, but active international cooperation for openness, standards and interoperability.

Bitkom represents more than 2,200 companies from the digital economy. They generate an annual turnover of 200 billion euros in Germany and employ more than 2 million people. Among the members are 1,000 small and medium-sized businesses, over 500 start-ups and almost all global players. These companies provide services in software, IT, telecommunications or the internet, produce hardware and consumer electronics, work in digital media, create content, operate platforms or are in other ways affiliated with the digital economy. 82 percent of the members' headquarters are in Germany, 8 percent in the rest of the EU and 7 percent in the US. 3 percent are from other regions of the world. Bitkom promotes and drives the digital transformation of the German economy and advocates for citizens to participate in and benefit from digitalisation. At the heart of Bitkom's concerns are ensuring a strong European digital policy and a fully integrated digital single market, as well as making Germany a key driver of digital change in Europe and the world.

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