Finland’s Bold Move into the Metaverse: A Year in Review and Prospects for 2025

Stereopsia – Brussels, December 9th 2024

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Other countries are going ahead

Other countries

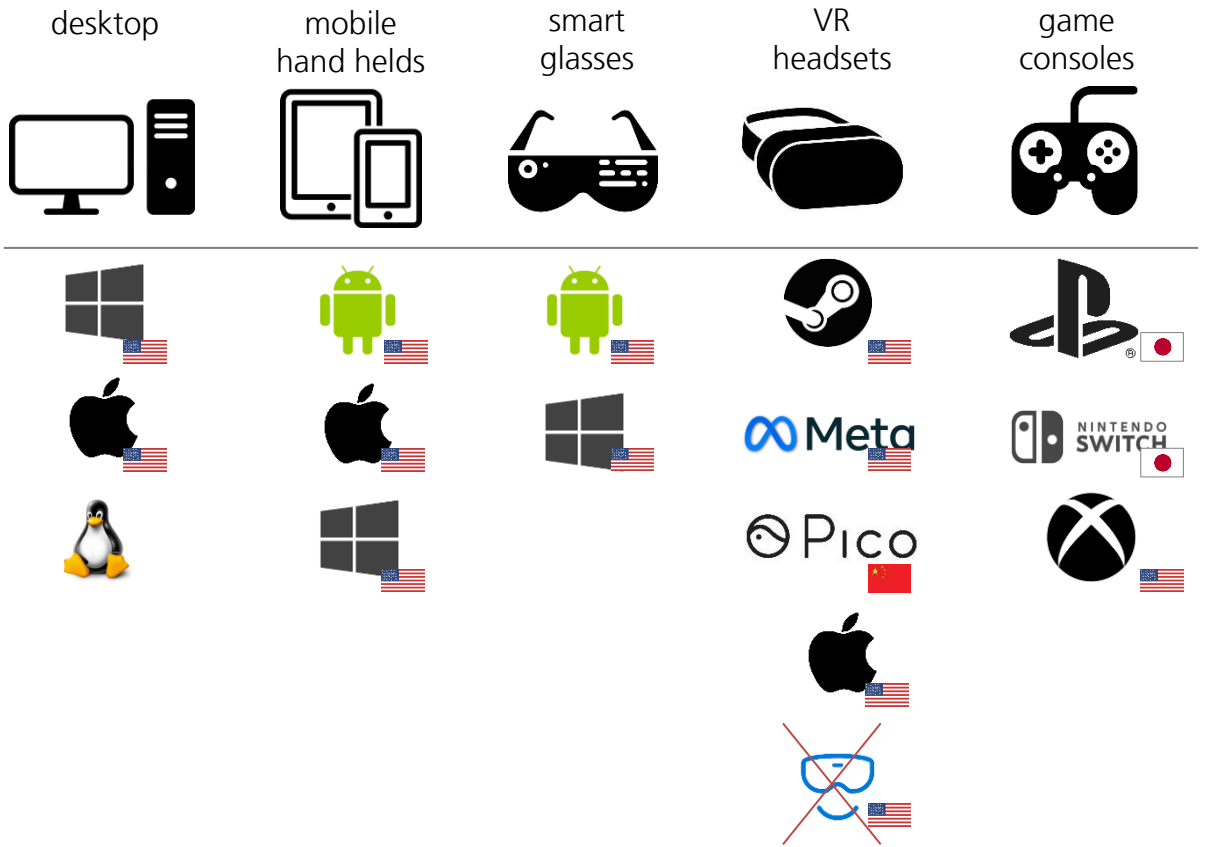
- identified economic & societal potential and
- started initiatives
- some of the strategies appear ambitious to almost aggressive

Europe finds itself only at the sideline of a fight for global XR ecosystems.

problem:

- Europe does not provide a huge, global platform provider
- platform providers aim at vendor lock-in

⇒ standardization and regulation could be valid strategy for us



Is there any opportunity for us?

Analysis by EY and NOKIA (2023)

Who will drive the industrial metaverse?

It will not only be

1. the big tech companies (1st place) and
2. existing metaverse platforms (2nd place) that will drive future metaverse developments,

but also

3. industrial equipment suppliers (3rd place),
4. manufacturers of enterprise software (4th place) and
5. game developers (5th place).

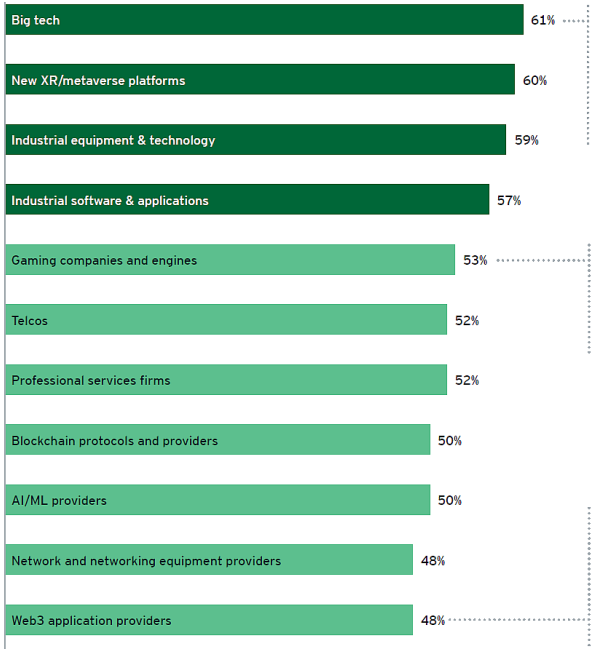
These are industries that have a strong position and tradition in Europe.

⇒ **we can be the drivers**

Key Players in driving the advancement of the industrial metaverse

EY NOKIA

https://www.nokia.com/metaverse/industrial-metaverse/the-metaverse-at-work-research/



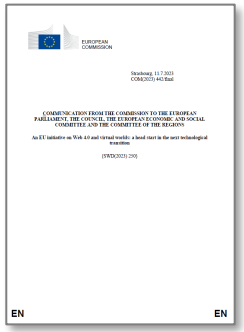
Big tech companies are already engrained in the infrastructure of the metaverse through their existing cloud services and visualization tools, while also investing heavily to create new metaverse platforms and AR/VR headsets.

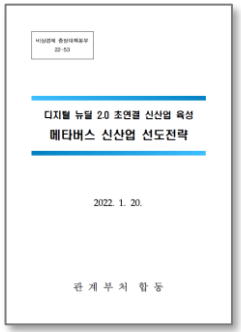
Gaming companies and engines play a key role in the early metaverse by providing the technology needed to make high-fidelity virtual environments like digital twins. Many of the features needed for the industrial and enterprise metaverses like advanced 3D graphics and physics engines have been in development for over a decade in gaming companies.

Web3 application providers, while not ranked as highly as other players, are still viewed as important by nearly half of respondents for their ability to handle many of the new challenges metaverse technology will bring. Challenges in user authentication across companies, for example, can be solved with the use of decentralized identities (DIDs)

countries with Metaverse strategies, December 2024


元宇宙产业创新发展三年行动计划
（2023—2025 年）





Global Metaverse Strategies Comparison

	strategy goals	target groups	strategy key elements	discrete measures
China	▪ world-leading industrial mature metaverse ecosystem ▪ Metaverse as an important growth pole of the digital economy ▪ establish three to five companies with global influence ▪ establish a number of specialised SMEs ▪ establish three to five industrial development clusters ▪ establish yuan / renminbi universe ▪ secure and efficient governance system for the metaverse	▪ industry ▪ public administration ▪ society	▪ upgrade key technologies ▪ Promote an industrial ecosystem ▪ enable the industrial metaverse ▪ strengthen the industrial base (incl. standardization)	▪ metaverse business parks ▪ MV infrastructure ▪ MV standardization agencies ▪ create MV best practices ▪ create MV applications for digital life
Dubai	▪ turn Dubai into one of the world's top 10 metaverse economies ▪ turn Dubai into a global hub for the metaverse community ▪ attract more than 1,000 companies ▪ support more than 40,000 virtual jobs by 2030 ▪ foster innovation; promote advanced ecosystems ▪ foster talent ▪ invest in future capabilities ▪ create new governmental work models	▪ tourism ▪ education ▪ government services ▪ retail and real estate ▪ [health care]	▪ XR and MV technologies ▪ foster MV innovation and economic contribution ▪ cultivate MV talent through education and training ▪ develop MV use cases and applications in Dubai government ▪ Adopting and scale globally ▪ Dubai as the "crypto-capital" of the world ▪ UAE as a "test bed" for new technologies	▪ over fifteen initiatives and strategies were announced in the 2022 assembly ▪ MV virtual embassy ▪ Emirates Airlines training in the MV
European Union	▪ boost the EU's technological capabilities ▪ accelerate the uptake of new business models and solutions ▪ support access to finance to support creators and to scale up innovative business models ▪ support societal progress and improve public services	▪ industry ▪ creative industry ▪ society / consumers	▪ foster a supportive business environment; support SMEs, start-ups ▪ Interoperability, standardisation, open standards and interfaces ▪ support open-source community ▪ build a talent pool of virtual world specialists ▪ empower and protect children in virtual worlds ▪ EU's robust legislative framework ▪ IP protection	▪ skills development for MV technologies (Digital Europe programme) ▪ guiding principles for virtual worlds through citizens' panel ▪ research on impact of MV on people's health through Horizon Europe ▪ develop a MV toolbox for the general public ▪ create European initiaive on Virtual Worlds ▪ create EU partnership on virtual worlds ▪ analysis of XR & MV standards landscape
Finland	▪ establish Finland as a leading architect and enabler for the Metaverse ▪ Finland to be considered as a benchmark society ▪ attract major foreign direct investments in all parts of the Metaverse value chain ▪ avoid domination by a single company or country	▪ society ▪ healthcare ▪ industry	▪ Finish vision, values and strengths ▪ boost economic growth ▪ cross-boundary collaboration ▪ education for the Metaverse ▪ marketing and sales on a global scale ▪ advance metaverse research	▪ Metaverse in Action Program (however just recommendations!): o support technology enablers o create / suport business Networks o showcase industrial Metaverse o showcase Metaverse society o showcase Metaverse healthcare
Japan	▪ respond to rapidly growing demand for digital transformation (DX) for enterprises and government agencies ▪ enable interoperability and collaboration between Metaverse platforms ▪ serve as new social infrastructure for enterprise DX and employee experience (EX) transformation ▪ promote metaverse business ▪ expand the "*Japan Metaverse Economic Zone*" globally ▪ respond to MV risks	▪ society / consumers ▪ government services ▪ enterprises	▪ agreement of numerous companies using their respective mature technologies to create an open Metaverse infrastructure supporting authentification, digital twins, NFTs, etc. ▪ analysis by the "*Study Group on Utilization of Metaverse, etc. for the Web3 Era*" established by the Ministry of Internal Affairs and Communications	▪ create Metaverse economic zone „Ryugukoku" ▪ media conference
Saudi Arabia	▪ gaming and e-sports market: US$ 13.3 billion to gross domestic product (GDP) and 39.000 jobs by 2030 ▪ create digital MV twin of futuristic megacity NEOM	▪ e-games, e-sports ▪ real estate ▪ society / consumers	▪ MV is key part of Vision 2030 ▪ launch of national „*Gaming and e-Sports Strategy*"	▪ the US$ 500 billion futuristic megacity NEOM shall have ist own metaverse ▪ investment in metaverse gaming
South Korea	▪ take the upper hand in the global metaverse market (5th largest market share by 2026) ▪ train metaverse experts (total of 40,000 people by 2026) ▪ nurture metaverse service providers (220 companies by 2026) ▪ discover metaverse best practices (total of 50 cases by 2026)	▪ society / consumers ▪ government services ▪ enterprises	▪ create world-class metaverse platform ▪ create and support MV ecosystem ▪ train Key players in the metaverse era ▪ nurture specialized corporations that could ▪ lead the metaverse industry ▪ build an exemplary metaverse world	▪ metaverse platform of the city of Seoul ▪ diverse types of funds to be provided ▪ "*Expanded Virtual World*" marketing campaign ▪ K-Metaverse pavillon: further showcases

Finland seeks to become metaverse global leader by 2035

Core Principles:
Finnish values, such as collaboration with other nations and leveraging its geopolitical positioning, Inclusivity, Ethics, and Digital Rights

3 key sectors from which to start:
- Industrial
- Healthcare
- Social Interaction

Action Plans:
The report presents actionable steps across various categories, including
- technology enablers,
- business networks,
- metaverse society,
- metaverse health, and
- industrial metaverse.

Strategies:
include setting up research consortia, promoting business cooperation, talent attraction, organisational participation, and regulatory frameworks for metaverse technologies.

Finland

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EU Strategy on „Virtual Worlds“

The European Commission have adopted a strategy on Web 4.0 and virtual worlds to steer the next technological transition and ensure an open, secure, trustworthy, fair and inclusive digital environment for EU citizens, businesses and public.c administrations.

3.1. People and skills

- 3.1.1. Building a talent pool of virtual world specialists
- 3.1.2. Virtual worlds toolbox for the general public
- 3.1.3. Empowered and protected children in virtual worlds

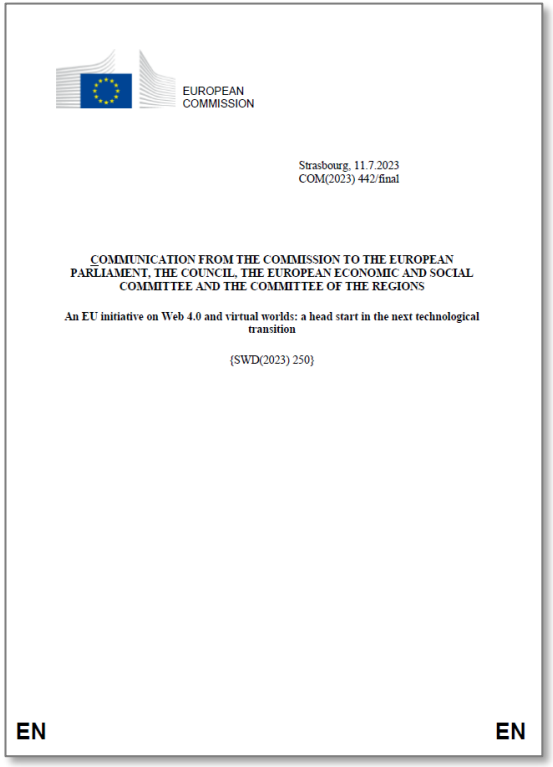
3.2. Business: supporting a European Web 4.0 industrial ecosystem

- 3.2.1. Boosting the EU’s technological capabilities
- 3.2.2. Accelerating the uptake of new business models and solutions
- 3.2.3. Fostering a supportive business environment

3.3. Government: supporting societal progress and improving public services

3.4. Governance

- 3.4.1. Governance at the EU and global level
- 3.4.2. Monitoring the development of virtual worlds and Web 4.0



EUROPEAN COMMISSION

Strasbourg, 11.7.2023
COM(2023) 442/final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

An EU initiative on Web 4.0 and virtual worlds: a head start in the next technological transition

{SWD(2023) 250}

EN EN

Other nations' metaverse strategies

Aim of the strategy:

- better respond to disruptive innovation and emerging new technologies, and be prepared for the future
- 13 new projects leveraging virtual worlds in the health, tourism, and education industries.
- Aside from merely sinking in the funds, the Ministry of Science added startups would also receive technological and regulatory support in order to thrive.
- The Ministry announced that it would also invest KRW40 billion (US$30 million) to fund smaller firms dabbling in virtual world projects. The ministry said this would be used to urge the smaller firms to pursue mergers and acquisitions that will strengthen the local ecosystem.
- announced work on Metaverse Seoul, a replica of South Korea's capital city, which is expected to be completed by 2026. According to the disclosure, the move is designed to expand the city's public services into virtual worlds, allowing avatars to access tax offices and counseling facilities.

South Korea

Pan-government strategy on metaverse as part of Digital New Deal 2.0 initiative. It focuses on four main subjects:

1. First is to reinvigorate the metaverse platform ecosystem, and foster an environment for the metaverse platforms to grow.
2. Second is to nurture experts and talent in the metaverse field, and providing people with opportunities to access metaverse without regional restrictions, and to participate in a variety of metaverse events.
3. Third is to nurture leading companies specialized on metaverse. To this end, metaverse infrastructure like metaverse demonstration facilities, and diverse types of funds will be provided.
4. Last is to create an exemplary metaverse world.

Japan

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Agreement on the creation of the "Japan Metaverse Economic Zone"

1. Background and Purpose of the Basic Agreement
2. "RYUGUKOKU (TBD)" is a Metaverse infrastructure with a Worldview
3. Three solutions for the promotion of DX and EX
   a) "AUTO LEARNING AVATAR" (hereafter ALA)
   b) "PEGASUS WORLD KIT" PWK)
   c) "MULTI MAGIC PASSPORT" (MMP)
4. Plans for future consideration

Japan Government Metaverse Statement: Interim summary of the study group on utilisation of the metaverse, etc. for the Web3 era

(1) issues for improving user convenience, such as how the avatar of the metaverse should be

(2) issues for business development for each use case

(3) the impact of the increased use of the metaverse

Creation of the Japan Metaverse Economic Zone:

Many Japanese tech and finance giants, including Mizuho Financial Group, Sumitomo Mitsui Financial Group, and Mitsubishi UFJ Financial Group, have signed an agreement to form this innovative platform.

- The idea is to power Japan through the development of next-generation games. Companies will use their respective technologies and areas of expertise to design the social infrastructure for the metaverse.
- Areas of focus will include enabling interoperability, gamification, fintech and information communications technology (ICT).

Japan Government Metaverse Statement:

Usability, accessibility and social aspects

Intellectual Property Promotion Plan 2022"

- Within its "Top 10 IP Strategy Measures," a primary emphasis was placed on the need to adjust to rapidly emerging technologies, particularly the metaverse, NFTs, and generative AIs. A key component of this visionary strategy is the planned development of guidelines addressing both content-related and inherent legal challenges of the metaverse.

The strategy aims to build on Dubai's achievement of attracting more than 1,000 companies in the fields of blockchain and metaverse. It also promotes Dubai's ambitions to support more than 40,000 virtual jobs by 2030.

Central to this strategy is the establishment of Dubai as a global epicenter for metaverse activities, achieved through the cultivation of an innovation-friendly environment and the creation of a launchpad for metaverse-oriented ventures. The existing technological parks, incubators, and accelerators within the UAE will play a role in nurturing the growth of startups and tech companies focused on the metaverse domain, facilitating their engagement with a worldwide clientele.

Dubai

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4 key sectors, namely:

01 Tourism

02 Education

03 Government Services

04 Retail and real estate

China

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"Three-Year Action Plan for the Industrial Innovation and Development of the Metaverse (2023-2025)"

5 key tasks

1. Building advanced metaverse technologies and industrial systems
2. Cultivating a three-dimensional and interactive industrial metaverse
3. Creating immersive interactive digital life applications
4. Establishing comprehensive industrial support
5. Constructing a secure and trustworthy governance system

14 specific measures, each tailored to address unique aspects of metaverse development

4 major initiatives that span

1. key technological enhancements
2. ecosystem cultivation
3. industrial empowerment and
4. foundation strengthening

Standards Strategy China

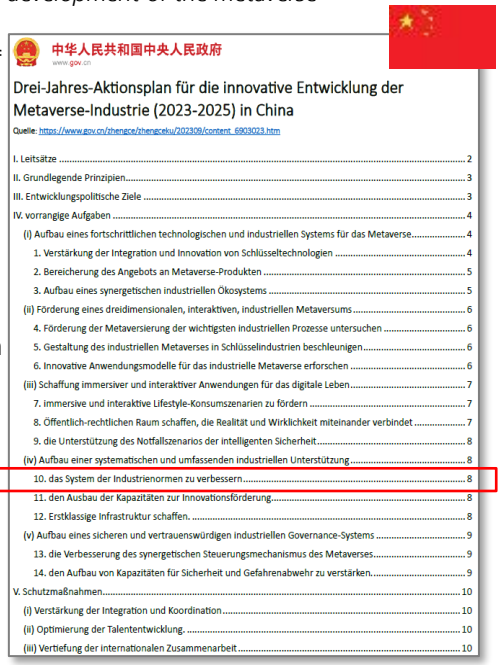
"China Standards 2035"

- 15-year plan to shape the future, to set the global standards for the next-generation of technologies.
- pushing domestic firms and experts to be part of the global effort to set standards
- research on China Standardization System, Method and Evaluation
- research on Supporting High-quality Development Standardization System
- research on Standardization Military-Civil Integration Development
- start with the national standards of **virtual reality technology**, integrated circuit design, intelligent health care and 5G key components, and gradually expand to the emerging areas of Internet of Things, photovoltaic, information equipment and other industries.

Metaverse Strategy China

"Three-year action plan for the innovative development of the metaverse industry (2023-2025) in China"

- Extensive publicising and promotion of standards and their implementation
- Identify the standardisation needs of the metaverse value chain
- Promote the establishment of metaverse standardisation organisations
- Encourage industry to actively participate in international standardisation work
- Organise and carry out the formulation and preliminary study of national standards, industry standards and group standards.
- Encourage application industries to promote the formulation of standards in specific areas
- focal points:
  - fundamental similarities
  - networking
  - security
  - trustworthiness
  - privacy protection
  - industrial applications


中华人民共和国中央人民政府

Drei-Jahres-Aktionsplan für die innovative Entwicklung der Metaverse-Industrie (2023-2025) in China

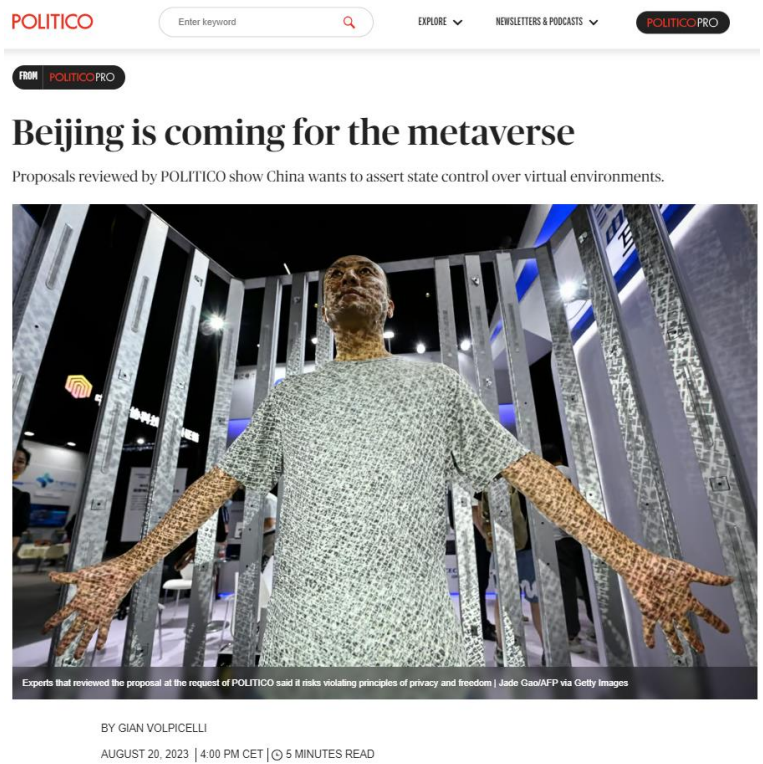
Quelle: https://www.gov.cn/zhengce/zhengceku/202309/content_6903023.htm

Chris Kremidas-Courtney, senior fellow at Brussels think tank „Friends of Europe“ and Lecturer for Institute for Security Governance (ISG) in Monterey, California.

He said that China plans to “*be the world leader in metaverse development*,” a technology that dovetails with its plan for a state-controlled digital renminbi. Standard-setting is the natural first step in that roadmap.

“If you want to seize the future, you set the standards for it”

Chris said.



POLITICO

Enter keyword

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NEWSLETTERS & PODCASTS

POLITICO PRO

FROM POLITICO PRO

Beijing is coming for the metaverse

Proposals reviewed by POLITICO show China wants to assert state control over virtual environments.

Experts that reviewed the proposal at the request of POLITICO said it risks violating principles of privacy and freedom | Jade Gao/AFP via Getty Images

BY GIAN VOLPICELLI

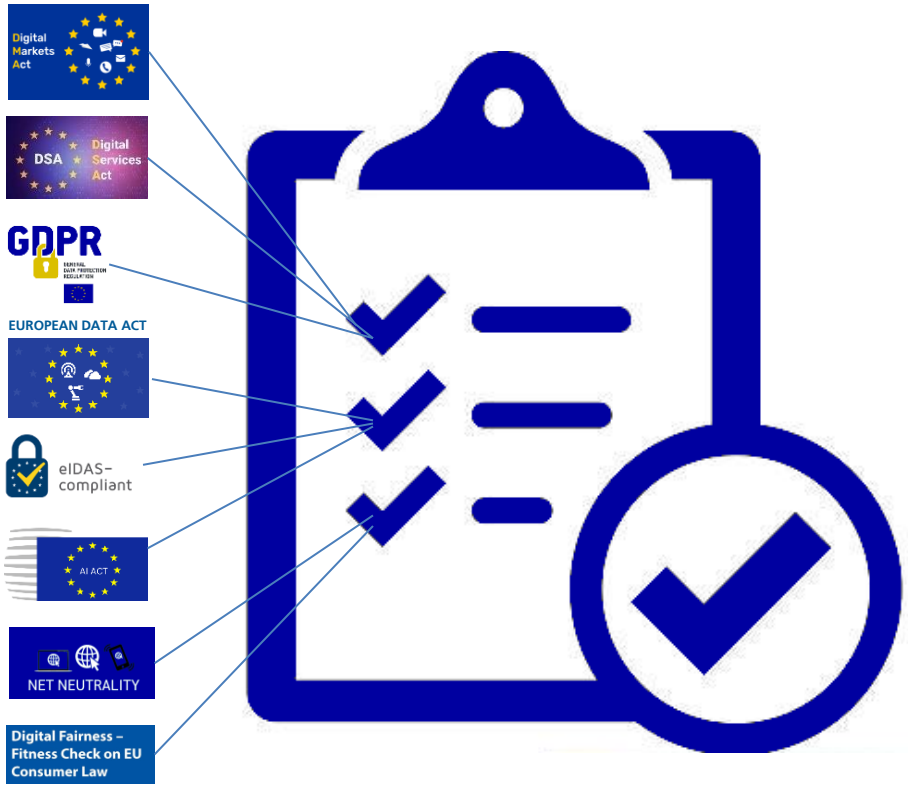
AUGUST 20, 2023 | 4:00 PM CET | 5 MINUTES READ

A EU regulation compliant Metaverse platform

Shall the metaverse be regulated?

- senseless question:
  it is already regulated
- we need a fully compliant
  MV platform

⇒ **We should take up the great challenge of building local platforms**



So what we should do now:

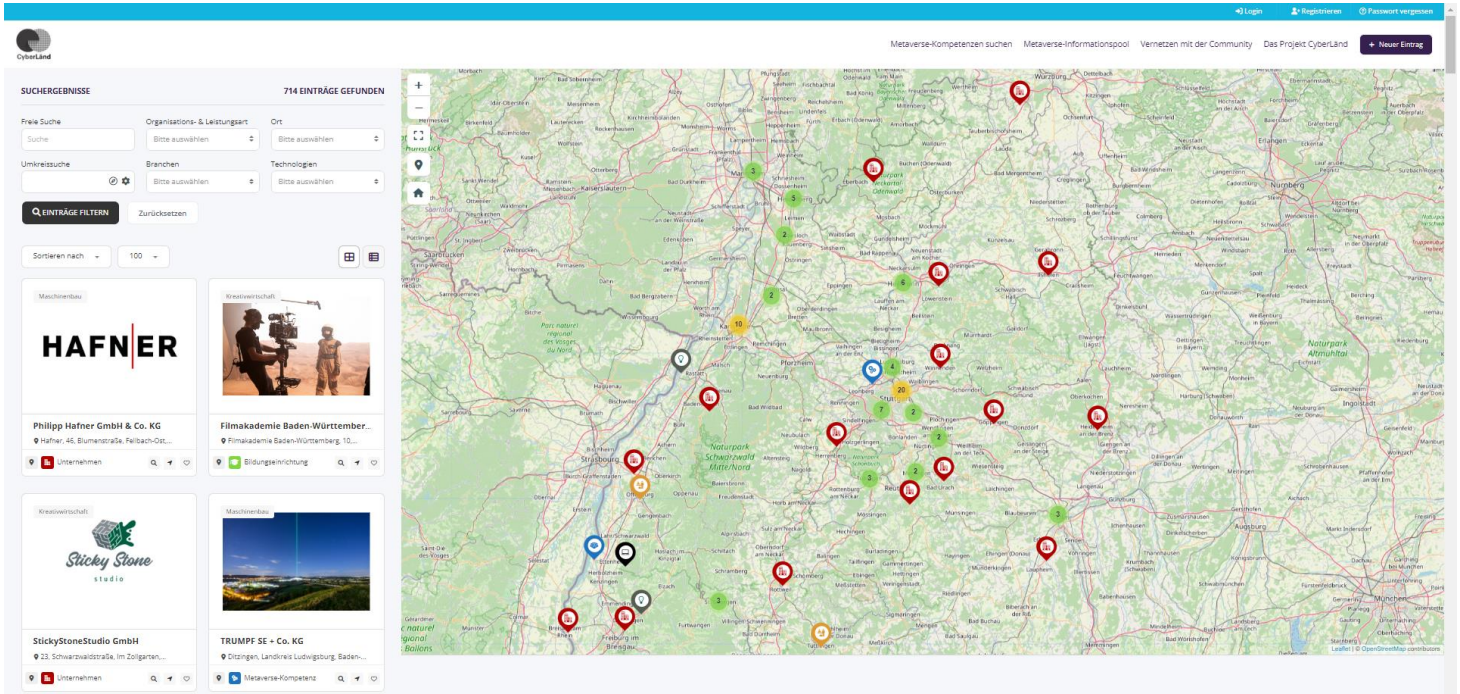
- network the community, build trustworthy cooperations and value chains
- identify the opportunities of metaverse by each relevant stakeholder
- build products, services, components for the metaverse
- enforce metaverse standardization –
  let's connect the metaverses to the our big data platforms that map digital twins
- fill the metaverses with our 3D contents: from our products, houses, factories, cities, …
  Of course with suitable IP protection and a good business model for us.
- build metaverse platforms fully compliant to EU regulations
- let's be the drivers of the metaverse - let's take great challenge of building local platforms

Baden-Württemberg Metaverse Competence Map: 700+ entries

entries are MV-related

- companies
- research labs
- consultants, attorneys
- educations & trainings
- events
- best practices
- …

⇒ we have a good stock of expertise



CyberLänd

Comparison of Metaverse Strategies Worldwide
EuroXR 2024 Conference – Athens, November 29th 2024

Thank you very much for your attention.

Prof. Dr.-Ing. Dipl.-Kfm. Christoph Runde

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