



# Normung frühzeitig mitdenken: Beispiel Metaverse

## Wirtschaftliche Ökosysteme und Selbstpositionierung

**Durchstarten mit Normung – zweite interaktive Konferenz zur Normungslehre**  
**25. + 26. September 2024, DIN, Berlin**

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

**Managing Director of Virtual Dimension Center w. V.**

**Project Lead „Living Lab XR-Interakt“**

**Founder of XR EXPO**

**Vice President „Industry & End Users“ of European Association for Extended Reality (EuroXR)**

**Chairman of Standardization Committee „eXtended Reality und Metaverse“ at DIN e.V.**

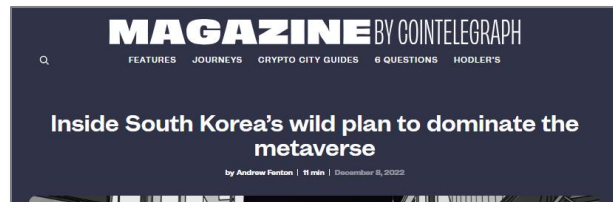
**Honorary Professorship Heilbronn University**



## Other countries are going ahead

Other countries

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



South Koreans are obsessed with technology. More than 80% of South Koreans play video games, and crypto adoption is high — both promising signs that its plan to dominate the Metaverse.

Share X Share Share

"Many years ago, it was AI. Now, it's the metaverse," he says. "From this perspective, [...] as long as you don't have a coin itself, they're willing to try a lot of these new technologies" — Doo Wan Nam from StableNode

**South Korea: The land of the metaverse**

If you had to pick the one country that's most primed to take advantage of the opportunities offered by the metaverse, South Korea would be high on the list.

It's a technology-obsessed country that eagerly adopts new products.

Dubai's Metaverse Strategy  
دبي  
المتaverse  
استراتيجية

## Dubai's Metaverse Strategy

The Crown Prince of Dubai and Chairman of the Dubai Executive Council Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, launched the Dubai Metaverse Strategy with the aim for Dubai to "become one of the leading Metaverse economies and a major hub for the global Metaverse community" by

01

Fostering Metaverse innovation and economic contribution

02

Cultivating Metaverse through education and research

03

Developing metaverse use-cases and applications in Dubai Government

04

Adopting, scaling, and globally advocating for safe platforms



## Metaverse Initiative by the Finnish Ecosystem

Virtual Potential into Real-World Impact

This is an initiative created by the Finnish Metaverse industry for itself. The project was initiated by Business Finland in order to understand better customer needs and business possibilities in the Metaverse and increase cooperation in the field. Initiative does not create binding obligations for Business Finland.

## countries with Metaverse strategies, September 2024



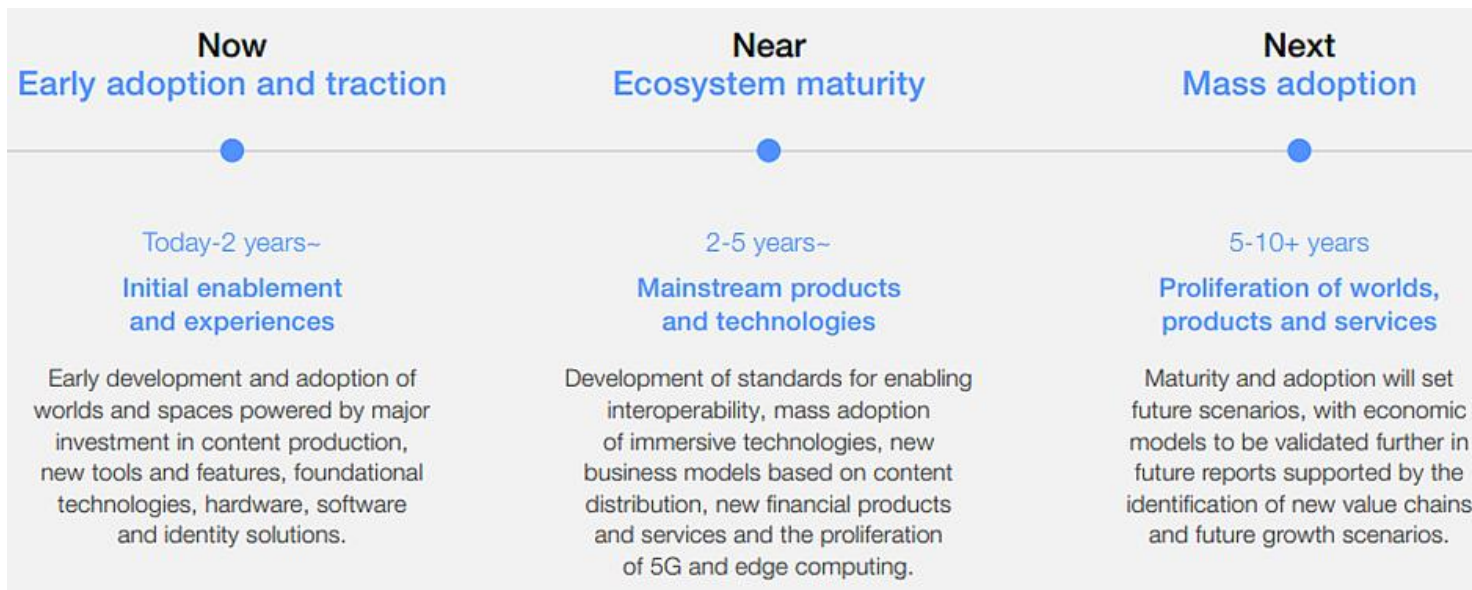


## Projected horizons of metaverse growth and adoption

Metaverses are  
in the making



<https://www.weforum.org/agenda/2023/02/metaverse-use-cases-industrial-consumer-enterprise/>



## Is there any opportunity for us?

Analysis by EY and NOKIA (2023)

Who will drive the industrial metaverse?

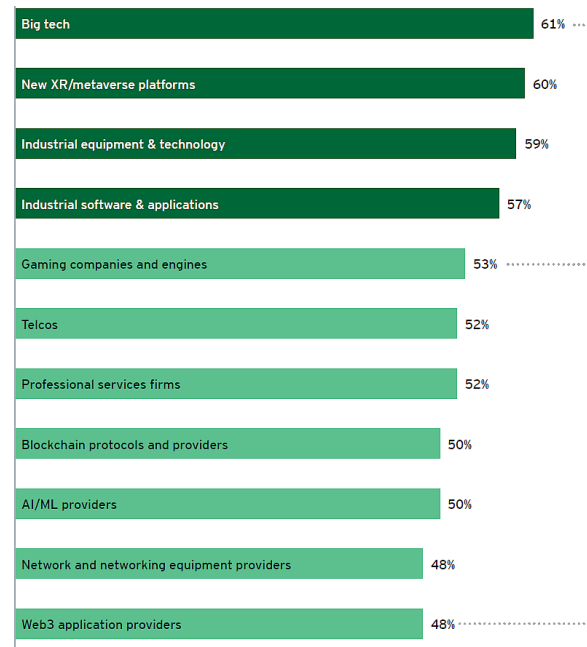
It will not only be

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 Germany.

⇒ **we can be the drivers**

## Key Players in driving the advancement of the industrial metaverse



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.

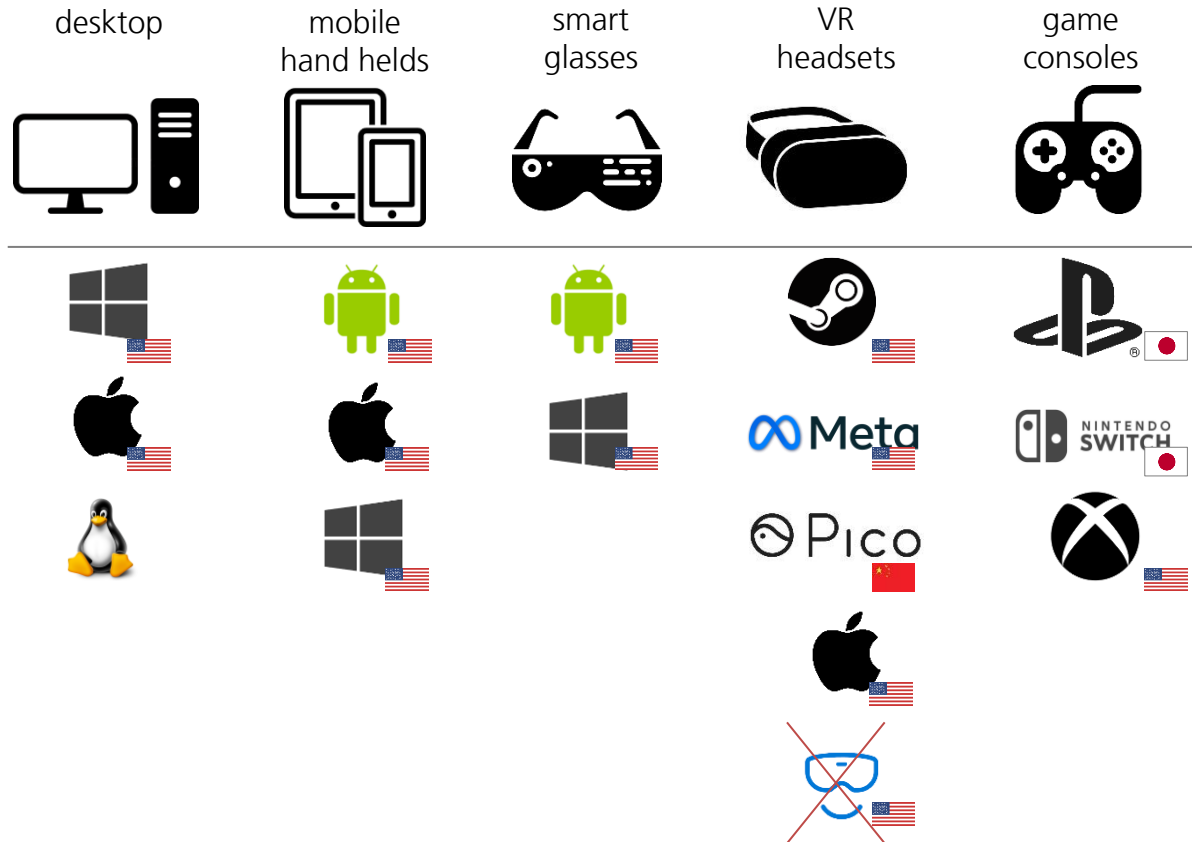
Web3 application providers, while not ranked as highly as other players, are still viewed as important by nearly half of respondents for their ability to handle many of the new challenges metaverse technology will bring. Challenges in user authentication across companies, for example, can be solved with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

## 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 options for us



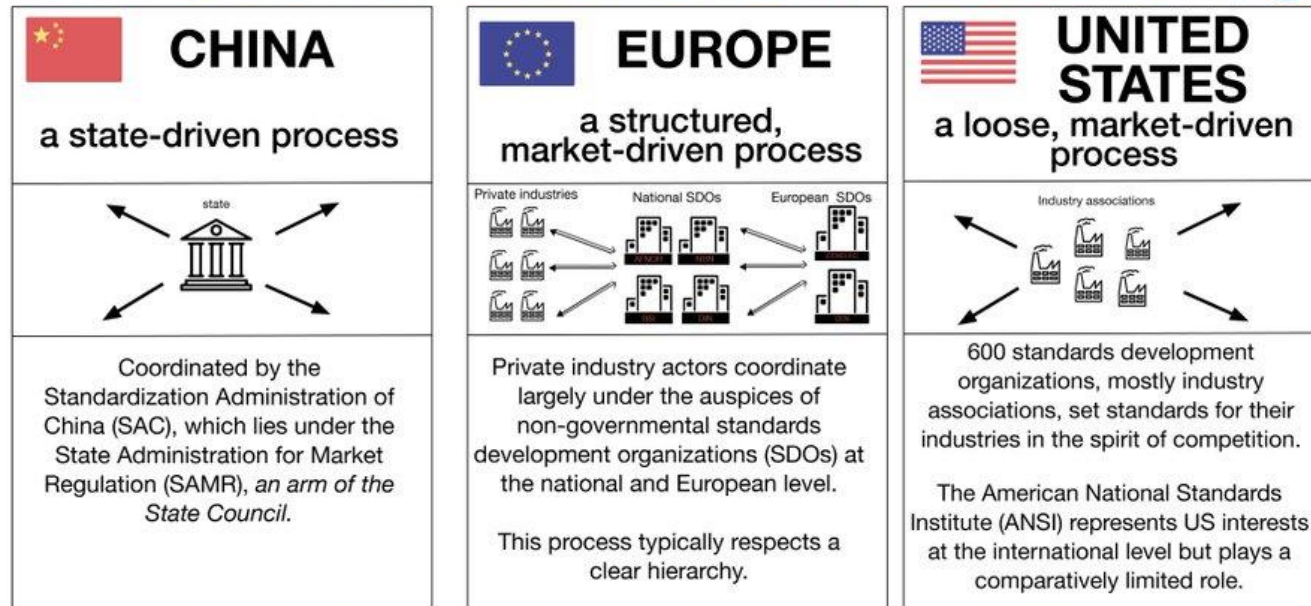
# Global Metaverse Strategies Comparison

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

## Standardization in the EU

- official bodies
- contribution from state and industry
- strong system and process
- considering all relevant stakeholders
- basis for regulation
- but: slow

## Setting standards in China, Europe and the US



Source: John Seaman, "China and the New Geopolitics of Technical Standardization", Notes de l'Ifri, Ifri, January 2020



*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.

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## 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

## 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





## Standardization

We still hold a strong position in official standardization organizations such as DIN, ISO, IEC, CEN, CENELEC.

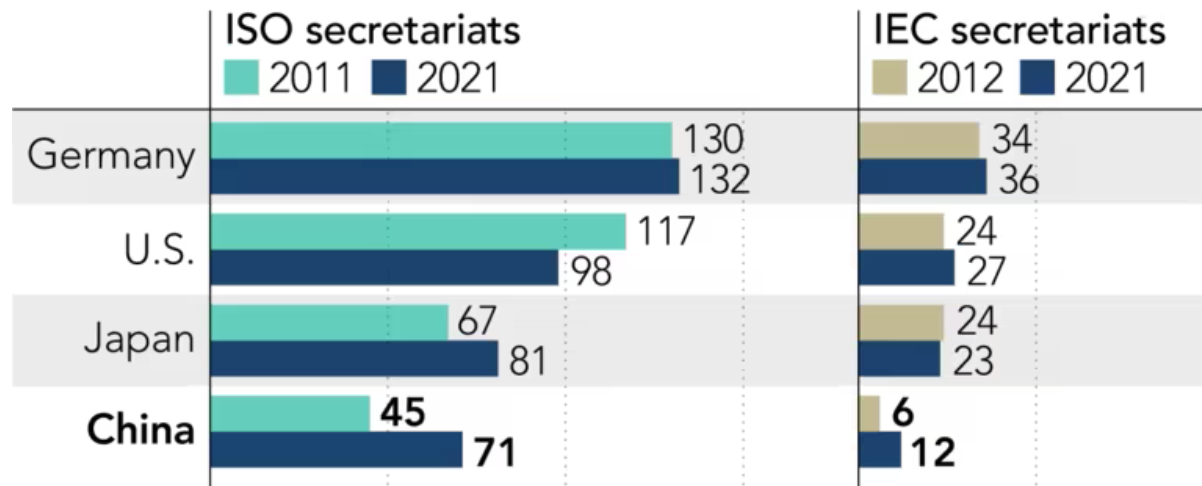
But:

- in-official organizations such as Metaverse Standards Forum act much faster
- China is catching up quick

⇒ **we should use our strong position to define the future of technology**

## China's growing clout in standardization organizations

(Number of secretariat positions by country)



ISO stands for International Organization for Standardization, IEC for International Electrotechnical Commission; includes twinned ISO secretariats  
Source: ISO, IEC, U.S. National Institute of Standards and Technology

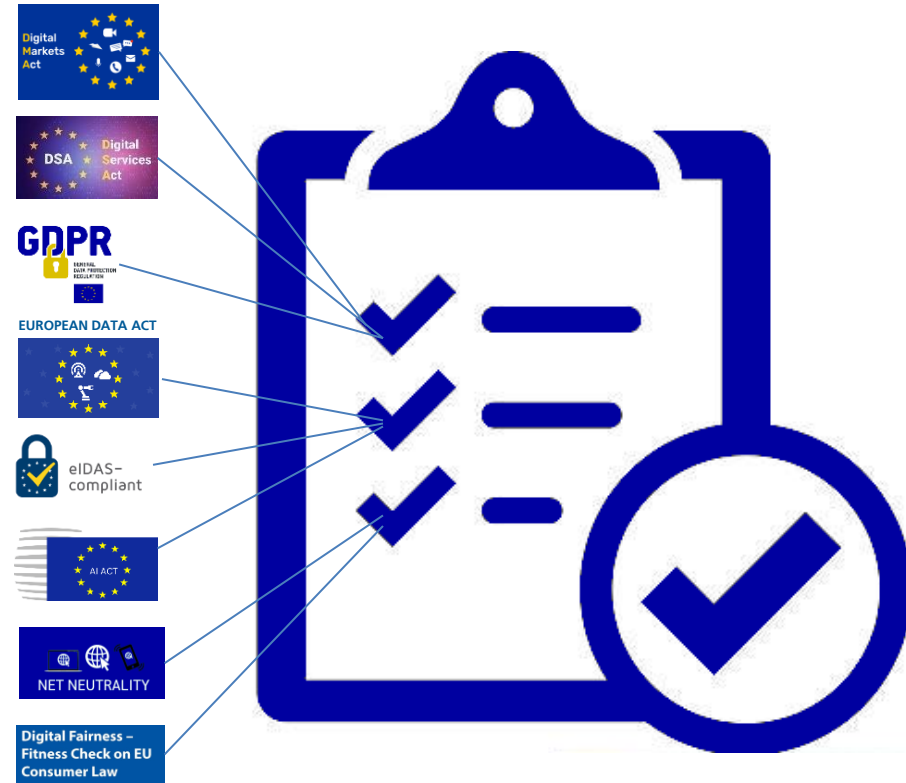


## A EU regulation compliant Metaverse platform

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**







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# **Thank you very much for your attention.**

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