



**XTIC**  
EXPERIENTIAL TECHNOLOGY INNOVATION CENTRE

# A perspective on **China's Metaverse Strategy**



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# Executive Summary

China's "Three-Year Action Plan for the Innovative Development of the Metaverse Industry (2023-2025)" reflects a state-driven, systemically integrated approach to building a next-generation digital economy. The strategy positions the industrial metaverse—rather than consumer entertainment—as the core driver of economic transformation. It seeks to fuse the real and virtual economies through advanced technologies such as AI, blockchain, cloud computing, virtual reality, and digital twins, aiming to strengthen national competitiveness and technological sovereignty.

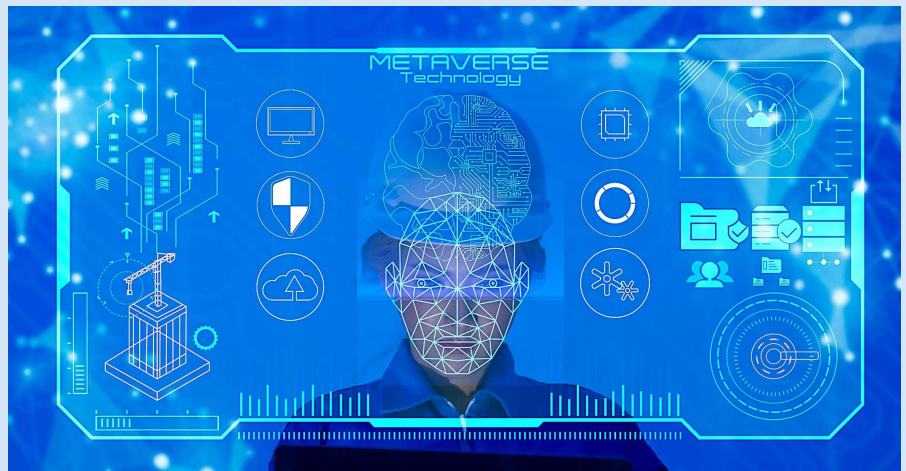
At its heart, China's approach blends centralized governance, industrial policy, and digital innovation.

The plan focuses on five pillars:

1. development of advanced technological and industrial systems,
2. promotion of an interactive 3D industrial metaverse,
3. creation of immersive digital life applications,
4. construction of systematic industrial support, and
5. establishment of secure and trustworthy governance systems.

Together, these reflect a comprehensive effort to integrate metaverse technologies within national strategic priorities such as 'Made in China 2025' and Digital China.

Key strengths include China's scale of industrial capacity, strong R&D infrastructure, and government coordination. By linking the



metaverse to manufacturing modernization and data-driven industrial processes, the plan aims to upgrade traditional sectors through digital twins, predictive analytics, and immersive collaboration. The creation of specialized zones, metaverse innovation parks, and open-source communities demonstrates China's capacity for rapid ecosystem formation.

However, the model faces weaknesses typical of state-led innovation systems—such as rigidity, limited creative freedom, and constrained international collaboration due to political sensitivities and data control requirements. Overemphasis on security and centralization may stifle bottom-up experimentation, crucial in content creation and global competitiveness.

China's opportunities lie in establishing global standards, shaping industrial ecosystems, and deepening South-South digital partnerships. As Western regulations (DSA- Digital Services Act, DMA- Digital Markets Act, AI Act- Artificial Intelligence Act, and MiCA- Markets in Crypto-Assets Regulation) evolve,

China can utilise its governance model to influence international norms. Its integrated infrastructure and pilot clusters can support large-scale deployment in education, healthcare, and smart cities.

The strategy must navigate geopolitical headwinds, technology export controls, and sustainability concerns. Global mistrust surrounding data governance may restrict adoption. In summary, China's metaverse plan represents a technological-industrial state project to consolidate digital power and global leadership. Success depends on balancing state control with creative flexibility—transforming industrial strength into global digital influence.

China's metaverse strategy demonstrates strong execution capability and industrial scale, but its reliance on advanced infrastructure and capital intensive technologies may limit accessibility for developing economies. Broader participation from the Global South will depend on the availability of more affordable, adaptable deployment models.

# Introduction



The eXperiential Technologies Innovation Center (XTIC) is established by IIT Madras, one of India's premier institutes. XTIC has recently constituted a committee to draft India's Metaverse Policy: the Metaverse India Policy and Standards (MIPS) Committee. This initiative brings together international standards agencies and various stakeholders to foster a global Metaverse that is pervasive, open, and inclusive.

The MIPS forum does not directly produce standards or policies. Instead, it coordinates resources and identifies needs to support the development of standards and policies within relevant organizations. This collaborative approach of all the stakeholders ensures that the evolving Metaverse ecosystem benefits from comprehensive and well-aligned guidelines.

MIPS has recently been very active in contributing to new standards in ITU as part of few study groups in the field of Metaverse.

MIPS committee was tasked to analyse Metaverse policy of various other countries before formulating our own. In this process, MIPS is creating our perspective on China's Metaverse policy to understand its vision and approach in depth. This will help us gain insights that can guide the drafting of a well-grounded Metaverse policy for India. We have several of our members from the MIPS committee that have contributed in creating this perspective.

The committee referred the definition and analysis of Metaverse from the ITU standards committee [1]

The committee analysed the policy of China published by the Government of China [2].



China's 'Three-Year Action Plan for the Innovative Development of the Metaverse Industry (2023-2025)' marks a strategic move to position the country as a global leader in the next-generation digital economy. The document, guided by the principles of technological sovereignty, industrial modernization, and global competitiveness, lays the groundwork for a 'Metaverse-powered' industrial ecosystem. Developed under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, the policy integrates state planning with market forces to accelerate industrial transformation and national digital capability.

## Summary or Highlights of China's Metaverse Policy (ref[2])

1. China treats the metaverse as a strategic component of the digital economy, with a primary focus on strengthening manufacturing through the integration of virtual and real worlds.
2. A national three-year action plan (2023-2025) sets clear goals for technology breakthroughs, scalable applications, and globally competitive metaverse firms and clusters.
3. Priority is given to core technologies such as AI, blockchain, XR, digital twins, cloud computing, simulation engines, and advanced chips.
4. Digital twins are deployed across factories, production lines, infrastructure, and cities to improve efficiency, planning, and decision-making.
5. Key industries including automotive, aerospace, electronics, energy, steel, and equipment manufacturing are targeted for rapid metaverse adoption.
6. The strategy expands metaverse use into culture, tourism, media, retail, education, healthcare, and public services.
7. Investment focuses on next-generation networks, high-performance computing, cloud-edge systems, and trusted data infrastructure.
8. Industrial ecosystems are strengthened through standardization, pilot zones, innovation parks, and support for leading firms and SMEs.
9. Governance emphasizes security, data protection, content regulation, ethical oversight, and risk control.
10. Talent development and international participation are promoted while safeguarding national strategic interests.



# Why did we study the strategy in detail and create our perspective?

This commentary is not an academic exercise but considered a very practical tool. It helps us in India as policymakers, businesses, and researchers understand global approaches to the Metaverse, compare strategies, and develop stronger and more context-appropriate policies in their own settings.

What we in India learn from the strategy:

- We learn, adapt, and improve policy and strategy design in our own contexts.

- It helps us identify best practices (what works well). China's policy gives us an excellent indication of how to integrate robust governance frameworks into a tech policy.
- As policies are not "one size fits all", we in India can ask ourselves "what can we adapt to our context". India might learn from China's state planning approach with market forces to accelerate industrial transformation.
- To provide insights for future international cooperation with other global forums.



- It helps us identifying Gaps and Risks for our own policy

Below is a detailed perspective that looks at its strengths, challenges, opportunities, and vulnerabilities.

## Strengths



China's metaverse strategy displays significant strengths across governance, industrial coordination, technological capacity, and long-term planning. The emphasis on the 'industrial metaverse' situates China's approach distinctively apart from Western models that prioritize consumer entertainment or speculative digital assets. This focus aligns with China's core strengths in manufacturing, supply chain integration, and infrastructural scalability. While industrial metaverse is key, China's strategy also talks about creating immersive and interactive applications for digital life that covers consumer use cases, and public industries like electricity, law, and educations.

The strategy's commitment to technological integration-spanning

artificial intelligence (AI), blockchain, cloud computing, and virtual reality (VR)-reflects an ecosystemic understanding of innovation. The coordinated development of 5G/6G, edge computing, and quantum-inspired computation highlights China's capacity for vertically integrated technology ecosystems. Unlike fragmented models in the West, this approach allows for end-to-end control of data, hardware, and infrastructure, strengthening digital sovereignty.

Please refer to Appendix A for a list of some leading XR/VR/MR companies.

Please refer to Appendix B for a list of prominent companies in AI/Blockchain/Cloud.

Institutionally, China's centralized planning enables efficient mobilization of public-private

partnerships. The policy encourages the formation of industrial consortia, metaverse innovation parks, and collaborative zones that blend state investment with enterprise innovation. This provides structural clarity for industries, accelerates the commercialization of R&D outputs, and fosters knowledge spillovers between academia and industry.

The state-led establishment of metaverse standards and intellectual property (IP) frameworks further enhances China's capacity to set global norms. By incorporating standardization and governance mechanisms early in the innovation cycle, China aims to reduce regulatory lag and ensure compatibility between domestic and international markets.

# Challenges

Despite its strategic coherence, the plan faces internal limitations that may impede its realization. First, the over-centralized nature of governance may restrict organic innovation. While top-down directives facilitate rapid industrial mobilization, they may suppress bottom-up creativity—a critical ingredient in digital innovation ecosystems. Bureaucratic rigidity could hinder adaptive policy responses to the fast-evolving metaverse landscape.

A second limitation lies in the potential overemphasis on industrial and infrastructural applications at the expense of creative and human-centered innovation. The metaverse's long-term vitality depends on participatory content creation, open innovation, and user agency—all of which require a relatively liberal ecosystem. China's stringent content controls and risk-averse culture may constrain grassroots innovation, limiting the diversity and global appeal of its metaverse products.

Third, the integration of data security with political control introduces compliance burdens for enterprises. The strategy's emphasis on 'security

first'—while justified within China's governance paradigm—may deter private investment and international collaboration. Multinational corporations may hesitate to engage deeply with China's metaverse ecosystem if data localization and censorship norms conflict with their global compliance requirements. It is essential to build a human centric metaverse. Interactions Design, agronomics of XR metaverse/devices are key to adaption.

Fourth, while China's metaverse policy is highly execution-oriented, its emphasis on large-scale infrastructure, advanced hardware, and centralized ecosystems creates entry barriers for the Global South. Capital intensity, limited interoperability, and constrained pathways for low-cost adoption risk excluding emerging economies from meaningful participation.

Measurable goals / metrics will have to be defined, else it will be hard to track progress and hold stakeholders accountable.

Metaverse capacity index(MCI) can be defined. MCI refers to various frameworks and initiatives designed to evaluate, measure, or index the

development, adoption, and infrastructure capabilities of the metaverse defined.

Defining other indices may be necessary as well.

The Whitepaper that XTIC published last year [3] refers to three different Metaverse Indices:

- 1) Ethical Metaverse Index that includes interoperability, content moderation and privacy,
- 2) Responsible Metaverse Index that includes global connectivity, particularly to the global south, innovation and creativity, diversion and inclusivity, and sustainability,
- 3) Transparent Metaverse Index that includes trustability and platform governance.

Furthermore, the absence of a clearly articulated intellectual property enforcement framework for virtual assets may generate uncertainty in cross-border transactions. While the document calls for IP protection, its practical implementation remains vague. This could slow the commercialization of creative content and limit foreign investor confidence.



# Opportunities

China's metaverse strategy opens unprecedented opportunities for economic transformation, industrial upgrading, and global leadership. The policy's alignment with the 'Made in China 2025' and 'Digital China' initiatives ensures coherence with national development agendas, amplifying its reach across sectors such as advanced manufacturing, education, healthcare, and smart cities.

The industrial metaverse provides a unique opportunity to digitalize China's manufacturing base. Through the integration of digital twins, IoT-enabled production systems, and immersive design platforms, industries can achieve higher productivity, predictive maintenance, and customized manufacturing. This could reposition China from a low-cost manufacturing hub to a high-value, innovation-driven economy.

Internationally, China's participation in shaping global metaverse standards—alongside the EU's GDPR, DSA, DMA, and AI Act frameworks—positions it as a potential norm-setter in digital governance. By promoting interoperability and ethical frameworks, China could enhance its soft power and build alliances in the Global South around shared digital infrastructure models.



The plan's inclusion of education, healthcare, and public administration as application domains also widens its social footprint. Virtual classrooms, digital twins for healthcare, and immersive training tools can bridge the urban-rural divide and improve service accessibility. If executed effectively, these measures could contribute to social equity and sustainable development.

Additionally, the establishment of metaverse science parks, innovation centers, and dedicated industrial clusters could attract global investment. Foreign firms seeking to access China's vast digital market may engage through joint ventures, bringing capital, expertise, and intellectual property to China's innovation ecosystem.

# Vulnerabilities

Despite its ambition, the strategy faces external and systemic threats that could undermine its success. Geopolitically, escalating technological rivalries with the United States and its allies may restrict China's access to critical hardware components such as advanced semiconductors and optical sensors. Such dependencies threaten the country's ability to maintain technological self-sufficiency.

Furthermore, the emergence of competing regulatory regimes—such as the EU's AI Act and the U.S. CHIPS

and Science Act—could fragment the global digital order. Divergent standards for data protection, algorithmic transparency, and content governance may create interoperability barriers for China's metaverse products in foreign markets.

Domestically, the sustainability of metaverse infrastructure raises energy and environmental concerns. High-performance computing, massive data centers, and continuous 3D rendering require significant energy inputs. Unless coupled with

green technology initiatives, these could contradict China's carbon neutrality commitments.

Socially, the rapid diffusion of immersive technologies could exacerbate issues of addiction, digital inequality, and surveillance anxiety. Without robust ethical safeguards, the metaverse could magnify existing societal disparities. Internationally, concerns about surveillance and data control might further isolate China's digital platforms from global trust networks.



# References

1. International Telecommunication Union. (2023). Metaverse: an analysis of definitions (ITU Technical Report ITU FGMV-02). [https://www.itu.int/dms\\_pub/itu-t/opb/fg/T-FG-MV-2023-02-PDF-E.pdf](https://www.itu.int/dms_pub/itu-t/opb/fg/T-FG-MV-2023-02-PDF-E.pdf)
2. VDC Fellbach. 2023. Metaverse-Strategie – China (English v01). Scribd. [https://www.scribd.com/document/759232410/Metaverse-Strategie-China-english-v01?utm\\_source=chatgpt.com](https://www.scribd.com/document/759232410/Metaverse-Strategie-China-english-v01?utm_source=chatgpt.com)
3. M.Manivannan et.al., Experiential Technologies In India, A White Paper And Skill Gap Analysis Of Experiential Technologies In India (2024), A Report Of The Industrial Consortium For XR In India Cave (Consortium For AR And VR Engineering) At IIT Madras, Mar 2024. <https://touchlab.iitm.ac.in/index.php/whitepaper-on-xr-in-india/>

## Appendix A

### Well-known XR / AR / VR / mixed-reality companies in China

1. ByteDance (via Pico)	14. Rayneo
2. Tencent Holdings Ltd.	15. LLVision
3. Alibaba Group (via Damo Academy etc.)	16. Shadow Creator
4. Huawei Technologies Co., Ltd.	17. EmdoorVR
5. Goertek Inc.	18. Ximmerse
6. Nreal	19. DPVR
7. Rokid Corporation	20. HiScene Information Technology Co., Ltd.
8. Pimax Innovation Inc.	21. Meizu Technology Co., Ltd.
9. XREAL	22. Hikvision Digital Technology Co., Ltd.
10. Lenovo Group Limited	23. OPPO (Guangdong OPPO Mobile Telecommunications Corp., Ltd.)
11. BOE Technology Group Co., Ltd.	24. Skyworth Digital Technology Co., Ltd.
12. iFlytek Co., Ltd.	25. Kuaishou Technology
13. Insta360	

# Appendix B

## List of prominent companies in AI / Blockchain / Cloud Computing

1	Cambricon Technology	AI
2	iFlyTek	AI
3	SenseTime	AI
4	Megvii Technology (Face++)	AI
5	Horizon Robotics	AI
6	Zhipu AI (Z.AI)	AI
7	MiniMax	AI
8	Baidu	AI / Cloud
9	Alibaba Group	AI / Blockchain / Cloud
10	Tencent Holdings	AI / Cloud
11	JD.com	Blockchain / Cloud
12	China CITIC Bank	Blockchain
13	Lenovo Group	Blockchain / Cloud
14	ARPA Chain	Blockchain
15	Baidu Xuperchain	Blockchain
16	Huawei Technologies	Cloud / AI
17	China Telecom	Cloud
18	China Mobile	Cloud
19	China Unicom	Cloud
20	NetEase Cloud	Cloud
21	Inspur Group	Cloud / AI
22	Kingsoft Cloud	Cloud
23	Ping An Technology	AI / Blockchain
24	WeBank (Tencent)	Blockchain
25	Xiaomi	AI / IoT



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