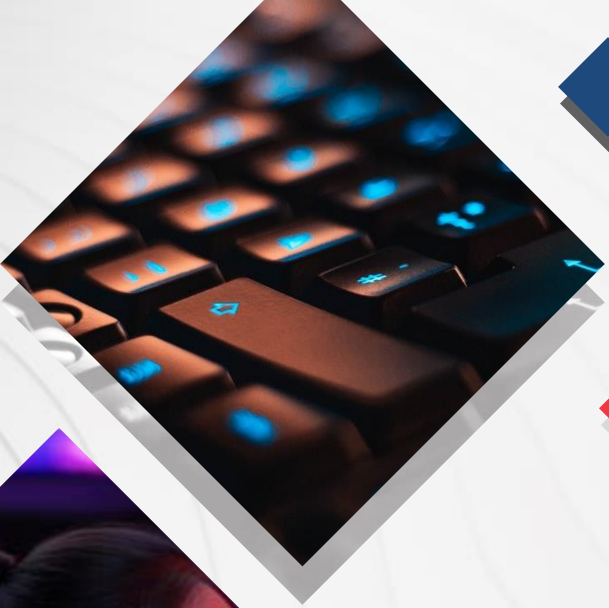




China's Metaverse and its retail applications

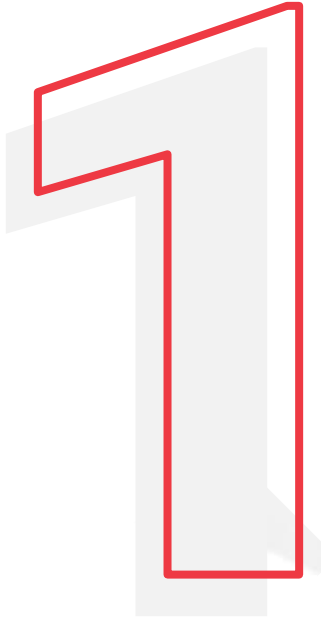
October 2022





CONTENT OUTLINE

1. **What is China's Metaverse?** **03**
2. **The Metaverse's technology** **11**
3. **The Metaverse's diverse retail applications** **25**
4. **Conclusion** **44**



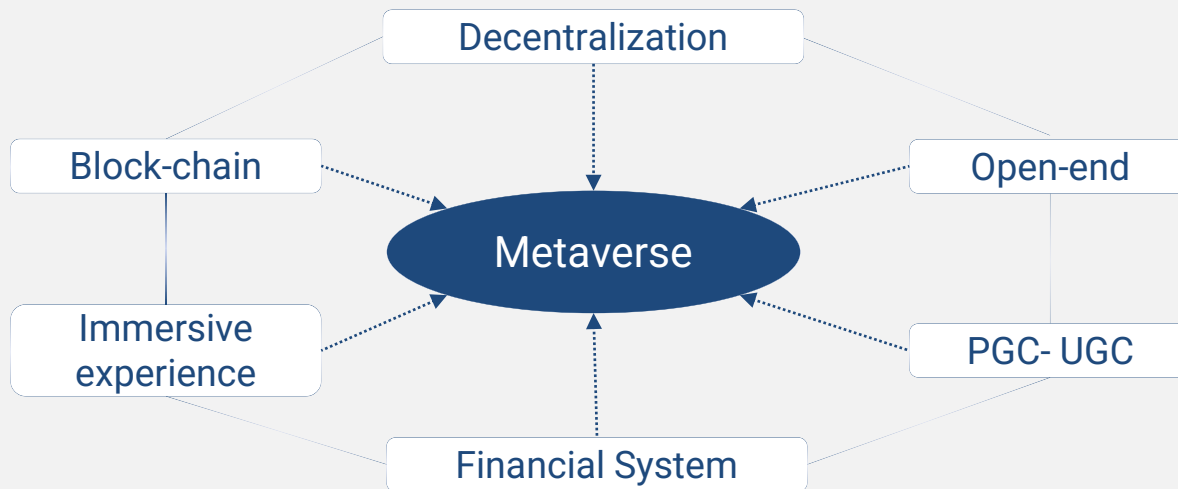
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What is China's **Metaverse**



What is the Metaverse?

The Metaverse is the virtual world hosted on the internet, interconnected via VR, AR, blockchain and other tech. As China invests and innovates in cutting edge technologies, meta-opportunities arise in a wide variety of industries.



Technology-enabled interoperability



Economic system backed by the blockchain composed of crypto-currencies and non-fungible tokens (NFTs)



Companies create independent platforms that users are free to navigate without restraint



The value created in the Metaverse can be exchanged for tangible assets

What is the Metaverse?

Thanks to the development of blockchain and VR technologies and token-based economics, video games are able to pioneer the concept of Metaverse.

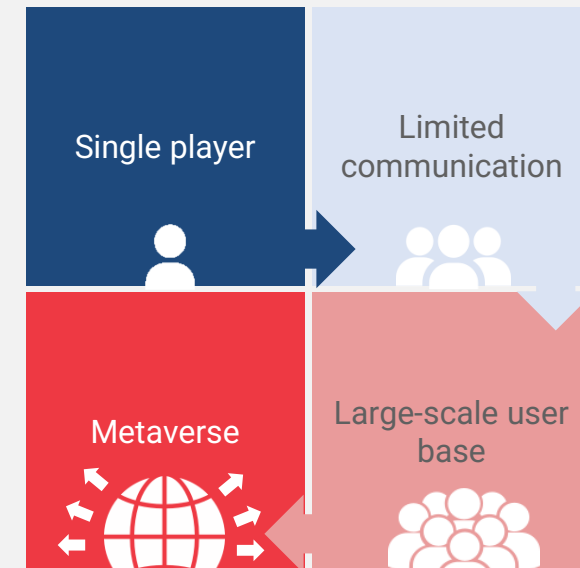
How Sanbox taps into China's Metaverse

Zhuhai Sandbox is a Chinese Metaverse game concept inspired by Roblox's business model. Content creators have the opportunity to develop apps and digital assets on the sandbox platform, powered by the UGC game engine. Assets and games can then be sold for digital currency.

Projects like these have been notoriously difficult to develop in China because all user-created content must comply with local regulations. Despite these hurdles, **Sandbox was able to raise over 300 million RMB through several investors.**



The game development stages of the Metaverse

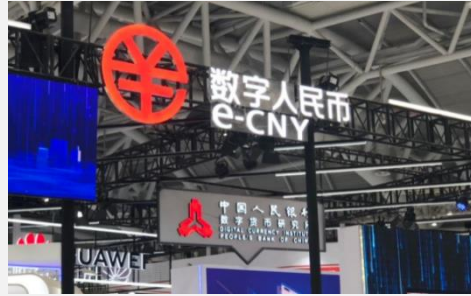


But the Metaverse goes far beyond just gaming

Today, a swath of new technologies enable the use of token transactions, virtual reality and AI far beyond just the world of gaming.

Finance

The Ministry of Commerce issued a document saying it will carry out the pilot of e-CNY. "The pilot of digital RMB will be carried out in Beijing Tianjin Hebei, the Yangtze River Delta, the Great Bay area of Guangdong, Hong Kong and Macao and the pilot areas in the central and western regions with conditions.



(Chubk, 2021)

Fashion

LineTex Digital is a company based in Hangzhou known for developing virtual try-on applications for retail. Having freshly raised 100 Million USD, the company is developing Metaverse technology for fashion designers and are planning to expand and open offices worldwide.



(Reuters, 2022)

Tourism

During the National Day holiday, Xi'an digital Lightyear Software Co., Ltd. and Datang sleepless city jointly announced the world's first Metaverse project based on the historical and cultural background of the Tang Dynasty - "Datang Kaiyuan."



(Biaoma, 2021)

Advertising

Ayayi is one of China's most popular virtual influencer. Virtual idols represent a safer alternative for brands to celebrities in China that can be caught in scandals. Major domestic brands like Florasis, Centaine and IDO have even developed their own "virtual ambassadors" to advertise their products.

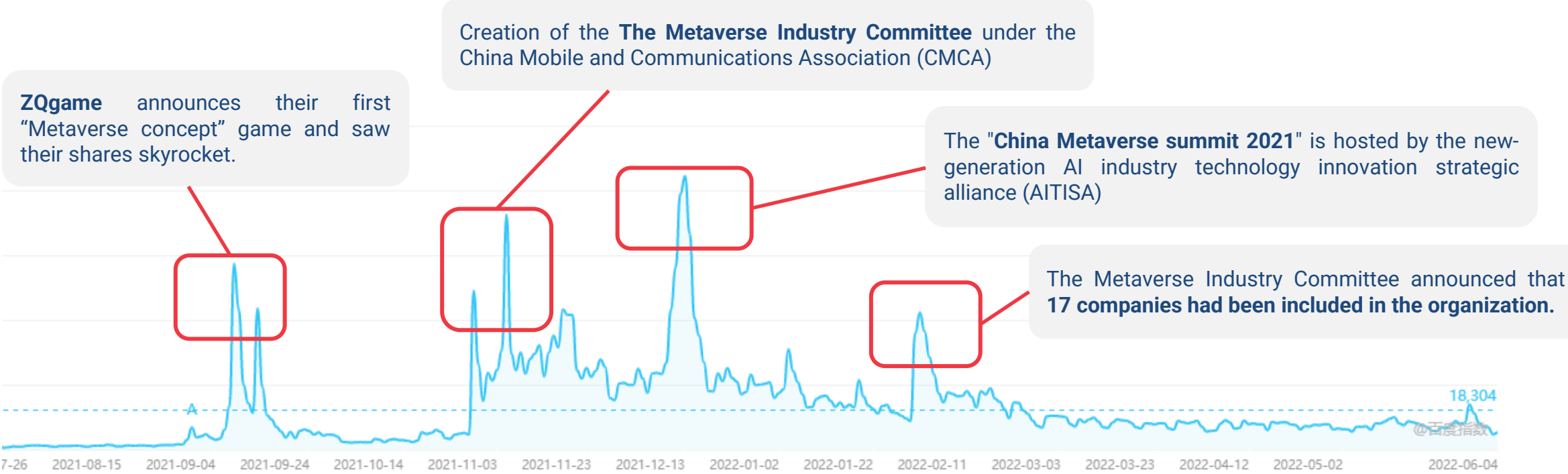


(Business Insider, 2021)

China's positive perception of the Metaverse drives interest

The China Metaverse summit 2021 gathers Metaverse innovators, entrepreneurs and scientists, aiming to provide the audience with a unique scientific and technological scene. In an IPSOS survey, 78% of Chinese people expressed a positive opinion of extended reality, 28% above the global average.

Search frequency of "Metaverse" on Baidu

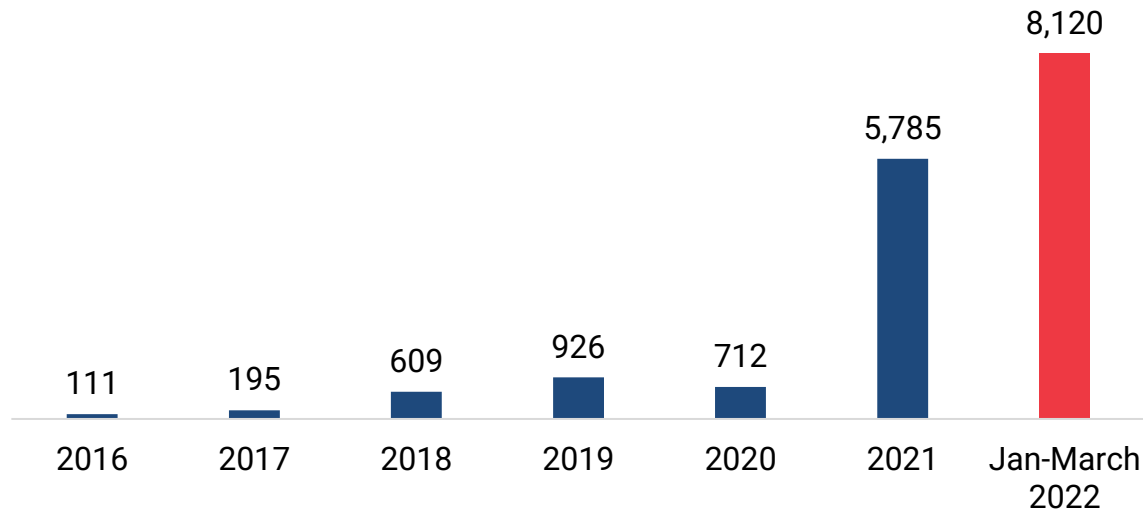


Source: Baidu Index

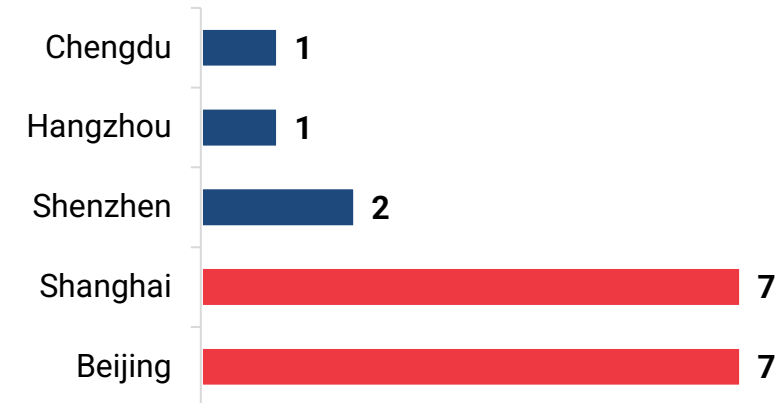
The Chinese government policies encourage Metaverse development

In China, the Metaverse industry is highly valued by governments at all levels and supported by national industrial policies. China has successively issued several guidelines to encourage the development and innovation of the Metaverse industry

Financing of China's Metaverse market
(Million USD, 2015-2022)



Number of Metaverse-related investment events by city
(January-April 2022)



More than 20 provinces have introduced Metaverse support policies

- In December 2021, the website of the Central Commission for Discipline Inspection and the State Supervision Commission released "How the Metaverse rewrites human social life."
- On January 4th, 2022, the People's Bank of China issued the financial technology development plan (2022-2025).
- On May 13th, 2022, the China Financial Information Center released a white paper on the study of the financial Metaverse.

Source: chyxx

Yet, China's Metaverse is limited by a strict regulatory environment

Strict government policies on cryptocurrencies and NFT trading limit the Metaverse's potential in China

The government is actively pushing for the E-CNY development



261 million personal digital wallets

87.5 billion RMB in transactions

China's 14th five-year plan aims at developing a digital economy in China by 2025. The digital Yuan (E-CNY) is one of the building blocks of this project.

Source: People's bank of China



China's digital Yuan wallet app

Two dates to remember for China's Metaverse regulations

- **September 24, 2021**, 10 government authorities jointly issued a notice to clarify that cryptocurrency is not a legal tender.
- **April 13, 2022**, industrial associations jointly issued the Proposals on Preventing NFT-related Financial Risks in order to prevent any financialization of NFTs in China.

Financial control by the government limits the Metaverse's potential

The Chinese government aims at keeping its financial sector heavily regulated to prevent "excessive speculation" and money laundering. In this aspect, NFTs in China, while allowed, **cannot be fractioned or resold**, making them only digital collectibles.

Trading cryptocurrencies is also banned in China except for the digital Yuan, which is indexed on the RMB and controlled by China's central bank.

How Chinese companies are investing in the Metaverse

Most of the major companies will invest in the development of software or hardware

Tencent has invested in many Metaverse companies around the world



- Tencent invested \$330 million in 48.4% stock right of Epic Games in 2012 as well as 51% of Roblox
- Tencent holds 49.9% share, and is currently the largest shareholder of Soul, a virtual social app.
- They also have secured 12% of Snap Inc. in 2017.

Huawei has the most profound in infrastructure and technical reserves



- Ranking first in global 5G standard core necessary patents (2020), Huawei had at the time registered 1970 patents
- In 2019, Huawei officially released Huawei VRGlass
- In 2021, Huawei officially launched its VR glass 6DOF game suite

ByteDance cuts into the Metaverse, design game + social networking through software and hardware



- ByteDance combines massive content streams, strong investment proficiency, outstanding R&D capabilities
- ByteDance purchased Pico for **5 billion RMB** and officially entered the VR industry
- In April 2021, ByteDance invested 100 million RMB in the Beijing Code Qiankun Technology Co., Ltd.

Alibaba has made online shopping and online payment mainstream



- Alibaba Cloud is the world's third largest public cloud service provider after Amazon and Microsoft.
- Alibaba announced to Nreal, a well-known AR glasses manufacturer, that it had completed a \$60million round C + financing

Source: Sina, Tencent

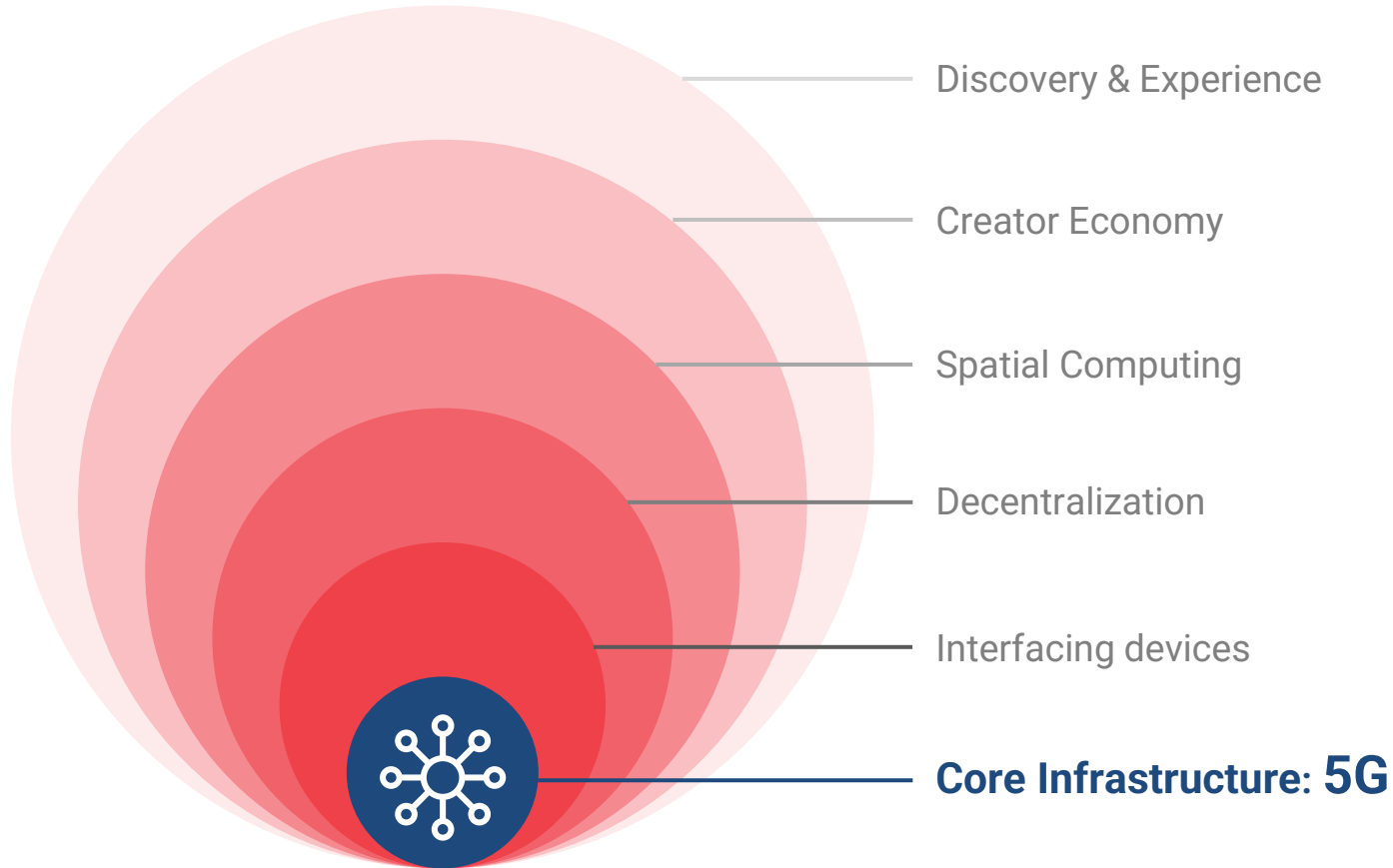
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The Metaverse's Technology

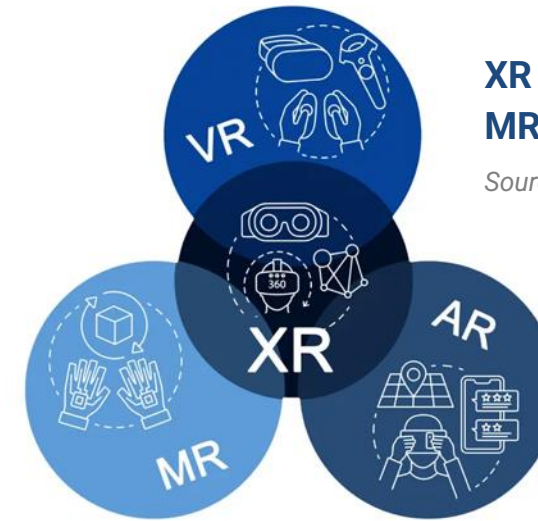


5G is foundational to the Metaverse's infrastructure

5G provides the low-latency, widespread coverage, and reliable connections, acting as a backbone that supports Metaverse functions like XR (extended reality) and cloud computing.



Source: Holonext



XR encompasses VR, MR and AR

Source: Envision IS

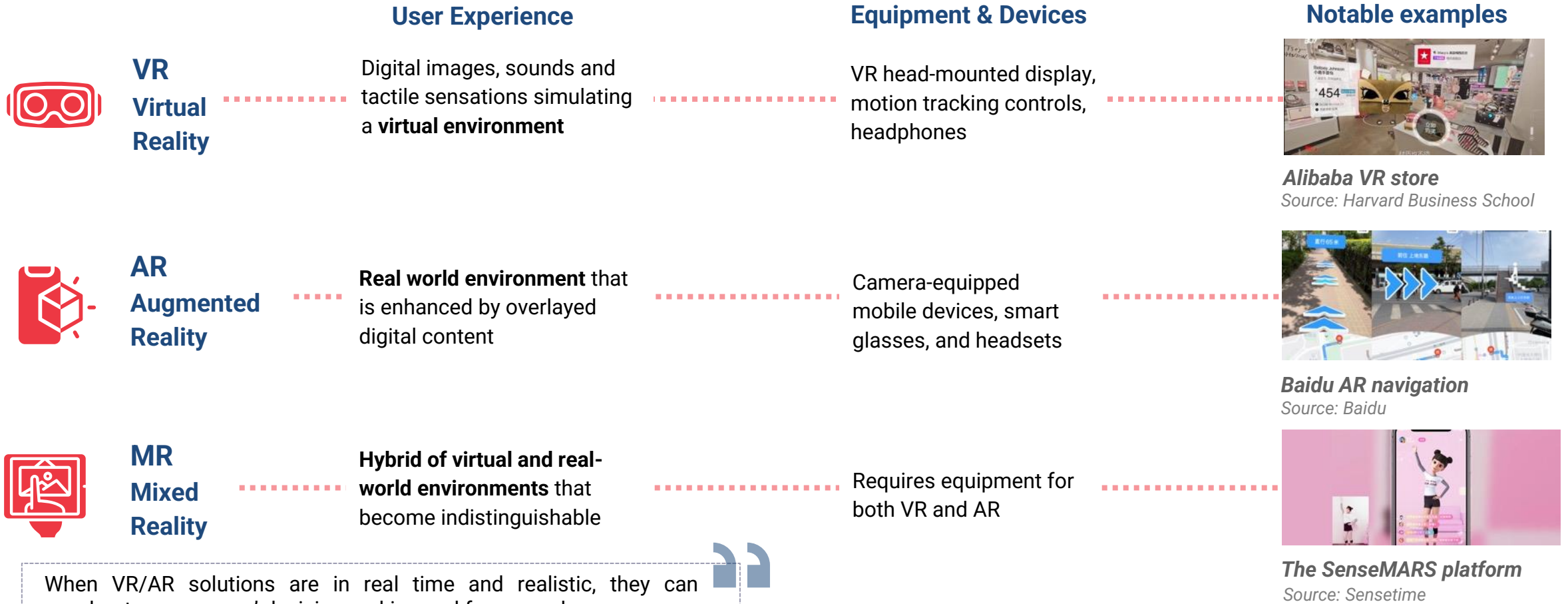
5G for XR in the Metaverse

XR will require better framerates, resolution, and processing power to truly provide an immersive experience for Metaverse users. This will require the low-latency, high speed, and wide coverage that 5G networks can provide.

Source: Tsinghua University

VR, AR, and MR: Interfacing with the Metaverse

Like a mouse and keyboard, special hardware such as VR headsets, smart glasses, haptic technology, and even neural interfacing are required to transport users to an immersive digital world.



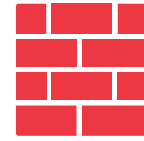
When VR/AR solutions are in real time and realistic, they can accelerate consumers' decision making and favor purchases.

Consumer goods MNC, Digital Topic Manager

Source: Experts' interviews by AYO

Cloud computing makes the Metaverse more accessible

Cloud storage, cloud computing, and cloud rendering will all be necessary in the Metaverse, considering the amount of storage and processing required to support a large-scale virtual reality environment.



Cloud removes hardware barriers

Cloud storage, computing, and rendering are key to **lowering the hardware requirements and entry barriers, maximizing the number of users that can participate.**

Source: Tsinghua University

Alibaba Cloud's Metaverse solution

Source: Alibaba Cloud



"XiRang", a Metaverse maintained by Baidu

Source: Baidu



Metaverse creators will partner with Cloud providers

- Cloud rendering can **remotely construct high quality Metaverse materials and digital content**
- **Data analytics and AI** can be powered by cloud computing.
- Cloud computing can provide **reliable wireless connectivity for VR** in the Metaverse.

Blockchain keeps the Metaverse's data decentralized

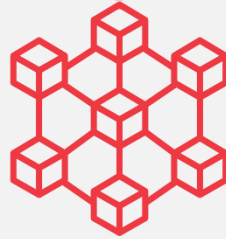
With the large amounts of transactions processed in the Metaverse, blockchain will be necessary to provide data security, decentralized storage, interoperability between systems, and support Metaverse currencies.

Basics of Blockchain

An immutable record of transactions.

Tracks ownership and trading of digital assets.

Networks can be Public, Private, Permissioned, or Consortium, determining **who can access the blockchain.**



Provides immediate and completely transparent **information, accessible to all members of the network.**

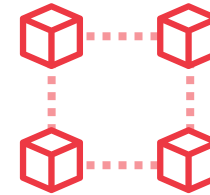
Source: IBM

Secure data storage

Vast volumes of sensitive info can be collected in the Metaverse. Blockchain security mechanisms will protect user data.

Data interoperability

"Cross-chain protocols" can be used to exchange data between blockchains in different virtual worlds. This allows users to migrate their Metaverse assets.



Ensuring data quality

Blockchain's permanent records allows users to audit and validate all transactions. This increases the effectiveness of AI/ML models that rely on high quality data.

Metaverse currencies

Cryptocurrencies, which exist only through the blockchain, will be core to the economy of the Metaverse.

Source: IEEE



The Blockchain-based Service Network (BSN) is China's state-backed Public blockchain network. They are developing a network unlinked to crypto currencies for international markets.

Source: SCMP

NFTs have a unique role in China as secondary trading is banned

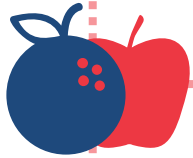
NFTs are financial securities made of digital data stored in a blockchain. In the Metaverse, NFTs can act as unique digital assets to be traded and owned by Metaverse users.

Every single NFT is unique

Unlike cryptocurrencies that are interchangeable
(X bitcoin = Y ethereum) NFTs have no specific values

Each NFT is distinguished by its ID code and metadata

Ownership of an NFT is readily tracked in the blockchain



Source: NYU

NFT trading in China

In China, **NFTs are known as Digital Collectibles (DCs)**. Due to the ban on cryptocurrencies, **DCs must be purchased through RMB and not through any existing cryptocurrency.**

The Chinese government also aims to prevent the use of DCs as financial assets. **Thus, the secondary trading of DCs are currently banned in China.** China also aims to use the BSN network to support distribution of DCs.

Source: Allen & Overy

The country is willing to embrace blockchain technology and encourages the role of NFT in copyright protection. Therefore, it may be possible for China to establish a sound regulatory mechanism to develop various NFTs transactions.

Retail MNC, Digital Innovation Lead



NFTs for land ownership in the Metaverse

NFTs have functioned as digital property rights to Metaverse properties.



"TooRichCity", a collection of Metaverse NFT properties from Chinese designer Heshan Huang

Source: AsiaCrypto

AI is highly developed in China, boosting Metaverse potential

AI and Machine Learning will be used to provide the best possible user experience in the Metaverse. Use cases include Metaverse infrastructure, deep learning, and content generation.



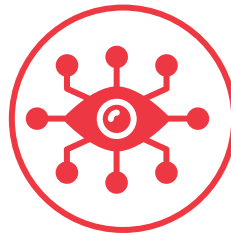
Natural Language Processing for lifelike AIs

NLP is vital for **intelligent virtual assistants (chat-bots)** to understand complicated human conversations and **learn from interaction with users, populating the Metaverse with human-like AIs.**



Content Generation with AI

AI generated art and virtual personalities are some examples of content generation with AI. The vast amounts of data collected through the Metaverse's will also **help AI create more tailored, personal content.**



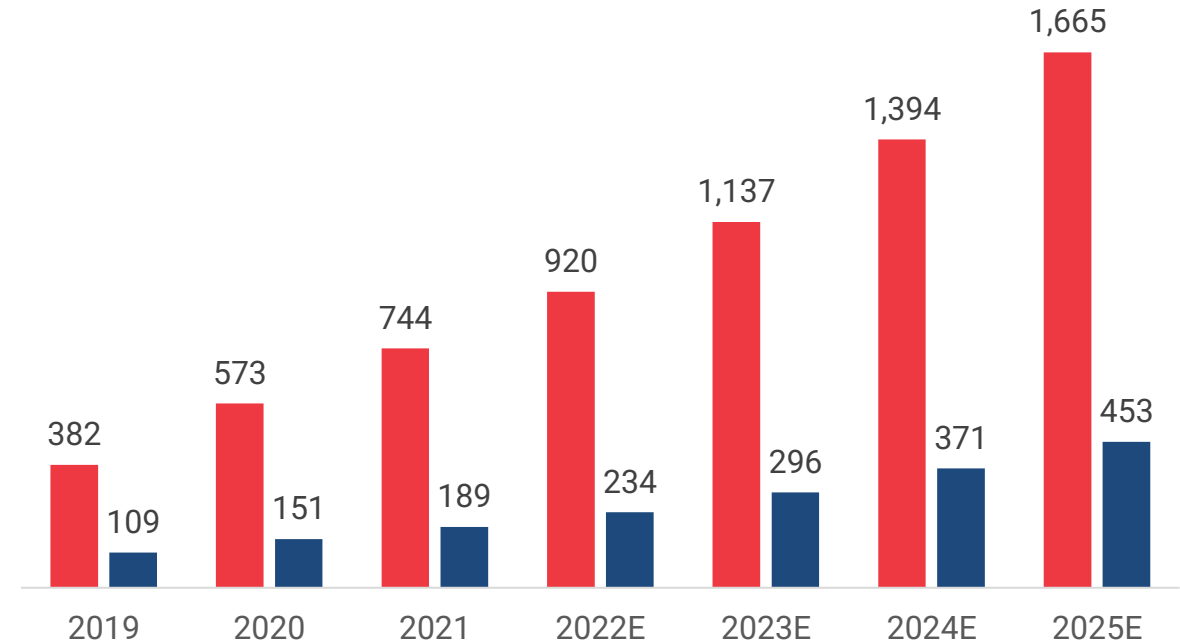
Machine vision: AI in XR technology

Machine vision is what allows XR devices to **analyze and understand user activities based on raw data perceived from the real environment.** AI will improve the ability of XR devices to record and make sense of real-world data.

Source: IEEE

AI industry size in China, 2019-2025
(in billion RMB)

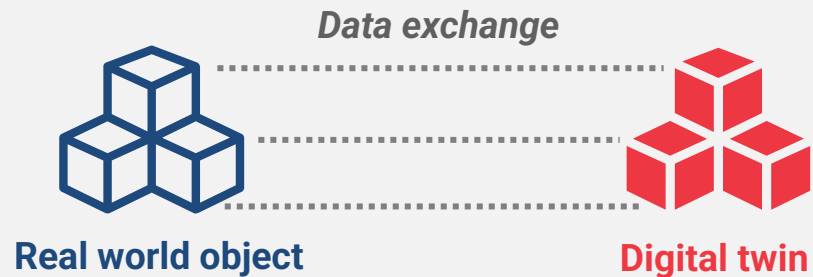
■ AI-driven industries ■ AI core industries



Source: iResearch

Digital Twins: Linking real-world objects to virtual representations

A Digital Twin is a virtual representation of a real-world object, just like how the Metaverse is itself a mirror of the real world. Digital twins will become key for Metaverse content that links the virtual and real world.



The key to digital twins is real-time data linkage.

IoT-enabled real-world objects use sensors to collect data that can be reflected in the digital twin.

The virtual environment of the digital twin can be manipulated to test the real object in certain conditions.



Smart architecture

Cities' conditions can be monitored with near real-time data from IoT sensors, satellites, drones and other sources. **This can help simulate development projects in the live city and understand their impact before construction.**

Beijing-based 51World's digital twin of Shanghai

Source: The B1M

Retail & ecommerce

Digital twins in the Metaverse can allow people to shop in the virtual space with real-time updated data. **Customers can shop from their homes, while being able to test the products via the Metaverse's digital twins.**

Source: LeewayHertz



Taobao's Metaverse mall at the 618 festival

Source: JingDaily

Tencent is positioned to lead digital content within the Metaverse

Tencent has strong capabilities in gaming, social networking, AI, server architecture, managing digital economies, as well as digital assets. Now, they will also develop the XR hardware to lead digital content for the Metaverse in China.

Tencent 腾讯

Social/communications



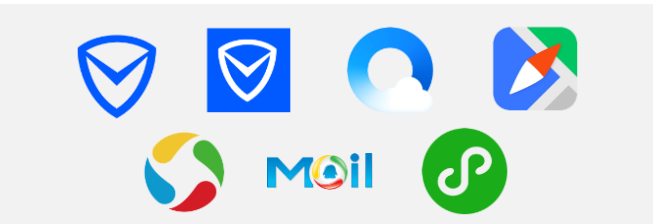
Digital Content



Fintech Services



Other tools



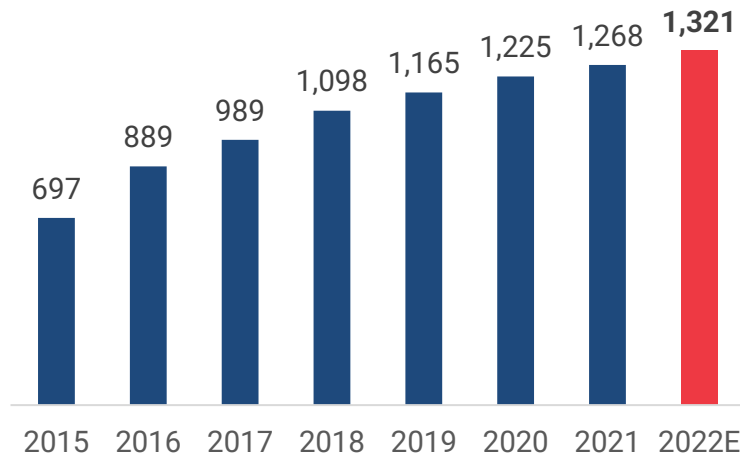
Tencent's key subsidiaries and brands

Source: Tencent

Tencent has WeChat (Weixin)

Operating WeChat has given Tencent the experience, resources and capabilities to provide a robust social network experience in the Metaverse.

Global MAU of WeChat (in millions)



Source: Tencent

Tencent's digital entertainment businesses

- Tencent is the leading gaming distributor in China and has **large ownership stakes in major gaming studios.**
- Experience in **online gaming architecture and designing video-game economies** will help Tencent design Metaverse spaces.

Tencent-owned companies



key IP



Alibaba has expertise in fintech, ecommerce and cloud computing

Alibaba's cloud computing (Alibaba Cloud), ecommerce businesses (Taobao & Tmall), fintech services (Ant Financial, Alipay), and now recent investments in XR technology makes the company crucial for Metaverse digital economies.



Alibaba's cloud Metaverse solution

Alibaba has a specialized cloud computing service for Metaverse related projects, providing features such as:

- Remote Rendering
- Data Analytics & AI
- Application deployment
- IoT integration
- Blockchain as a Service
- Low latency networks

Source: Alibaba

Alibaba funds Nreal, an AR hardware startup

Alibaba invested RMB 400 million (USD 60 million) in Augmented Reality startup **Nreal**, which is headquartered in Beijing.

Source: Bloomberg



The Nreal Air



The Nreal Light

Source: Nreal

ByteDance has an advantage in user experience with social commerce

ByteDance's key advantage is in Douyin (TikTok), a globally popular user-generated content sharing app. However, they are also expanding into developing XR hardware as well as virtual social networking apps.



ByteDance acquired Pico

ByteDance bought Chinese VR headset maker Pico in 2021 for an estimate RMB 9 billion (USD 1.4 billion)

ByteDance is the only Chinese tech firm to outright acquire an XR hardware company.

ByteDance has also set up the Pico Store, an app shopping center with over 425 VR apps. About 80% of the apps are gaming related.

Source: Forbes



The Pico Neo 3, Pico's flagship VR headset and controller

Source: Pico

ByteDance's digital worlds

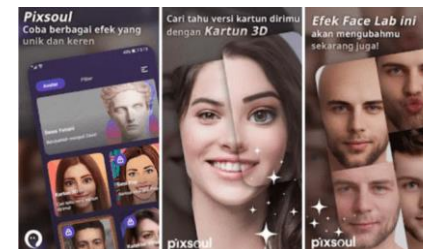
ByteDance tested a virtual world social networking app in China called Paiduidao ("Party Island"), which allows users to generate their own avatars and socialize in virtual worlds.



ByteDance's Paiduidao app.

Source: SCMP

Aside from TikTok/Douyin filters, ByteDance also launched Pixsoul, an app that can create digital avatars through AI facial recognition.



ByteDance's Pixsoul app.

Source: ByteDance

Baidu's Xirang platform is a major step towards a true Metaverse

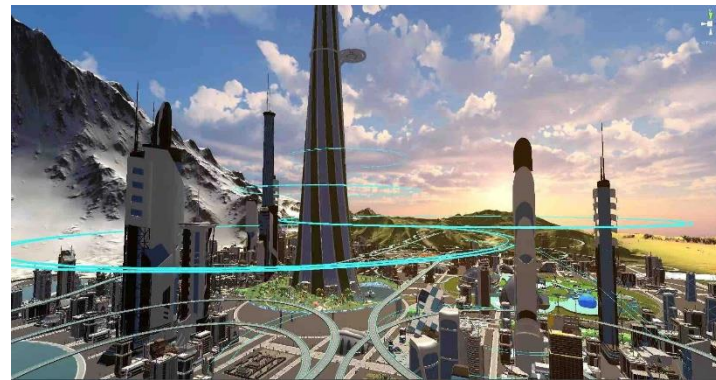
Baidu has invested in building a true Metaverse in their Xirang platform, which is supported by Baidu's expertise in AI solutions as well as VR headsets and VR content creation.



Baidu's Metaverse platform, Xirang

Baidu has built their own experimental Metaverse platform, Xirang, which features:

- AI-supported interactions & virtual assistants
- Immersive sound-scape and digital environment
- Multiplayer support for 100,000+ people
- Support for a variety of operating systems (PC, iOS, Android)



The main hub in Xirang, "Creator City"

Source: Baidu

Baidu's other VR products

Baidu has a well-developed VR department with an **all-in-one VR headset**, **VR content creation tools**, **VR broadcast control/device management tools**, and an **AI-assisted 3D model creator**.



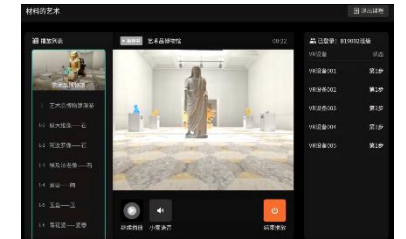
Baidu VR headset



VR content creation



3D model creator



VR device management

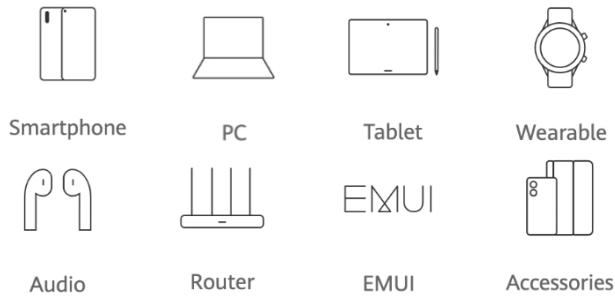
Source: Baidu

Huawei's telecom networks is key for core Metaverse infrastructure

Huawei's expertise in telecommunications networks, such as their work in 5G, will become key for ensuring the core Metaverse infrastructure has low latency, symmetrical bandwidths, and high overall network speed.



Consumer Products



Business Products & Services

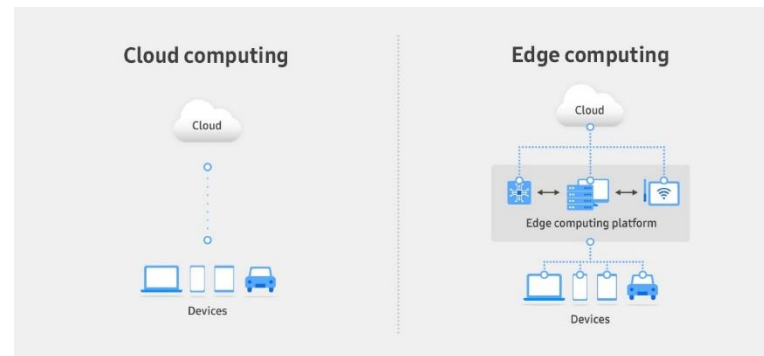
- Carrier Network
- Enterprise Networks
- Energy & Power
- Smart City
- Internet Service Provider
- Huawei Cloud
- Intelligent Computing
- Data Storage
- Intelligent Vision
- Enterprise Services
- Carrier Services

Huawei Edge Computing

Edge Computing reduces latency and bandwidth use by computing in a location physically close to the source of data.

Huawei provides architecture solutions to manage edge computing nodes (such as user's computer, an IoT device, or a server), **minimizing latency issues for Metaverse edge nodes such as VR/AR devices.**

Source: Huawei



Source: Samsung

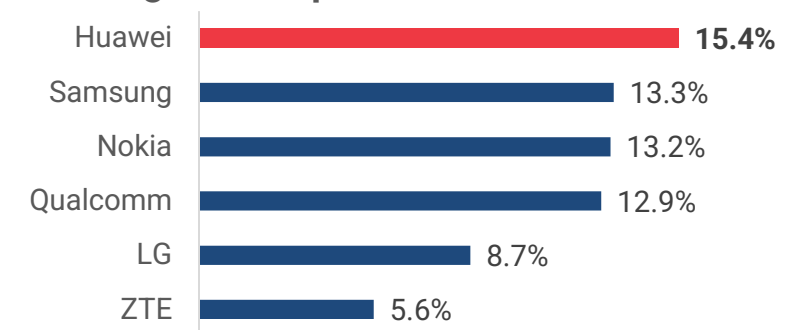
Huawei's 5G in the Metaverse

Huawei is a global leader in the field of 5G telecommunications in number of patents. In China, Huawei is also the leading 5G provider.

A strong 5G network will be the basis of all other Metaverse infrastructure, providing **ubiquitous wireless connectivity** and coverage, **low latency, reliable communication for edge computing**, and developer APIs.

Source: Huawei

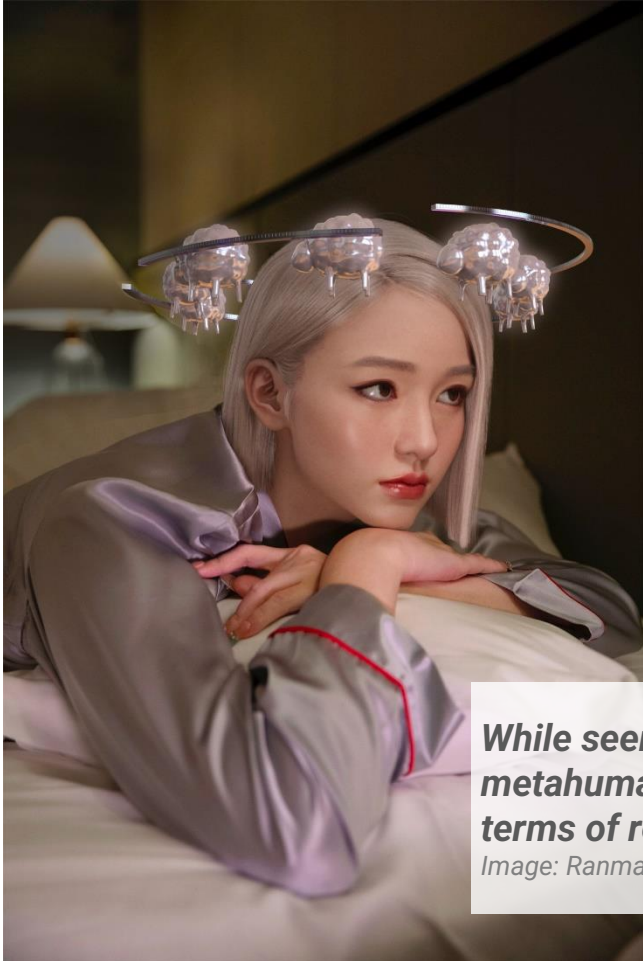
Companies with the highest share of global 5G patents as of Feb '21



Source: IPlytics

The Metaverse is a long way from reaching its full potential in China

Despite both the Chinese consumers' and government's enthusiasm for the Metaverse, the technology and its various applications still have to mature for companies to explore them further.



While seen as a "safer" alternative, metahumans also have limitation in terms of reach and recognition.

Image: Ranmai Technology

VR, AR, and metahumans: toward a normalization of the Metaverse's technologies

- VR and AR applications successfully drive consumer engagement and purchases. However, in the long term and as they become more widespread, they might lose their initial flare and become a sales tool like any other.
- Metahumans constitute a safe bet for brands to avoid KOL-related drama. However even for Metaverse-friendly Chinese consumers, metahumans cannot completely replace the attraction of real stars.

It is hard to bring a large fan group and social impact from the very beginning. If you want to do a metahuman, you need to be patient on the payback period for ROI and invest proactively for its growth.



Retail MNC, Digital Innovation Lead



Pomellato issued digital collectibles to promote their new collection

Source: SCMP

NFTs to remain digital collectibles?

Cryptocurrencies and NFT speculation and second-hand market are banned in China, leaving blockchain-based assets to be little more than **digital collectibles**.

Those collectibles have however proven to be **effective promotional assets**, playing on consumers' FOMO and giving an "exclusive" turn to a marketing campaign.

3

The Metaverse's Diverse retail applications



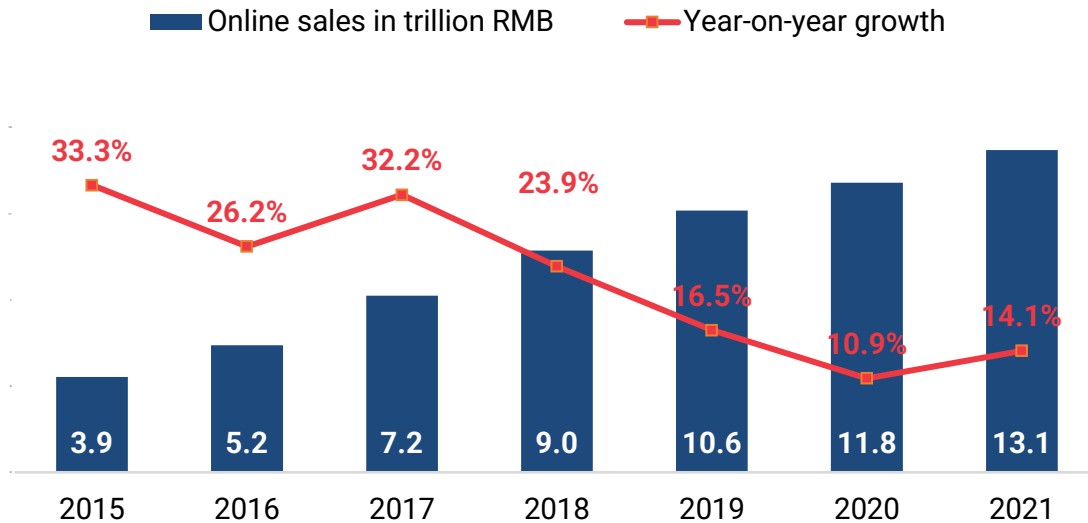


A.
Metaverse Shopping

Why retail and ecommerce is transitioning to Metaverse shopping

As e-commerce has already achieved high penetration rates in the Chinese market, consumers are likely to want to also transition from e-commerce into Metaverse shopping.

Online sales volume in China



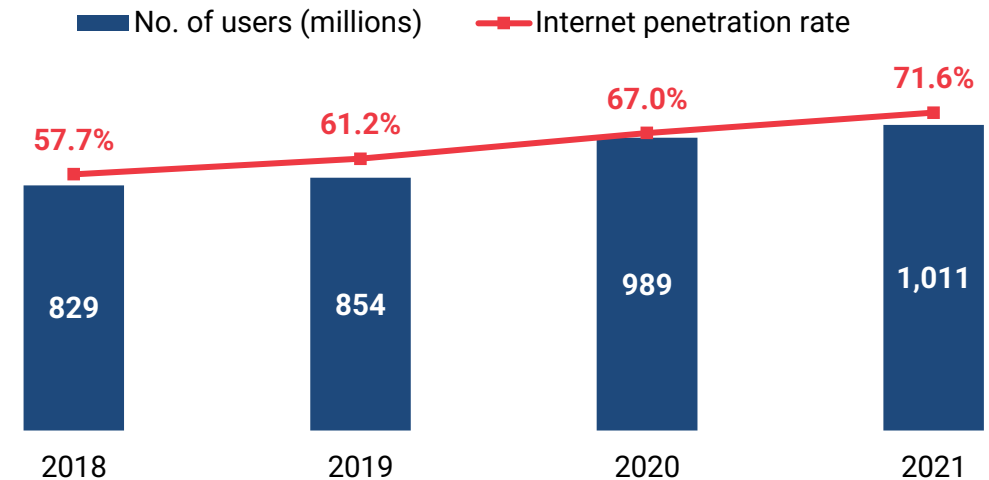
- Gen Z is the main consumer group, and their consumption needs are personalized and diversified
- Gen Z e-commerce is characterized by **socializing, live streaming, and willingness to try anything special/new**
- Total volume of online sales have **increased steadily every year**
- Retail in **China transitioned from offline shopping to e-commerce** because of high demand and cost saving benefits, we will likely see another transition to Metaverse commerce

Source: NBSC, Online sales survey

Taobao, the e-commerce giant, launched the “**Metaverse mall**” on 618 shopping festival

- Shoppers could guide their avatars through 3D stores and engage in a variety of immersive and interactive activities
- Alibaba has also been grasping the meta verse opportunity, launching programs such as **VR shopping Buy+ Program and 3D shopping** on Tmall Luxury Pavilion to recreate physical shopping experiences virtually

Internet users in China and penetration rates, 2018-2021



Virtual shopping: The best of physical storefronts & online commerce

Powered, by VR and AR technology, virtual shopping in the Metaverse can greatly increase customer engagement and conversion rates.

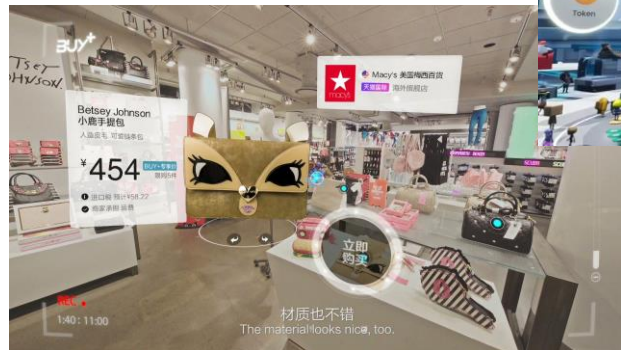
A new reality for retail

With AR/VR, brands can immerse customers in **unique virtual environments** that tell the brand's story and set it apart.

Virtual shopping offers **the best of both worlds**: The immersion of physical stores and the convenience of online websites.

Metaverse shoppers can **try on virtual retail products**, **interact with brand representatives**, and **connect with other shoppers** in the virtual environment all from their own homes.

Taobao's 618 Shopping Metaverse Mall.



Taobao's VR shopping Buy+ Program.

Source: Taobao

Virtual shopping is great for engagement

7x more time spent by shoppers

Consumers spent an average **14 mins in 3D virtual shopping experiences** in comparison to **<2 mins on static 2D e-commerce sites**.

70% increase in conversion rates

A boost in customer engagement due to the experience in virtual shopping results in a **70% increase in conversion rates**.

450% increase in ROI

Retailers offering a virtual shopping environment like a Metaverse have seen **ROIs grow by 450%** due to the higher conversion rates.

Source: KPMG

Key technologies: VR and AR

 **Virtual Reality**

VR head-mounted display, motion tracking controls, headphones provide digital images, sounds and tactile sensations.

 **Augmented Reality**

Camera-equipped mobile devices, smart glasses, and headsets overlay digital content on the real world.

Source: National Taiwan University

Metaverse shopping case study: Real Time AR-try on

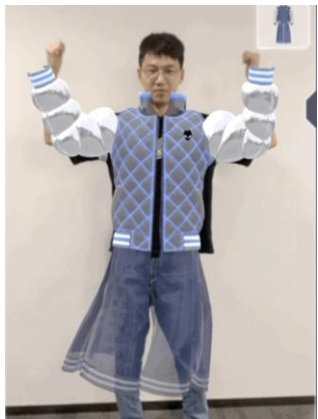
Kivisense, a Chinese tech company who specializes in WebAR engines for try-on, develops AR try-on technology that allows virtual, real-time fittings. The technology is offered through web, WeChat mini-programs, Shopify and offline boutique stores.

Real time-AR try-on technology

Brands and online shopping platforms such as Gucci, Farfetch and Lancome, have adopted AR try-on technology to create more **realistic virtual shopping** experiences.



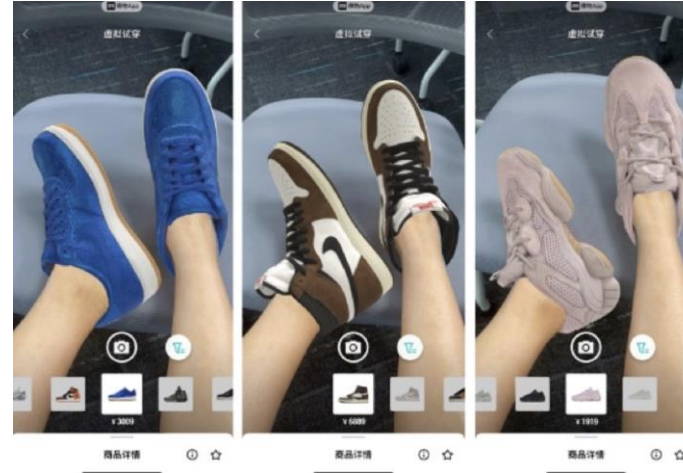
Farfetch's AR clothing try-on technology



Gucci AR clothing try-on technology

The technology is growing increasingly mature; it captures the customer's movement and AR products move **simultaneously** with them.

Poizon's AR footwear try-on



Poizon is an online shopping platform for fashion boutiques and shoes that has an AR footwear try-on feature.

One consumer shares his experience with the function:



*"The function did **solve the issue of returning the products** for not fitting; it **offers the opportunity for trying on every pair one likes.**"*

*However, there's **no way of simulating the feeling when one actually wears the shoes** (whether it's comfortable) and one **cannot know the best size they should purchase.**"*

B. Meta-humans

Ling and Angela, two of the top virtual influencers in China

Metahumans: virtual, human-like online personas

Metahuman virtual personas experienced a rapid rise in recent years within China. Consumers are engaged by these lifelike, digital personas for their unique appearances as well as the artistic value they can bring.

Metahumans: an overview

Metahumans are human-like digital personas that are **created from scratch** by teams of **programmers, designers, animators, marketing specialists, and 3D artists**. While the metahumans today are **managed by teams of very human experts**, AI technology can empower metahumans in the Metaverse to think, act, and interact like real humans.

Source: VirtualHumans

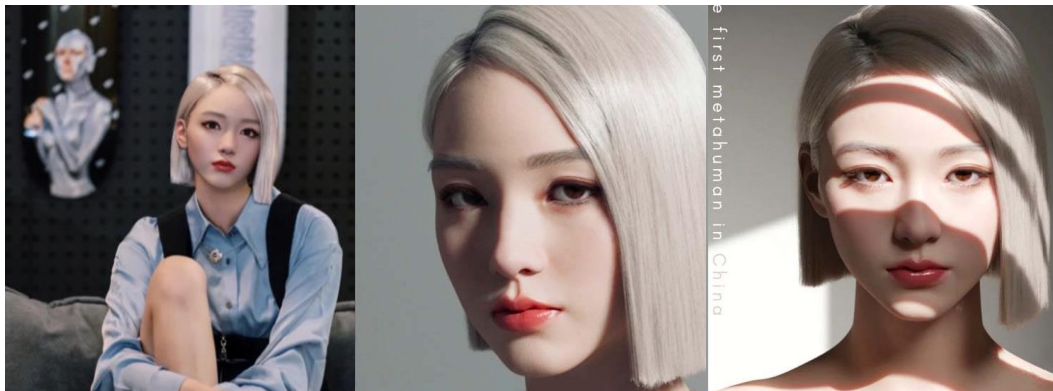
Metahumans are totally controllable, with a low risk for public meltdown because of scandals. They are also cheaper than mature pop stars or influencers and more attractive to the new generation consumers.



Ben Huang, Retail Industry Digital Expert

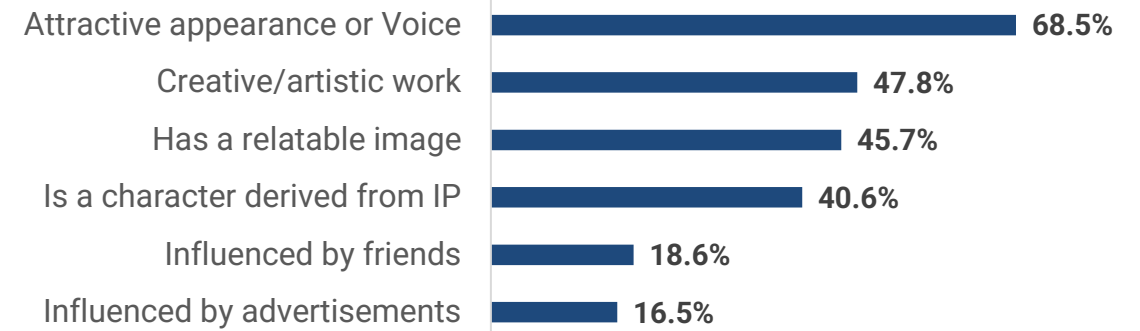
Source: Expert interview by AYO

Ayayi, China's first metahuman celebrity

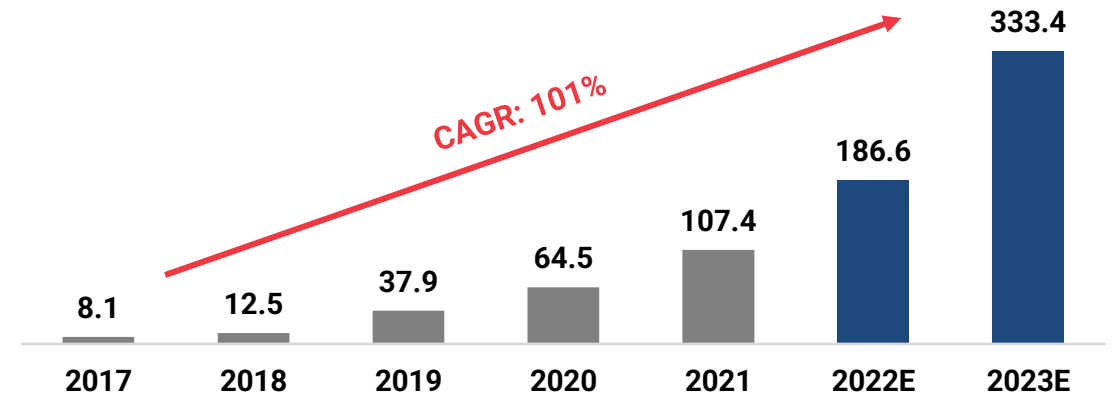


Metahumans are already wide-reaching in China

Top reasons Chinese consumers say they are interested in metahuman influencers



China's virtual idol market size, 2017 to 2023 (RMB billions)



Source: iiMedia Research

Chinese metahumans are the next frontier of KOL marketing

Many brands adopt these virtual influencers to appeal to Gen-Zers who are interested in two-dimensional ACG culture. Today, the hyper-realistic metahuman virtual idols are gaining traction.

Virtual Idol, 'Luo Tianyi (洛天依)'

Luo Tianyi is one of the first and biggest virtual idols in China.



Luo grows on user-generated content- like songs, music and illustrations- which made fans feel closer and more personal.

She was the first virtual idol invited by CCTV to perform at the Spring Festival Gala in 2021.

She also joined Langlang, the famous Chinese pianist for an **Extended Reality concert** and attracted thousands of her fans.

Metahuman influencer, 'Ayayi'

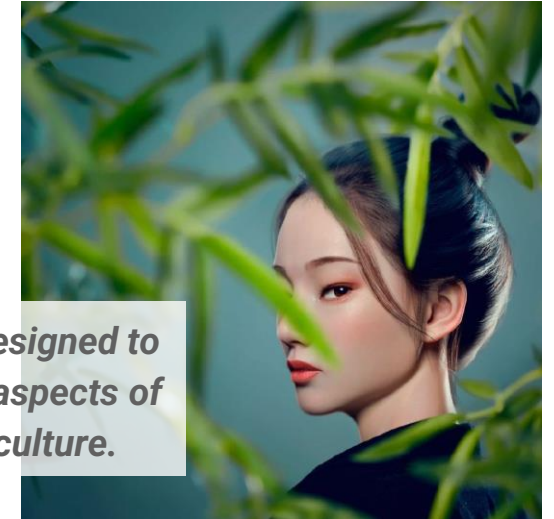
The first metahuman from China, Ayayi, was created by RM Inc. (燃麦科技) in May 2021. Her account on Xiaohongshu **set a new record on gaining followers in the Xiaohongshu KOL community.**



Ayayi's collaborations with well-known brands and companies.

Guerlain partnered with Ayayi in online and offline campaigns. She also partnered with **Tmall Super Brand Day** to release limited-edition NFT mooncakes and physical gift boxes for the Mid-Autumn Festival.

AI virtual influencer, '翎 Ling'



Ling is designed to embody aspects of Chinese culture.

Ling was created in May 2021. She is designed to have a proudly Chinese persona with a **love of traditional culture like Beijing opera, brush writing and Tai Chi.**

Ling has partnered with **luxury brands such as Gucci and Vogue**, and her parent company indicates that she will focus on streaming for e-commerce in the future.

Virtual livestreamers and virtual youtubers (Vtubers)

Many brands adopt these virtual influencers to appeal to Gen-Zers who are interested in two-dimensional ACG culture. Today, the hyper-realistic metahuman virtual idols are gaining traction.

Virtual livestreamers have existed for a few years

A VTuber's consists of the digital Vtuber avatar and its operator whose voice and motion are captured. The avatar is animated through software, that captures the streamer's motions, expressions, and mouth movements.

Today, virtual youtubers are operated by teams of designers, animators, programmers, as well as the "actor" behind the Vtuber avatar.



A-Soul Bilibili World Special Interactive
Source: Bilibili





Chinese Virtual idol livestreaming group "A-Soul"

Source: Dao Insights

A-Soul is a virtual idol group developed by ByteDance and Yuehua Entertainment. The group debuted in 2020 on Bilibili and has amassed over 10 million followers within 2 years.

Top highest earning Vtuber groups in China (November 2021):

		Monthly earnings	Unique donations
	A-Soul	RMB 3.15 million	31,878
	VirtuaReal	RMB 2.93 million	25,498
	Project Providence	RMB 1.20 million	11,010

Source: Bilibili

Metahumans livestreamers and mixed reality (MR)

Nescafe's JD store's virtual livestreamer and the Yichan Little Monk brings MR to livestreaming, drives viewer engagement at all hours of the day.

Yichan Little Monk

The Yichan Little Monk IP originated from a 3D animated children's show that premiered in 2016. However, the IP's wholesome and nostalgic themes have resonated with Chinese audiences, leading to its success on Douyin.



Motion Capture Based Mixed Reality Livestream & Sales



Yichan Little Monk's Douyin homepage, like a "human" influencer



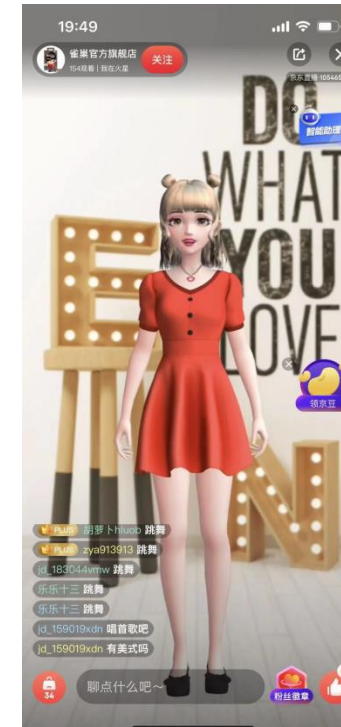
Yichan Little Monk branded merchandise for sale

Nescafe's JD Virtual Livestreamer

The Nescafe store on JD has a 24/7 livestream hosted by a metahuman in a Mixed Reality environment. Audiences can ask the metahuman influencer questions about products as well as for performances.



Product reviews appear during stream to drive conversions



Digital shopping guide to attract customers at all hours



Metahuman livestream leads users to sales and AI chatbot

Despite the quick rise, virtual Influencers is still an immature market

Tech-companies created meta-humans/idols to collaborate with brands and companies for innovative marketing. Meta-idols are more controllable because they rarely have scandals and are applicable everywhere; however, they also have limitations.

Innovative marketing: Advocate for body-positivity

In recent years, the **topic of body positivity** gained much attention amongst young Chinese consumers, as an increasing number of **brands such as DOVE and Victoria's Secret are going against the 'body perfect' trend**. These campaigns are well received and remembered.



Virtual Idol Angie in an Azo advertisement.

Source: Angie's Weibo

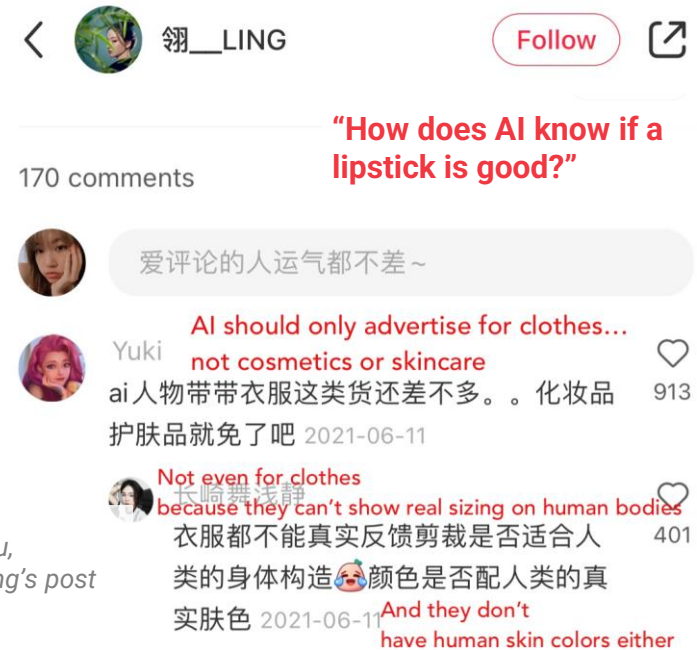
'Angie', created by the Chinese CGI creator Jesse Zhang became the brand ambassador for Azo, a female probiotic brand.

She shifts the beauty standard because she wasn't designed to be super skinny.

Angie creates a **positive influence on social media by advocating** for simple beauty and for women to pursue a **comfortable and self-fulfilling life**. Fans praised Angie for her realistic look and said she cheered them up.

Doubt and Limitations: Virtual Influencers cannot speak for reality

Ling, one of the most popular Chinese meta-idols, fell into controversy because she commented a lipstick as **"moisturizing and not dry"** on Xiaohongshu. The post was later edited, but many netizens voiced their doubts about the virtual idol's comments:



Source: Xiaohongshu, Comments under Ling's post

Chinese consumers are **not yet 100% open to** the use of AI influencers. Thus, brands will need to carefully navigate between human and meta human KOL partnership.

C.
Metaverse collectables

Metaverse collectibles: Content to be traded, sold, and owned

NFTs can exist as any type of digital content to be collected and are identified by strings of data stored in a blockchain. In China, NFTs are also known as DDCs (decentralized digital certificates, 数字藏品 in Chinese) intended for collection and not speculation.

Metaverse collectibles will be powered by NFTs

Each NFT is distinguished by its ID code and metadata and is therefore entirely **unique**. This feature is key for making digital collectibles desirable.

In China, NFTs are known as **Decentralized Digital Certificates, or "DDCs"**, and are intended to be collected and not traded or used for speculation.

In 2021, **4.56 million digital collections** were released in China.

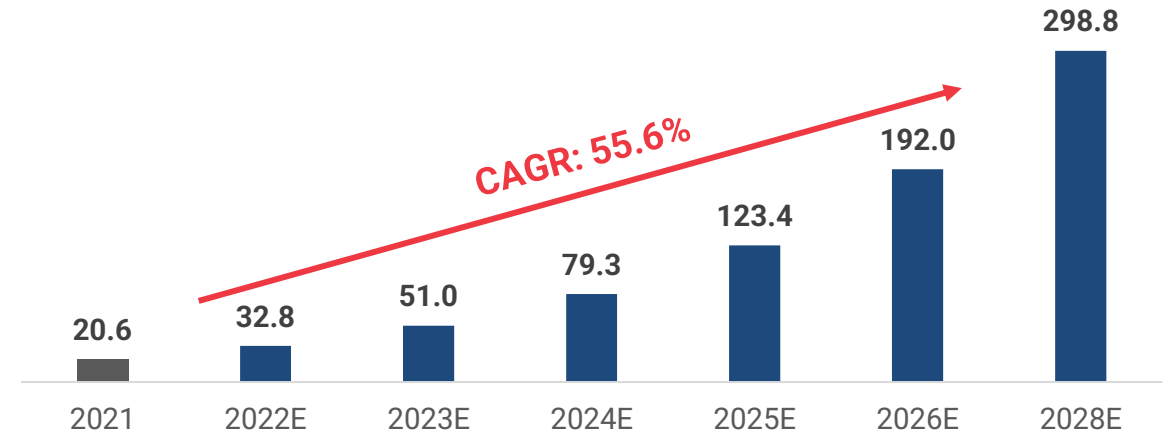


Wine brands MengZhiLan and JingShaGuJiu used digital collectibles as promotional tools

Source: Sohu

Metaverse collectibles are a booming industry in China

NFT market size in China, 2022 to 2028 (RMB billions)



Source: TechInsight360

Key technology: Blockchain

Blockchains are an **immutable record of transactions**, making it perfect for tracking the trading of digital assets.



Blockchains provides immediate and completely transparent **information, accessible to all members of the blockchain network.**

Source: IBM

Using digital collectibles as promotional tools in China

Dairy brand Mengniu's daily digital collectible campaign and automobile brand Roewe's "Meta Car" collectible are two cases of digital collectibles being used as promotional tools.

Dairy Brand Mengniu's digital collectibles event



Mengniu's "ThreeCalves" digital collectibles event, in collaboration with Metaverse platform ODin META

Source: ODin Meta

ODin META is a DDC trading platform that worked with Mengniu to launch the "ThreeCalves - Sleep Freedom BOX" event. There were 2,000 collectibles at RMB 90 each which were sold out in 10 minutes.

The event was hosted to promote Mengniu's "ThreeCalves" brand and their new milk product. Participants would receive the real product, the digital collectible, as well as access to an exclusive Meta-event.

Roewe's first NFT digital art sold for RMB 1 million



The custom Roewe Chinchilla auctioned off along with the NFT

Source: ODin Meta

On January 23 2022, Roewe Motors successfully auctioned the company's first NFT digital art piece, "Roewe Metaverse", at the Shanghai National Auction House.

The piece also came with the the title to a real car—a customized Roewe Chinchilla—and an "Advanced Custom PLUS" service from Roewe.

The auction opened online and offline simultaneously, and in just 30 minutes the piece was auctioned off to artist Ye Shengqin for RMB 1 million.



Digital Collectible Case studies in China

In collaboration with top designers of Shanghai Fashion Week 2022, Xiaohongshu launched digital collectible clothing in April. Other examples of Digital Collectibles include Chinese-inspired digital art.

Xiaohongshu digital collectible clothing



Netizens endorse virtual fashion for these reasons:

- Virtual fashion can be more **sustainable** compared to the traditional fashion industry
- Virtual boutiques are **not limited by real-world factors**, like gravity, wind and light
- Consumers may show off a unique piece of clothes on social media with **less cost** than an actual one

However, hold negative attitudes towards the concept with 2 main complaints:

“What is the **difference with photoshop**”?

“This is just another way of **encouraging unnecessary spending**”

Other significant NFT examples in China



RTFKT's virtual sneaker NFT sold for 190,000 RMB
Source: RTFKT



The creations of Chinese NFT artist Song Ting
Source: Sixtstone



“Flower Landscape”, a NFT collection inspired by traditional Chinese art and poetry
Source: Smzdm



D.
Metaverse events

The Meta ZiWU skyscraper where a Dior Metaevent took place, photo: iWeekly

Metaverse events: from entertainment, to business, to education

The complete Metaverse will be made up of smaller, interconnected Metaverse events. Metaverse events provide an easier way of connecting people as well as environments than exceeds what is possible in the physical world.

Metaverse events can surpass real life

Virtual Metaverse events can surpass real life events in **spectacle, presentation, and artistry**, owing to the impressive environments that can be rendered within the digital space.



Dior's "ON THE ROAD" runway show, 2022

Source: Dior



The show's venue, the virtual skyscraper Meta ZiWU.

Source: iWeekly

The digital environment may also allow for **more people to participate in these events**, departing from the existing elitism.

Digital wearables being showcased at a fashion show can be **listed as digital collectibles for consumers to view and collect**.

Metaverse events can be used for a variety of purposes

- Concerts
- Fashion shows
- Business meetings
- Sports events
- Job fairs
- Exhibitions
- Pitches/presentations
- Education/lectures

Key technologies: Cloud computing

- Cloud rendering can **remotely construct high quality Metaverse environments for Metaverse events**
- Cloud storage, computing, and rendering are key to **lowering entry barriers, maximizing the number of users that can participate**.
- Cloud computing can provide **reliable wireless connectivity for VR/AR applications**.

Source: Alibaba Cloud



From a macro perspective, the demand for online meetings and online events is still increasing, so iterative versions of Metaverse events are worth investing in while ensuring that the user experience is not weakened.

Retail MNC, Digital Innovation Lead



Source: Experts' interviews by AYO

High engagement potential but steep technological requirements

Metaverse events presents great potential both in term of participants engagement and accessibility. However, high technical and financial requirements and the relative novelty of the technology represent a risk for companies.

Key technologies: 5G networks (and beyond)



Metaverse events will require **better framerates, resolution, and processing power** to truly provide an immersive experience. This will require the **low-latency, high speed, and wide coverage** that 5G networks can provide.

Source: Tsinghua University

Metaverse events are more convenient for participants and more immersive than ordinary online meetings. However, Metaverse conferences have very high requirements on system stability and network speed.

Retail MNC, Digital Innovation Lead

Source: Experts' interviews by AYO

Strengths

Convenience for participants

Virtual events can potentially host much more participants while not suffering from logistics issues or facing venue restrictions. Fast booking and attending make for a better overall user experience.

No geographic restrictions

Beyond bypassing venue capacity limitations, meta-events allow to easily host international gatherings. This is even more relevant for the Chinese market, currently suffering from lockdowns and travel restrictions.

Immersive experience

The novel and immersive experience brought by VR technology has shown great potential for higher consumer engagement.

Weaknesses

High initial costs

Although venue-related costs are not an issue for meta-events, the initial software and hardware investment might discourage early investors to organize those kind of events

High network and system requirements

As meta-events require to stream a large quantity of data in a constant manner, network requirements both from the host and attendees are high.

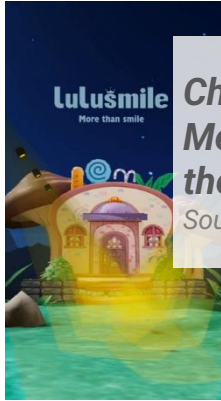
Uncertain return on investment

The meta-event technology concept still being young, there is little data available on ROI for such events, making them risky bets for companies.

Metaverse events case studies in China

The Lulusmile Roblox event during the Shanghai Fashion Week represents how a fashion show can be hosted within the Metaverse, while the Tencent x Adidas OZ Future Concert showcases the demand for Metaverse concerts.

Lulusmile Roblox event during Shanghai Fashion Week



Chinese brand Lulusmile hosted a Metaverse event on Roblox during the Shanghai Fashion week.

Source: Shanghai Fashion Week



The Lulusmile event was focused around a **Metaverse runway fashion show**. Guests at the event could freely interact with other guests through the Roblox platform. Lulusmile also showcased **both NFT and real-life clothing collections** during the fashion show.

Adidas and Tencent throw a Metaverse concert

Using virtual avatars dressed in Adidas's newest Ozword collection, guests could **attend a catwalk, complete activities to redeem digital sneakers, and socialize with each other**.

The event featured Korean-American rapper **Jay Park** and Chinese-American rapper **MC Jin**, who performed as virtual avatars.

In total, the *Landing on OZ Future Concert* attracted **1.3 million participants**.



Tencent and Adidas's "Landing on OZ Future Concert" (登陆OZ未来音乐会)

Source: TMELAND & Adidas



4

Conclusion

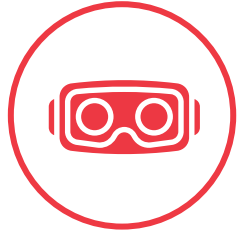


Takeaways for companies wanting to invest in China's Metaverse



Thanks to both public and government interest in the Metaverse, Chinese companies, especially big tech, **are very invested in developing the Metaverse.**

It is the next arena for BBAT to **compete for market share** both home and abroad.

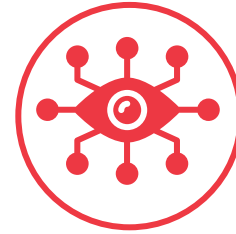


The Metaverse is the next frontier for gaming and retail. Now is the time for brands to set up their Metaverse presence in China in order **to beat the rush.**



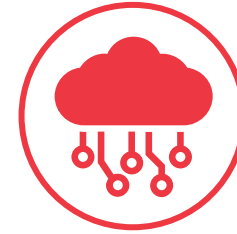
Events, collectables and collaborating with metahumans **are first steps that a brand can take** in China's Metaverse.

As those technologies develop and normalize, they will **become increasingly common in retail.**



China's Metaverse will be **very centralized**, and the government will be quick to implement measures preventing fraud. **Brands have to be agile** to navigate quick regulatory changes.

If MNCs with successful global Metaverse cases want to keep first mover advantages, they will need to start early to **design viable China strategies.**



The Metaverse in China is **a giant in its infancy.**

Despite both the Chinese consumers' and government's enthusiasm, **the technology and its applications still have to mature** for companies to explore them further.



China own world-leading infrastructures **including 5G and the local tech ecosystem** provide diversified supply chain resources.

Thanks to this environment, China **could be a highly cost-efficient market** to deploy Metaverse strategies.

ABOUT





AYO
INNOVATION CONSULTING

AYO is a digital innovation consulting firm dedicated to accompanying our clients to **deploy disruptive technologies, customer-centric solutions, and inspiring campaigns** that drive and influence the future world.



**WELCOME ONBOARD,
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Leverage Innovative Technologies to Drive **New Sources of Growth.**

By engaging with **internal and external** innovators, we translate business objectives into specific metrics for innovation, and provide services to tackle market and operational challenges.



Innovation Challenges



Design Sprint Workshops



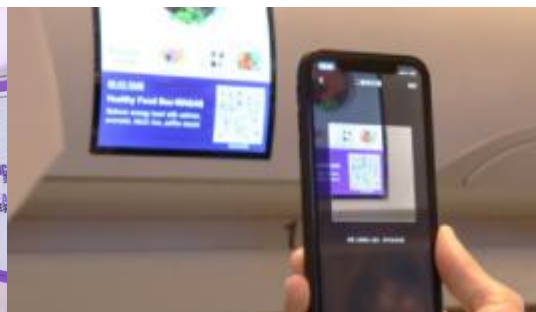
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PoC & Scale-up



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We tailor innovation strategies for multinational corporations to co-create trailblazing solutions and build inclusive ecosystems with leading-edge tech firms, industry experts, and prestigious organizations.





“ Confronted with new opportunities, people tend to lose out in four ways: they don’ t see it coming, they turn their nose up at it, they don’ t understand it, or they’ re too late to adapt. ”

- Jack Ma (Founder & Chairman of Alibaba Group)

Contact Us:



Innovation@areyouok.com
<https://www.areyouok.com/>

ABOUT



Our mission is to guide businesses to holistic growth in China

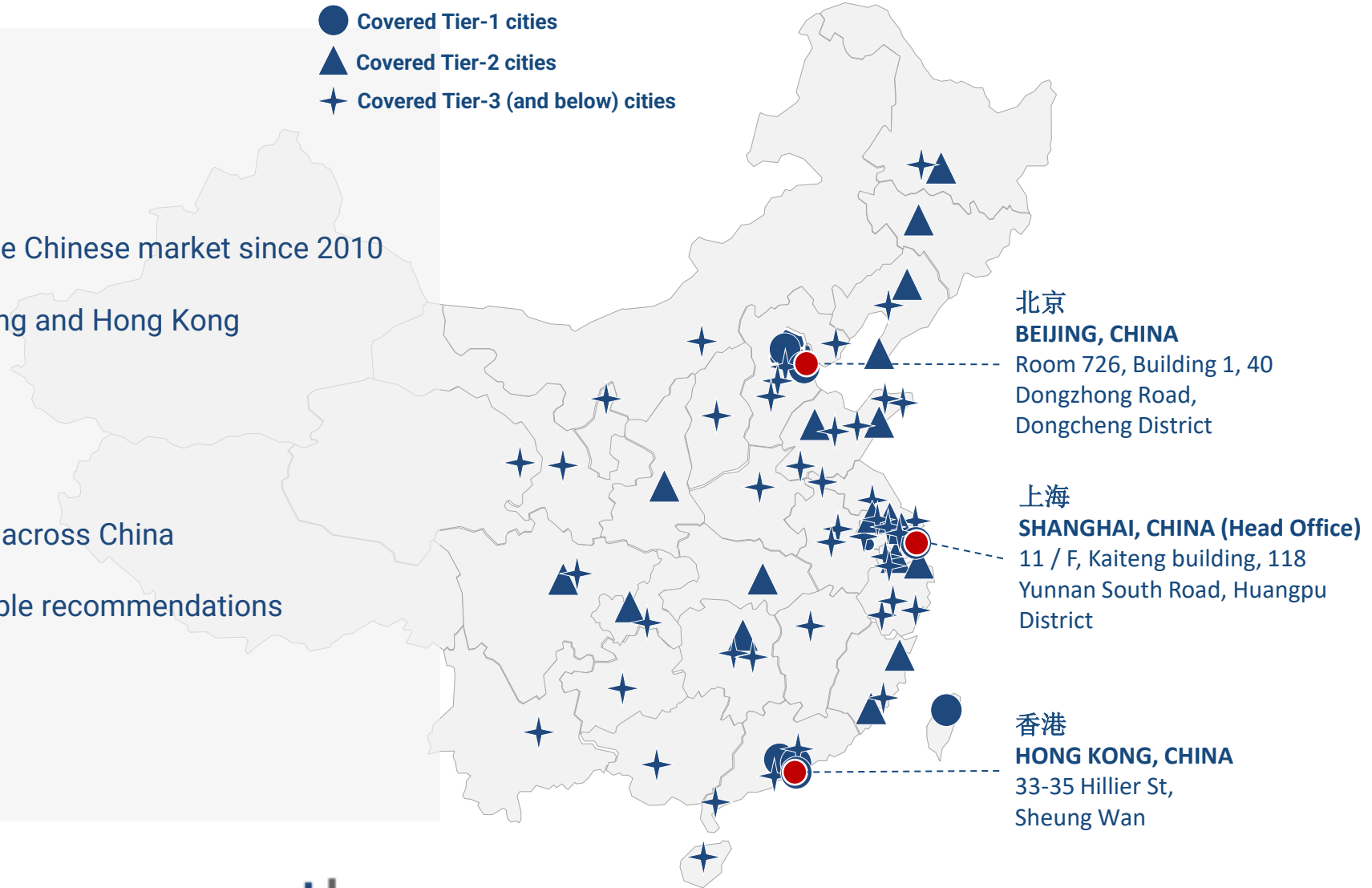
Through our market research and strategy consulting, we equip businesses with the knowledge and guidance to achieve growth in China and beyond

Who We Are

Your Market Research Company in China

We are **Daxue Consulting**:

- A market research firm specializing on the Chinese market since 2010
- With 3 offices in China: in Shanghai, Beijing and Hong Kong
- Employing 30+ full-time consultants
- Full, complete, national coverage
- Efficient and reliable fieldwork execution across China
- Using our expertise to draw precise, reliable recommendations
- With key accounts from around the world



Our past and current clients

350+ clients with 600+ projects for the past 10 years



Daxue's approach: methodology-based consulting

An agile and data-driven approach towards solving complex research questions

RESEARCH

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as the base for

CONSULTING

咨询



IN-HOUSE ORGANIZED

We do not outsource



RESEARCH-DRIVEN

Consulting backed up by massive research



TRADITIONAL METHODOLOGIES

Interviews, cold calls, focus groups, surveys, and etc.



AGILE

Market discovery -> market validation -> market entry



SOFTWARES AND TOOLS

3rd-party software and in-house built scrapping tools



COLLABORATIVE

We encourage frequent meetings and workshops with our clients



ACCESS COUNTRY-WIDE

Able to run research across all layers of population



TRANSPARENT

Full insights into our work with frequent intermediate updates



MASSIVE

Data-driven and cross-checking from many angles



INDUSTRY PARTNER NETWORK

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SENTIMENT ANALYSIS
情绪分析



BRAND
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INSIGHTS

洞见



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PROCESS
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PROFILING
目标人群画像



BRAND (RE)POSITIONING
品牌（重新）定位

STRATEGY

策略



BUSINESS INTELLIGENCE
商务智能



VALUE PROPOSITION &
MESSAGING HOUSE
价值主张&信息传播策略



IP COLLABORATION
IP合作

INNOVATION

创新



OMNI-CHANNEL
MARKETING
全渠道策略



PRODUCT CONCEPTS DEV.
& TESTING
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MARKET ENTRY
市场准入

Our methodologies



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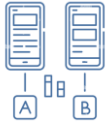
FOCUS GROUPS
小组座谈



CONSUMERS INTERVIEW
消费者访谈



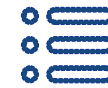
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A/B 测试



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日记研究



ONLINE & OFFLINE SURVEYS
线上&线下问卷



SOCIAL LISTENING
社媒聆听



STRATEGIC WORKSHOP
小组访谈



MYSTERY SHOPPING
神秘顾客研究



UX/UI TESTING
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