Can metaverse solutions enable a sustainable future?

How the metaverse is supporting the SDGs

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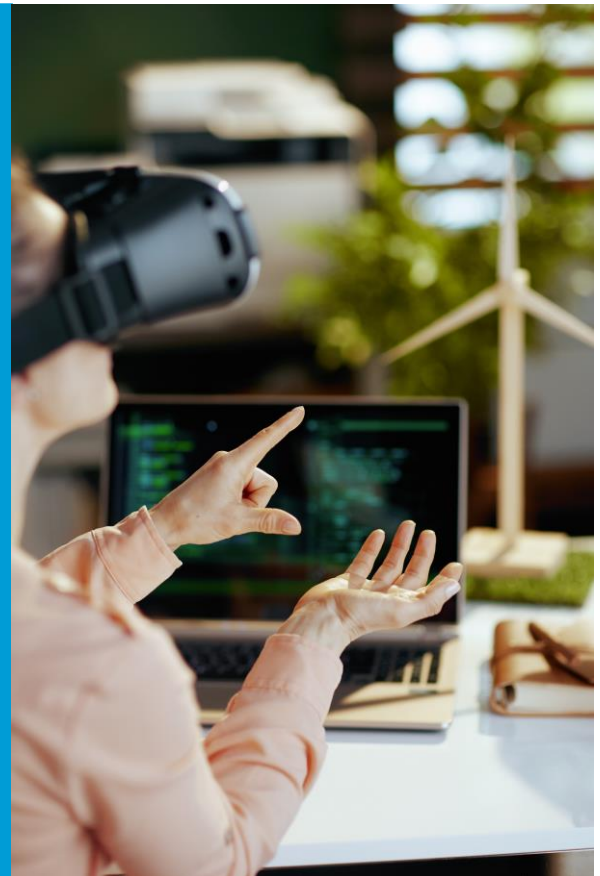
The metaverse may sound like a distant concept, but it already has a big presence in our society

The arrival of the metaverse has created possibilities for sustainability.

The metaverse has the potential to reduce GHG emissions by 10 Gt CO2e in the US alone by 2050.

That is the equivalent of removing 2,380 cars from the road a year!

Source: *Energy and Environmental Science*



How the metaverse can be utilized for sustainability

Metaverse Tourism

Air travel accounts for 2.5% of global emissions. The metaverse can help with virtual travel and tourism!

Sustainable Retail

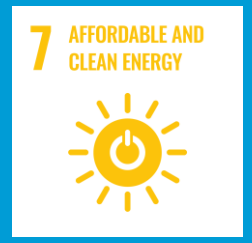
Lifelike virtualization of the experience of trying on clothes could also yield meaningful sustainability benefits

Metaverse Education

The metaverse can make distant education possible, saving on carbon emissions

How can the metaverse support the SDGs?

The metaverse can host real-time water quality monitoring systems, alerting users to potential contamination or scarcity.



The metaverse can simulate energy-efficient buildings, appliances, and transportation.

The metaverse can host virtual climate summits, workshops, and educational sessions.

Preparing platform to enable metaverse

Use Case

- **Naked-eye 3D** for big and small screens
- **XR** (Cyberverse)
- **Digital Human**

Cloud & Platform

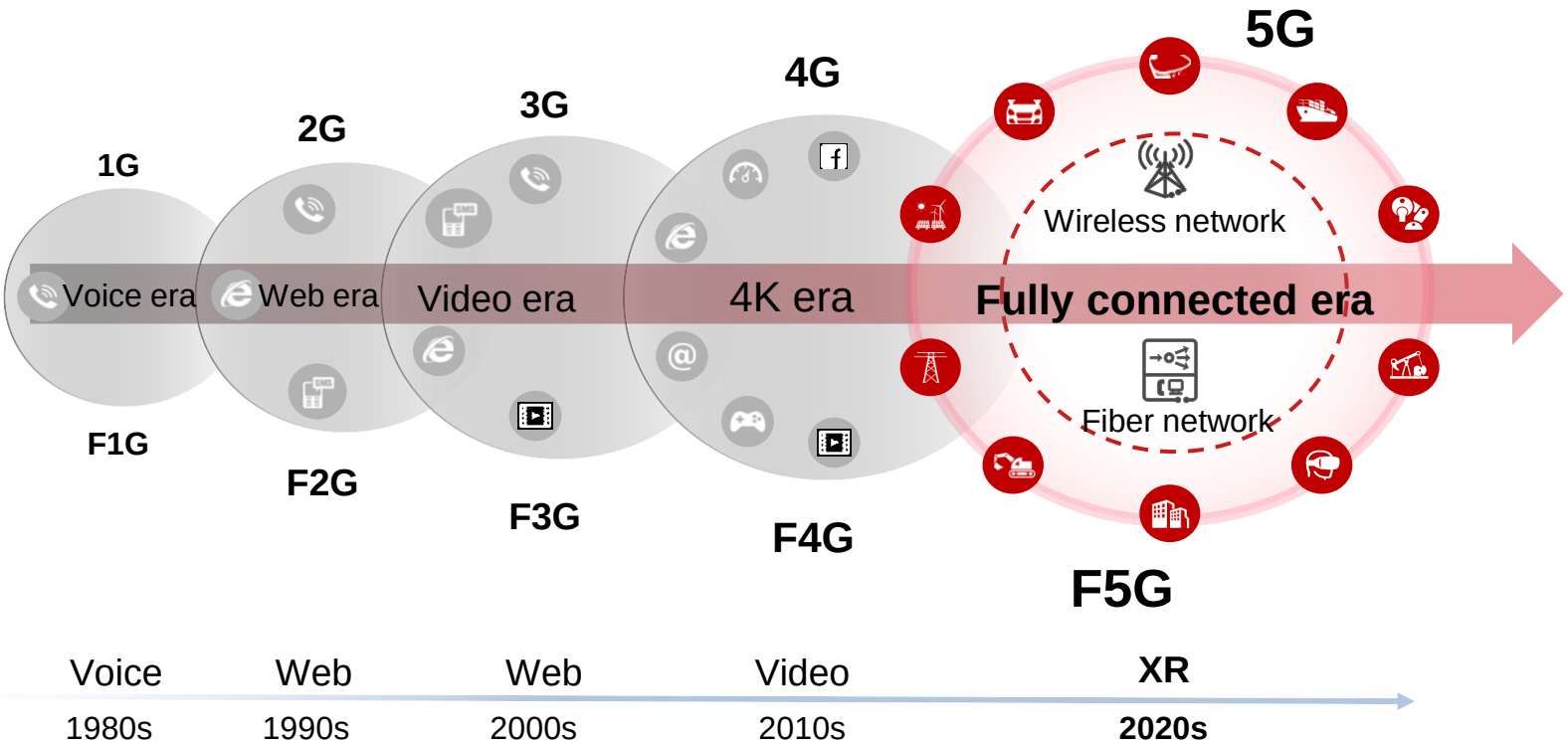
- **XR Platform** (Envision)
- **Digital Content Production Line** (MetaStudio)
- **Enabling Service** e.g. Block chain, Fintech, AI training (ModelArts)

Experience Networking

- **Target Network** (GUIDE)
- **Advance Solution**, e.g. game accelerating, 5G slicing, security etc.
- **Innovative Product,** e.g. 5.5G, FTTR, Wi-Fi6

Device

- **XR Glasses** (Alice)
- **Device Computing** (AR Engine)
- **HarmonyOS** Smartphone / Big Screen / PC / Sensor

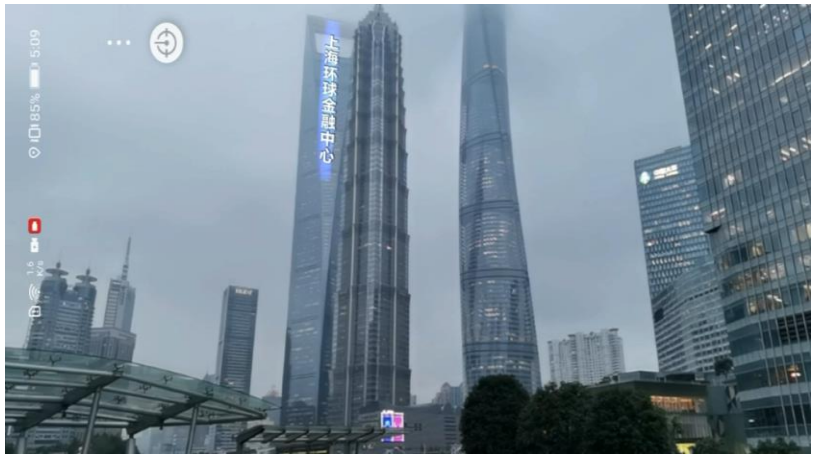


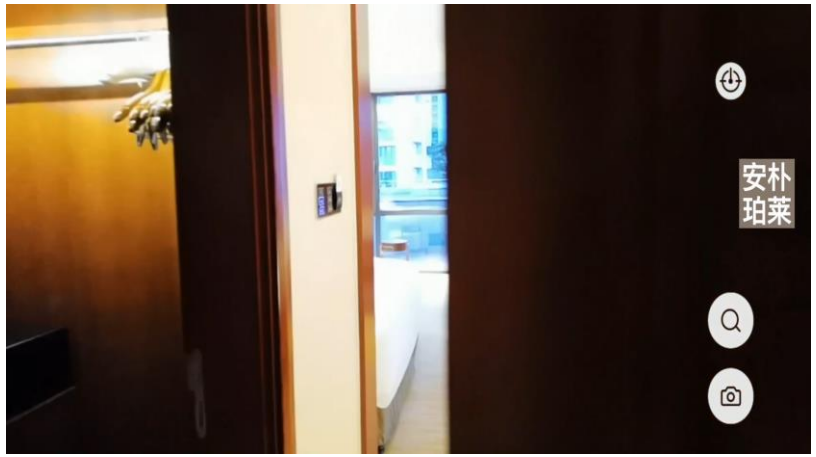
Core Technology

- **Collection** 3D audio/video collection, Full view image collection)
- **Chipset** (NPU, Cloud GPU, Display)
- **Data Governance**
- **Interaction & Sensing**

Holography turns every point in space-time into a portal of information

Information display panel





Clickable desktop

Drawing board of graffiti

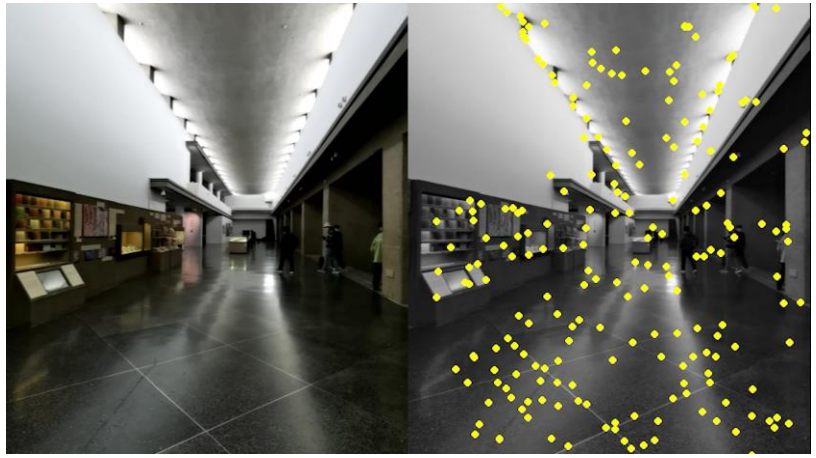
Game park

Key capabilities to build next generation holographic content

High-Precision 3D map

High-Reality Rendering

Centimeter-Level Spatial Computing



Strong AI Environment understanding

Exploring the topic of the metaverse and sustainability

ITU's Focus Group on metaverse has a group dedicated to exploring the nexus between sustainability and the metaverse.

Working Group 8
Sustainability, Accessibility & Inclusion

1. Technical Guidance: Guidance on green and low carbon development of metaverse
2. Technical Specification: Methodology on assessment of GHG emissions of metaverse

Supporting all aspects of sustainability and technology

ITU-T Study Group 5

Sets International Standards for Climate Action and Sustainable Digitalization

Thank you!

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