

Exploring Citiverse

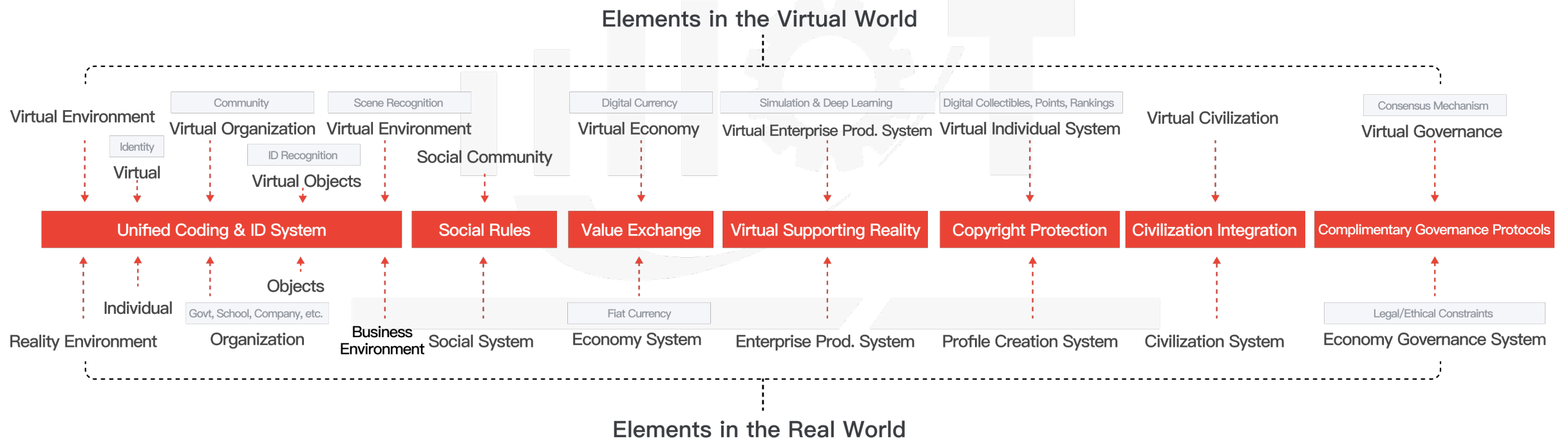
The Future of City Governance

Dr. Chao Ma

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Metaverse: an immersive and interactive space

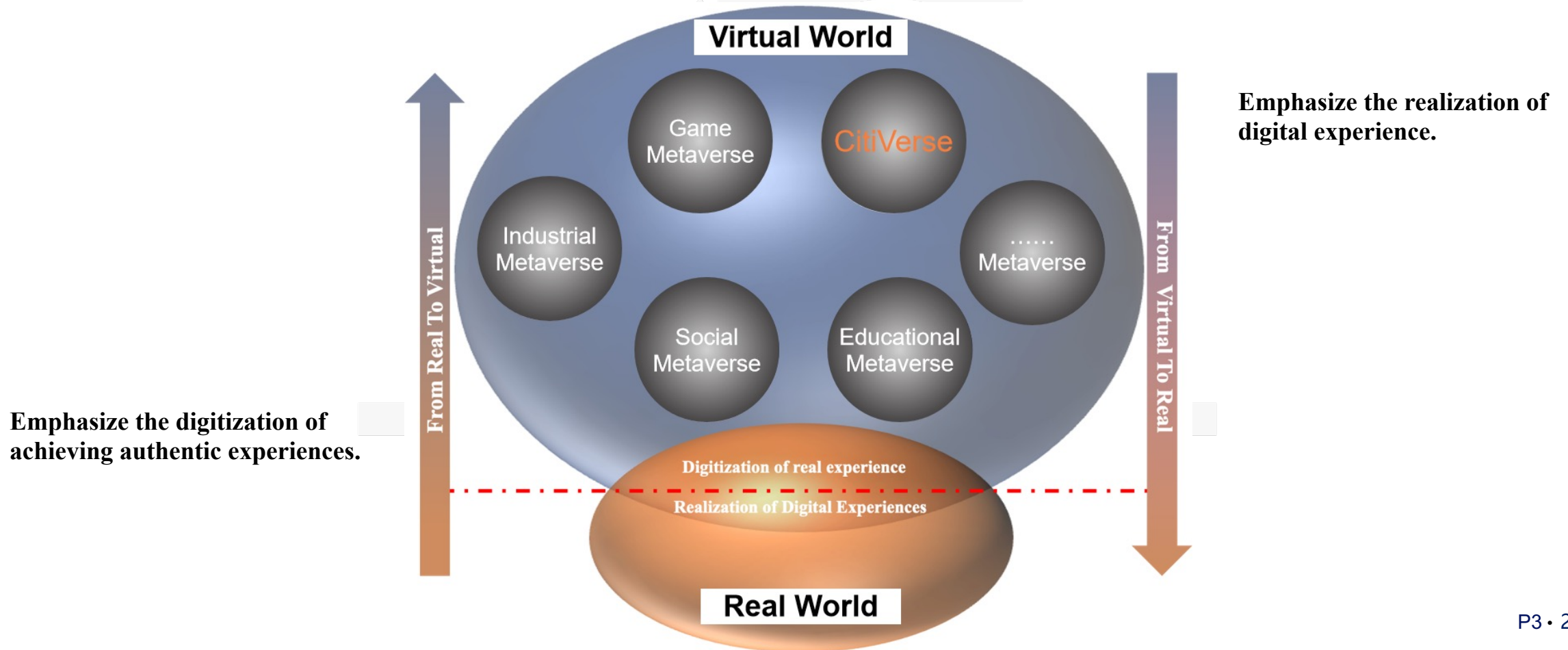
- The Metaverse is a collective virtual shared space, merging physical and virtual reality. It combines virtual reality (VR), augmented reality (AR), 3D virtual spaces, blockchain, etc.
- Key focuses of Metaverse include *Unified Coding & ID System, Social Rules, Value Exchange, Virtual Supporting Reality, Copyright Protection, Civilization Integration and Complimentary Governance Protocols.*



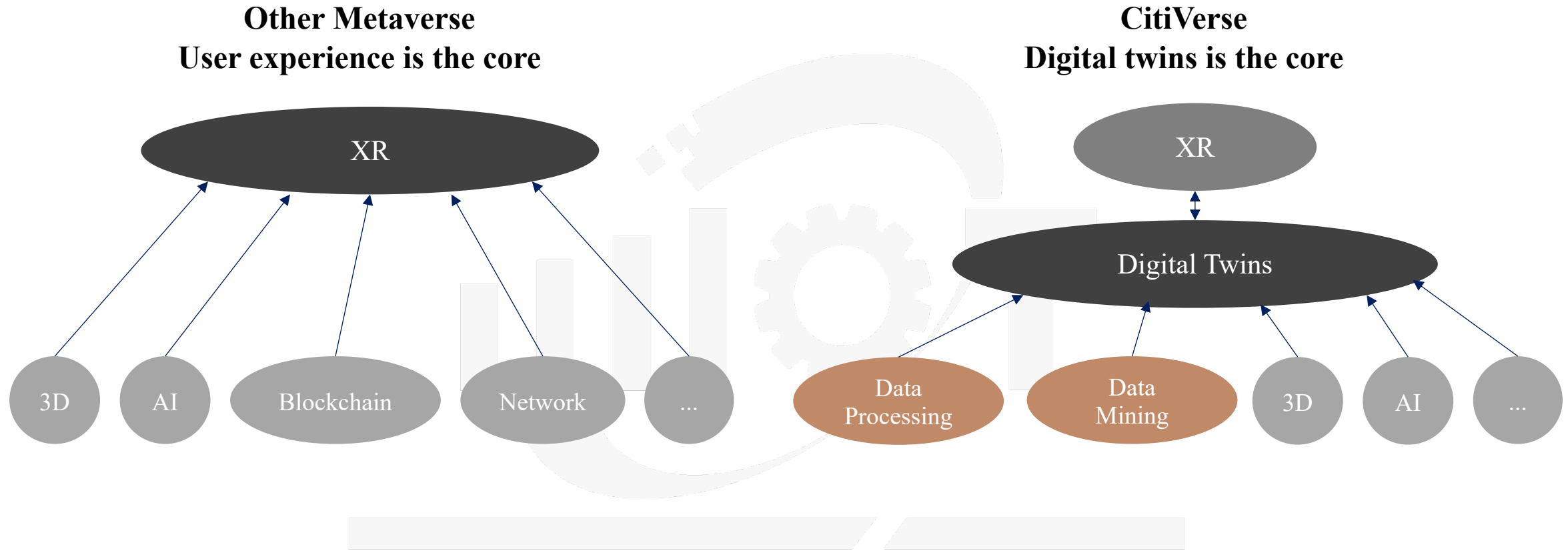
CitiVerse: A vital development field of the Metaverse

The CitiVerse is:

- the landing and expansion of the metaverse in the **Cities and Communities** field.
- a typical representative of the development direction of the metaverse from reality to virtual.
- a series of interconnected and distributed hybrid and virtual worlds representing, and synchronized with, their physical counterparts.



The key technology of CitiVerse is based on digital twins

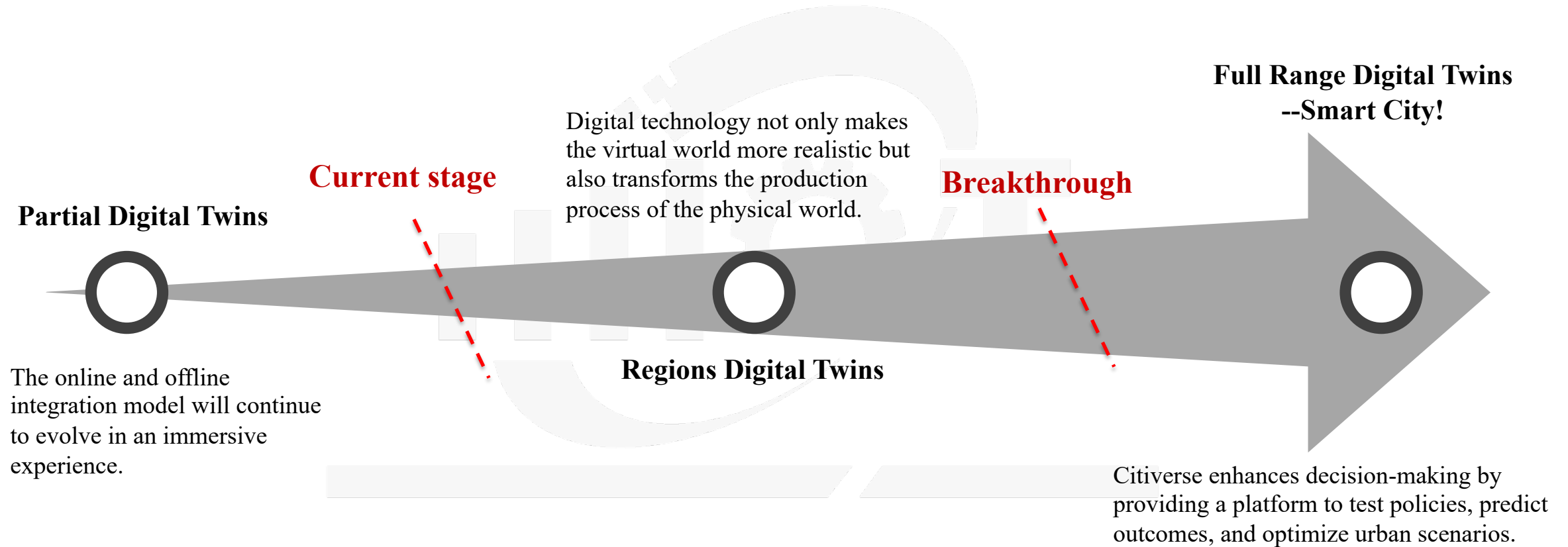


- XR is the most important technology, all technological applications are aimed at improving user experience.

- Digital twins is the most important technology, all technological applications are aimed at solving the city and community problems.

The trend of CitiVerse

- According to the level and scope of combining virtuality and reality, it can be divided into **Partial Digital Twins, Regions Digital Twins, and Full Range Digital Twins**.



- The CitiVerse is still in the stage of **Partial Digital Twins** and moving towards **Regions Digital Twins**.

Key Features of CitiVerse

➤ **Data-Driven Simulations:** CitiVerse integrates real-world data to create virtual city models, offering insights into various urban dynamics.

➤ **Policy Testing:** It allows policy-makers to simulate different policies and observe their potential impacts before implementation.

➤ **Predictive Modeling:** CitiVerse enables the forecasting of future trends and outcomes based on simulated data.



((())) "Cloud Road Center" Digital Twin Project

- Yangpu Bridge (Shanghai) digital Twin 1.0 has been put into operation by the end of 2021. The road management and maintenance department uses a new generation of digital twin technology to empower the digital application of facilities, ensure the safe operation of Yangpu Bridge, and realize the three-dimensional integration and control of "Observation-Management-Prevention".

Observation

Dynamic Structure Digital Twin

A total of 17 types of more than 1100 structural safety data perception points are deployed throughout the bridge to fully grasp the digital signs of the bridge.



Management

Administration of prohibited vehicles

The sensing device will push the license plate number, intrusion time, photos and other relevant data of the prohibited vehicle to the digital supervision system within 2 seconds, and synchronously start the relevant management and disposal process.



Prevention

Real-time analysis of the overlimit vehicles

Overlimit and overloaded vehicles crossing the bridge automatically trigger the structural safety monitoring and disposal process, and synchronously form the impact assessment of overlimit traffic on structural safety and pavement technical conditions.



(((X))) Xinghuo BIF Builds the Trust Foundation for CitiVerse

- Xinghuo blockchain infrastructure facility, is a national-large blockchain infrastructure and independent identity system.
- The Baquan Gorge, a 5A-level scenic spot in China, uses Metaverse (powered by Xinghuo BIF) to allow visitors to make Lantern Wishes (a traditional folk activity) in a virtual environment. Compared to the traditional method, this approach is more interactive, engaging, and environmentally friendly.

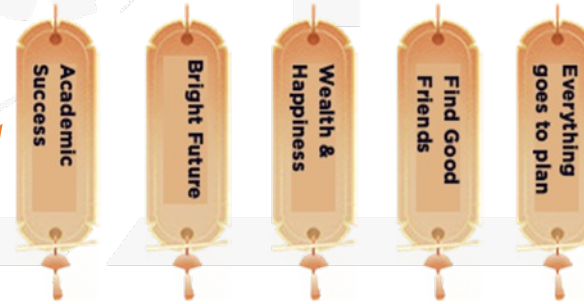


Wishing Lantern Design



Choose your favorite Lantern

Wishing Card Design



Choose your wishing card



Place your Lantern in the wishing Area

((())) "Panoramic Fuyang" Digital Twin System

- In order to solve the problems of difficult monitoring and management of 3,585 old houses in Fuyang District, Hangzhou, Fuyang District actively promotes the construction of digital twin project.
- This project including: **Building Health Risk Assessment, Tunnel Flooding Situation Monitoring, Intelligent Dispatch of Emergency Resources.**

Building Health Risk Assessment

Construct a building digital twin model to realize a comprehensive perception of the internal organization, potential risks and wall status of old buildings, and grasp information such as building settlement, wall dislocation, and wall cracks in real time. At the same time, a building health risk assessment model are established to realize real-time monitoring and prediction, early warning and automatic alarm of health risks of old buildings in Fuyang.



Tunnel Flooding Situation Monitoring

Real-time monitoring of the water level in the tunnel, combined with rainfall, drainage and other data, to dynamically evaluate the waterlogging situation of the tunnel. Reverse control is realized by connecting the platform with traffic signs, traffic lights and other facilities at the entrance and exit of the tunnel. Provide real-time early warning for vehicles planning to pass through the tunnel, detour in advance, and direct traffic diversion.



Intelligent Dispatch of Emergency Resources

The platform provides a map display of basic resources and provides related auxiliary capabilities for emergency response. Based on the analysis of emergency resource data and the intelligent calculation of emergency resources around the building, it provides support for emergency response decision-making.



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 电话: +86 010-6230 0350

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