**POV**

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The Metaverse
A virtual world of Infinite Possibilities

Overview

Metaverse is a social-economic construct where businesses & customers interact in a virtual world powered by a global economy model. In this point of view article, we will explore the key business drivers, underlying technologies, potential use cases, and the industry segments leading early adoption of the Metaverse. Additionally, we will address the critical challenges anticipated as the Metaverse transitions into mainstream business operations.

Metaverse got its name from the 1992 sci-fi novel "Snow Crash"– it is more of a vision than a concrete reality. The word "meta" is a Greek word that means 'beyond or across' and the verse is "universe." So, it is a place that transcends beyond the physical world to the virtual 3D (Virtureal). Metaverse bridges the gap between the physical, financial, and immersive worlds and can expand upon the global economy model. People around the world can perform activities in the virtual world as they do in the physical world like work, meet, play games, and socialize together, except in 3D space. Consumers are excited to use the Metaverse for social connection, and 59% said there Is at least one activity that they preferred to do virtually. In addition, as Mark Zuckerberg noted at Meta Connect 2023, "we expect to see a blend of digital and physical worlds as part of the metaverse experience".
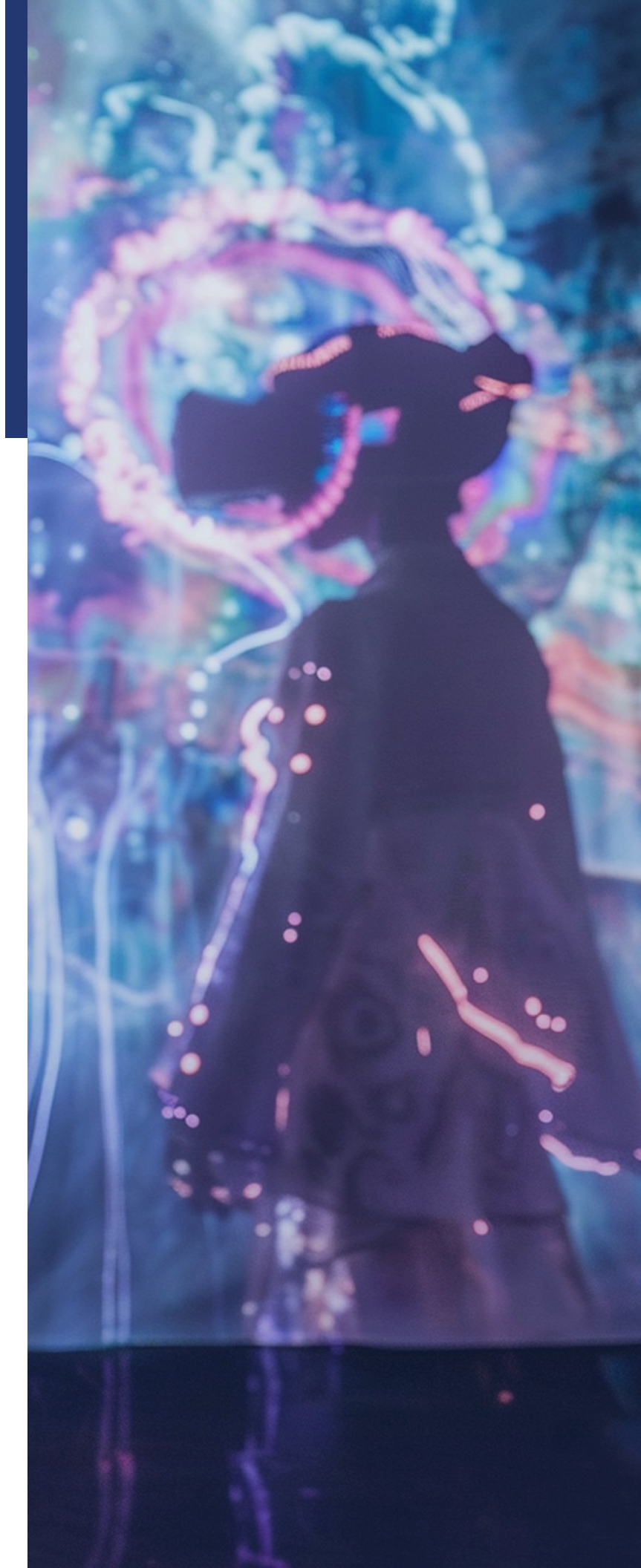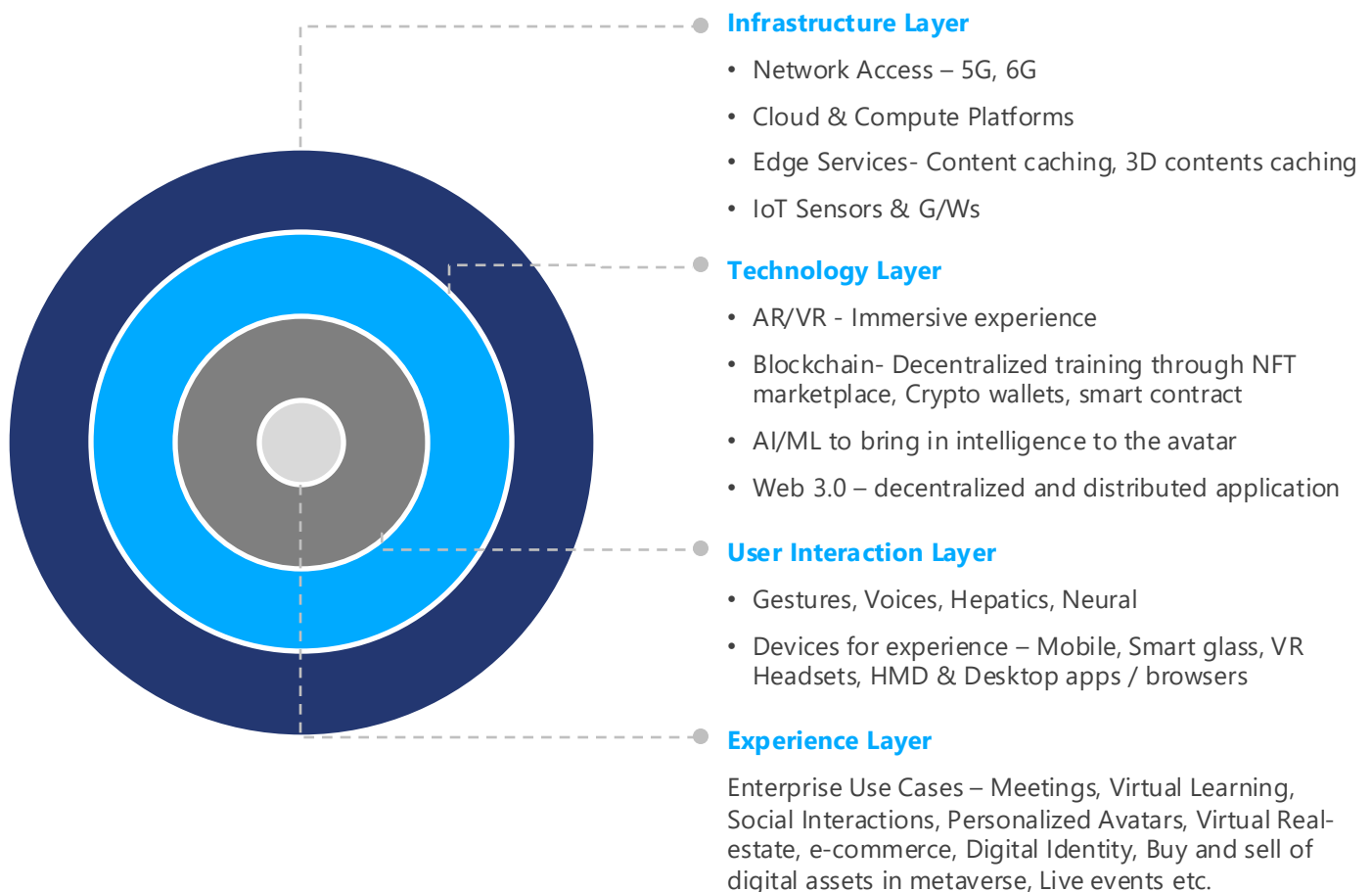
The Economic Potential of the Metaverse

While Gen AI has captured significant interest in 2024, it should be noted that AI is a cornerstone technology for the metaverse. The Metaverse is anticipated by 2030 to drive $5 trillion in value creation and $936 billion in market size with CAGR's ranging from 38% to 90% with the gaming segment adopting first. Gaming software fans are already experiencing the rapid transition into embracing Metaverse using VR technology, and networking components for a multi-player experience, more so with the use of crypto wallets.

The Metaverse is poised to generate $5 trillion in value by 2030, with its market size projected to soar past $1 trillion.

Enterprise can think of Metaverse as a new digital channel (VR is a way) where people (clients) can work, interact and collaborate with businesses. Should we broaden to include what other companies are doing and there isn't one metaverse.

Major corporations such as Microsoft (Activision Blizzard), Meta, EPIC Games and Unity have Invested $1 Billion in the Metaverse till date.
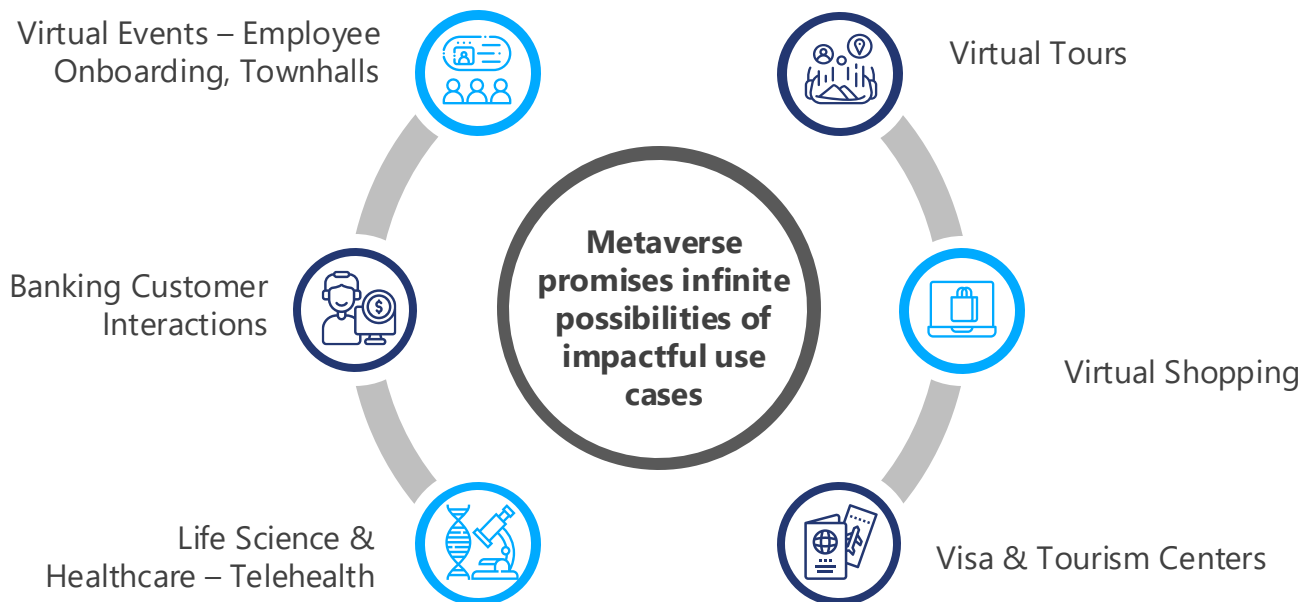
Building Blocks of a Metaverse Application

Infrastructure Layer

- Network Access – 5G, 6G
- Cloud & Compute Platforms
- Edge Services- Content caching, 3D contents caching
- IoT Sensors & G/Ws

Technology Layer

- AR/VR - Immersive experience
- Blockchain- Decentralized training through NFT marketplace, Crypto wallets, smart contract
- AI/ML to bring in intelligence to the avatar
- Web 3.0 – decentralized and distributed application

User Interaction Layer

- Gestures, Voices, Hepatics, Neural
- Devices for experience – Mobile, Smart glass, VR Headsets, HMD & Desktop apps / browsers

Experience Layer

Enterprise Use Cases – Meetings, Virtual Learning, Social Interactions, Personalized Avatars, Virtual Real-estate, e-commerce, Digital Identity, Buy and sell of digital assets in metaverse, Live events etc.

Metaverse outreach expanded as it can now be accessed from high- & low-end devices

Metaverse solutions are moving beyond price barriers as devices ranging from highly specialized models to low-cost ones are available. We can deliver these solutions on specialized VR headsets, Android/iOS smartphones on VR mounts (e.g., Irusu Monster VR Headset) as well as on Laptop/MacBook (with limited VR view but gesture controls with keyboards). Individuals based on their role or level of engagement can select the appropriate device gear. The launch of Meta's Quest3 and new Ray-Bans at Meta Connect in 2023, is a delightful additions to the wearable devices for Metaverse and as Mark Zuckerberg said at the end, "This glasses/AI Bots/Quest Combo is the future", we couldn't agree more,

Virtual Events – Employee Onboarding, Townhalls

Virtual Tours

Banking Customer Interactions

Metaverse promises infinite possibilities of impactful use cases

Virtual Shopping

Life Science & Healthcare – Telehealth

Visa & Tourism Centers

Key Business Drivers Fueling the Metaverse Adoption

Expand business: Without large investments in buying, build & operations of physical brick & mortar stores/offices.

Reduce carbon footprint: By lowering the need for travel for businesses & customers.

Lower payment costs: Promotes global economy using e-wallets and cryptocurrencies via blockchain-powered marketplaces.

Increased customer outreach: Events & Promotions in meta can scale beyond boundaries and open new vistas for business.

Human interaction: Keeps the human experience of every customer engagement intact.

Challenges in Metaverse Adoption

While the Metaverse presents exciting opportunities, several challenges must be addressed:

Bandwidth: Rich immerse experiences utilize 3D content and avatars of high polycounts. While there is promising actions underway to lower bandwidth needs, in the short term a minimum of 5G speed is needed.

Decentralized: As the Metaverse is about decentralization and leads to the creation of Decentralized Autonomous Organizations (DAOs) - a shift from the conventional regulatory-based setups and thus ensuring Democracy in the Metaverse is important.

Ensuring Security: Essential element of any implementation given DSO and heterogeneity. Increased vulnerabilities will give rise to the need for defining new Metaverse protocols.

Data Privacy: Since data is of the highest order in a decentralized world, we need to bring in Zero Knowledge Proof where the sender shares the data with the receiver without revealing it to maintain privacy.

Talent: More than coding abilities for Metaverse, the priority requirement is people who have high digital creativity. Any organization developing or working on metaverse must invest in a large pool of creative people.

Device Cost: While the initial investment in VR headsets with controllers is coming down, any implementation needs to be able to take advantage of lower-cost devices or smartphone-based solutions as they become available.

Age Appropriate: Initial users part of the age group 15-35 years old, ensuring proper controls and support should be put in place to alleviate usage of this immersive technology.

Why Infinite as your Metaverse Partner

Infinite brings over 15 years of proven expertise in digital and engineering services, with a dedicated Metaverse Center of Excellence (CoE) focused on co-innovating with tech partners and startups to develop business applications that deliver solid returns on investment (RoI).

Our CoE lab offers a comprehensive suite of services for our customers, including 3D content creation and design, hardware/software prototyping frameworks, XR development, cloud integration, and testing services. With Infinite as your partner, you can confidently navigate the complexities of the Metaverse and unlock its full potential for your business.

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A seasoned expert in Digital Technologies Practice and Business Development with 24+ years of experience in Product Engineering Services, specializing in IoT, Mobility, and Cloud Solutions.

He brings extensive experience across diverse industry segments, including Automotive, Health & Lifestyle, Consumer Goods, Manufacturing, Telecom, Transportation, Energy, and Utilities.

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