Metaverse Case Study

Learning metaverse development in **baby** steps

The problem

Communication

The limit of video/audio calls over internet.

Not able to see and hear in real time with far away peoples around the world.

Customize/Personalize

The customization and personalization offered to users, with limited interactions.

Haptics

The feelings and emotions are not fully expressed.

Can’t able to actually sense anything.

Solution

Introducing **Metaverse**, the future of internet

The word "**metaverse**" is a portmanteau of the prefix "**meta**" (meaning beyond) and "universe"; the term is typically used to describe the concept of a future iteration of the internet, made up of persistent, shared, 3D virtual **spaces** linked into a perceived virtual universe.

Explanation (Deep-Dive)

Metaverse

What actually it is ?

Does it already **exists** ?

You can think of the **metaverse** as a new **version** – or a new **vision** – of the **internet**, one where people gather to **communicate**, **collaborate**, and **share** with a personal virtual presence on any device.

Facebook (Meta), Microsoft, Apple and Nvidia (Omniverse) etc; are actively working on it currently and which create some huge impacts in the upcoming years.

Metaverse

As a **Decentraland**

Where people **Work, Play & Socialize**

Providing access to **Spaces**, allowing people to interact in an immersive way through **VR** and **AR**.

Use of **Blockchain** system, makes it extremely **Secure**, though people can buy/sell virtual assets, collaborate and work together without **physically** present onsite.

Metaverse

Importance For **Developers**

Facebook(Meta), Microsoft, Apple, Nvidia

For Developers: We call it "**metaverse stack**" which will enable developers to "*build a rich digital model of anything physical or logical*"

Microsoft: They call it "**metaverse apps**" or "**digital twins**" defined as "*rich digital models of anything physical or logical, from simple assets or products to complex environments.*"

Facebook: They introduced **Portal** (a video calling device) and **Oculus** — which can "*teleport you into a room with another person, regardless of physical distance, or to new virtual worlds and experiences.*"

Nvidia: They introduced **Omniverse** which is based on an open source technology developed by Pixar, called **Universal Scene Description** (USD) described as "*the HTML of 3D.*"

Metaverse

Explanation of **Technical Terms**

Blockchain, Web 3.0, NFTs

Blockchain technology is central to the development of the metaverse and **Web 3.0**

Web 3.0 is a digital place where we can produce content, share it, and formalize deals. Users will be able to interact with data through artificial intelligence and machine learning technology.

On the other hand, we have got the **Metaverse**. It refers to a virtual space of the future that allows access to a wide range of entertainment and projects involving the entire spectrum of augmented reality.

NFTs are the bridge to the metaverse, and facilitate identity, community and social experiences in the metaverse

Metaverse

Explanation of **Technical Terms**

DeFi, MetaFi

Through **DeFi** networks, you can easily **buy** or **sell** your Metaverse tokens using **smart contracts**, **P2P** transactions, and more.

We explore how it unlocks value in the Metaverse through what we call "**MetaFi**": the decentralised financial tools of the Metaverse.

Challenges in **Metaverse**

Challenge 1

Interoperability Across Metaverse

Sharing virtual assets, accessing cross-platform tools & expanding large scale business models

Challenge 2

Privacy/Data Security

Protection of large quantity of sensitive personal information stored or shared in meta-verse

Challenge 3

Mental Health

If virtual worlds lead users to shy away from real-world responsibilities and interactions

Thank you

Case study prepared by Umar Ahmed