THE CREDIT UNION GUIDE TO WEB 3.0 AND THE METAVERSE

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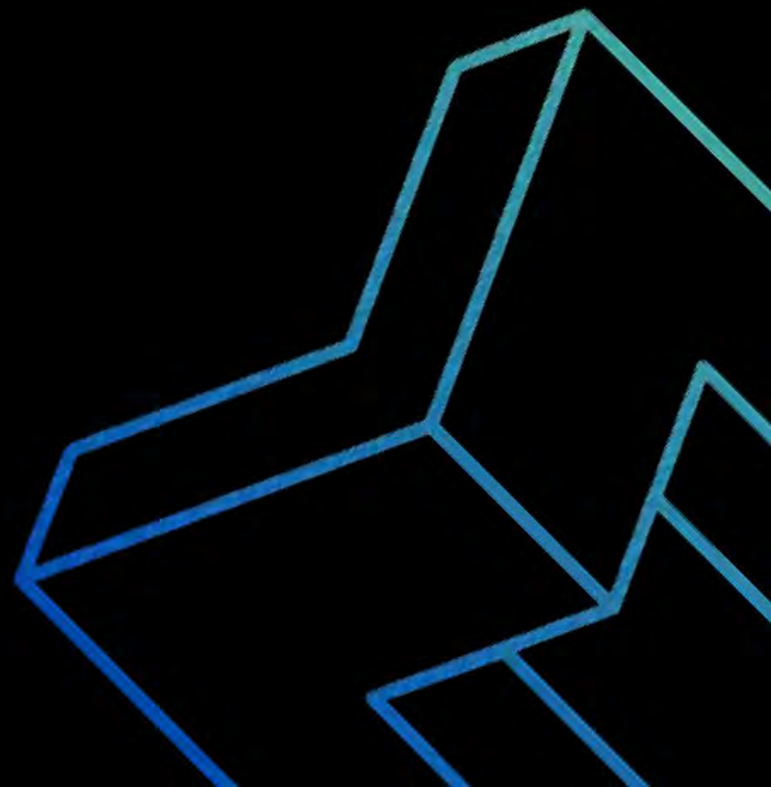


I am the CEO of MMH Technology Group, which encompasses Data Systems and Blockchain Consulting

- Member of the Crypto Sustainability Coalition at the World Economic Forum
- Past Chair and Executive Board member of Blockchain for Impact (Works with the UN)
- One of approximately 2% of women of colour that sat on at least two publicly traded boards in Canada during 2022
- Metaverse Ambassador for the Global Blockchain Business Council
- A board member of the Canadian Blockchain Consortium (CBC)
- Chair of the CBC's Mining Committee
- Past Chair for Girls In Tech

Spoken at:

- Davos during the World Economic Forum General Assembly
- United Nations Headquarters
- Richard Branson's Necker Island
- Parliament in Canada
- Silicon Valley, among other places

WHAT WE WILL COVER

- Introduction
- What is Web 3.0/Blockchain?
- What is Cryptocurrency/NFT's
- What is the Metaverse?
- Why are financial services interested in the Metaverse?
- Financial Institutions using the Metaverse
- Existing Metaverse Platforms
- Requirements to use the Metaverse
- How are FI's using the Metaverse?
- Opportunities for Credit Unions in the Metaverse
- Challenges for Credit Unions in the Metaverse
- Use Cases
- Conclusion
- Questions?

WHAT IS WEB 3.0?

Web 3.0, also known as the decentralized web is the next stage of the World Wide Web that aims to provide a more interconnected, and decentralized internet experience.

The current Web 2.0 focuses on social networking, content creation, and e-commerce. In contrast, Web 3.0 aims to create a more seamless and secure user experience by integrating various technologies such as artificial intelligence, blockchain, and decentralized data storage.

WHAT IS BLOCKCHAIN?

Blockchain is a distributed, decentralized digital ledger that records transactions in a secure and transparent manner.

It is a technology that enables the creation of a tamper-proof and publicly accessible database that can be used to store and manage any kind of information, not just financial transactions.

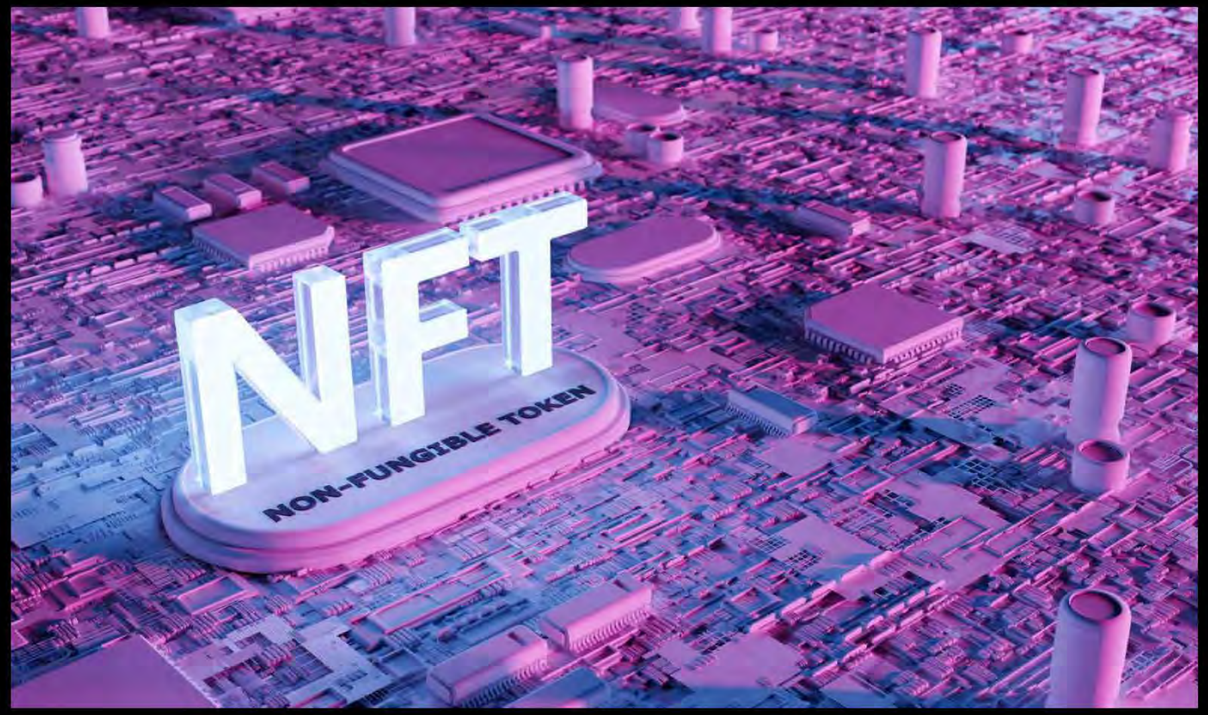

I HAVE NO IDEA
WHAT CRYPTO CURRENCY IS
AND AT THIS POINT
I'M TOO AFRAID TO ASK

WHAT IS CRYPTOCURRENCY?

Cryptocurrencies are a form of digital money operated via a decentralised system, meaning they aren't regulated by banks or governments. Their value, like traditional money, is based on supply and demand, and then secured by cryptography, which makes it nearly impossible to counterfeit.

Many cryptocurrencies are decentralized networks based on blockchain technology.

WHAT IS AN NFT?



NFT stands for Non-Fungible Token.

An NFT is a unique digital asset that is stored on a blockchain, which is a distributed ledger that records transactions in a secure and transparent manner.

What makes an NFT unique is that it icannot be divided into smaller units like other cryptocurrencies such as Bitcoin or Ethereum. Each NFT is also unique and has its own digital signature, which makes it impossible to duplicate or counterfeit.

WHAT IS AN NFT?

NFTs can represent various types of digital assets such as art, music or videos.

They can be bought and sold like other digital assets, and their ownership and transaction history are recorded on the blockchain, making them transparent and traceable.

WHAT IS AN NFT?

NFTs (Non-Fungible Tokens) can be used in the metaverse in various ways. Here are a few examples:

Digital Art: NFTs can be used to represent unique digital art pieces in the metaverse. These digital art pieces can be anything from 2D images to 3D sculptures, and they can be displayed in virtual galleries or sold in virtual marketplaces.

Virtual Real Estate: NFTs can also represent virtual real estate in the metaverse. Virtual land or property can be bought and sold using NFTs, and these can be used to build virtual structures or even entire virtual cities.

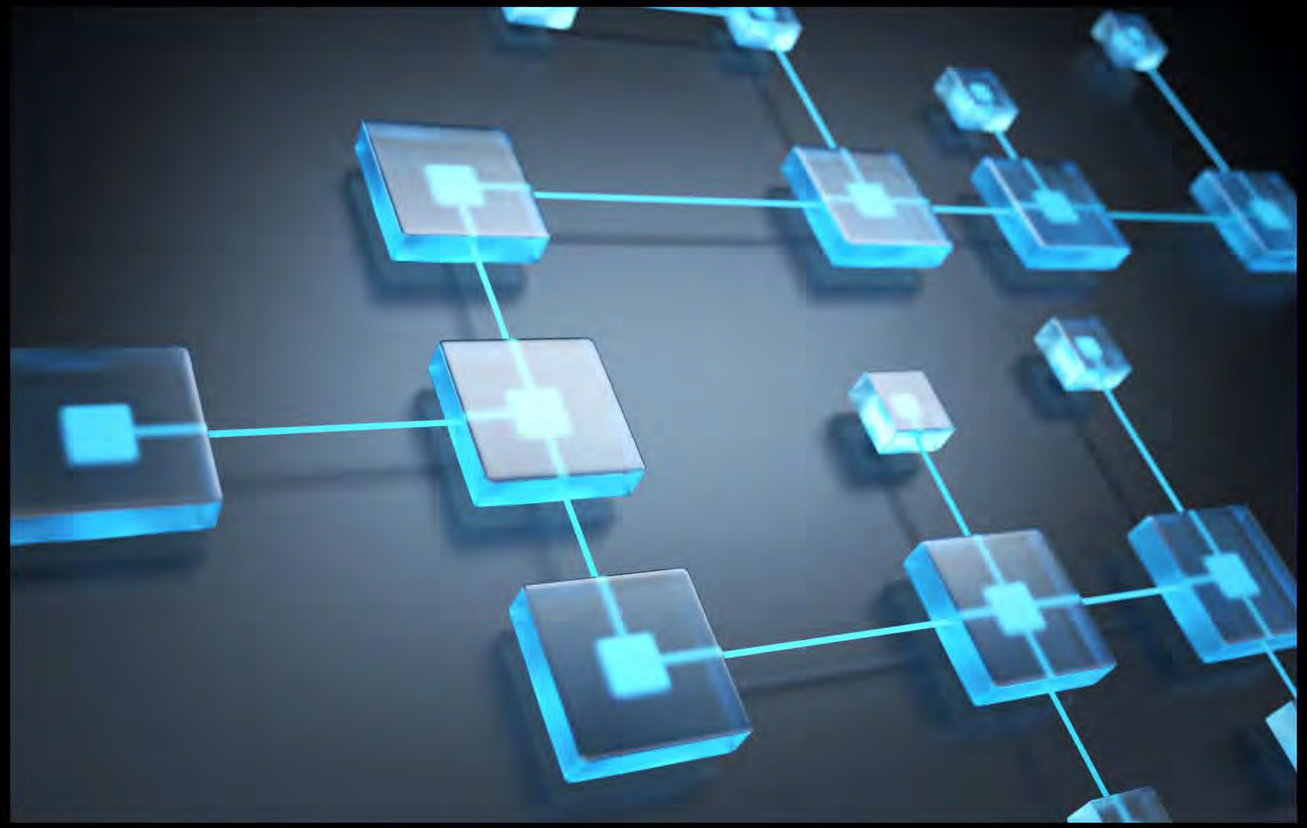
Virtual Goods: NFTs can be used by gamers to represent virtual goods such as armor, or other in-game items. These items can be bought and sold in virtual marketplaces

WHAT IS BLOCKCHAIN?

A blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system.

A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain.

WHAT IS BLOCKCHAIN?



In a blockchain, each transaction is recorded as a block, which is linked to the previous block in a chain. The entire chain of blocks is stored on multiple computers or nodes, creating a decentralized network.

Each node on the network has a copy of the blockchain, which is updated in real-time as new transactions are added.

WHAT IS BLOCKCHAIN?

The security of the blockchain comes from the fact that each block contains a unique cryptographic hash that is generated based on the data in the block.

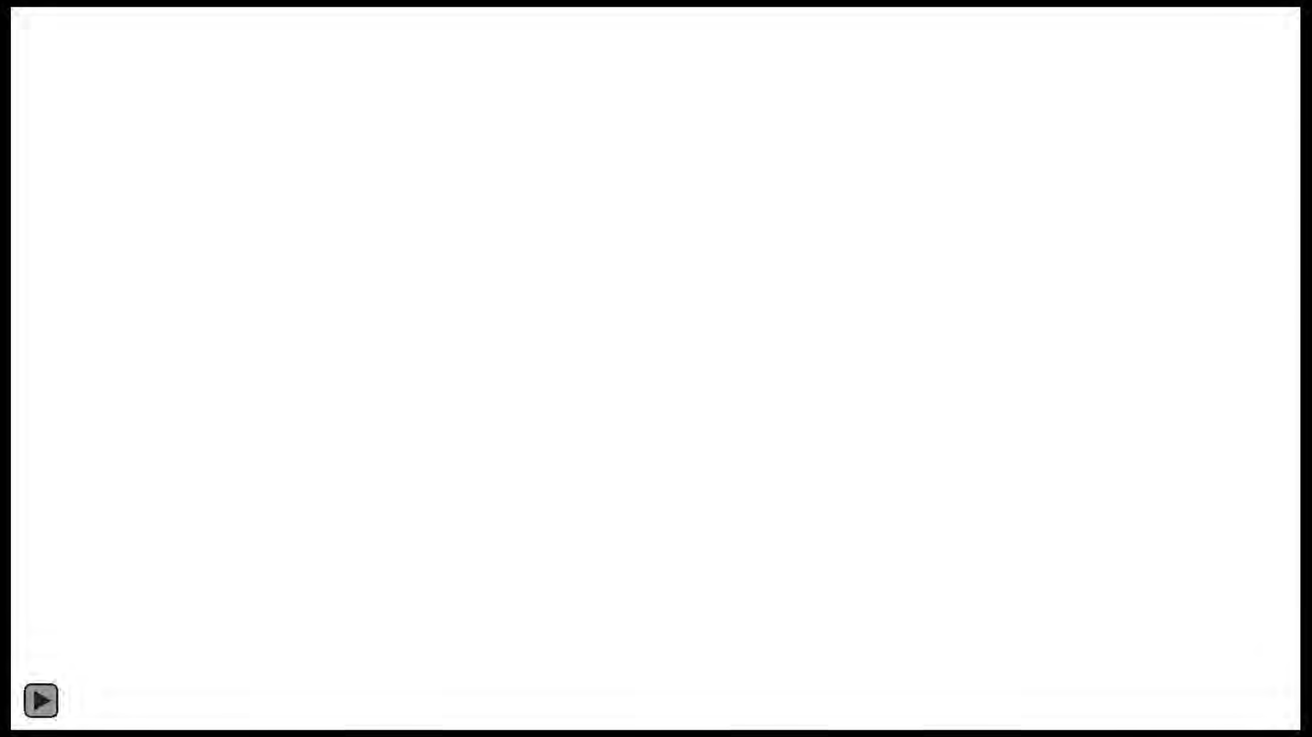
A hash is a mathematical function that converts an input of arbitrary length into an encrypted output of a fixed length. Thus, regardless of the original amount of data or file size involved, its unique hash will always be the same size.

WHAT IS BLOCKCHAIN?

Any attempt to alter the data in a block would result in a change in the block's hash, which would be immediately detected by the network. This makes it nearly impossible for anyone to tamper with the blockchain without being detected.

Blockchains can be used for a wide range of applications, including supply chain management, voting systems, and more.

WHAT IS THE METAVERSE?



As online experiences become more "real," we place more of our real lives online.

Defining "Metaverse":
A 3D internet. The metaverse is a network of spatially immersive virtual worlds that can be experienced synchronously by millions of people. It is the intersection of the physical and digital world.

How to use it?
Viewed via web browser or headset, users can have real-time interactions and experiences with each other and businesses anywhere in the world.

Market Opportunity

What is the metaverse? The intersection of three technologies

The metaverse lies at the convergence of three current technologies: M-Worlds, web3, and AR/VR/MR -- to create a 3D, immersive, new digital age. It is the next generation of the internet.

web3

30M installed VR headsets
800M mobile AR users

$16B
Total Market Value
AR/VR/MR

30B NFT wallets
$40B total NFT assets

$50B
Virtual Transactions
DIGITAL ASSETS

500M
Daily Active Users
M-WORLDS

FORTNITE
ROBLOX

Digital worlds

Sources: Matthew Ball; Bloomberg; Artillery Intelligence; Binance Research; BCG analysis
Note: 2021 figures

"By 2026, 25% of people will spend at least one hour a day in the metaverse for work, shopping, education, social and/or entertainment", according to Gartner, Inc.

Also by 2026, 30% of businesses worldwide will have products and services ready for the metaverse.

WHY ARE FINANCIAL SERVICES INTERESTED IN THE METAVERSE?

1.They want to be where potential new customers are bridging operations between physical locations and global employees.

2. A new way to engage employees, clients, and the public with unique opportunities to educate on and connect with services.

3. Fortify commitment to advancing technology in the workplace.

Financial Institutions that are using the Metaverse

J.P.Morgan

CBI

Hana Bank

HSBC

Union Bank of India

QUONTIC

CaixaBank

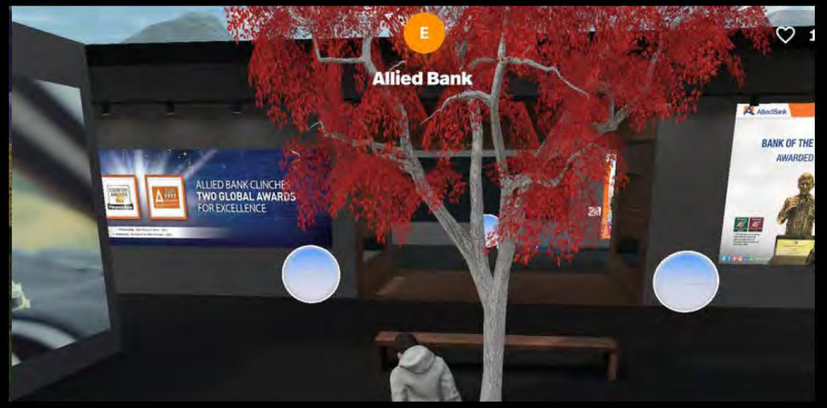
Standard Chartered

BANK OF AMERICA

METAVERSE GROUP

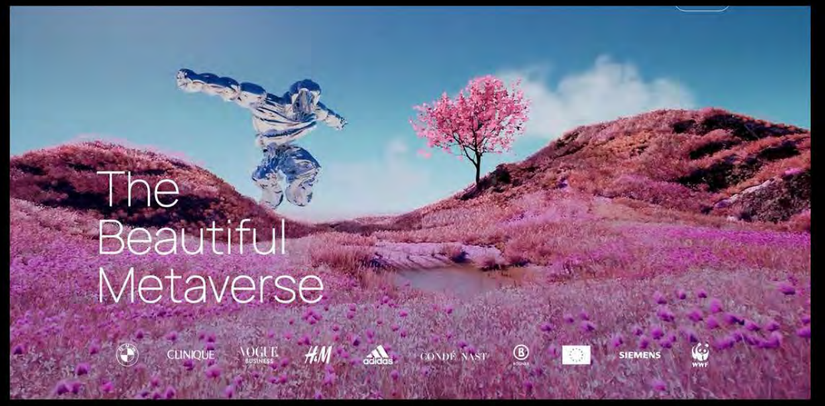
EXISTING METAVERSE PLATFORMS

1. SPATIAL
spatial.io



2. PORTAL
theportal.to

3. JOURNEE
journee .live



4. DECENTRALAND
decentraland.org

REQUIREMENTS TO USE THE METAVERSE

What do customers need for these platforms?

- Computer or Laptop
- Virtual Reality (VR) Headset Optional
- Internet Connection

HOW ARE FI'S USI

- Metaverse Branch
  - KB Bank
  - Quontic
- Metaverse Lounge
  - JP Morgan
  - Union Bank of India
- Metaverse Office
  - Hana Bank
  - DGB Financial Group
- Virtual Land
  - CaixaBank
  - Standard Chartered

Bank	Country	Metaverse Partner	Activity	Description
Hana Bank		ZEPETO	Metaverse Office	Hana Bank launches special task force to attract younger customers in the virtual metaverse.
VISA		CryptoPunks	NFT Purchase	Visa steps into the metaverse via purchase of its first NFT, the CryptoPunk 7610.
BANK OF AMERICA		STRIVR	VR Training Program	Bank of America becomes first financial services firm to launch VR training in nearly 4,300 financial centers.
KB Kookmin Bank		SHAREBOX	Metaverse Branch	KB Bank develops the KB Metaverse VR Branch Testbed to access banking services in the metaverse.
DGB Financial Group		EARTH 2	Metaverse Office	DGB Financial Group purchases second headquarters on Earth 2 metaverse.
JPMorgan Chase & Co.		Decentraland	Metaverse Lounge	JPMorgan becomes first bank to open its Onyx lounge in Decentraland.
SCB ไทยพาณิชย์		THE SANDBOX	Metaverse Office	Siam Commercial Bank's technology arm SCB 10X opens HQ in The Sandbox.
HSBC		THE SANDBOX	Virtual Land	HSBC acquires virtual real estate in The Sandbox for sports, esports and gaming initiatives.
AMERICAN EXPRESS		–	Trademarks	American Express files several patent applications to provide its real-world services in the metaverse.
NatWest		GREEN ROCK	Virtual Events	NatWest enters the metaverse with virtual event series 'Portrait of Success' that challenges gender stereotypes.
HSBC		–	Metaverse Fund	HSBC launches fund to capture investment opportunities in metaverse for wealthy Asian clients.
imagin		Decentraland	Virtual Land	CaixaBank's imagin enters the metaverse by opening the virtual version of imaginCafé on Decentraland.
mastercard		–	Trademarks	Mastercard files 15 NFT and metaverse trademark applications to extend its services in the metaverse.
standard chartered		THE SANDBOX	Virtual Land	Standard Chartered acquires virtual plot of land at The Sandbox's Mega City district.
QUONTIC		Decentraland	Metaverse Branch	Quontic opened an outpost in the metaverse to connect with customers, offer education, and eventually offer banking services.
CBI		Decentraland	Metaverse Branch	CBI opens a virtual Metaverse location in Decentraland.
Union Bank		THE SANDBOX	Virtual Lounge	Union Bank of India launched Metaverse Virtual Lounge, 'Uni-verse'

OPPORTUNITIES IN THE METAVERSE

Financial Institutions can

- Create new revenue streams for their business
- Earn transaction fees and interest on loans on new accounts that are opened.

OPPORTUNITIES IN THE METAVERSE

BRANDING AND

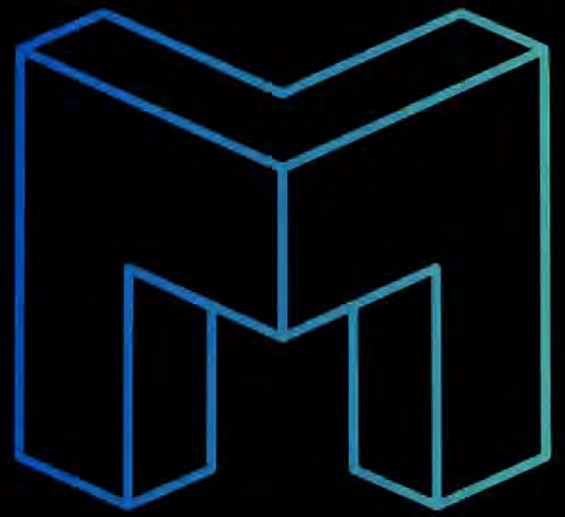
- The metaverse provides an opportunity for financial institutions to showcase their brand in a new and innovative way.
- The metaverse allows financial institutions to create immersive experiences to demonstrate products and services.
- Access a new generation and demographic of client

OPPORTUNITIES IN THE METAVERSE

POTENTIAL CUSTOMER

Today, 300M people are spending time in major virtual world metaverse games.

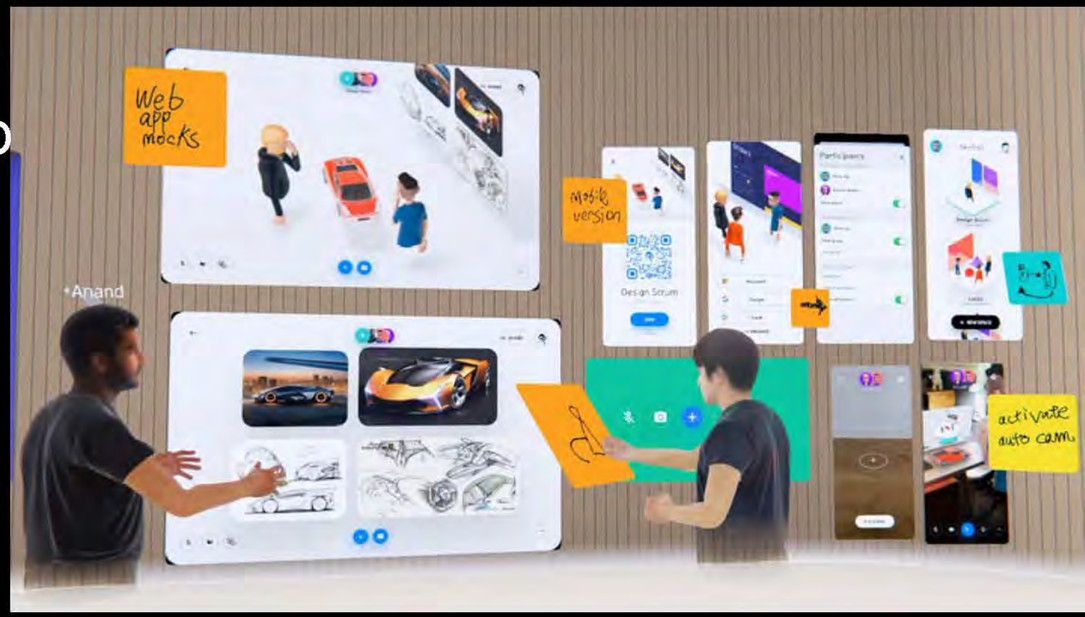
A recent EY report on the metaverse: "As consumers invest more in their digital identities, they buy more digital products and spend more time in digital experiences. These digital identities are becoming as important as their physical selves, fusing digital and physical worlds."



OPPORTUNITIES IN THE METAVERSE

VIRTUAL

The metaverse can serve as a platform for FI's to conduct virtual meetings with customers. This can help FI's offer a more personalized experience to customers and reduce the need for in-person meetings.



OPPORTUNITIES IN THE METAVERSE

VIRTUAL BRANCHES

Financial Institutions can create virtual branches in the metaverse, which can serve as a platform for customers to interact with the FI's products and services. These virtual branches can offer an immersive experience that is not possible with traditional banking channels.

OPPORTUNITIES IN THE METAVERSE

FINANCIAL

The metaverse can be used to educate customers about financial literacy. Financial institutions can create interactive experiences that teach customers about budgeting, saving, investing, and other financial topics.

CHALLENGES IN THE METAVERSE

While the Metaverse has the potential to revolutionize the financial services sector, there are several challenges that FI's need to be aware of.

Some of these challenges include:

REGULATORY CONCERNS

- Comply with existing regulations and adapt to new ones that emerge as the metaverse evolves.

- Key regulatory areas:
  - Virtual currency laws, Anti-Money Laundering (AML), and Know-Your-Customer (KYC) policies.

- The need for regulatory clarity: Collaboration between FIs, regulators, and policymakers.

SYSTEMS INTEGRATION

Financial institutions have complex systems and processes, and integrating these systems with the metaverse can be challenging. Investments in new technologies and infrastructure may be needed to ensure smooth integration with the metaverse.

SECURITYCONCERNS

- Cybersecurity threats in the Metaverse include hacking, phishing, and theft.
- Protection measures for FIs: Strong encryption, multi-factor authentication, and cybersecurity audits.
- Collaborative approach: Financial Institutions, regulators, and virtual world developers working together to enhance cybersecurity.

CUSTOMER ENGAGEMENT

- Using the metaverse may be a new concept for many people outside the 15 to 30-year age range, and financial institutions will explore effective ways to engage with these users in the metaverse.
- Traditional ways of interacting may not be effective in the metaverse.

USE CASES

JP MORGAN CHASE

Customers can do the following:

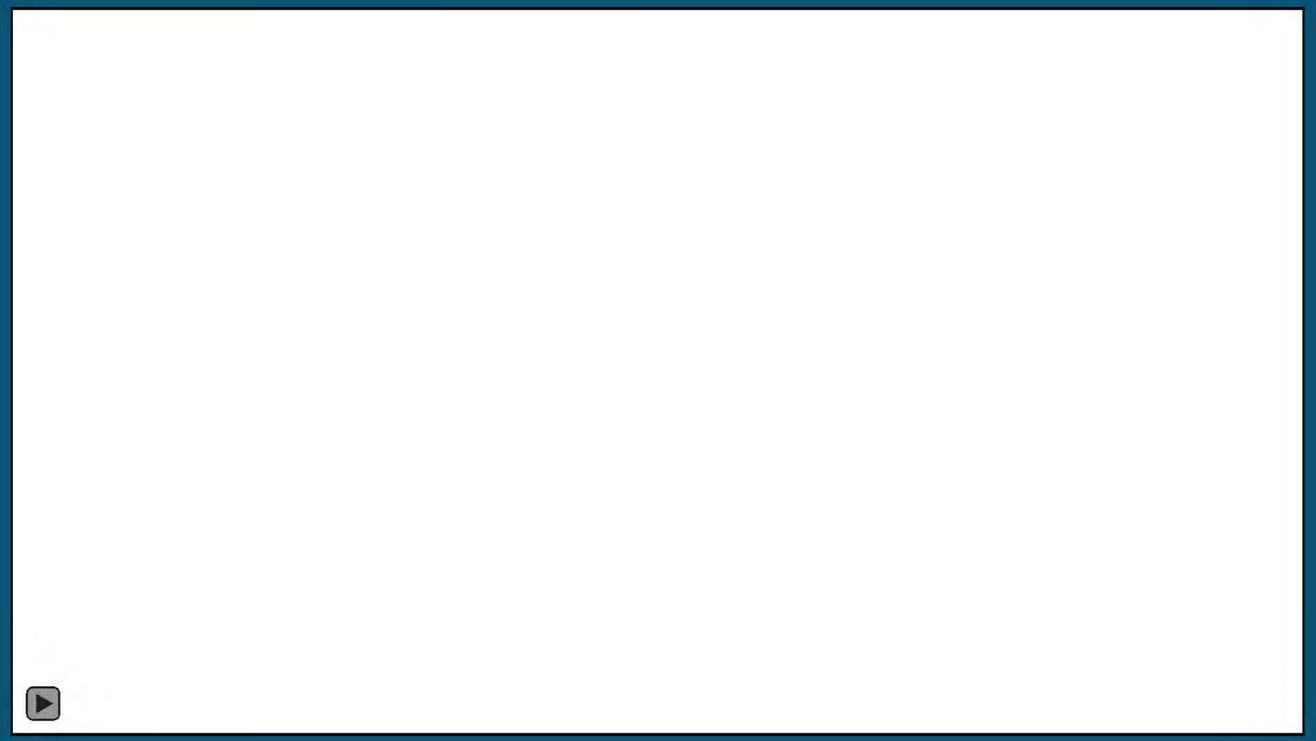
- Open an account
- Deposit their checks
- Fill out a mortgage app on a new home

UNION BANK OF INDIA

Customers are able to:

- Balance Inquiry
- Mini Statement
- Loans

ICICI BANK



Customers can:

- View KYC Facilitation video
- Acces a 24/7 Metaverse Branch

CONCLUSION

Overall, the metaverse offers abundant opportunities for banks to innovate and transform the way they do business. There will be challenges along the road to adoption; however, embracing this new technology can lead FI's to new revenue streams, improved customer engagement, and differentiation from their competitors.

THANK YOU!

QUESTIONS?

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