

next in financial services

BANKING IN THE METAVERSE

From buzzword to business case:
Why banks are optimistic but cautious about the metaverse

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Foreword

From science fiction to technology buzzword, the metaverse has quickly become one of the most talked about emerging technology trends. Many industries are already exploring use cases of how to conduct business and leverage the opportunities in the metaverse, and the financial services industry is no exception. With its infinite possibilities, the metaverse has the potential to propel banks to the next level of truly engaging customer experiences.

Making the metaverse a reality for your business

The metaverse is still in the first phase of Gartner's hype cycle¹, after all, with an anticipated 10-plus years until it reaches sustained productivity. As such, institutions should develop long-term roadmaps that emphasize clear use cases, and not mere flag-planting.

Our latest research reveals that banks are cautiously optimistic about the metaverse. However, to make the most of this new world, banks should understand the metaverse's building blocks of the metaverse and using that knowledge to consider how they could create entirely new business models in addition to enhancing customer experiences. Also, there is merit in exploring ideas and use cases that have not yet been thought through or solved so far and consider the impact of metaverse.

For now, it may seem like exclusively virtual or augmented reality, but there are tangible, value-adding opportunities to explore for generating revenue and transforming customer experiences.

While investing in the metaverse may not be the highest priority for your organization's digital transformation, especially considering the security and privacy concerns, it is still important to define your strategy and research your customers – both present and future. Often, companies must meet their customers where they are, and for banks, that next place could be to establish their presence in the metaverse.

DENNIS GADA

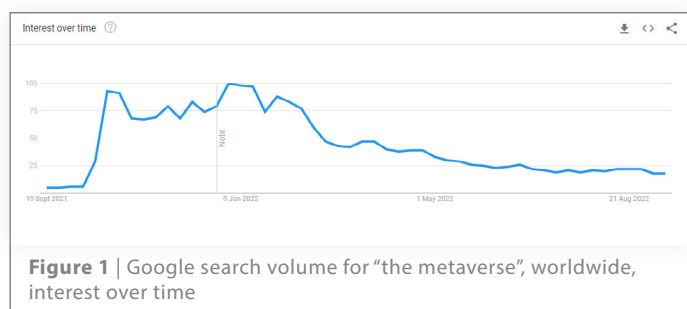
Senior Vice President
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Introduction

Banks are approaching the metaverse optimistically but cautiously – with some justification to research by Infosys.

Although the term has been in use since it was coined by science fiction author Neal Stephenson in 1992, the current buzz was kicked off in October 2021 when Facebook CEO Mark Zuckerberg bet his company's future on a vision of a persistent, connected, immersive world hosting retail, events, services, and entertainment.



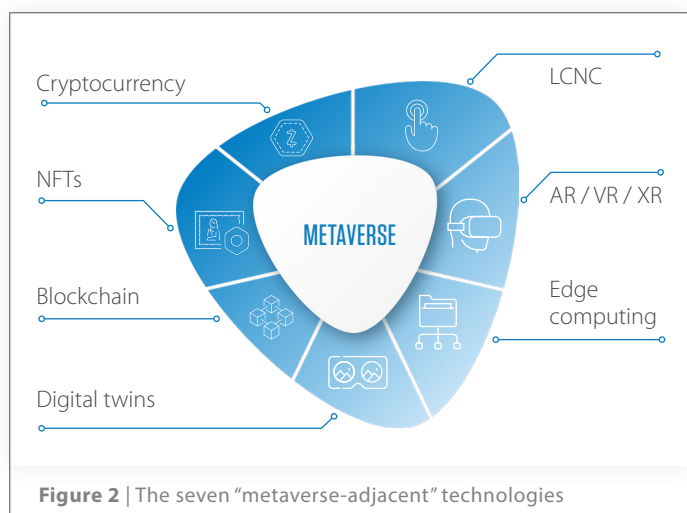
111 RESPONDENTS

Goal: To better understand regional banks' metaverse perceptions, as they investment in technology and assess preparedness in adoption

Since then, many industries have been considering how they can jump on board the metaverse bandwagon: from supply chain management to education and from healthcare to manufacturing, vendors and service providers are considering if and how they need to invest in the metaverse. This is

even though the metaverse – the persistent, connected immersive world imagined by Zuckerberg and myriad science-fiction writers – doesn't fully exist yet.

What does exist at present is several technologies that we describe as "metaverse-adjacent". These are the building blocks of a future overarching connected space already in use across retail and manufacturing industries. We discuss these technologies, their current use, and their potential future use in the metaverse at length in The Metaverse Insider Guide.²



From our present-day perspective, there are broadly three types of metaverse. They will likely overlap in the future, but so far, they are typically fragmented and differentiated as below:

INDUSTRIAL

This type of metaverse is used in an industrial setting to repair and monitor facilities. This saves time, resources, and carbon footprint by not being physically present to resolve issues.

For example, a "digital twin" of any physical object that is outfitted with various sensors to communicate physical complications to a virtual copy.

COMMERCIAL

This is used in retail and banking settings to recreate the physical commerce experience in a virtual setting, where customers can purchase items and have personalized experiences without a physical presence.

For example, virtual conferences became a popular use case during the pandemic to make the in-person lobby feel more real than just a typical video presentation.

CONSUMER/SOCIAL

This is often used in gaming and to drive greater social connections and networks. This can also be used with education and sports.

For example, banks have also used this component to assign virtual identities and avatars to people, so they can make payments on behalf of their 'real world' personas.

We have found that banks are thinking about what a future metaverse means for their businesses, their clients and their retail customers. However, to make the most of this new paradigm, banks should consider developing an understanding of the building blocks of the metaverse and using that knowledge to consider how they could create entirely new business models in addition to the new experience layer. Beyond meeting customer expectations, there are potentially new revenue streams and business models through the broader Web 3.0. Banks have a unique opportunity to be at the forefront of this disruption by getting involved now.

Key survey findings

The Infosys survey of regional banks in the US found that the while banks are optimistic about what the metaverse may entail for their businesses and customers, there are significant challenges and hesitations to face along the way.

Over half of US banks believe metaverse investments can achieve a return within two years. Although 9% say they are already making a return on their investments, others do not expect a return within a year — or longer. Looking beyond the immediate future, financial institutions are overall optimistic about revenues the metaverse could deliver.

PROSPECTS

Given the global metaverse market is expected to reach over \$750 billion by 2026,³ the metaverse is worth exploring.

A total of 30% of respondents expect metaverse revenues to accelerate within the next decade, and 46% within five to 10 years. However, that is not unreserved enthusiasm: 15% of respondents — and 27% of those in C-suites — responded that they don't think these revenues will be achieved.



1 Experience Before ROI Banks are currently focusing on the experience rather than on new business models.

Banks in North America, like many other sectors, are focusing on how to use metaverse technologies to build an additional channel for customers and clients to access existing banking functions rather than new business models. Around 62% of respondents are concentrating on services such as transfers, payments, and balance checks, and customized financial advice, and are thinking about how to use the metaverse to build their brands and deliver a seamless digital experience.

2 It Is Here, and It Is Happening Banks are beginning to invest in digital assets and technologies, which may be high risk with high reward

Banks are considering investments in the decentralized financial instruments that underpin Web 3.0, such as blockchain, nonfungible tokens (NFTs), and cryptocurrencies. Still, digital assets remain challenging with concerns around scams, volatile cryptocurrency movements, the collapsing NFT market, and an uncertain regulatory landscape.

3 Security and Customer Privacy Both banks and customers are prioritizing their security and privacy

Around 55% of respondents believe security and privacy will be the biggest concerns for their business and customers. Given the public scams and collapse of cryptocurrency prices, banks should remain vigilant with cyber-security, but also keep in mind the relative risks in the “real world” versus the metaverse. Data privacy of metaverse avatars will likely be a greater concern to protect customers, and will require standards, if not regulation, to uphold customer privacy.

4 Learn Before Earn The main challenges for banks investing in the metaverse are around acquiring necessary skills and business knowledge, maintaining customer privacy, and identity management

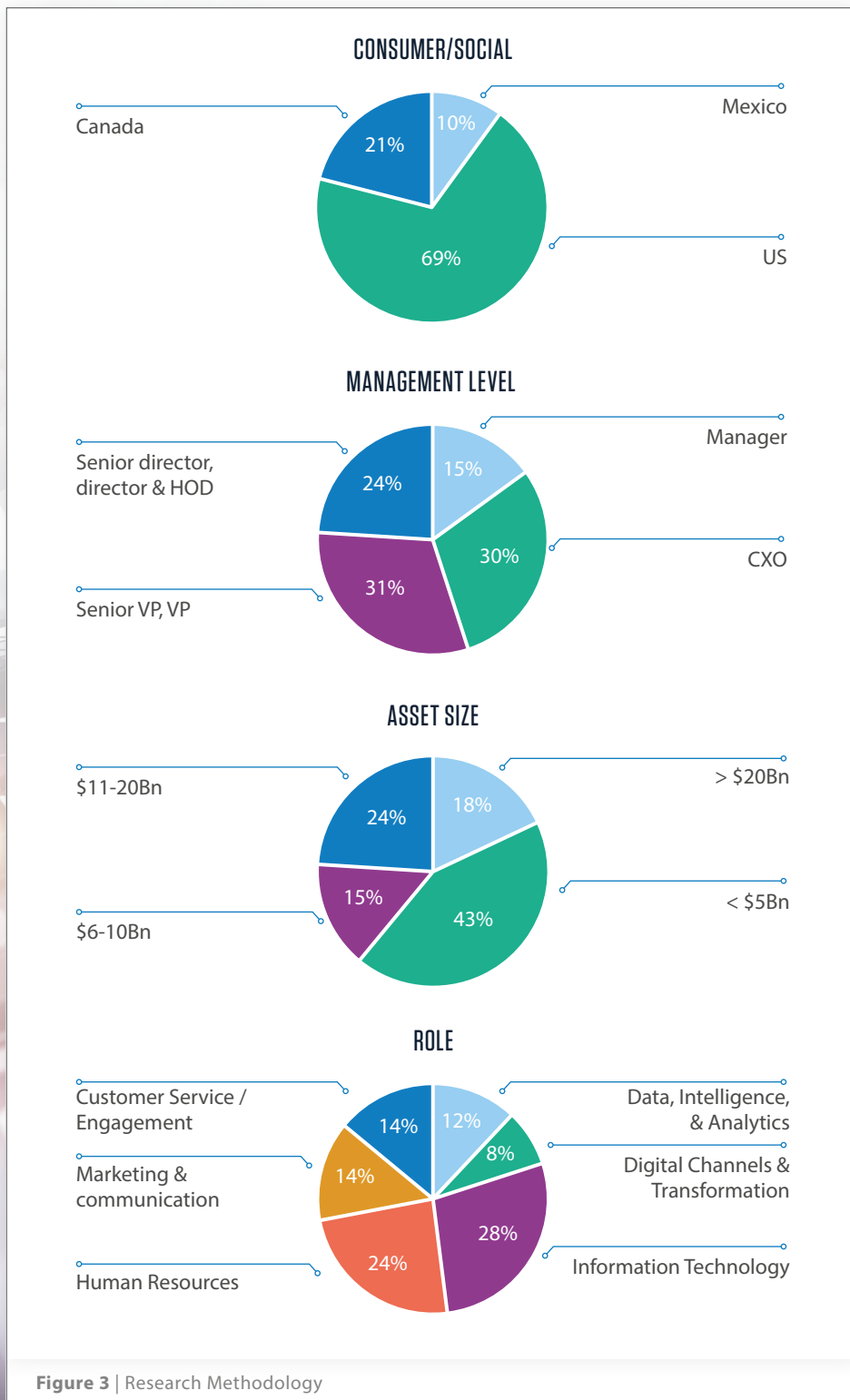
Banks are aware of potential challenges and focus on acquiring relevant skills of customer privacy and authentication and identity management. To support their accelerated innovation, banks will choose collaboration over competition – partnering with fintechs and IT services providers to ease their transition to the metaverse.

Research methodology

In July 2022, Infosys surveyed regional banks in the US to understand their perceptions of the metaverse as they pursue investments in technology and assess preparedness in adoption.

The data was collected from a North American survey of 111 banking professionals, from management and operational levels to the C-suite and senior level executives (see Figure 3). Most of the surveyed companies are in the US (70%), and the rest in Canada and Mexico. Also, each of the surveyed companies has more than US\$5 billion in assets.

Through this survey, Infosys aimed to gauge the attitudes and perceptions of the metaverse, specifically for regional banks in the financial services industry, and to examine where, when, and how firms plan to invest in the metaverse.



Experience before ROI

Banks are currently focusing on the experience rather than new business models

Most discussions around the metaverse derive from current gaming experiences in existing spaces such as Fortnite and Roblox. So, it shouldn't come as a surprise that the current focus from banks – as well as from other sectors – is based on adding metaverse experiences as a new way for customers and clients to interact with financial institutions.

BANKS ARE NOT ALONE

in building a new way for customers to interact with their services. Many other sectors, especially retail and entertainment, are working to deliver new experiences for customers, with varying degrees of success and uptake.

It doesn't matter as much who drives adoption, whether it's Apple, Amazon, Spotify, Uber, or the next big tech giant – it matters that customers are adopting behaviors, preferences, and expectations around experience. This in turn should benefit banks hoping to encourage existing – and new – customers to use these

new channels, as they are likely to have already experienced these new channels elsewhere.

When asked further about the experience, banks ranked building a seamless digital experience high on the list of important factors, with a total of 42% of those responding saying that was important or very important. The financial institutions also believe that seamless digital experience will be very important or fairly important to customers. Some banks have already begun exploring the possibilities.

For example, Bank of America launched a virtual reality (VR) training program in thousands of its centers.⁴ The bank says that every financial center in its network will eventually use VR headsets to practice a wide range of skills, including strengthening and deepening relationships with clients, navigating difficult conversations, and ultimately, listening and responding with empathy.

Leveraging metaverse would allow banks to enable virtual interactions with customers and other stakeholders. For example, customers can move around using their avatars and speak with bank relationship manager or investment advisor via video chat, which would automatically begin when the avatar stands before the manager or advisor.

Through metaverse, banks can enable sophisticated and personalized services to a customer's avatar. For example, services such as:

Fund withdrawal from virtual ATMs or branches into virtual wallet.

Visit virtual branches for high-touch customer service.

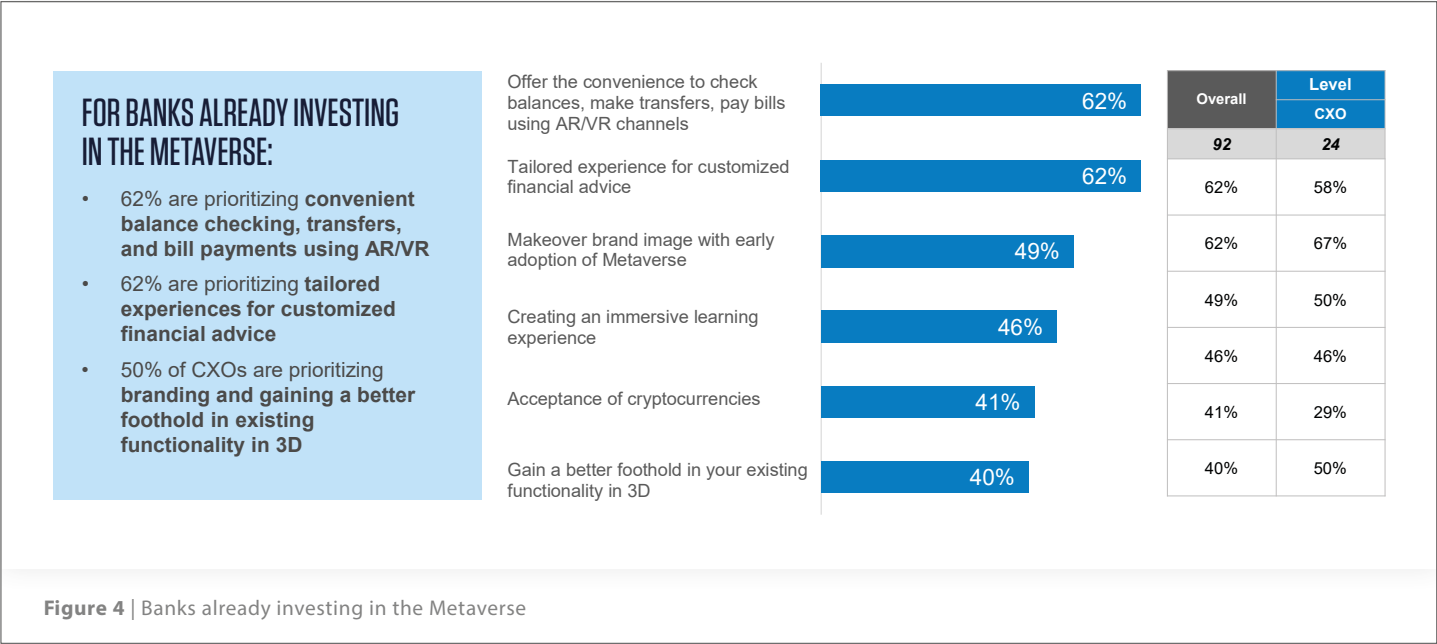
Appointment and consultation with avatar advisor.

House tour with a mortgage broker in real time.

Ability to discuss and purchase customized financial products.

Attend investor event or take part in bank sponsored community programs.

Seek help from virtual assistants.



JPMORGAN CASE

In early 2022, JPMorgan entered the metaverse, becoming the first bank to open an immersive lounge in a virtual world.⁵

Visitors to this Onyx lounge in Decentraland can create their avatars by choosing a gender, skin tone, hairstyle, clothes and accessories. JPMorgan has said it is in the metaverse to explore the many opportunities it presents for both consumers and brands alike.

As another example, interns at Ally developed a financial learning experience game to teach financial literacy in the metaverse.⁶ The game has characters that guide players through activities, from understanding cash flow and budgeting to learning about stocks and shares investing, how taxes work and how to buy a home.

The C-suites in banks also focus on their brand image, with half of them saying it's a priority to be an early adopter to the metaverse for branding purposes. Banks can leverage digital presence and immersive experience in metaverse for targeted marketing and branding (to millennials and Gen Z, for instance), and for adopting brand integration strategies by collaborating with gaming, entertainment, and sports industries.

For example, Visa promoted video booths and team shirts using the Tokyo Olympics logo on Zepeto, an avatar app.⁷ And Truist acquired fintech startup Long Game to bring a gamified finance app to younger generations that motivate smart financial behaviors.⁸ Banks can leverage metaverse for testing of new product and services, such as for those millennials and Gen Z, without costly prototypes. For instance, buyers could take a 3D virtual tour and try out the various products and services and provide feedback.

Citi has tested holographic workstations for conducting financial trading.⁹ EQIFI is bringing decentralized finance (DeFi)-enabled global banking services into metaverse, through its virtual and fully interactive headquarters inside Netvrk (a metaverse developed on blockchain that enables users to monetize their creations through NFTs and virtual land).¹⁰ The crypto-friendly bank would allow users to effortlessly interact with its DeFi products within metaverse. Users

Most FIs recognize the metaverse as a new channel before they even think about ROI, even though it's tapping into a completely new audience as well as their ways to interact with their products and services. For financial services specifically, we're calling this finverse – where banks and financial service providers can make finance management and transaction immersive and comparable to real life experiences. CMOs need to think their branding strategies for finverse, CIOs need to understand complex dependencies across platforms and CEOs need to leverage the creator economy so that customers can create new products and discover growth engines.

Finverse brings the confluence of transformation efforts that is underway in the industry:

Digitization of financial products

Embedded or invisible finance

Journey towards flexible and decentralized infrastructure.

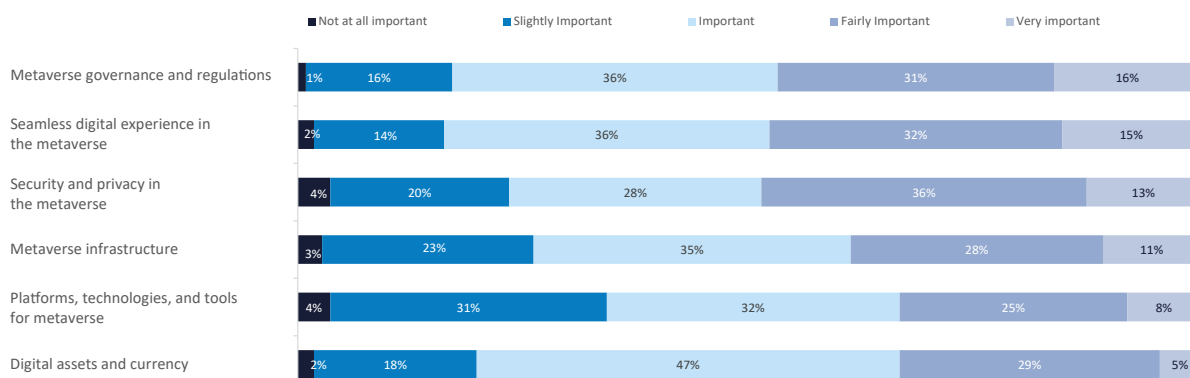
BHARAT M. GUPTA

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can borrow against their dormant tokens as collateral. Also, users can turn their idle assets into passive income. By depositing tokens into the platform, users can receive either a fixed or variable interest rate for the duration of deposit. And Mastercard unveiled an AR app that offers cardholders a virtual tour of three reward categories.¹¹

FOR CUSTOMERS, BUSINESSES PREDICT GOVERNANCE AND REGULATIONS WILL BE MOST IMPORTANT, FOLLOWED BY SEAMLESS DIGITAL EXPERIENCE.



Overall
111
3.45
3.45
3.34
3.21
3.04
3.16

Figure 5 | Predictions for customers

THE METAVERSE IS PERCEIVED TO BE MORE RELEVANT FOR SERVICING AND OPERATIONS DEPARTMENTS.

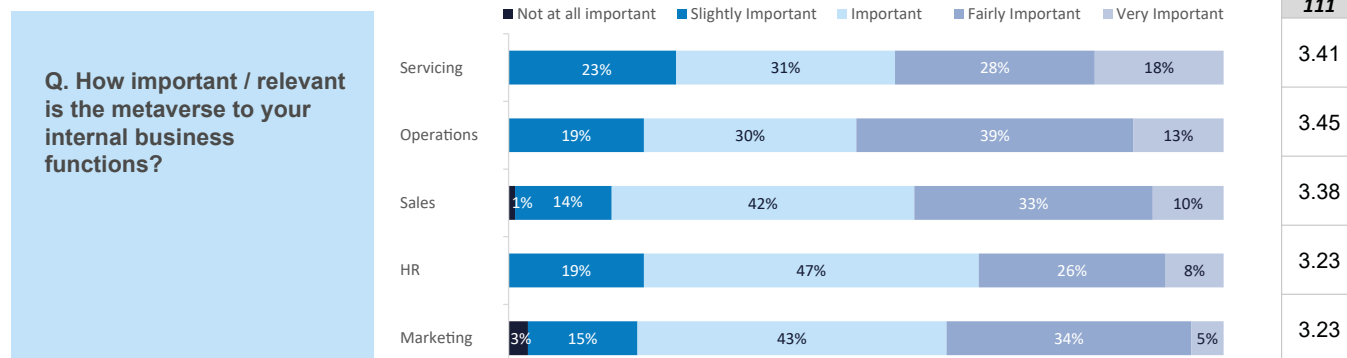


Figure 6 | Importance of metaverse for internal business functions

While these are interesting approaches to using 3D technology as a marketing tool, we have yet to see any evidence of genuine engagements from users. The success of these tools will depend on the providers' ability to understand how people learn, experience, and purchase.

Despite the optimism around building digital experiences, there is an awareness that metaverse technologies could be relevant to more prosaic functions. In our survey results, servicing and operations came top of the list when asked which internal functions the metaverse would be important and relevant to, with 46% saying servicing would be very or fairly important, and a total of 42% saying that operations would be fairly or very important. Other functions more commonly cited as potential use cases for the metaverse, such as sales, HR, and marketing, were felt to be less relevant. Infosys expects this to be most apparent through the development of the future of work.

In the last couple years, we have seen the rise of remote video conferencing services, and many of these leaders are diving into the metaverse to define the future of work. Zoom has recently released AR-style integrations with virtual animal avatars to not only make meetings more fun, but to hopefully alleviate video fatigue.¹²

And Microsoft Mesh is a platform to power different metaverse applications — from holographic experiences to creating custom integrated spaces for virtual meetings, organizations, events, and marketplaces.¹³ Ideally, Mesh will make Teams not just the hub for collaboration and work but the hub for the metaverse — prompting greater future of work integration.

Despite all of this, a recent survey by YouGov,¹⁴ a UK survey and data analytics firm, found among respondents in the US and the UK that the activities most were interested in doing in the metaverse were leisure activities, including visiting a virtual destination, going to a concert or a gig, watching sports, visiting a theme park, shopping, and playing videogames.

With these expectations, it makes sense that financial institutions are therefore looking at the experience layer rather than considering what new business models they could develop in the metaverse. There is perhaps an opportunity for banks to widen their horizons on what they could develop in the metaverse beyond building an immersive channel for customers and clients.

It is here, and it is happening

Banks are beginning to invest in digital assets and technologies, which may be high risk with high reward

As might be expected, banks are also looking to leverage their expertise in financial services by prioritizing digital assets and other Web 3.0 technologies for their metaverse efforts. The metaverse is intended to sit on blockchain, which would foster a creator's economy where the incentive structures are realigned to reward users for creating communities.

30% OF RESPONDENTS

are already investing in digital currencies, with 46% in digital assets, and 34% in blockchain.

Meanwhile, 52% said they need to prioritize digital currencies; 50% said they need to prioritize digital assets, and 28% reported that they need to prioritize blockchain investment.

According to Pew Research, 16% of Americans have invested in or used a cryptocurrency, and more specifically, 42% of American men between 18 and 29 have invested in or used it.¹⁵ While more than 7 million people in the US don't have bank accounts,¹⁶ an estimated 280 million people have mobile phones.¹⁷ People are open to digital currencies, and if they already have a mobile phone to support these transactions, it may be easier than creating a bank account.

Digital wallets and mobile banking

Still, banks can facilitate payments (e.g., for shopping and purchases) and support payment platforms, networks, and rails in metaverse — for digital, virtual, and cryptocurrencies. American Express plans to have its real-world payment card services work in the metaverse.¹⁸ The firm is considering offering ATM services, card payments, banking services, and fraud detection to customers in the metaverse. The firm is also setting up a virtual marketplace for NFTs and providing cryptocurrency services in metaverse.

Banks can support digital wallets as tools that bridges blockchain and decentralized applications in metaverse. For example, enabling users to utilize their digital wallet to share their digital assets through receiving, storing, or transferring tokens. Or to connect their bank accounts, cards, and payment apps within the digital wallet.

And, back to JPMorgan's Decentraland, users need to obtain digital wallet to have full experience. This digital wallet would work as a personal account, allowing the user to connect from different devices, keeping all their digital assets (such as names, collectibles, and lands) and progress safe. Decentraland uses Ethereum blockchain to record the ownership of all those digital assets and tradable items¹⁹. As another example, PayPal has launched a new 'super-app' and outlined its vision to become a digital wallet platform supporting metaverse.²⁰ The super-app combines payments, savings, bill pay, crypto, shopping, and more.

"Crypto is poised to offer the greatest wealth building event in generations, if not of all time. While Jamie Dimon fuels suspicion of crypto being a decentralized Ponzi scheme, it's the self-interest in such an assertion that gave rise and credence to this revolutionary movement. Blockchain is a bet on cooperation at a level of scale that we've never seen before, but its momentum comes from a promise that's built on both the prospect of relieving mechanical friction -- and disintermediating middlemen that provide little value (yet find ways to charge progressively higher fees). There are significant use cases to BTC beyond offering a synthetic and digital store of value, which include driving payments, remittance, facilitating commerce, providing credit and liquidity, even offering a universal translator and transporter of money across financially incompatible countries."

RANDY SCHWARTZ

Partner - Experience Design
Metaverse Co-Lead, WONGDOODY
(an Infosys company)



Banks on blockchain

Banks are continuing to explore more avenues that will hopefully result in more revenue, even if in the future. Mastercard is betting on startups focused on non-fungible tokens (NFTs), stablecoins and bitcoins as they launched a startup engagement program, Start Path Crypto, dedicated to exploring and solving problems for single users and businesses around the world using blockchain technology²¹. And recently, Fidelity Investments has expanded new thematic ETFs (exchange-traded funds) into the crypto and metaverse industries.²² Now, investors can invest in companies that develop, manufacture, or sell products/services related to the metaverse.

Additionally, blockchain allows users to own their data and be free to monetize or badge it. Securing personal data and governing its use and expressions is a core use case of blockchain that regional banks could adopt.

The recent shift of the Ethereum blockchain²³ to proof-of-stake rather than proof-of-work (known as “the merge”) to validate transactions should make building products on that blockchain more attractive. The shift to proof-of-stake means that blockchain is no longer consuming vast amounts of energy, removing one of the principal objections to the use of this blockchain. If banks were previously concerned about the environmental cost of working within the Ethereum ecosystem, this shift presents a new opportunity. And since blockchain already supports sustainability through transparency and traceability, banks can be reassured by the ESG value of cryptocurrencies.

PROFILE ON CRYPTO FOR REMITTANCE

13% of online cross-border remittances are paid in crypto

41% of cross-border participants pay a percentage fee averaging 6.2%

\$26 Compare to BTC which has proven the ability to wire \$1B in 24 minutes for a mere \$26

51% of those making cross-border P2P payments currently hold cryptocurrency

16% 1 of US adults (banked or unbanked) have touched crypto, but for men 18-29 it's 42%

Beyond artwork: NFTs as valuable digital assets

Another Web 3.0 technology on the banks' radar is NFTs: 38% said they were already investing, while 27% said they needed to invest.

NFTs are a type of digital asset whose creation and ownership are registered on a blockchain. However, unlike a Bitcoin or indeed a real



coin — where it doesn't matter which one you hold so long as you have a Bitcoin or a pound coin — NFTs are unique. They are often represented as artworks: the Mona Lisa is nonfungible as there is only one Mona Lisa and it derives its value from that.

NFTs are recorded on a blockchain, and it is that unique record that creates its value: like the Mona Lisa, there is only one record, and ownership of that record is what's traded.

As an example, Visa spent USD 150,000 to purchase a pixelated NFT artwork, named CryptoPunk 7610²⁷. However, Visa didn't itself actually take into custody the 49.5 ETH, paid for the token, or the asset. Rather, Anchorage, a newly licensed bank, facilitated the purchase, becoming the first known U.S. bank to custody NFT. The transaction, conducted by Anchorage, was performed via an Ethereum smart contract. Post that, Anchorage stored the bought NFT in Visa's digital vault, that is accessible with Visa's private key.

Beyond niche artwork, banks can leverage NFTs for more utilitarian services and digital assets, too. They could process payments related to these purchases, offer custody services, and support secondary marketplace for NFTs. These practical use cases are much more efficient and remove cumbersome processes that disintermediate the marketplace.

However, banks should be aware of both the collapse over summer 2022⁵ of the NFT market, and the concern around NFTs more broadly. Minecraft, the enormously popular 3D game that many cite as a proto-metaverse, said in July that it would ban NFTs from its platform, and there have been concerns expressed about scams and copyright theft as unscrupulous actors “mint” artists' works without consent.

Virtual real estate and metaverse mortgages

Crypto is more than just trading, but it's also a digital asset that investors hope will appreciate. Metaverse-specific tech companies are already seeing the potential value in virtual real estate. TerraZero Technologies has provided one of the first ever mortgage to purchase virtual real estate within the metaverse²⁸. It has facilitated "metaverse mortgages" for a client buying virtual property in the Ethereum-based metaverse platform Decentraland²⁹. In the future, prospective clients could use the website to explore metaverse land listings, and then finalize the brokerage process with the company. TerraZero holds the virtual land as registered owner until loan is paid back³⁰. Each transaction is collateralized with the underlying virtual real estate, which is represented as an NFT. TerraZero evaluates the borrowers' business plans for generating money using virtual land. It does not base its loan decisions on speculations of the increasing land prices.

FIS CAN SUPPORT VIRTUAL MORTGAGE AND RELATED FINANCIAL ACTIVITIES SUCH AS:

Virtual real estate lending.

Supporting monetization of virtual land through rentals, games, events, and other revenue producing ideas.

Leveraging novel assets (e.g., NFTs) as collateral to underwrite virtual property and land mortgages.

Supporting usage of virtual property as collateral for bank loans.

GIVEN THE PERILS THAT ACCOMPANY LENDING IN THE METAVERSE, BANKS CAN ALSO OFFER VARIOUS RISK AND COMPLIANCE MANAGEMENT SUPPORT. FOR EXAMPLE:

- Novel underwriting and risk management approaches such as alternative credit scoring models for millennials and Gen Z.

- Support lenders in evaluating the lending risks involving digital assets, including for virtual real estate

- Support the metaverse's digital identity services in their Know Your Customer (KYC) and Anti-Money Laundering (AML) procedures.

FireStarter has implemented Blockpass KYC solution for its incubated metaverse projects³¹. FireStarter is the first Initial Metaverse Offering (IMO) launchpad on Polygon network which nurtures and launches NFT, Social Token, GameFi and DeFi projects through metaverse. Using Blockpass solution, users can create, manage, and store a data-secure digital identity which can be utilized for complete ecosystem of token purchases, services, and for accessing regulated entities.

Still, banks must remain vigilant to potential threats, especially when dealing with high-value customers.

Security and customer privacy

Both banks and customers are prioritizing their security and privacy

Financial institutions are rightly cautious about some of the wider challenges of the metaverse such as security, privacy, governance, and regulations. In The Metaverse Insider Guide, we discuss the growing backlash around the capture and use of personal data, particularly with sensitive financial and healthcare data.

Our survey found that a total of 55% of respondents placed security and privacy for the business at the top of their list of important topics, and they also predicted that it would be of most importance to their customers, with a total of 47% saying governance and regulations would be very or fairly important to their customers.

needed to transact in metaverse may need financing by fiat currency in the real world. Once inside metaverse, this cryptocurrency is vulnerable to completely unregulated environment – one driven by commercial intentions of the hosting company. Fiat currency to crypto currency interface is a potential paradise for money laundering.

However, in 2021, only 0.15% of cryptocurrency activity was used for illicit activities³². Compared to the estimated 2.7% of fiat currency estimated for money laundering and fiat currency, cryptocurrency has tremendously less risk. Of course, there are risks, but there are risks regardless for banks.

Data privacy for metaverse avatars

The avatars in metaverse are just a digital reflection of real human beings. Offensive behaviors in the real world can also be exhibited by avatars in the digital world. Sensory devices such as head mounted displays, tactile gloves and other sensors capture a great amount of biometric information of the users which should be protected. Data monetization controls should lie with end users and not the organization that owns the metaverse platform, its servers and software. Monopoly of private corporates over governance of such data may potentially lead to unauthorized data monetization – through either selling or data mining.

FOR THE BUSINESS, SECURITY AND PRIVACY IN THE METAVERSE IS MOST IMPORTANT, FOLLOWED BY SEAMLESS DIGITAL EXPERIENCE.

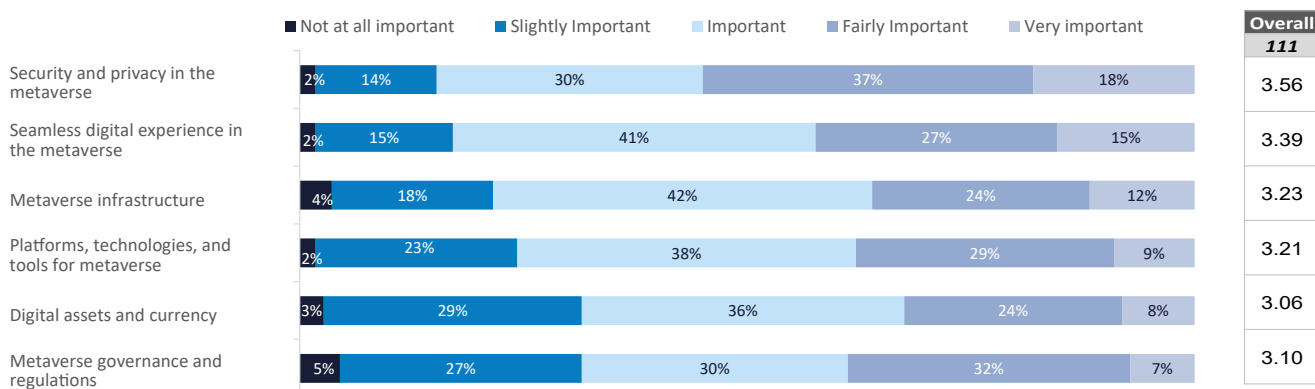


Figure 7 | Importance of security and privacy

In this caution, banks are aligned with would-be metaverse users in both the UK and the US who told YouGov that they had concerns around the regulation and security of metaverse spaces. And banks need to be particularly alert to worries expressed to YouGov about cryptocurrencies: Potential users of the metaverse in the US fear having their crypto stolen, or having it lose its value. These are not just fears, but genuine challenges for banks, given the proliferation of scams and the collapse in cryptocurrency prices that are a big disincentive for potential customers and investors.

Assessing risks in the real world vs. the metaverse

The exchange of virtual assets and services in metaverse is facilitated by cryptocurrencies and NFT. The digital wallet

Metaverse platforms facilitate social connections, but users still need control over what part of their personal information is accessible to whom. While a 3-D gaming metaverse platform may provide freedom to users to keep their real-life identity confidential, an e-commerce or online-education oriented metaverse platform may require real-life identity. Some metaverse platforms may provide multiple privacy configurations. For example, "Second Life", an online game from "Linden Lab" offers a privacy configuration called "Private Island" or "Skybox" where avatars can visit only with special scripts called "Flight Assist".

Fundamentally, software developers — guided by the policies of metaverse platform's owner — codify the privacy regulations in metaverse. An open-source approach where software developers decide on privacy regulations in a democratic manner will always be more trustworthy than autocratic decisions taken in private

metaverse owned by corporate behemoths. An open-source approach to metaverse development will ensure that metaverse governance is codified into its architecture and monitored by a community of software developers.

Setting standards for the future of the metaverse

The Metaverse Standards Forum was created to provide leading organizations and companies the standards to build an open metaverse.³³ Through implementation prototyping, hackathons, plugfests, and open-source tooling, the goal is to prioritize what developers need today to build the metaverse of tomorrow. This forum will also help develop consistent terminology and deployment guidelines to ensure timely standardization can accelerate the growth of the metaverse and hopefully, avoid many security, privacy, and regulation concerns.

Despite its challenges, the metaverse has the potential to track more data than traditional social media. Banks should not be deterred from investing in the metaverse as there are many opportunities to mitigate security and privacy risks through value-adding investments.

“Metaverse brings in new model of 360-degree engagement and empowerment where physical and digital worlds converge and provides us with abundance of innovation in this space. While its exciting time for innovation, scrutinizing privacy and security needs to take pole position.”

RAJNEESH MALVIYA

Senior Vice President
Financial Services at Infosys



Learn before earn

The main challenges for banks investing in the metaverse are around acquiring necessary skills and business knowledge, maintaining customer privacy, and identity management

Even if banks acknowledge the potential of the metaverse, many still recognize the challenges that come with it in business acumen and cybersecurity.

46% of respondents believe the main concern is acquiring the necessary skills and business knowledge to implement successful metaverse programs. Given that the metaverse doesn't fully exist yet, this will be an iterative process as more technologies develop and customer preferences strengthen.

The C-suite especially recognizes that even the most clear, unified future vision must include room to be flexible with evolving and emerging technologies. 80% of CXO-level respondents believe they are prepared for the metaverse, but still require additional skills within their organization to understand business requirements and to develop their strategy.

Banks will likely rely on IT services providers for technology expertise to navigate their metaverse journey.

Respondents named other top challenges as customer privacy (45%) and authentication and identity management (41%). Many sectors have these concerns about the metaverse, but banks in particular may view these investments as risky. For customers entering the metaverse, they expect seamless experiences despite the challenges – imposing more pressure on banks to get it right upon initial investment.

This especially presents opportunities for fintech to help financial services navigate metaverse investments. Instead of trying to develop in-house technologies and processes to protect customer data and identities, banks can partner with fintech that specialize in cybersecurity, authentication, or identity management.

INFOSYS METAVERSE FOUNDRY

In February 2022, Infosys launched the Infosys Metaverse Foundry to ease and fast track enterprises' exploration of the metaverse, including virtual and augmented environments, for their customers, workplace, products, and operations. Infosys Metaverse Foundry helps enterprises navigate the metaverse by partnering with them through the discover-create-scale cycle. With more than 100 ready-to-apply use cases and templates, Infosys can provide expertise for enterprises through business cases and execution roadmaps of all industries.

THE TOP 3 CHALLENGES WITH INVESTING IN THE METAVERSE ARE:

Acquiring the necessary skills and business knowledge
Maintaining customer privacy
Identity management

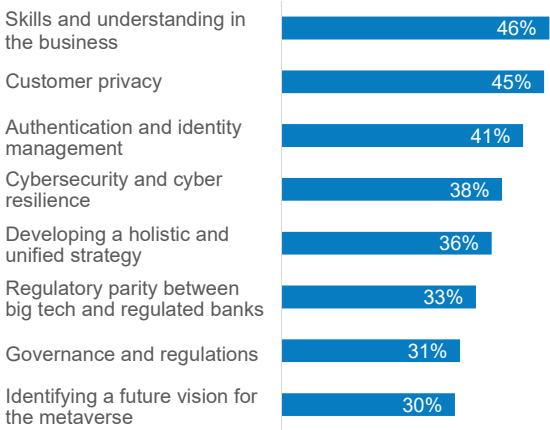


Figure 8 | Top 3 challenges

Conclusion

Defining a strategy for banks' metaverse investments

Almost all banks recognize the potential for the metaverse to offer customers and clients a new way of experiencing and accessing their products and services. Early adopters have started investing in this space – even if they don't anticipate immediate returns.

While rightly cautious, as the metaverse is an emerging paradigm with some significant challenges, there are still unexplored opportunities for the financial services sector to think about new business models to serve their customer base. So far, experience, especially within payments, has been the priority, and there's much more to be considered with pursuing deeper changes and innovations in the business.

Digital assets and the subsequent technologies, such as blockchain, NFTs, and cryptocurrencies, may be high risk but could potentially offer high reward, especially in an emerging market. Even beyond these developing technologies, security and privacy will be key concerns for both the business to achieve returns and for the customers to build loyalty.

Banks should be looking to identify initial business use cases and define value-driven customer journeys within the metaverse. Especially with different generations varying their relationships with banks, there may be multiple undiscovered opportunities to reach customers in meaningful and memorable ways. By researching multiple segments and channels, banks can avoid risking losing their market share – even with healthy skepticism. Banks should be careful but not avoidant. By supporting talent through continuous upskilling and collaboration, banks can remain competitive and maintain customer trust.

The research shows that banks know the metaverse could be an important future way to do business and are thinking about how to make that new paradigm deliver value for their customers and for their own businesses. Those financial institutions that are alert to both the possibilities and the challenges should be in a good position to capitalize on those opportunities as the metaverse evolves.

The metaverse – the persistent, connected, immersive world imagined by its proponents – may not yet exist as fully imagined, but banks should make sure they are tracking the evolution of the technologies that will form the building blocks of that vision.

"The research shows that banks know the metaverse could be an important future way to do business and are thinking about how to make that new paradigm deliver value for their customers and for their own businesses. Those financial institutions that are alert to both the possibilities and the challenges should be in a good position to capitalize on those opportunities as the metaverse evolves "

AMY DIXON

AVP, Client Services
Financial Services at Infosys



Over the next few years, the metaverse will likely be redefined as more technologies and trends emerge. There could be one metaverse, or many. Similarly, customers' relationships with banks will likely be redefined with changing preferences and competitors. Banks that tap into this potential and better understand both the market and their customers will prove to be most successful with the strongest investments in the metaverse.



References

- 1 | [What's New in the 2022 Gartner Hype Cycle for Emerging Technologies](#)
- 2 | [Infosys Knowledge Institute | The Metaverse Insider Guide](#)
- 3 | [Global Metaverse Market to Reach US\\$758.6 Billion by the Year 2026](#)
- 4 | [Bank of America is First in Industry to Launch Virtual Reality Training Program in Nearly 4,300 Financial Centers](#)
- 5 | [Markets Insider | JPMorgan opens a Decentraland lounge](#)
- 6 | [Fintropolis teaches financial literacy in the metaverse](#)
- 7 | [Visa Consulting & Analytics | The metaverse as a strategic inflection point](#)
- 8 | [TechCrunch | Banking giant Truist acquires fintech startup Long Game](#)
- 9 | [Finextra | Citi taps Microsoft HoloLens for virtual reality trading](#)
- 10 | [Netvrk Partners with EQIFI, to Bring Banking into the Metaverse](#)
- 11 | [Finovate | Mastercard Leverages AR to Offer Virtual Tour of Card Rewards](#)
- 12 | [The Verge | Zoom's new virtual avatars let you show up to your next meeting as a dog](#)
- 13 | [Microsoft Mesh for Teams](#)
- 14 | [Unlocking the Metaverse: US & UK Report \(yougov.com\)](#)
- 15 | [Pew Research Center | 46% of Americans who have invested in cryptocurrency say it's done worse than expected](#)
- 16 | [Key Findings from How America Banks: Household Use of Banking and Financial Services | 2019 FDIC Survey](#)
- 17 | [BankMyCell | How many people in the US own a smartphone?](#)
- 18 | [Business Insider India | AmEx reveals its metaverse ambitions in a trademark filing for tech to let people to use its payment cards in virtual worlds](#)
- 19 | [Decentraland | Get a Wallet for Beginners](#)
- 20 | [TechCrunch | PayPal launches its 'super app' combining payments, savings, bill pay, crypto, shopping and more](#)
- 21 | [Mastercard launches new Start Path cryptocurrency and blockchain program for startups](#)
- 22 | [CityWire | Fidelity launches Metaverse Ucits ETF as part of new thematic range](#)
- 23 | [Ethereum Merge and what it means for the crypto industry | World Economic Forum \(weforum.org\)](#)
- 24 | [PYMNTS | New Study: Crypto emerging as a favored form for cross-bord remittances](#)
- 25 | [Pew Research Center | 46% of Americans who have invested in cryptocurrency say it's done worse than expected](#)
- 26 | [Bitcoin.com | Latest Global Findex Survey: Share of Adult Population with a Bank Account Now 76% — 1.4 Billion Adults Still Unbanked](#)
- 27 | [Forbes | Visa Enters Metaverse with First NFT Purchase](#)
- 28 | [Cision | TerraZero Technologies Inc. Provides one of the First Ever 'Metaverse Mortgages' To a Client, Financing Their Virtual Real Estate Purchase Within the Metaverse](#)
- 29 | [Business Insider India | Metaverse mortgages are being issued to buy virtual land — and one of the first ever was just signed for a property in Decentraland](#)
- 30 | [Forbes | The Coming Boom in Metaverse Lending for Banks](#)
- 31 | [Finyear | FireStarter Implements Blockpass KYC for Incubated Metaverse Projects](#)
- 32 | [Yahoo! | Only 0.15% of the Total Crypto Transaction Volume is for Illicit Activities](#)
- 33 | [Metaverse Standards Forum](#)

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