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New frontiers in financial products

Digital assets, DeFi and the metaverse

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Introduction

The frontier of financial products is constantly being shaped and reshaped.

Today, a new frontier is being formed – outside the confines of conventional banking, and existing within automated, virtual reality (VR) and augmented reality (AR) environments.

This new frontier is evolving at warp speed but is far from being fully formed. However, it is already clear that understanding crypto assets, decentralised finance (DeFI) and rapidly evolving metaverse environments will enable financial institutions to create new, innovative products and services.

In this report, we're excited to share our perspectives on this fast-evolving space.

Crypto assets

The most well-known crypto asset, Bitcoin, first emerged in 2009 in the throes of the global financial crisis and amid growing mistrust of conventional banking.

Originally created as an alternative to the traditional financial system, crypto assets have started entering the mainstream,[1] with one of Australia's Big 4 banks making plans with a crypto exchange and crypto custodian to offer the assets through its app,[2] although this has since been paused.[3]

But despite widespread interest, crypto assets are by no means ubiquitous, with only 28.8% of Australians holding a cryptocurrency.[4] Further uptake has also been hampered by the significant volatility seen in cryptocurrency markets in the last 12 months.

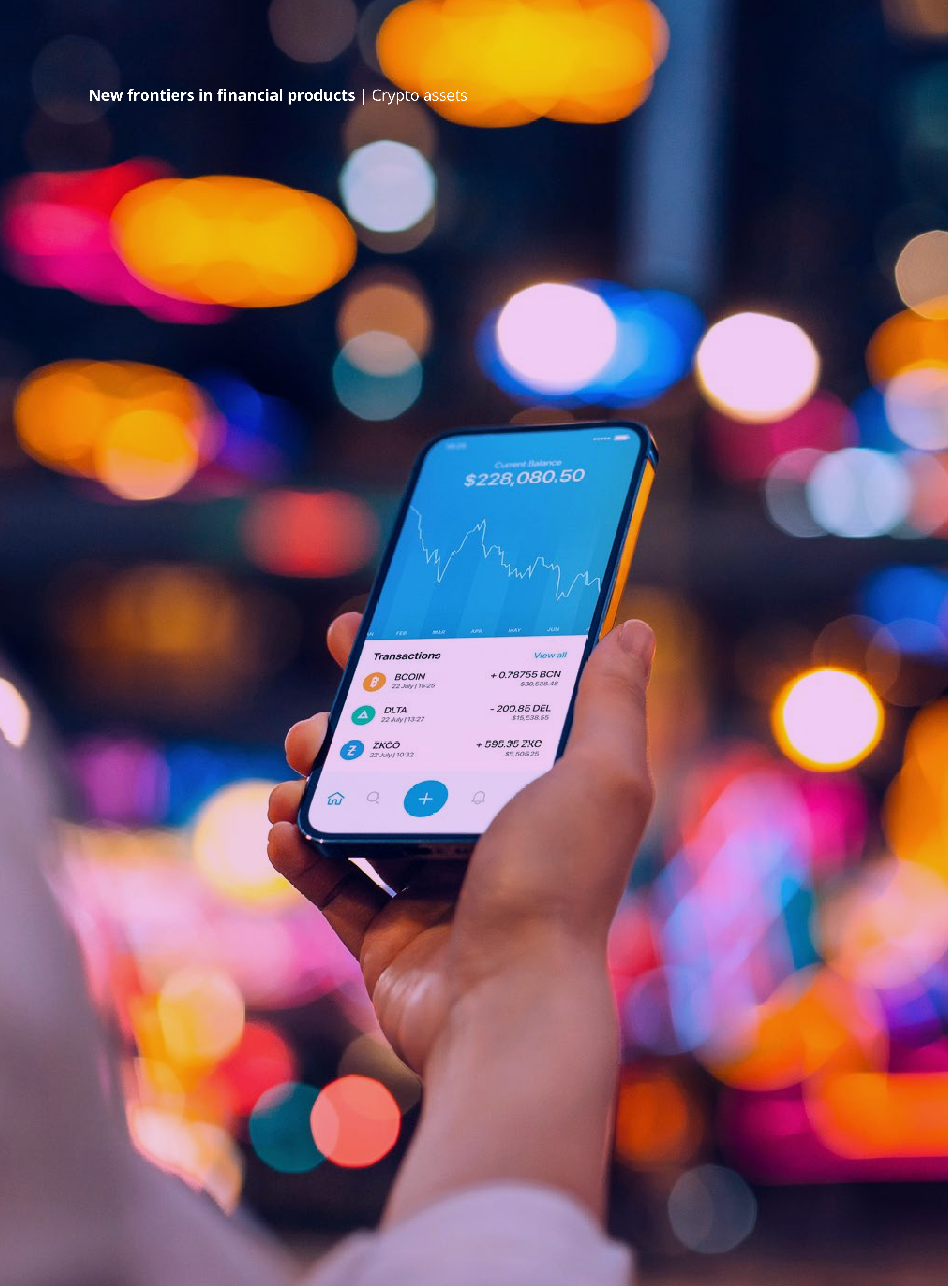
Global market cap of crypto assets soared to just over USD$2.9 trillion in November 2021 before slumping to less than USD$1 trillion at the time of writing.[5] While macroeconomic factors have played a heavy role, an arguably larger impact is the catastrophic failure of several centralised exchanges.

Many cryptocurrency sceptics have pointed to these failures as evidence as to why these assets are dubious and should be avoided. However, advocates of a decentralised marketplace are quick to point out that this is not an indictment on the underlying assets or technology. Instead, they see this as a human problem driven by greed and deceit; one which could be avoided if the market moved to a decentralised future, away from centralised and single points of failure.

Increasingly common, stablecoins are a type of fungible cryptocurrency also backed by distributed ledger technology but, rather than appreciating or depreciating freely, they are linked to fiat currencies or other types of reserves such as gold and oil, other cryptocurrencies, or algorithms that determine supply. These links are primarily designed to make stablecoins less volatile than cryptocurrency, and therefore suitable for more than just trading.

> *These technologies still have a significant runway to reach maturity. Leaders in financial services must continue to balance product and service innovation with their obligations to customers.*
>
> ***Meredith Wheelhouse***
> *Deloitte Australia*

1. https://www.theverge.com/2019/1/3/18166096/bitcoin-blockchain-code-currency-money-genesis-block-silk-road-mt-gox
2. https://www.commbank.com.au/articles/newsroom/2021/11/CBA-to-offer-crypto-services.html
3. https://www.finextra.com/newsarticle/40290/cba-presses-pause-on-crypto-pilot
4. https://www.statista.com/statistics/1244739/australia-cryptocurrency-ownership/
5. https://coinmarketcap.com/charts/



Another of the Big 4 has been the biggest mover in Australia so far in stablecoins – albeit not in the retail space – having launched the first ever coin linked to the Australian dollar in May 2022. This allowed a family office client to access AUD$30 million in tokenised carbon credits on a digital assets exchange. However, the transaction required not just the involvement of this exchange, but also three other digital asset platforms to create the smart contract underpinning the stablecoin.[6]

Locally, conversations have started to shift beyond the realm of design and implementation towards integration and regulation. The introduction of crypto payment rails into customer and merchant channels at a retail level. In addition, the ability to activate new wholesale markets using stablecoins is being actively explored and tested by members of the financial services ecosystem. The potential benefits which could be offered by the implementation of regulated liabilities and central bank digital currency on distributed ledgers is also an active area of exploration.

Stablecoins will play a major role in the next phase of financial technology development, Web3[7] – a version of the internet that will run entirely on distributed ledger and cryptocurrency technology – and its key component for financial products and services, decentralised finance or DeFi.

6. https://media.anz.com/posts/2022/03/anz-completes-landmark-stablecoin-payment
7. https://medium.com/monolith/understanding-defi-web3-explained-b1b84929b242

DeFi

DeFi moves beyond distributed ledger technology's utility in creating and trading cryptocurrencies to using it to underpin financial products and services, provided directly to and by individuals with no need for intermediaries.

Automated lending platforms based on smart contracts are the most basic and common form of DeFi. On these DeFi lending platforms – the natural evolution of the peer-to-peer lending platforms that emerged around 2005 – borrowers can use their crypto assets as collateral for loans, and lenders can use their crypto assets to earn passive income (interest), with rates for both calculated automatically based on supply and demand.

The utility advantages of DeFi are its directness, the deterministic nature of smart contracts creating certainty and transparency, and execution in real-time that reduces costs. Globally, some major DeFi lending protocols are emerging, like Aave, Compound and Maker,[8] and Web3 is already evolving to include mortgages based on decentralised autonomous organisations (DAOs) and non-fungible tokens (NFTs) and replicate other areas of traditional finance.

"The most common approach is to buy a property, establish a company to own the deed, and then establish a DAO,"[9] explains Deloitte Australia Head of Creative Technology Emad Tahtouh. "You can then create NFTs that have ownership of the company and, in turn, the property. This is a convoluted approach towards the end goal of having mortgages or deeds that live on a distributed ledger, so they can be fractionalised and traded like any other Web3 asset."

However, before DeFi mortgages and other DeFI products and services become a part of mainstream finance, they and the mechanisms that support them need to be regulated,[10] particularly as the 2021/2022 'crypto winter' has shown they are just as susceptible to market conditions as conventional financial products are. The Australian Prudential Regulation Authority (APRA) is addressing emerging risks in the space.[12]

The phrase 'crypto winter' likely came from the hit HBO series, Game of Thrones. In the show, the motto of the House of Stark was 'Winter Is Coming.' It was considered to be a warning that lasting conflict could descend on the land of Westeros at any time. Similarly, an extended period of trouble may be settling over the crypto market... Defining the phrase even more literally, crypto winter is when prices contract and remain low for an extended period.

Forbes

8. https://www.defipulse.com/defi-list
9. https://consensys.net/blog/blockchain-explained/what-is-a-dao-and-how-do-they-work/
10. https://www.afr.com/companies/financial-services/dao-consultation-will-involve-thorny-questions-on-responsibility-20220324-p5a7lp
11. https://www.theguardian.com/technology/2022/jul/02/nft-sales-hit-12-month-low-after-cryptocurrency-crash
12. https://www.apra.gov.au/crypto-assets-risk-management-expectations-and-policy-roadmap

In July 2020, global total value locked (TLV) in DeFi, a measure of the overall value of crypto assets deposited in decentralised finance, was just USD$3.61 billion. Twelve months later and DeFi TVL had soared to USD$126.9 billion, then peaked at USD$248.8 billion in last November before suffering a precipitous drop to USD$77.3 billion in June 2022.[13]

However, its potential is clear, not least because DeFi has a powerful financial inclusion element by expanding lending to reach underserved segments of the market, for example by assessing low and no-profile borrowers using non-financial data with advanced analytics and AI.

Furthermore, because of the speed – mere seconds – and lower cost of individual transactions, it can serve sole traders or micro-, small- and medium-sized enterprises (MSMEs). This is not just limited to payments, savings, credit and insurance, which they might not otherwise be able to get, but potentially even with trade finance, invoice discounting and foreign exchange services that are usually reserved for big companies with higher volumes.

Third-party providers are emerging to streamline previously paper-based processes, such as blockchain-based bank guarantees.[14]

DeFi, and other efficiencies brought about by financial technology like software-as-a-service and cloud-based analytics, also have powerful potential to serve specific segments of the population, or affinity groups, whereas conventional financial services and products cannot 'de-scale' in the same way to serve such narrow market segments.

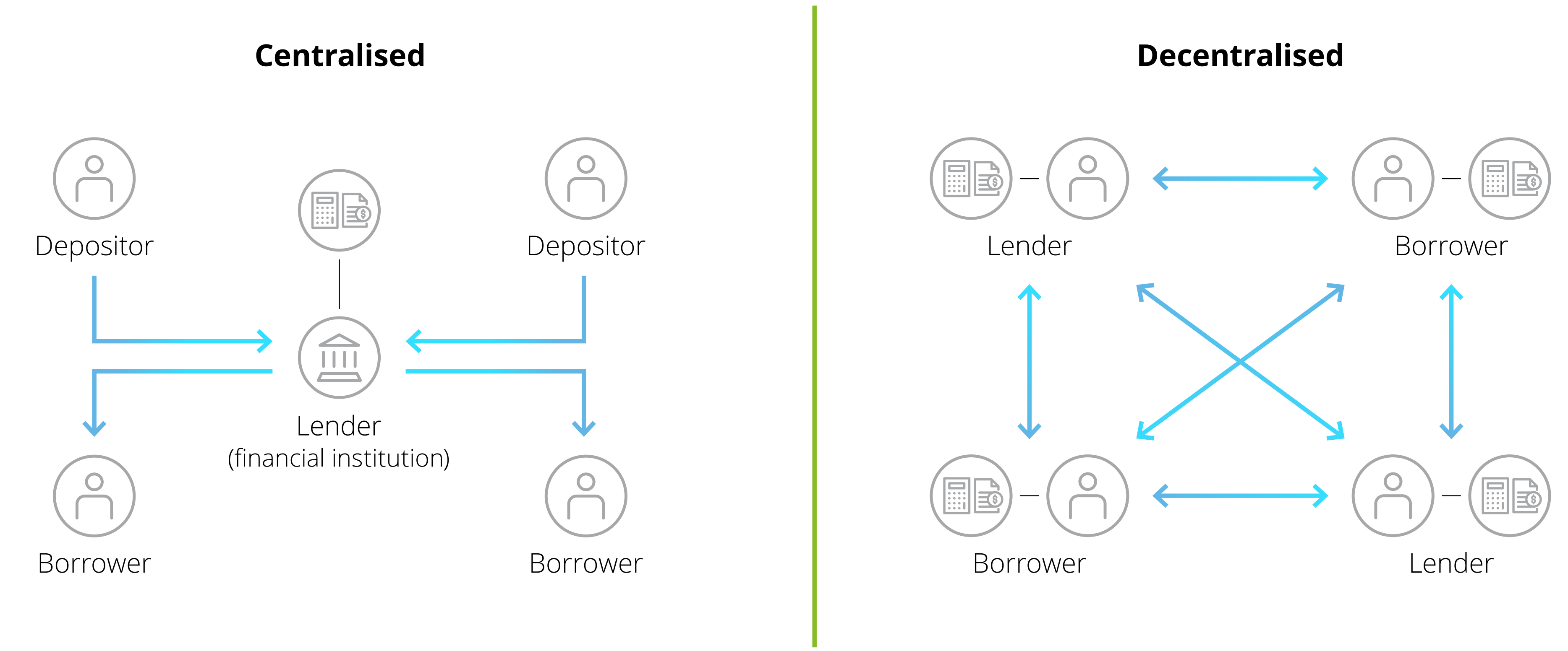
13. https://www.statista.com/statistics/1272181/defi-tvl-in-multiple-blockchains/
14. https://www.lygon.io/

"DeFi is the most exciting and threatening technology for traditional lenders, because the user experience and the benefit to consumers is so powerful that it will spill beyond crypto and move into other assets," says Tahtouh. "With one of the biggest DeFi lenders, there is no ownership beyond the tokens, no board, and any changes made to the platform can only be achieved through a vote, even though the core development team still has a large stake. In a DAO, all the profits stay within the protocol and can be distributed to token holders."

"DeFi also has the advantage of being extremely low cost, with no need for employees and complete automation, which allows for the creation of highly competitive products."

Incumbent financial services providers now need to carefully consider whether and how they can provide DeFi products and services – as well as how these will exist in the metaverse.

Centralised vs. decentralised lending



The graphic is visualising traditional borrowing and lending versus a decentralised model.
In a traditional model, customers deposit money into a bank who in turn loan it out to borrowers.
In a decentralised model, borrowers interact directly with lenders using the public blockchain as rails.

The metaverse

The metaverse concept is based on a persistent 3D, and VR-AR environment, and is evolving rapidly from science fiction to financial services fact.

To date, the concept has been most advanced in gaming, with several platforms allowing players to become immersed in digital worlds, earn virtual currencies and interact with peers.

World of Warcraft, launched in 2004, was a pioneer in this space, developing a large internal economy based on trading in virtual assets by its 120 million players. These gaming metaverses have since evolved to include platforms such as Fortnite, Minecraft and Roblox, and online social gaming and social experiences like Decentraland and the Sandbox, where one major global bank recently bought 'land'.[15]

Although the current state of enabling technology means a fully realised or 'true metaverse' is years away, its economic potential is thought to be huge, with JPMorgan estimating it could become a USD$1 trillion a year opportunity.[16]

In terms of financial products and services, the greatest potential of this nascent metaverse lies in the transaction layer. World of Warcraft users cannot transact in virtual assets outside its internal economy, but there is increasing demand among consumers for ways to trade their digital assets wherever and however they want.

If we didn't have crypto or Web3, nobody would be talking about the metaverse as more than just another gaming or virtual reality experience. But the idea that you can now own an asset, bring it into an experience and take it out of that experience, still own it, and trade it on multiple platforms – without being beholden to the developer – is what's really getting people's attention.

Emad Tahtouh
Deloitte Australia

Although many banks are looking at the metaverse as a new way to offer financial products and services, most are still addressing the question of whether to do nothing and wait to see how the metaverse evolves, establish a foothold through a marketing presence or cooperation with leading platforms, or go 'all in' on the metaverse by investing to achieve scale.

Advances in creative technology mean metaverse-like experiences in financial services are becoming more practical. Retail banks still have a strong advantage in their customer services experience of being able to speak to a branch manager or personal banker, but this will not always be necessary.

"You can even get away with not providing this experience at all, but when it is needed, people will be interacting physically less and less. Banks need to ask whether a phone or video call will suffice, or whether they need to build out more digital, interactive and immersive experiences," says Tahtouh.

15. https://www.reuters.com/business/finance/hsbc-buys-virtual-plot-land-digital-push-2022-03-17/
16. https://coingeek.com/banking-giant-jpmorgan-sees-1-trillion-value-in-metaverse/

There is a long way to go before a bank's customers will be able to withdraw cryptocurrency from a virtual ATM and spend it at a stadium event in the metaverse with thousands of fellow fans, or before homebuyers will be able to enjoy a virtual weekend in the house of their dreams before discussing DeFi mortgages with an avatar.

However, there is already huge potential for banks to provide digital engagement via personalised, contextual interactions informed by data and analytics.

Banks looking to offer such engagement will require research and strategic thinking, thorough mapping of the desired customer experience and journey, and the technological and talent capacity to implement them.

Inside the metaverse economy

Creator economies
Multi-sided value creation platforms

Interfaces
Brain-machine and human APIs

Metaverses
Digital experiences and worlds

DAOs
AI-driven dynamic governance models

Blockchain/crypto tech
Trusted, private, and secure value exchange

Web 3.0
Decentralised access and self-sovereignty

Data-Driven Digital Networks (DDDNs)
Multi-sided consumption networks

Source: Constellation Research via The Financial Brand, https://thefinancialbrand.com/144686/the-bankers-guide-to-the-metaverse-digital-engagement/

Seven steps for building a metaverse strategy

1. Consider overall brand strategy in context with the metaverse economy
2. Choose an enterprise use case
3. Determine the desired business outcomes
4. Design and build reusable assets
5. Identify an experience strategy and engagement modality
6. Apply analytics, automation, and AI for scale
7. Use insights to power a data-driven digital network

Source: Constellation Research via The Financial Brand, https://thefinancialbrand.com/144686/the-bankers-guide-to-the-metaverse-digital-engagement/

Cybersecurity for DeFi and metaverse products

As fintech has proliferated over the past decade and shaped a new generation of financial products, the attack surface for cyberattacks has also grown. This will only continue as DeFi products and the potential to serve customers in metaverse environments grow.

Today, cybersecurity is typically based on local rules and approaches, but in DeFi and the metaverse there will be a host of new and different interactions across products and jurisdictions.

"At the moment, cybersecurity takes a platform-based approach, but as DeFi and metaverse environments evolve, it will require interactive protocols that cover the entire attack surface," says Deloitte Australia Privacy Enhancing Technology Director Tim Scott. "Financial products will also face cross-jurisdictional challenges as they become more distributed and touch various different cybersecurity frameworks."

However, as the financial product landscape evolves, customers' desire to secure their data – and not share what they don't want to share – will remain a constant. Until cybersecurity protocols and regulation are established for DeFi and metaverse products, financial institutions can pre-empt potential cyber issues by shifting their approach from front-end compliance to back-end risks, according to Deloitte Cyber Director Leonard Ng.

"Financial institutions can already use AI machines to curate transaction histories and match that information with data on fraud and cyber risks," he explains. "But new product environments will be a completely different ballgame, with cyber revolving around back-end systems – for example how to store data appropriately – and addressing threats, rather than the compliance of front-end product offerings."

For now, financial institutions eyeing DeFi and metaverse products face a period of uncertainty, as authorities consider how this distributed ecosystem operates, the extent of its boundaries and ultimately how it will be regulated.

"We are already having conversations with every major bank in Australia, local regulators including APRA, and global regulators like the Hong Kong Monetary Authority and Monetary Authority of Singapore," adds Scott. "One thing is for certain is that data sharing and collaboration will be critical as the narrative and dynamic about how you protect financial information evolves."

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