

USING TECHNOLOGY AND ECOSYSTEM TO UNLOCK THE POTENTIAL OF DIGITAL ASSETS





FOREWORD

The financial services industry is under tremendous pressure from customers, regulators as well as fintechs to innovate. Digital assets powered by blockchain could prove to be a massive opportunity up for grabs for traditional banks to stay relevant. As the digital assets market grows at an enormous pace, several banks, including central banks, as well as governments and regulators, have already begun their exploratory journey in this space.

With blockchain technology evolving to address the challenges of scalability and security, several use cases are emerging in the digital assets space. Be it digital currencies, tokenization of assets, custody solutions for crypto-derivatives or even non-fungible tokens (NFTs), digital assets offer real-time and efficient transactions, reduced cost, increased liquidity and enhanced transparency and security.

Capgemini is pleased to bring to you this paper where Everest Group explores how traditional financial institutions (FIs) can leverage their strengths to venture and accelerate in the digital assets business. Capitalizing on their large customer base and trusted relationships, traditional banks can offer new digital assets products and services. Banks could digitize their core products such as securities, bonds, etc., offer new services around custody, security, payments, asset management etc., or even design new crypto-based products to their customers.

A key prediction Everest Group offers in this paper is about a hybrid model in which traditional and digital assets will co-exist in the future. The key for incumbents would be to adopt a co-creation model collaborating with ecosystem partners to offer customers a single platform leveraging both centralized and decentralized technologies. As the on-chain and off-chain economies converge, an interoperable infrastructure that can support end-to-end value chain for any asset class will become critical.

At Capgemini, we are committed to stay abreast of the evolving blockchain landscape to help our clients get the future they want. As part of our larger blockchain offerings, we offer our customers an enterprise-grade custody solution to support digital assets with options to build, buy or integrate with full suite of APIs. With the right set of assets and capabilities, and a robust ecosystem of partners, we can help enterprises navigate the decentralized future.

We hope that this paper will help your organization in mapping out the strategy to capture the digital assets business.



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Using Technology and the Ecosystem to Unlock the **Potential of Digital Assets**



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Introduction

Digital assets are growing quickly, with modern technologies and products creating demand for new investment services. For example, from Q4 2020 to Q3 2021 alone, cryptocurrency valuations skyrocketed from US\$ 578 billion to US\$1.85 trillion – a growth rate of more than 450%. And they will continue their upward trajectory as both their reliability and awareness increase.

This dramatic growth has led to the proliferation of FinTechs as they explore untapped opportunity in the digital assets market such as crypto custody, tokenization, and cross-border payments. FinTechs are gaining increased acceptability and interest from the investor community; for example, Coinbase reached US\$100 billion valuation in its IPO launch in May 2021. Retail investors are exploring the use of digital assets in day-to-day transactions such as payments and remittances, as some companies started to accept crypto payments for cross-border transactions.

Financial institutions, governments, and regulators have also started to experiment with digital assets. Financial firms cannot offer cryptocurrencies directly to their customers until the regulations permit; however, they have started to provide indirect investments, through stocks, ETFs, and managed funds.

And they are investing in the development of crypto capabilities within their own products and services. However, they face numerous challenges across the asset value chain – from product development to market launch to investor purchase. To overcome these challenges, financial services firms need partners to help them strategize as they tap into this exploding market.

In this report, we explain the benefits of a hybrid platform to solve specific industry challenges as financial institutions adopt digital assets at speed and scale. We also examine the co-creation model for digital assets that financial institutions could consider a multi-collaboration model will become the future standard within financial services.

Key business potential driving the demand for digital assets in financial services

Digital assets have come a long way – from only cryptocurrencies to a broad array of financial assets using blockchain technology. This growing acceptance is evidenced by the shift from a comparatively small set of technology-enthusiastic retail investors purchasing or mining cryptocurrencies, to the current upsurge in demand from the institutional and High-Net Worth (HNW) investor segments in the last 18 to 24 months. Today, cryptocurrencies, crypto funds, and security tokens are considered legitimate assets to diversify investment portfolios. In fact, Deutsche Bank predicts that cryptocurrencies may dominate the payments market within the next decade. If that happens, digital assets will transform from a speculative investment vehicle to a common, practical asset instrument.

As digital assets increasingly become a practical alternative investment, demand will rise for investments in technology, operations, and infrastructure for digital assets. As FinTechs have introduced with cryptocurrencies and trading platforms supported by blockchain services, Decentralized Finance (DeFi) has emerged as an alternate to centrally regulated financial services. While traditional Financial Institutions (FIs) are exploring blockchain technology to digitalize fiat currency by leveraging Central Bank Digital Currencies (CBDCs), they are also exploring Decentralized Ledger Technology (DLT) to digitize their internal processes to improve security and operational efficiency. Similarly, the asset ecosystem has expanded, with the buy-side market evolving into a wide array of products such as liquid digital assets (including cryptocurrencies, stable coins, private coins, and CBDCs), digital tokens (security tokens and NFTs), crypto hedge funds, custody portfolios, and crypto derivatives/instruments (stocks, crypto ETFs, and futures and options). Crypto-custody and trading have emerged as the top use cases for emerging FinTechs and RegTechs. Increasing use of distinct types of coins has given rise to a prominent use case for digital assets. For instance, privacy coins were developed for private trades to enable private and anonymous blockchain transactions by obscuring their origin and destination. The most common crypto-fiat currency pairs for privacy coins are the US dollar, the Euro, and the Australian dollar. Stablecoins, on the other hand, were designed as a less volatile version of cryptocurrencies by pegging them to physical assets. Cryptocurrencies are an alternative to fiat currency and have been the most traded digital asset.

Countries such as China, the Bahamas, Sweden, and Singapore are spearheading the adoption of Central Bank Digital Currency (CBDCs). The Monetary Authority of Singapore is working with large banks such as JP Morgan to leverage CBDCs for interbank transactions. Exhibits 1 and 2 define the distinct types of digital assets in the market with a view into the adoption dynamics and key examples.

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EXHIBIT 1

The digital assets market is a thriving ecosystem comprising privacy coins, stablecoins, cryptocurrencies, and Central Bank Digital Currencies (CBDCs) Source: Everest Group (2022)

	Type of asset	How to trade	Examples
Privacy coins	It is designed on private and anonymous blockchain transactions to hide the origin and destination of transactions and maintain privacy of sender and receiver over network.	Stealth address (new address for every transaction), transaction mixer, and Zn-SNARK are used to validate transaction without revealing critical information.	 Monero and Zcash hide transaction value, sender and recipient identity Dash and Beam are some other privacy coins in market
Stablecoins	 These are tokens backed by fiat money, commodities like precious metals, and other cryptocurrencies They counter the volatility of cryptocurrency by tying its value to real-world assets 	Traded on exchange platforms and on service provider (coin issuer) platforms, wherever offered.	 DIAM – a token provided by diamDEXX and backed by real diamonds. Users can buy real diamonds using DIAM coins USDC, one of the well known stablecoins, is pegged against the US\$
Cryptocurrency	 Digitalized currency created to decentralize and deregulate medium of exchange and store monetary value DLT is used to store coin ownership on publicly accessible database 	 Many exchange platforms are available to buy and sell tokens Wallets are used to store and trade the currency over internet with several service providers for their products 	 Bitcoin Ether from Ethereum Binance Coin Dogecoin
CBDCs	 Central banks issued and regulated stablecoins Envisioned as central bank issued digital version of fiat currency 	To be traded as regular cryptocurrency but completely regulated by government and state regulators.	 China launched public testing of its digital the RMB/e-yuan in 2021 Bank of France issued a government bond using CBDC to test the technology

EXHIBIT 2

Digital assets also provide an alternative to traditional financing; security tokens are digital securities while NFTs offer alternative to traditional auctions

Source: Everest Group (2022)

	Type of asset	How to trade	Examples
Decentralized Finance (DeFi)	 Based on smart contracts, to facilitate direct transactions Aim is to digitalize and decentralize traditional financial products such as loans, insurance, savings, and trading 	 Traded on Ethereum- based decentralized platforms It works without exchanges, brokerage, or banks, which provide financial intermediaries 	 Compound – earn interest/yield YouHodler, Dharma – lending and holding stocks on crypto Synthetix – hold real asset without holding it (synthetic assets)
Security tokens	 Crypto assets that are backed by real physical or digital assets that can be traded Used as liquid blockchain contracts for fractional ownership of underlying assets 	 Traded on special platforms designed using smart contracts Traditional security exchanges such as NYSTX are joining the technology 	 Open Finance, tZero, ISTOX, Nxchange, and Uniswap are active examples At least 70 other platforms are under development including London stock exchange and New York Security Token exchange (NYSTX)
Non-fungible Tokens (NFTs)	 Tokens that identify a collectible, digital art, domain names, physical asset ownership records, and more digital assets as unique These tokens are managed through blockchain-managed ownership 	 A digital certificate of ownership (not copyright) is traded Cannot be traded with other NFTs Traded with cryptocurrency on various platforms 	OpenSea – platform that auctions a collection of photos, songs, and other digital items to buy and sell using Ethereum based cryptocurrency.
Utility tokens	Digitalized tokens, issued by firms through blockchain, used to provide benefits and access for their digital products/services to the investor.	 Not exchangeable with other utility tokens Bought using cryptocurrency to standardize prices globally 	Fan Token Offerings (FTOs) by football clubs, used to take part in team decision through polls, are a unique experience for fans.

Digital assets have also evolved into diverse asset classes to ensure digitization of the financial services products. Products such as Decentralized Finance (DeFi), security tokens, utility tokens, and Non-Fungible Tokens (NFTs) create a diverse digital asset economy. Utility tokens are used for payments, while security tokens serve as debt instruments, and NFTs offer a secured way to represent digital versions of physical assets such as real estate, lending contracts, artwork, or other digital assets for a specified purpose. These assets are prevalent across the globe, but larger transactions tend to take place in the US and parts of the Asia Pacific market such as China, Thailand, and Singapore; NFTs' adoption is rising in Europe and the UK.

Crypto trading

Many crypto trading service providers have entered the market to manage one asset or multiple types of assets. Among these crypto trading providers, exchange platforms offer the most diverse set of services covering both trade and storage of digital assets. For example, Coinbase has listed over 5,000 crypto assets for trade, while providing retail (exchange, wallet, card, and loan) and commercial (trade, custody, asset listing, and ecommerce support) services. These exchanges have been instrumental in creating the protocols for trade, payments, safekeeping, asset listing, and infrastructure support.

Attracted by global investments worth more than US\$2 trillion in digital assets, FIs want to enter market to provide these services to their diverse investor segments. In coming decades millennials and Gen Zs will dominate these segments. FIs will need to transform their products and services to design financial market services for these generations, to stay relevant in the long run – otherwise they run the risk of losing out to FinTechs and niche players.

However, FIs could leverage the credibility and reliability they have earned over their long history in financial services to drive digital asset momentum among their existing investor bases. Banks also have the benefit of understanding local markets and enjoying deeply integrated relationship with different generations of customers, enabling them to create personalized experiences for every investor. They could spearhead similar standards of trade, safety, and security for digital assets and stay ahead of the curve.

Crypto custody

Crypto custody – such as hot storage, cold storage, hybrid storage, and a multi signatory method that works through group consensus – is the other vital service for digital assets. Custody is important for institutional investors who are at significant risk if they lose the private keys to access their assets. Furthermore, they need an added level of protection against hacking. It is mandatory for large investors in most regions to have a professional custodian to handle their assets. Hence, it is imperative for custodians to scale up their operational and technology footprints as institutional investor demand for digital assets rises.

Though DLT makes the transaction of digital assets safe for accounting and settlement purposes, storing the digital assets poses many challenges. Digital custodians are always under threat of information theft and cyber-attacks. The unregulated nature of these assets further increases risk for these investors. In most large economies, regulatory bodies will allow FIs to provide crypto custody services, but regulations for trade remain unclear. For example, the US SEC has not allowed traditional FIs to directly provide digital asset trading services to their customers, but it is encouraging FIs to provide custody services for large investors. Some regulatory bodies are working on regulatory frameworks around custody services that exchanges, and startups are

adopting. Exchanges are developing end-to-end services themselves and acquiring smaller startups to help with this work. Finally, some large traditional banks are developing their own crypto custody services.

Opportunities for FIs

FIs that enter the digital assets market have several opportunities in this growing market – they could explore and design new crypto-based products such as NFTs, or digitize traditional core products such as securities, stocks, and funds using DeFi. They could also provide services for digital assets such as payments, asset management, and financial security.

Some traditional global banks have started to experiment with blockchain technology and cryptocurrency investments. For example, JP Morgan Chase has tested their own stable coin, JPM Coin, which has been pegged to the US dollar.

FIs are planning to launch their own digitally native assets. These assets can be funds directly created on crypto platforms such as the digital bond on Ethereum launched by European Investment Bank. FIs could also manage fund services based on a diverse set of asset classes. With the rise in digital assets, FIs could play the role of gatekeepers for their clients by ensuring their exposure to digital assets is safe and secure. For example, some large asset management firms have introduced products such as crypto based ETFs to help diversify the portfolios.

Digital custody could be a game-changing opportunity for traditional FIs as their market reach and its understanding positions them perfectly to go to market as soon as they can develop the technology needed for crypto custody services. FIs should consider working with third-party service providers using APIs and microservices to strategize and co-create value for their customers.

The business case for co-creating technology platforms for digital assets that financial services firms can adopt

Designing a platform to combine traditional and digital assets for FIs

Traditional and digital assets for retail and institutional investors will coexist in the next decade. FIs need to build hybrid platforms that allow the management of both traditional and digital assets simultaneously so that the investors can get a single view into both asset classes and can exchange funds on a single platform. Exhibit 3 explains how investors could leverage a single platform to manage their portfolios that comprise of both digital and traditional assets. The platform would offer end-to-end value chain coverage for any asset class.

Traditional financial institutions could tap into this potential space, creating a hybrid infrastructure that offers both centralized and distributed ledger technology for trading traditional and digital asset classes on a single platform. They could offer centralized processes such as reporting, settlements, and regulations with distributed custody and blockchain registry as value-added features. The end purpose would be to interconnect traditional assets and digital assets infrastructure.

Additionally, APIs and microservices could create hybrid models for investors to simplify their transactions with the wider ecosystem. A simplified framework to process multi-method

transactions (based on both currency types and crypto-fiat exchange pairs) and dual service offerings (core services with value-added features such as real asset tokenization, cross-border payments, and remittances) are additional advantages of a hybrid platform model.

Financial institutions must look at how their customers want to access and use both type of assets together. The same platform would allow customers to search, trade, and store both types of assets while keeping the underlying infrastructure same for financial institutions in maintaining the trade between them.

EXHIBIT 3

Investors need a simple platform that provides research, listing, trading, and exit opportunities for digital and traditional assets under a single platform

Source: Everest Group (2022)



Benefits to financial institutions of adopting next-generation technology to manage digital assets

There are numerous benefits for FIs to adopt next-generation technology for digital assets, including operational efficiency, speed, and customer experience, as described in the following table.



Operating efficiency

- DeFi will digitalize traditional products and services such as fiat money to stablecoins
- CBDCs will digitalize fiat currencies making it easier to trade, regulate, and monitor transactions for the entire ecosystem
- Decentralized Apps (dApps) will offer traditional financial services using safer, faster, and cheaper methods, which might improve financing availability and experience significantly for retail and commercial customers
- Smart contracts will ease various financial processes including KYC, buildingdocumenting-executing various contracts and deals, accounting, and financial crime and compliance among others

Speed

Smart contracts, dApps, and crypto payments will increase process and clearance speed significantly, offering benefits such as real-time processing and monitoring.

Customer experience

- Utility tokens will improve/customize internal process such as governance, security, and utility for multiple use cases and their processes
- DLT offers increased transparency and security for maintaining openly verifiable and immutable transaction history databases over multiple systems
- Use of public-private key cryptography to access information sent between accounts in a peer-to-peer method increases security and privacy of transactions/information
- dApps, smart contracts, and payments will improve customer experience
- Crypto custody will enable FIs will to offer customers derivative services and products over digital assets

Adoption of modern architectures using cloud, microservices, and APIs is accelerating the digitization of the financial system. However, many small and medium FIs continue to operate on legacy systems that are in dire need of updating. And even some of the large FIs, which have created monolithic systems over the years, are slow to upgrade or replace. These activities require a lot of effort, resources, and time.

On top of technology infrastructure challenges, lack of regulatory clarity and policy guidance are potential roadblocks for financial services firms as they attempt to scale in this space. Some crypto-friendly European countries have spearheaded this transformation by creating guidelines

for digital currency, Anti Money Laundering (AML), and trade viability. Central banks, such as the Monetary Authority of Singapore (MAS), are designing new structures to regulate virtual assets and streamline DLT. On the other hand, some regulatory bodies, such as the US SEC, still consider digital assets to be unregulated, risky security instruments. The challenge remains to regulate digital assets at a global level without compromising their nature. The process of building regulatory framework for digital assets is going to take many years and will be an iterative process. This uncertainty poses a high regulatory risk for FIs to provide their customers digital assets. FIs could take a balanced approach as described in Exhibit 4, to leverage partnerships and alliances, acquisitions, and/or proprietary platforms as they scale their digital assets businesses while minimizing risk.

EXHIBIT 4

Financial institutions can adopt a three-pronged strategy to accelerate their digital assets business: partner, build, and acquire

Source: Everest Group (2022)

Partner and collaborate

Some FinTechs specialize in developing crypto services such as APIs that banks can utilize to quickly launch their Banking-as-a-Service (BaaS) in crypto market.

Build and develop

Banks can develop and build their own DLT systems and launch their own coins on exchange markets. They can develop crypto trading services around their currencies or enter the trade service market with their own trading platforms.

Acquire and invest

Many FinTechs have created a significant market through various crypto assets and service innovations. Banks can acquire these start-ups to enhance or upgrade their offerings. The scale of development and investments (including finances, staff, and technology) is not feasible for many medium and small banks, and even some larger banks may not be able to invest, as their current priorities might not align with developing crypto capabilities. In these scenarios, FIs might lose the advantage to others that are to serve the market. The three-pronged strategy described in Exhibit 4 (build, partner, and acquire) could help solve some of the challenges around lack of necessary infrastructure, modern systems, and dedicated talent to accelerate business transformation.

FIs could invest through corporate ventures to develop the technology in a plug-and-play model that allows customizations when needed. For instance, Deutsche Borse and Commerzbank have jointly invested in the FinTech called 360X to drive the introduction and adoption of assets through the digital assets marketplace. It will also create an ecosystem for converting and trading real assets. FIs could also collaborate to solve the challenges around liquidity of digital assets. Liquidity of cryptocurrencies would determine how easy is it to trade on exchanges with other coins or fiat currencies. Digital assets liquidity has risen over the last few years as the number people exchanging them with Bitcoins has soared. The market has risen over 400% in liquidity over past five years. However, FIs need to explore the potential for improved market accessibility enabled by fractionalization of digital assets. Fractional ownership, or fractionalization, entails shared and syndicated ownership for a digital asset. Fractionalization has several benefits: it enables increased liquidity in the market and eliminates geographic boundaries and the need for intermediaries. A simple ownership structure recorded on a distributed ledger (blockchain) will allow the asset holder to trade the assets directly on the exchange.

Fractionalization would thus lead to reimagining the whole end-to-end process of finding and matching investors with investment opportunities and the subsequent secondary market opportunities once an investment has been made.

For instance, digital asset representation for illiquid asset such as real estate would improve the liquidity of this physical asset – it could now be traded on public markets built on blockchains for easy access. It reduces intermediary processes due to high automation and allows fractional ownership. This drastically increases the number of buyers who can afford smaller virtual portions rather than purchasing entire assets. IT service providers and technology providers are also leveraging tokenization and are helping FIs understand the technology and its benefits.

A co-creation model will help FIs to build customer journey of future

FIs need to prepare for imminent transitions and adoption of both forms of finances as the market heats up. However, as noted earlier, the requirements to do so, in terms of developing technology, infrastructure, and talent, take significant effort, time, and money. While the largest banks have started to experiment with the technology, others might find it difficult to keep pace with the market. Partnership and collaboration is one option to address that challenge.

A co-creation model based on partnering and collaborating will enable financial institutions and allied businesses to combine, package, and offer products/services along the full customer life cycle. These technology and system integration partners will facilitate technology infrastructure, operational workflows, and market-ready customizable products in a cost effective, safe, and composable format to ultimately accelerate outcomes for FIs.

Conclusion

Banks face a major challenge in adding digital assets to their portfolios: the need to upgrade legacy systems while competing against FinTechs that are already competing in the market and capturing significant share. FIs need to modernize their legacy systems and integrate with the broader financial ecosystem. Medium and smaller banks particularly are impacted by legacy systems hindering their ability to adopt modern financial standards and rapidly develop products to keep pace in the fast-evolving market. Even the larger FIs are slow to move away from their monolithic systems. Adding to the challenge is the need to invest to run traditional and crypto infrastructures in parallel, particularly as FinTechs are designed around modern technologies such as cloud, APIs, artificial intelligence, and machine learning. However, they usually specialize in a niche which gives them a significant advantage over FIs who serve broader services.

In the past five years, several central banks have actively explored market viability of developing CBDCs in a bid either to curb private cryptocurrencies or to strengthen the use of fiat currencies. This much change in only five years demonstrates the exponential speed at which digital assets can be developed in financial services. Banks are, therefore, starting to adopt open banking architectures to fast-track their digital transformation initiatives, which already utilize cloud and APIs. Similarly, they can use open banking architecture to co-create crypto capabilities.

FinTechs specializing in developing crypto services APIs could support banks in launching products more quickly through their banking-as-a-service platforms. IT service providers are already developing the required capabilities to support FIs through their crypto adoption journeys. They are offering services such as strategizing, developing, implementing, and maintaining crypto custody network. Through a co-creation model FIs could leverage some of the broader ecosystem's capabilities. They could deploy, upgrade, and customize their hybrid platforms based on investor needs. This model would allow then to remain cost efficient and to compete against FinTechs.

Though the digital assets market is far from being saturated, FIs must act now and act fast, or else they will forever lag the FinTechs.



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This study was funded, in part, by Capgemini

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