Coalition Greenwich
A division of CRISIL

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Digital Assets: Managers Fuel Data Infrastructure Needs

amberdata

CONTENTS

Executive Summary

Crypto is dead, long live crypto.

Recent Coalition Greenwich research shows the U.S. and U.K./European crypto markets to be highly resilient and advancing despite heavy scrutiny and uncertainty in the U.S. market. Asset managers and hedge funds are positive and upbeat about the growth opportunity of the asset class as well as the commercial opportunity to offer a range of investment funds, exchange-traded funds (ETFs) and even new digital asset securities.

David Easthope advises on market structure and technology globally.

While some asset managers are more enthusiastic with traditional use cases in the asset class (investing, trading, products), others continue to be attracted to the potential of decentralized finance (DeFi). In a surprising twist, these same managers are optimistic about the U.S. market over the next five years and its ability to offer frameworks as well as prudent regulation to support the development of the market.

The crypto markets always seem to advance even in difficult troughs. And while Dubai, Singapore and Switzerland can also support crypto hubs in a positive fashion, the U.S. and U.K./European opportunity is also strong. In the meantime, banks and other intermediaries see an opportunity to support tokenization of assets (both financial and real-world assets (RWA) and DeFi), with proofs of concept (PoCs) and pilots across the globe.

Infrastructure, including well-regulated custody, is critical to the development of the ecosystem. However, the next arms race is going to be centered on data, analytics and tools to support front-office professionals (PMs, analysts and traders) in their never-ending request for higher returns and the ever-elusive alpha.

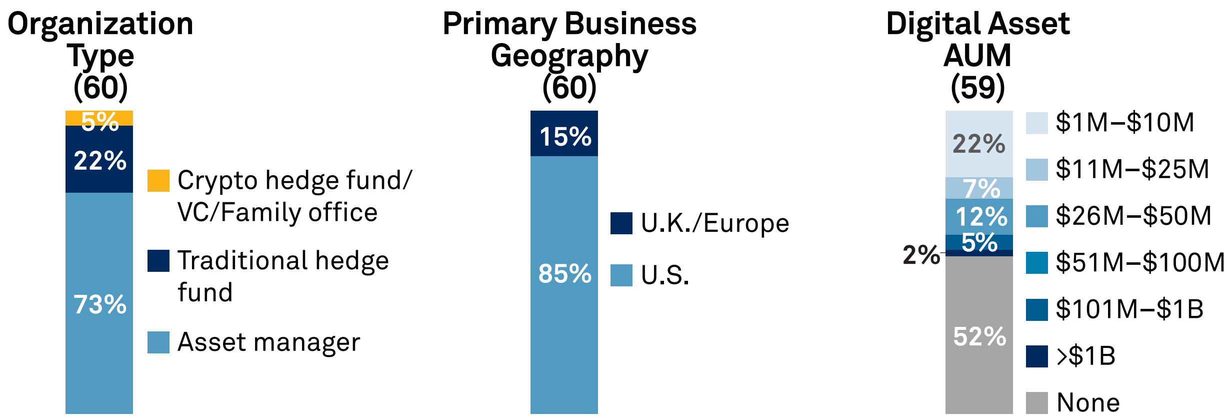
Spending on crypto market data, on-chain data, as well as portfolio and risks systems are very much on the radar for the next 6 to 12 months, suggesting firms will be on firmer ground when the clouds clear and sunny skies appear next.

METHODOLOGY

Between May and June 2023, Coalition Greenwich conducted research, in partnership with Amberdata, to better understand how institutions are implementing digital assets, including investment strategies, products, data, and technologies to support the asset class. We conducted online interviews with 60 buy-side professionals from asset managers, hedge funds and other investors in the United States and the United Kingdom/European Union. Their roles include portfolio managers, traders, analysts, researchers, and managing directors.

Almost half (48%) of these buy-side respondents have digital assets under management (AUM), reflecting a mix of active investors and those with some curiosity. In addition, we conducted extensive qualitative interviews with several sell-side institutions and infrastructure players active in the market, to round out the findings on use cases, pilots and infrastructure used to support digital asset trading and investing.

Respondents



Note: Numbers in parentheses represent number of respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

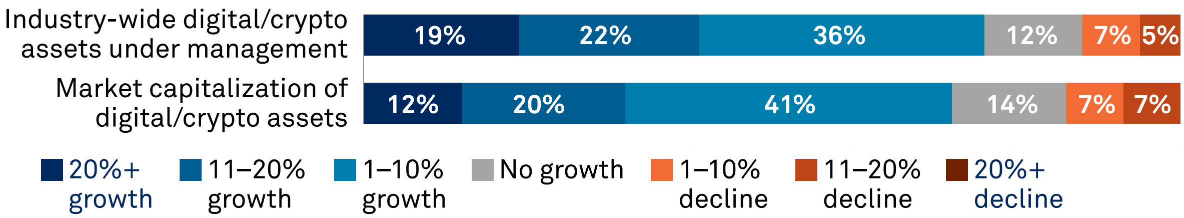
The Market Opportunity for Managers

This report presents key findings from our recent study that explores the current implementation of digital assets by managers and other intermediaries and sheds light on the market opportunities, implementation strategies and data infrastructure requirements for these firms. The study gathered insights from asset managers, hedge funds and select banks/intermediaries, including active investors as well as firms still exploring digital assets.

Investors see a growing market opportunity to manage digital assets. There are a range of estimates for total crypto market capitalization, but it stands at about $1.2 trillion in assets as of August 2023. Add to that the growing opportunity for tokenized financial and real-world assets (RWA), which Bernstein estimates at $5 trillion, and digital assets reflect a burgeoning asset class. Moreover, while much of the $5 trillion reflects tokenized cash or cash-like instruments (i.e., central bank digital currencies (CBDCs), stablecoins and tokenized deposits), additional opportunities are available in private funds, securities, commodities, real estate, and other RWA.

The digital asset market is anticipated to grow at a healthy clip, according to our research, with three-fourths of our managers expecting digital asset AUM to grow over the next five years, and over 40% expecting very strong growth (11–20%+ growth).

Expected 5-Year CAGR (%) of Digital/Crypto Assets



Note: Based on 59 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

Moreover, managers see an opportunity to expand their AUM faster than the overall market with 44% expecting digital assets to be a growing business line over the next three to five years. Thus, while digital assets may not be for every type of manager at present, a growing set of firms expect to manage these assets.

Despite the enthusiasm for the longer term, however, there are near-term realities. Some firms clearly believe we are in a short-term pause, particularly for those in the U.S. While a majority believe institutional sentiment toward digital asset adoption has slowed, 46% remain neutral to positive about the current state of adoption. **Furthermore, those with a dedicated role in digital assets are notably more positive—so those firms that are true believers remain actively engaged and building.**

While attitudes in the U.S. are influenced by enforcement actions (e.g., Binance), in the long term, the U.S. remains a favored destination and investors ultimately expect a constructive framework from policymakers. It is hard to predict the future, but our research points to surprising optimism in the U.S. Below-the-radar activities, such as bringing tokens into compliance (to get them relisted), getting FINRA approvals and setting up broker-dealers/ATSs are happening with a fervor, with firms like BlackRock adding momentum with its ETF filing.

Manager Implementation Strategies

How can investment firms capture this growing digital asset opportunity? Looking at current and planned digital asset strategies, we see a fundamental market that is maturing, with an emphasis on active and passive strategies but also represented by stat-arb and other venture capital (VC) strategies. As a nascent technology market with some inherent inefficiencies, it is no surprise to see VC and stat-arb represented. **Volatility and arbitrage are a feature, not a bug, of this industry and will remain a focus, alongside more traditional investment products such as mutual funds and ETFs.**

Current or Planned Digital Asset Investment Strategies

Most Common Strategies	
Active	**35%**
Passive/Index/Tracker	**30%**
Statistical arbitrage	**22%**
Venture capital	**22%**
Multi-strategy	**17%**

Other Strategies	
Market making	**9%**
Yield	**9%**
Infrastructure only	**9%**
Agency/Principal	**9%**

Note: Respondents could select multiple strategies. Based on 23 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

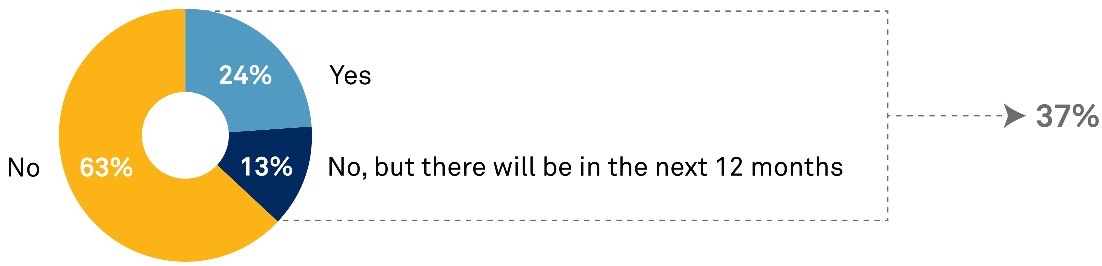
Manager participation in the sector is robust and fairly diversified. However, the industry is still maturing and managers are bullish on the most obvious and direct digital asset use cases, such as crypto portfolios, investment products and tokenization of existing financial instruments. However, the tail end of the digital assets ecosystem (such as non-fungible tokens (NFTs)) is likely less of a priority, as some traditional managers are more constrained and reflect a conservatism not found in the deep end of the crypto investing pool.

Organizational Participation in the Digital Asset Sector

Note: Based on 59 respondents. *Includes research, exploring potential opportunities, using ETFs, investing in Bitcoin miner.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

Firms are getting quite serious about crypto as reflected by organizational strategies as well. Twenty-five percent of buy-side firms have a specific digital assets strategy and an additional 13% plan to launch within the next two years. And it's not just products behind these strategies. Crypto is increasingly staffed by people—typically seasoned professionals in new and exciting roles. These roles are being staffed up, with almost a quarter of firms with a senior role dedicated to digital assets, reflecting seriousness about implementation as well as senior management buy-in.

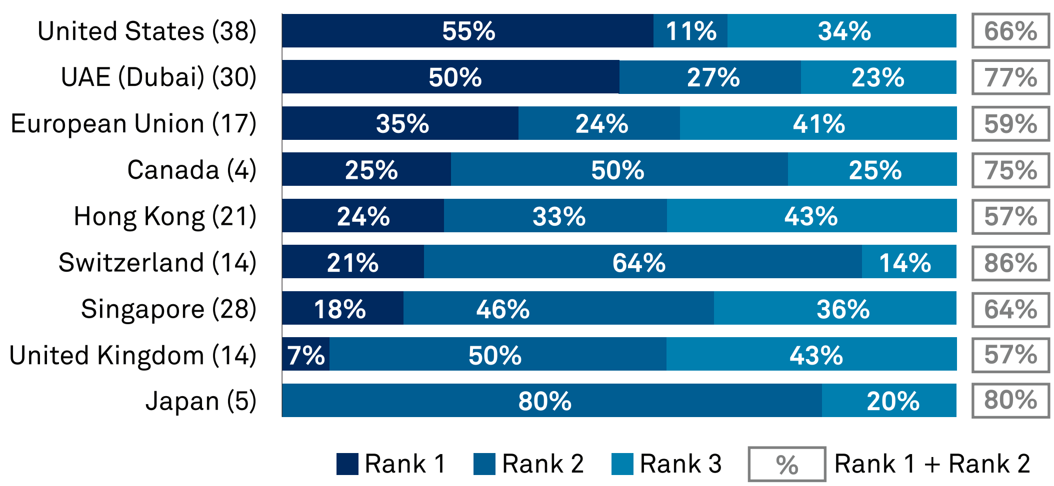
Organizations with a Senior Role Dedicated to Digital Asset Strategy Implementation



Note: Based on 54 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

Followers of crypto are no doubt aware of the recent regulatory activity in the U.S. Despite this upheaval, the U.S. crypto market has demonstrated remarkable resilience, with some optimism gaining traction. Our research shows that the U.S. regulatory environment remains crucial for digital asset investors, but other locations like Dubai and Switzerland also garner support. This surprising positivity reflects a desire to make the U.S. a place to do business in the longer term. The reality is that U.S. and European crypto professionals want to see opportunities in their home markets. And while opportunities abroad offer pathways and business diversification, they are not ideal for everyone. Policymakers in Dubai, however, clearly deserve accolades for recent promotion of their markets.

Geographies Positively Supporting Digital Asset Adoption in the Next Five Years

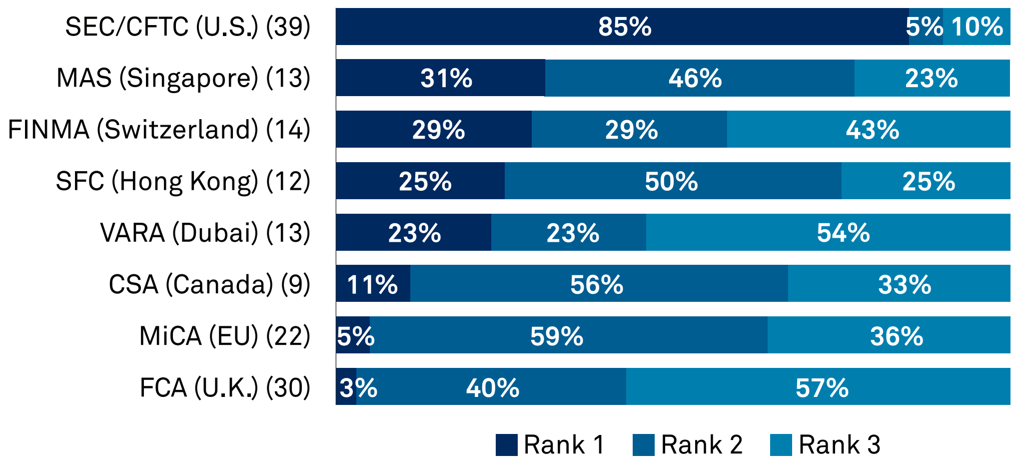


Note: Numbers in parentheses represent number of respondents. May not total 100% due to rounding.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

The U.S. is central to manager planning in this space. The good news is that the tide may be turning. In the next five years, the SEC and the CFTC are expected to be providing the most positive opportunities for investors in our study. This could be a combination of optimism and even some wishful thinking that lurks below the surface, as some of the enforcement actions and policy debates take place publicly, but more constructive debates happen behind the scenes among regulated institutions. It is not exclusive to crypto—SEC proposals on U.S. equity market structure are hotly contested, but preparation is taking place as well

However, there are near-term challenges based on regulatory frameworks in the U.S. For example, in the U.S., platforms are being challenged (see Coinbase, Revolut or Binance.us), as well as infrastructure, with capital rules and SAB 121 snaring some firms. However, the Ripple ruling could also create a pathway forward for more assets to be available for trading (and with support services) in the U.S., and some of these platforms and infrastructure providers may ultimately switch these and other assets back on.

Regulatory Frameworks Providing the Most Positive Opportunities for Digital Asset Strategies



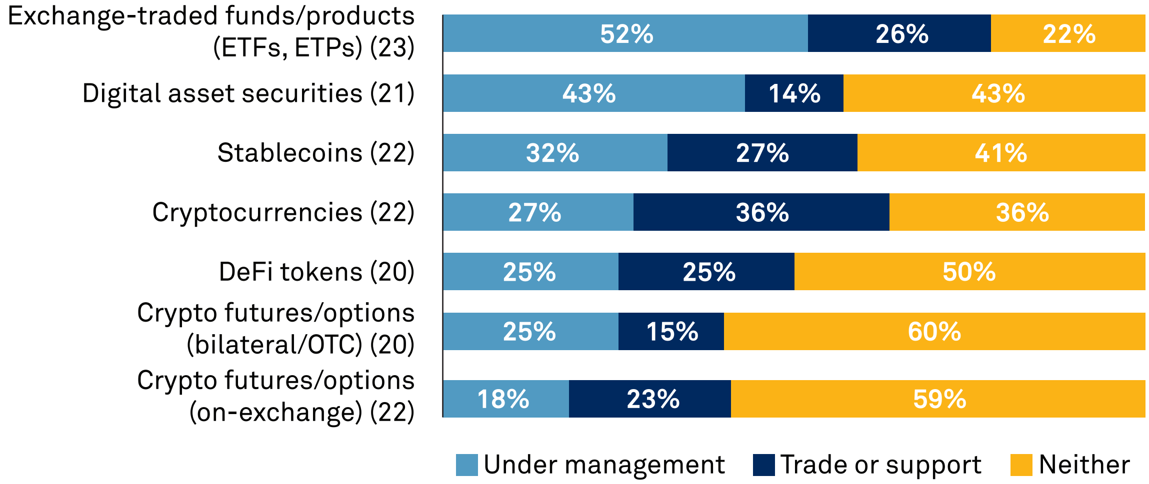
Note: Numbers in parentheses represent number of respondents. May not total 100% due to rounding.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

Managers Will Continue to Build

Today, most funds are managing or plan to offer exchange-traded products. This is the simplest path to implementation and the easiest to build. Firms have been there before, have investment committees that understand these products, and risks are easier to quantify. Clearly, stablecoins and cryptocurrencies are also under management—these are the main instruments owned and managed by crypto hedge funds, for example.

Some funds have moved to the frontier and now manage DeFi tokens as well. Futures are less common among our respondents, but some innovations are making futures more readily accessible, such as margin trading on CBOE Digital, the approval of Coinbase's futures market, as well as futures being offered by CME.

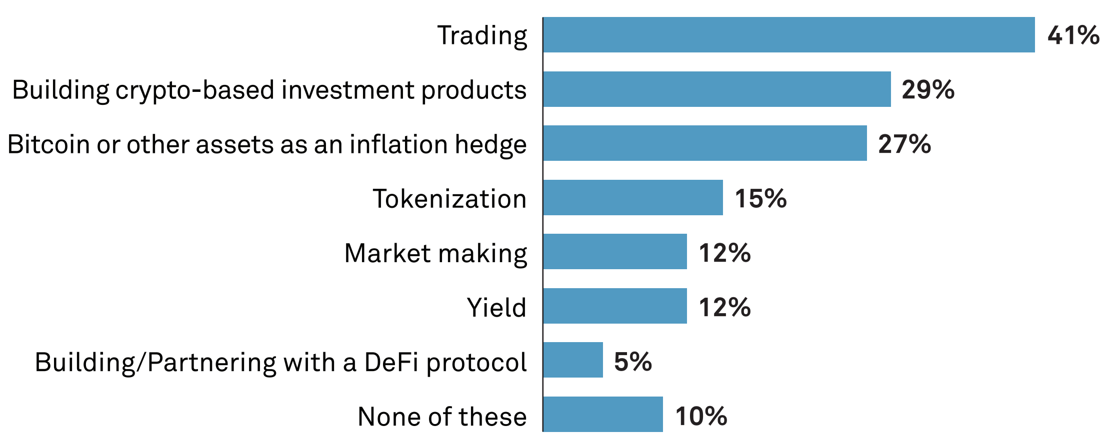
Digital Assets Currently Under Management/ Planning to Have Under Management



Note: Numbers in parentheses represent number of respondents. May not total 100% due to rounding.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

In the next two years—hardly a long time in crypto land—managers will focus mainly on trading and investing strategies with an emphasis on building new investment products. They believe Bitcoin and other assets can be useful tools against inflation also see the trading opportunities inherent in this relatively volatile asset class. Other interests will likely be pushed further out to the future. We believe this reflects the emerging nature of this asset class, as well as the most obvious and useful strategies being adopted first by hedge funds and asset managers.

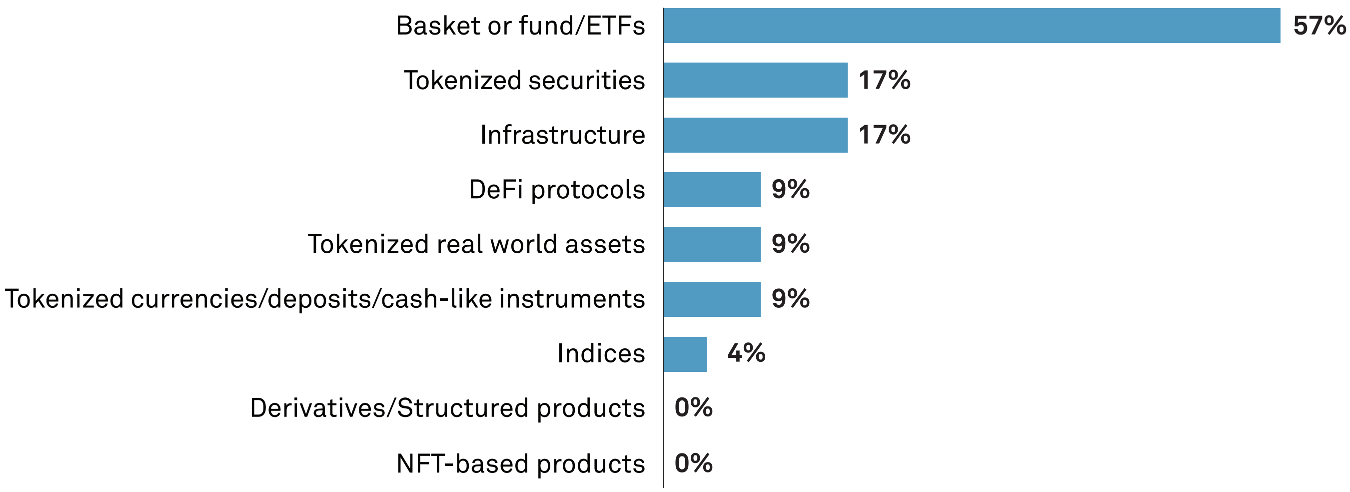
Primary Interest in Digital Assets in the Next Two Years



Note: Based on 59 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

In terms of building new products, pooled vehicles are the top choice for managers, represented by baskets of funds/ETFs. These products are simply in the DNA of asset managers—it is what they know they can build, and managers need far less regulatory clarity than with tokenized securities. Building infrastructure and engaging in DeFi protocols, while clearly on the roadmaps of some managers, have significantly higher risk profiles and longer time-frames than simply launching ETFs. For instance, several Bitcoin spot ETFs appear to be on the brink of approval in 2023.

Digital Assets Organizations Currently Building or Intending to Build



Note: Based on 23 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

We do believe, however, than tokenized investment products, including investment funds and other pooled investment vehicles created under the Investment Company Act of 1940 are a step forward for the industry. Today's investment structures were clearly designed in different technological, legal and cultural contexts. While ETFs are about 30 years old and still growing, digitization is starting to introduce competition to existing fund structures. For the investment fund industry, blockchain technology has arrived, with real, tangible benefits for funds—including real-time settlement and an immutable, transparent, distributed ledger.

Blockchain-based settlement offers new efficiency in fund administration as well as transparency for a variety of participants, including fund issuers, service providers, intermediaries, and investors. In fact, among respondents to an earlier Coalition Greenwich study, 67% of market participants agreed that efficiency in fund administration is one of the top benefits of tokenized funds.

Making Traditional Assets Crypto-Native

In 2022, we watched as the "tokenization of everything" began to unfold, driven by the benefits of blockchain technology—namely rapid settlement, fractionalization and transparency inherent in blockchain-based financial assets. Now, with at least one attempt on the books to tokenize almost everything (including equities, mutual funds, collectibles, real estate, and private equity), we continue to see more traditional financial assets, like bonds, see blockchain-based issuance.

Tokenizing bonds is hot. For instance, UBS has launched digital bonds that are publicly traded and settled on both blockchain-based and traditional platforms and exchanges. Moreover, the European Investment Bank (EIB), SBI and other financial institutions have also experimented on crypto-native bond issuance.

There are multiple examples across 2022 and 2023:

- **UBS** launched the world's first digital bond issued by a banking institution globally to be listed, traded and settled on a regulated digital exchange. The digital bond settles via **SIX Digital Exchange (SDX)**.
- **Deutsche Bank** became the first bank in Asia to conduct an intraday repo transaction on **J.P. Morgan's** blockchain network.
- **Goldman Sachs** issued a $100m+ digital bond that settled instantly on its tokenization platform, using CBDC tokens issued by **Banque de France.**
- **HSBC, BNP Paribas and RBC Capital Markets** all participated in the EIB's latest digital bond issuance.

As 2023 moves ahead, banks continue their work on infrastructure to better integrate blockchain technology by focusing on distributed ledger technology (DLT) as well as by incorporating the settlements, payments and other rails needed to allow for the full life cycle of these assets. For instance, the NY Fed tested tokenized deposits with R3, called the Regulated Liability Network (RLN), while J.P. Morgan Onyx also has plans and a model to tokenize deposits. Other banks like MUFG are looking at offering a stablecoin platform for multiple banks as well.

Tokenization Opportunity

Traditional financial institutions are paying attention to the tokenization opportunities that blockchain technology presents. In 2023, infrastructure players and sell-side firms continue to experiment and build. While there are a number of projects underway, in our conversations with leading financial institutions and intermediaries, we observed a clear resonance around certain projects that involve tokenizing financial and real-world assets. The projects include the Canton Network, Project Guardian and activities through J.P. Morgan Onyx. In terms of public chains, Avalanche and Polygon were mentioned.

Intermediary Activity on Public and Private Blockchains

- **Canton Network** – blockchain for institutional assets
- **Project Guardian** – collaborative initiative under MAS including DBS, SBI, SGX, Standard Chartered, Citi, J.P. Morgan
- **J.P. Morgan Onyx** – DBS, BNP Paribas intraday repo
- **Securitize –** launch of KKR Fund on Avalanche

To tokenize financial and real-world assets, banks are experimenting with both public blockchains and interoperability with private, distributed ledgers. And while private blockchains have captivated minds (see KKR's tokenization of their fund on Avalanche via Securitize), most of the sell-side attention is currently on private, permissioned chains.

Private blockchain opportunities are being actively investigated by multiple leading banks, including Goldman Sachs. For instance about Canton, a blockchain for institutional assets:

> Most of the development you will see certainly from the U.S. banks—J.P. Morgan, ourselves and many of the others—will be on a private blockchain.
>
> *~Mathew McDermott, Global Head of Digital Assets, Goldman Sachs*

And it's not only about the assets themselves. There is also strong sentiment around getting the necessary data to utilize smart contacts. Oracles for smart contracts, for instance, provide this data on the blockchain—the Pyth Network is one example. Pyth is a private financial oracle network that provides real-world data on chain. With firms like MIAX and CBOE Digital publishing real-time derived markets data to the DeFi community, the idea is to make DeFi markets work more and more like traditional markets by bringing data on chain for participants.

> Let's combine the ingenuity of crypto with the principles of traditional markets. Trust me, it's going to be exciting.
>
> *~John Palmer, President, CBOE Digital*

On the tokenization front, Project Guardian in Singapore has also captivated minds. Project Guardian is a collaborative initiative under the Monetary Authority of Singapore (MAS) with the financial industry that seeks to test the feasibility of applications in asset tokenization and DeFi, while managing risks to financial stability and integrity. Participants include HSBC, UOB, Schroder's, UBS, DBS, SGX, Standard Chartered, Citi, DBS Bank, J.P. Morgan, and SBI Digital. Pilots concentrate around fixed income, foreign exchange and asset/wealth management. Outside of Asia, other banks are quite engaged and motivated by recent activity in the EU and U.K. and are participating in the DLT "sandboxes" that provide pathways forward.

Banks and other intermediaries see an opportunity to support tokenization of assets (both financial and RWA) and support DeFi, tokenization and other PoCs and pilots across the globe. The Canton Netowrk, the Pyth Network and Project Guardian are just examples.

> The next generation of markets is tokenization of securities.
>
> *~Larry Fink, CEO, BlackRock*

However, even as new infrastructure is being developed, guardrails are clearly needed. The DLT pilot regime in Europe, MiCA and the FCA sandbox have offered the banks avenues for legal and compliant experimentation. In addition, the permissioned networks will need to be integrated with public networks at some point. Interoperability of blockchains is a topic being specifically addressed by the Canton Network, backed by Digital Asset and its DAML smart contract language, which counts 30 members.

Other options like Ownera FinP2P provide a conventional routing system among different blockchain applications. How this interoperability will ultimately take place is still a mystery, but it is required for this technology to become better integrated and realize the value inherent in the technology (as opposed to traditional databases).

Implications for Data/Infrastructure

Based on the use cases and pilots, we clearly see a scenario where banks and other intermediaries need a variety of data to support their activities, including market data and on-chain data. Moreover, to the degree these projects begin to stretch into full DeFi, additional data sets will be necessary.

Data and Infrastructure Targeted by Intermediaries—Sell Side

Data
- Market data
- On-chain data
- DeFi data

Infrastructure
- Protocols
- Custody
- Settlement
- Payment rails
- Tokenization projects

Ratings/Indices/Taxonomy
- Classification
- Crypto indices
- Stablecoin scoring systems
- DeFi ratings

For bank platforms, such as fund services, data from venues (i.e., trade data) will need to be incorporated with traditional accounting and administrative functions. DeFi will also create challenges where bank clients decide to chase opportunities. Pricing isn't all that matters—naming conventions and security master data will also need to be integrated into traditional custody systems. How does a bank, for instance, take on-chain data and feed it into accounting and downstream systems? It is not entirely clear. What is certain, however, is that banks will need both the permissioned as well as public data side-by-side to effectively nurture and serve this market.

Moreover, we believe some intermediaries with a futuristic agenda will use the advent of blockchain to collapse services across siloes (such as multiple accounting applications) into a unified structure. The massive tokenization opportunity across private assets (and the lack of standards) may offer the revenue pool to support this undertaking and make it too difficult to pass up.

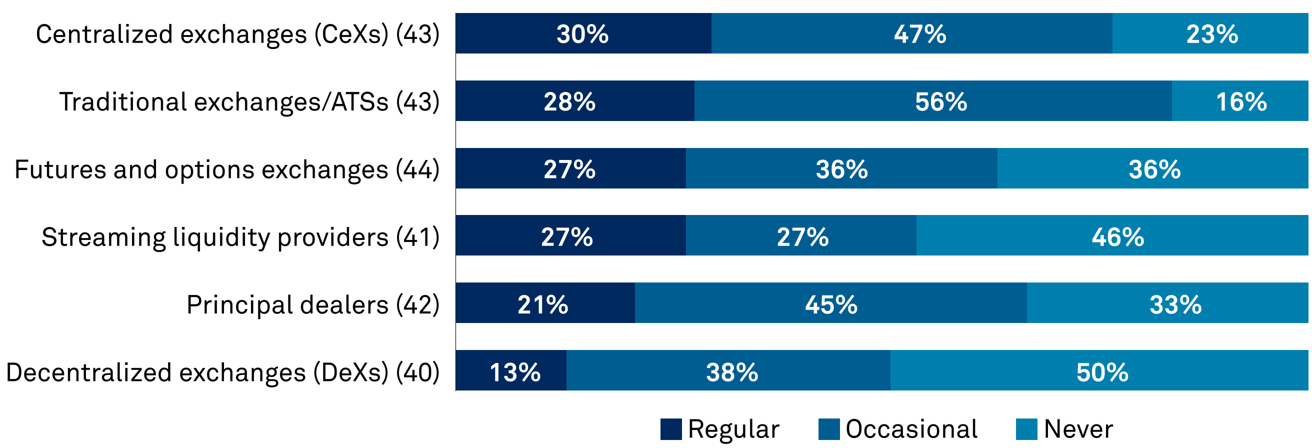
The Great Data Explosion

Globally, market data spending is on a roll[1] across a variety of asset classes, data types and geographies. For example, we see minimum 5% increases and, in some cases, 10% increases over the next 12 months in equities, fixed income and alternative data. Moreover, ETFs, derivatives and structured products are also seeing considerable growth in spending across the buy and sell side.

Crypto data is no exception. To manage assets in the sector requires data, and lots of it. Required data sets include general market data, crypto market data, on-chain data, and derivatives markets data. DeFi is also a major data requirement, which is not offered by traditional data providers.

To some extent, the choice of instruments, counterparties and venues determines needs for data—including market and pricing data. Our research shows that managers are leveraging centralized exchanges, derivatives exchanges, dealers' streaming liquidity, and even use of decentralized exchanges. That's a lot of data inputs for pricing and execution. Most of these communicate via REST APIs and WebSockets, while others leverage the FIX protocol. Aggregating across these markets is a tall order, and usually beyond the means of managers, especially traditional ones.

Level of Participation at Different Destinations and Market Venues

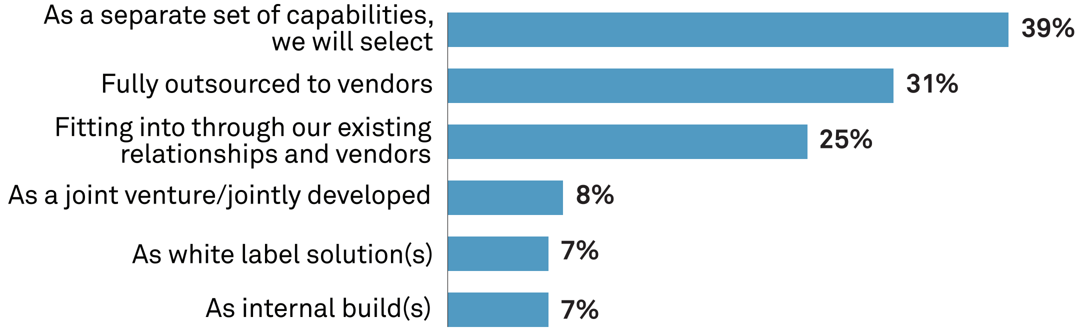


Note: Number in parentheses represents number of respondents. May not total 100% due to rounding.
Source: Coalition Greenwich 2023 Global Trading Technology Study

The great data explosion is leading to a need for data as well as applications to support investment and trade workflows. **When it comes to sourcing data and applications, 85% of study participants expect to use an outside vendor for market data, APIs and portfolio/risk systems.** Only 15% will use internal builds or jointly develop a system. Moreover, managers are likely to see these capabilities as distinct, requiring a separate process from existing relationships, vendors and outsourcing. Crypto infrastructure remains unique.

[1] https://www.greenwich.com/market-structure-technology/market-data-quality-over-cost

How Digital Assets Data Infrastructure and Applications Fit within an Organization

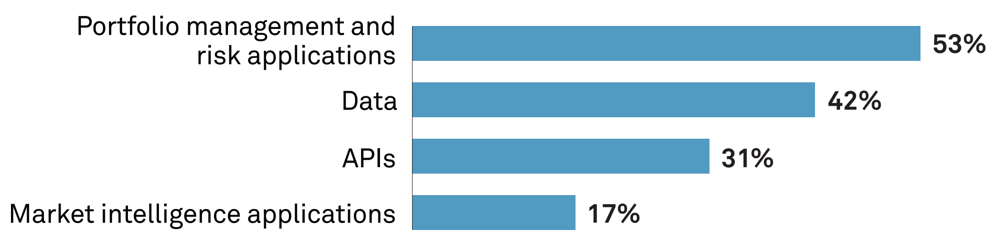


Note: Based on 59 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

In summary, the data ecosystem is an expanding universe. Managers prefer to buy rather than build, with managers seeking data, APIs and portfolio/risk systems through new and existing partners, and with some looking to fully outsource.

Looking ahead, we see growth in spending on crypto market data, on-chain data, as well as portfolio and risk systems for the next six to 12 months, suggesting that firms will be on firmer ground (in terms of infrastructure) when the clouds clear and sunny skies appear next. While the U.S. is clearly pushing off some spending (or else spending through legal entities outside the U.S.), we expect momentum to accelerate as we move into 2024. The need for portfolio management and risk systems is particularly interesting and reflects a maturing asset class.

Digital Assets Data Infrastructure and Applications Required by Managers



Note: Based on 59 respondents.
Source: Coalition Greenwich 2023 Digital Assets Infrastructure Study

Looking Ahead

Our research demonstrates that despite some perception of slowed momentum, respondents with dedicated roles in digital assets and those managing digital assets today are displaying positive attitudes toward the sector. We see the U.S. market remaining resilient over the next several years, while traditional investment manager use cases continue to dominate interest, and unconstrained hedge funds go for more edge cases and seek volatility.

In terms of overall crypto market structure, as the industry (particularly in the U.S.) segregates duties across the trade life cycle, implementing investment strategies may involve more specialized partners as vertically integrated firms become scarcer. We expect to see a full range of services (e.g., news, market data, on-chain analytics, research, and ratings) rise up to support greater implementation of investment strategies. With greater clarity, the market could be poised for sharp growth if the pathway, particularly in the U.S., becomes clear.

On the tokenization front, banks and infrastructure firms are not waiting to build, albeit in Singapore, Dubai, Switzerland, and other locales. The European Blockchain Regulatory Sandbox has captivated attention from the banks as a safe place to experiment, and the FCA in London is also being relatively hospitable and engaging on the tokenization and securities front. For banks, there is no need to wait. Opportunities to build are present now.

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