OliverWyman

DIGITAL ASSETS GOING MAINSTREAM

Opportunities for Financial Institutions

Dan Jones
James Gordon
Keat Lai

Digital assets are generating significant market interest. In the unregulated crypto market, startups and early investors have enjoyed enormous value creation, while in the enterprise space, firms have taken technologies developed and tested in the crypto market and adapted it to payments and settlement, record keeping, securitization, and trading. As adoption accelerates and digital assets go mainstream, there are multiple commercial opportunities for financial institutions and significant first-mover advantage to be taken in the crypto markets.

This paper discusses the commercial opportunities that are starting to avail themselves to traditional financial institutions, such as banks, payment companies, insurers, and fund managers.

WHAT ARE DIGITAL ASSETS?

The developments in distributed ledger technology (DLT) and the innovative application of cryptography underpin the growing digital asset ecosystem. These instruments have properties that allow value to be stored, transferred, tokenized, and rules or processes embedded and autonomously enforced among semi-trusted or untrusted parties. The latter property is a significant innovation that has enabled the creation of digital units with financial or economic elements that can traverse organizational boundaries.

Digital assets cover a wide spectrum of digital instruments built on a variety of technologies, security, and governance models. They generally exist on open permissionless networks, or semi-open, permissioned networks. Open, permissionless networks have given birth to 'crypto assets' which have enjoyed an incredible boom this year, while permissioned environments are typically deployed in enterprise settings and provide a foundation for a range of offering including, for instance, state-endorsed digital currencies.

Exhibit 1: Digital asset properties

	Private Networks	Public Networks
Ownership	• Bearer instrument • Based on data recorded on universally accepted registry	• True and Final • Can be fungible or non-fungible
Transaction	• Payment = settlement • Pre-agreed rules and processes are automatically enforceable	• Peer-to-peer
Value	• Representation of a claim • Guaranteed by 3rd party	• Based on protocol rules
Security and Trust Model	• Permissioned model • Syndicated trust through known entities with reputation	• Un-permissioned model • Parallelization and massive syndication of trust through unknown entities
Key Distinctions	• Resistance to adversaries • Various governance models • Infrastructure for information records, payments and settlement, and enforcement of business logic	• Resistance to censorship and adversaries • Extra legal • Anonymous/Pseudonymous by design • Nondiscriminatory participation model • Open-source governance • Crypto asset infrastructure ***Focus of this document***

WHY NOW?

Since Bitcoin was launched by the mysterious Satoshi Nakomoto in 2009, the financial services industry has been slow to react as the crypto asset industry grew from a niche offering to one that generates billions of dollars in revenue annually. The industry has spawned billions of dollars in revenue annually, creating at least 20 unicorns.

While significant wealth has undoubtedly been created by individuals and startups that entered the space early and executed well, incumbent financial services firms have yet to find ways to either meaningfully participate in the crypto asset market, or utilize distributed ledger and blockchain technology to launch digital asset propositions or streamline existing operations. Most initiatives have struggled to break out of the proof-of-concept phase because of immature technology stacks, risk governance issues, limited commercial value, or lack of regulatory clarity.

However, four key developments over the past year are setting the scene for a step-change across the industry.

Institutional investors

Firstly, institutional investors have started to play a role in the market and were largely responsible for the crypto bull market in early 2021, according to various analyst reports. MassMutual's $100 million exposure to Bitcoin and Brevan's announcement to allocate up to 1.5% of its asset into crypto assets have signaled a growing acceptance and commitment by a new set of sophisticated and regulated players in this market. These players are driven by a combination of the material trading opportunities that exist in the market, a strategy of allocating assets to an emerging asset class, and more importantly, demand from clients for exposure to an asset class that has provided outsized risk-adjusted returns over the past decade.

Maturing market

Secondly, the participation of institutional money managers is the result of a market that is maturing. Liquidity and price setting venues have institutionalized governance, compliance, taxation, and reporting capabilities, allowing market participants to trade their own balance sheet and client funds with confidence. Market liquidity has also reached levels that support large block trades with large acquisitions and disposals in the range of hundreds of millions of US dollars with minimal slippage. There is also an emerging yield curve in the crypto market, denominated in various fiat and cryptocurrencies, resulting from the lending activities of both centralized entities and decentralized lending pools. Regulations, while still lacking in certainty and homogeneity, have shifted. There is clearly a class of regulators in jurisdictions such as Singapore and Switzerland that welcome the crypto industry and are promoting the use of DLTs. And, while regulators in the US have stepped up oversight of this industry, the message has still been consistently pro-innovation. This is evident with recent pronouncements by the Office of the Comptroller of the Currency (OCC) to permit banks to

settle on public blockchain infrastructure. Even China, which has banned all cryptocurrency activities, has encouraged the adoption of distributed ledger, blockchain, and other tamper-resistant cryptographic technologies that are being built by the crypto industry.

Commercialization

Thirdly, there is now growing evidence that commercially valuable cryptocurrency propositions can be realized. Coinbase reported net income of US$770 million on revenue of US$1.8 billion in the first three months of 2021[1]. Robinhood's entry to the crypto space contributed US$87 million or 17% of its Q1 2021 revenue[2]. Meanwhile, Revolut and Square have reported increased user-engagement after introducing crypto asset offerings. Digital asset propositions are not only in the trading and investment space; banks and payment companies have also launched payment solutions that are built on stable coins or permissioned distributed ledger networks. Most notable of these is Visa's support for USDC settlements on Ethereum, an infrastructure that no regulator or financial institution governs or operates.

Maturing technology infrastructure

Lastly, the technology landscape has developed significantly since the last crash in 2018. Developments in, for example, Layer-2 solutions[3] have matured, and these solutions have enabled higher-complexity and higher-speed transactions at a lower cost. These include solutions that scale up Ethereum's transaction speed while offering a lower transaction cost and bridges that allow different blockchains to link with one another, enabling the creation of derivatives, such as tokens on Ethereum that represent Bitcoin. Outside the Big Two of Bitcoin and Ethereum, alternative public blockchain protocols and their native currencies are now being more widely adopted. This even includes protocols that use governance and consensus models that are philosophically at odds with the original intention of decentralization, and the democratization of network trust and security. However, these alternative protocols, for example, Binance Smart Chain, have seen significant adoption and usage as developers and users flock to ecosystems that are flush with capital, have low transaction costs, high transaction speeds, and developer-friendly libraries that enable fast deployment. In addition, supporting infrastructure and applications that interact with public cryptocurrency protocols are now available both in the public open-source space and the commercial space. These solutions are 'off-chain' tools that make it easier to secure, interact, and deploy various products onto public cryptocurrency protocols. Enterprise-level self-custody solutions are also available in the market where not only keys are secured but also the exchange of wallet addresses. Together, these advancements make it possible for institutions to deploy scalable retail wallets without incurring significant protocol transaction costs and enable companies to build propositions on significantly more accessible and mature technology stacks.

1 Coinbase Form 10Q — April 2021

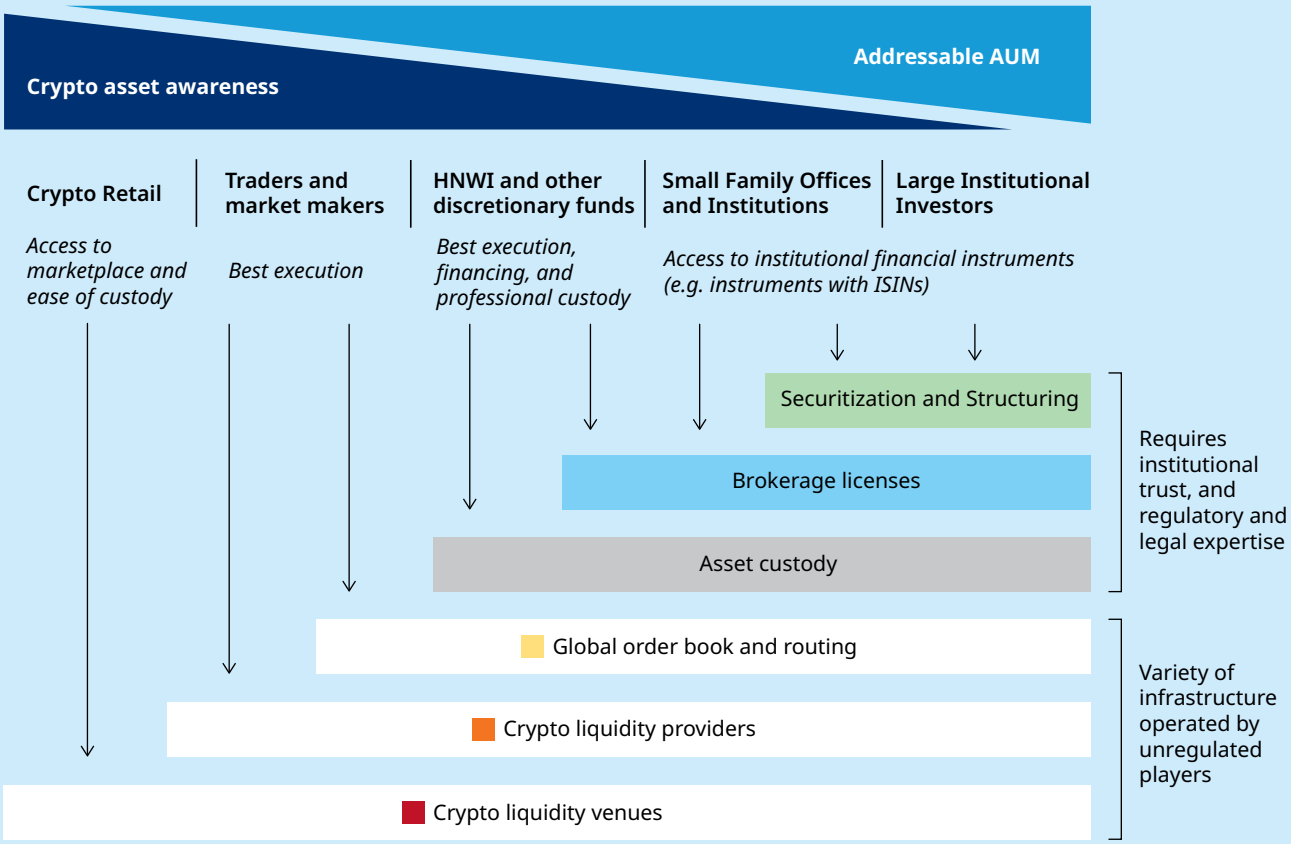
2 Robinhood form S-1 filing

3 Network infrastructure that is built on top of blockchain protocols

CRYPTO MARKET STRUCTURE THROUGH THE LENS OF FINANCIAL MARKETS

Viewing the crypto market through the lens of financial markets, we see the current crypto market differentiated into six layers (see Exhibit 2).

Exhibit 2: Crypto asset market and capabilities



Crypto liquidity venues, providers, and global order book and routing

The bottom three layers have largely developed away from regulatory oversight and the competitive pressures of large financial institutions over the last decade. However, given the pace of development and concentration of technical expertise among crypto firms, incumbents enjoy a significant advantage and are reaping the dividends of the investments they have made in building up their crypto asset balance sheet, market intelligence, infrastructure, and network. Most new entrants will need to find models to partner, or work, with these incumbents when entering the market.

Crypto liquidity venues

At the base, are liquidity venues where prices for various crypto assets are discovered. Similar to commodity markets, prices are discovered in spot and derivative markets. However, unlike traditional commodity markets, there are various regulated and unregulated marketplaces, centralized and decentralized markets where material amount of trading volume is present. Crypto assets also do not have limitations on physical arbitrage aside from transaction costs thus price information can very quickly be exploited across different liquidity venues. Another major difference in crypto markets is that exchanges play multiple roles that are typically segregated in regulated markets. Crypto exchanges need to operate market infrastructure, provide custody, build retail brokerage capabilities and at times also operate trading shops and market maker firms that trade across the market and venues. Institutions that want to trade thus need access to intelligence, risk management, trading and execution infrastructure across multiple venues and counterparties.

Crypto liquidity providers

The second layer comprises of liquidity providers and currently, the largest liquidity providers are firms that provide OTC services and market making services at liquidity venues. Most of these firms are trading their own books and client funds and for the most part it is unclear whether these are co-mingled or appropriately segregated. It is thus challenging for financial institutions to apply traditional compliance and governance tools to mitigate both financial and non-financial risks. Adding to the complexity are open, non-discriminatory smart-contract-based liquidity pools that exists only in code and lack any legal entity from which regulators, creditors, and investors can regulate or seek remedy. In the crypto market, it is almost impossible to understand a counter party's position given the variety of venues leverage and derivative instruments are accessible.

Global order book and routing

The third layer comprises of trade execution infrastructure that combines the order books and various liquidity venues and providers. Various players have built up networks of counterparties and connectivity infrastructure to exchanges to provide a global order book with a range of execution services. The best provides narrow spreads to a large variety of crypto assets. However, a large challenge for players in this space is access to reliable fiat on ramps as banks have largely shied away from providing banking services to unregulated crypto firms. There is clearly an opportunity for firms with high institutional trust and access to banking licenses and banking partners to play in this space.

Asset custody

In order to access the market of institutional capital, wealth management capital pools, and potentially even corporate treasuries, the market will require custodians, regulated broker dealers, and firms with structuring and securitization capabilities. Custodians and custody solutions will be important given the high risk of fund losses due to security breaches or human error. The irreversibility of transactions and the bearer-instrument-like properties of these assets make institutional custody an important component.

Brokerage licenses

Despite the oft-stated goal of public blockchains to disrupt intermediaries, broker-dealers will continue to play a role in building the acceptance of this new asset class. There will still be a need for regulated intermediaries that service and provide access to crypto markets in a manner that allows investors access to legal recourse in disputes. Like in traditional markets, brokers will be important gatekeepers that influence capital flows. As regulations keep up, existing liquidity providers with strong relationships to capital pools will most likely step into this space and decide to be regulated. This layer will likely be very competitive, and a key battleground between traditional financial institutions and existing incumbents.

Securitization and structuring

Like traditional markets, there will be a need for sophisticated financing products that meets the needs of large family offices, institutional investors, and large corporates. The latter becoming more important if payment companies and corporates start adopting cryptocurrencies as payment instruments. Even structuring crypto assets into simple fund management products, such as a crypto ETF, is an area that remains largely untapped due to regulatory uncertainties and uncertainties in how risk is priced and ultimately allocated. For instance, it is unclear how a default in a stable coin or a technical failure of a tokenized derivative instrument will impact the entire market. Nevertheless, the institutional risk management and legal rigor of traditional financial institutions are required to make crypto markets generally more accessible to vast swathes of institutional and wealth management capital.

OPPORTUNITIES

Financial institutions can participate in the crypto market in numerous ways; we discuss six archetypes that will shape financial services participation in digital assets in the near future.

Exhibit 3: Six models for financial institutions to participate in the crypto market

Custody and Wallets

Offer licensed and regulated custodial services of digital assets to institutions and/or retail clients

Trading Venues

Provide institutional-grade trading and settlement platforms of digital assets

Wealth and Fund Management

Offer digital asset exposure through wealth management and fund management products for institutional and retail clients

Prime Brokerage

Set up prime brokerage desk service and provide access to crypto markets for institutional traders

Payments and Settlement

Provide safer and faster payment and settlement systems to banks, institutions, and merchants

Innovative Financial Offerings

Develop and offer new financial offerings combining financial contracts and engineering with digital instruments

Custody and wallets

Custodians are important for the future of the crypto market infrastructure, and there is opportunity for firms with the right institutional trust, balance sheet strength, and legal and technical know-how. Some traditional financial firms, such as Fidelity, StateStreet, and BNY Mellon, have entered this market, developing the required technical and security know-how to move from sub-custody to self-custody, and working with insurers to underwrite potential fund losses. However, while the need for these services is clear, the commercial opportunity for a pure-play custodian proposition has yet to be proven. Crypto custody will likely command higher pricing compared to traditional asset custody, but the technical, legal, and underwriting complexity will likely be costlier than traditional custody. Custody firms thus need to attract a large volume of assets to custody. These assets are unlikely to come from retail deposits at crypto exchanges given the lack of regulatory mandate to segregate funds, and the technical expertise of large exchanges to self-custody. Instead, they will likely come from other financial institutions managing client funds or offering new crypto-linked financial instruments, such as Bitcoin ETFs.

Trading venues

Developing trading venues and trading-related platforms and infrastructure is another area in which financial institutions can participate. However, the retail trading platform market is extremely competitive and entrenched competitors have the product manufacturing flexibility, low compliance overheads, and healthy balance sheets to fend off even well-funded entrants. New propositions in this space will need to be tailored to a particular segment or offer more complex marketplace functionality supporting market-specific auction and bidding structures to differentiate. Less developed, however, are trading venues that can combine global execution, deep liquidity, fiat settlement rails, and brokerage services, such as margin financing, in a regulated environment with clear know-your-client (KYC) and know-your-transaction (KYT) compliance frameworks. Very likely, the platform will be a 'club' of known and reputable counterparties that have strong risk and compliance governance models. It is also unclear how the economics of these services will evolve given how incumbents currently play multiple roles, thus capturing more margin, and how trade and margin volumes will evolve over time.

Wealth and fund management

One major opportunity that depends on how regulation evolves are wealth management products that provide exposure to the crypto market. The development of this opportunity would undoubtedly unlock a significant amount of capital. Regulators have rightly been cautious as market manipulation concerns and the lack of enforcement powers on foreign market participants have made it challenging to fulfill their investor protection mandate. However, most market practitioners are expecting regulators to allow some forms of regulated crypto financial products given the size of the market and the ease of accessing these products in the gray market. A key development to watch will be how US regulators treat Bitcoin ETFs and how issuers will manage crypto volatility 24/7 alongside their market makers.

Prime brokerage

As more sophisticated trading firms access the crypto market, demand for crypto prime brokers will likely increase. Some banks have announced their intention to set up desks that serve hedge funds to trade in the market. The challenge with the prime broker model is the necessity to build or assemble components across a wide range of startups with differing maturity. Order routing, execution, crypto and fiat settlement and clearing, and custody are elements of hard infrastructure that currently exist in some form but will need to be brought together by an aspiring prime broker. The infrastructure will need to be paired with a strong balance sheet that offers low-cost crypto and fiat financing. Currently, entities with the largest crypto balance sheets are exchanges, almost all of which also offer some form of financing as part of their services. Entrants will need to find ways to attract large quantities of crypto deposits or partner with existing players to access low-cost crypto financing.

Payments and settlement

Outside of trading and investment, payment and settlement solutions are another area where financial institutions can deploy digital assets. The potential here is for firms to deploy a fungible digital token that is an instrument representing a claim against an institution with a strong balance sheet and combining this with an open network into which participants can easily integrate. As the payment and settlement environment is highly heterogeneous with multiple applications and infrastructure both domestically and globally, it is critical that participants clearly identify a specific market need. For instance, in countries such as China and Singapore, domestic retail payments are already functioning very well with near instantaneous transfers between banks and between e-wallets and banks, and with manageable counterparty risk. Thus, the case for a digital asset-based payment infrastructure is less clear outside of a regulatory push for Central Bank Digital Currency (CBDC). It is more likely that in these markets, a form of private DLT will be deployed for a cross-border payment solution, where settlement and counterparty risks are still inefficiently managed. However, in markets such as the US, propositions such as Circle's USDC have gained traction as it integrates low-cost public blockchains that function as an international and domestic payment network, with an instrument that can generate yield if deposited at firms or protocols that lend out USDC. Unlike the other opportunities described above, payment and settlement applications can also be deployed either in public or private distributed ledger networks. Public networks have the benefit of a large existing network of participants, ease of integration, and proven resilience. However, speed, cost, and regulations are still challenges that need to be resolved. Private networks address some of these challenges, but institutions will have to resolve governance, security, liquidity, and commercial issues in both consortium and non-consortium models of private networks.

Innovative financial offerings

Finally, financial institutions can develop new financial products by combining the technical features enabled by digital assets with innovation in financial engineering. For example, tokenization, a feature enabled by digital assets, can allow new derivative products to be created where counterparty risks are more visible and manageable, and liquidity potentially unlocked through fractionalization and bundling. Similarly, new product offerings are possible, for example term deposits that can be redeemed, spent, and traded on secondary markets as senior notes. A major reason why fintech and crypto companies have successfully launched widely adopted solutions is because partners and other developers can easily integrate and build new offerings on top of their core propositions. Stable coins, initially launched as a payment instrument, are now used as a trading instrument, yield generating asset, and source of financing, and the companies issuing these instruments have encouraged other partners to continue to build new applications. The downside risk of an ecosystem approach is economic value sharing with other actors and potential exposure to regulatory risk. However, it remains to be seen how much longer financial institutions can afford to ignore the disruptive models in this space given their commercial developments and the increasing appetite of regulators to experiment with new technologies and regulated fintech companies. Our view is that to participate successfully, financial institutions will need to embrace an open and ecosystem-based approach to developing and deploying these capabilities.

RISKS

As banks and other financial institutions weigh potential models to launch digital asset propositions, firms will need to review their risk management frameworks. Some of these risks will be familiar but require new controls, others will be new and drive changes in the risk taxonomy and management.

AML/KYC

One of the major concerns of adopting digital assets, specifically crypto assets that are built on public networks, is the risk of money laundering and other forms of misconduct, including market manipulation. While the risk is real, outside the use of privacy coins, there are now solutions that allow companies to manage and mitigate money laundering and fraud risks. Most wallets in public blockchains have been linked to entities and once the pseudonymous maps are established, it is a fairly trivial exercise to take a white-listing approach to managing transactions.

Protocol risk

More challenging to enumerate are the protocol risks associated with using a public blockchain to store and transfer value. As most of these networks are governed and operated as open-source projects, participants have limited ability to influence how these projects develop over time. Some protocol upgrades can be significant as can be seen with Ethereum's upgrade and transition from proof-of-work to proof-of-stake that fundamentally changes the economics of users and node operators. Financial institutions who choose to adopt these new networks will need to be part of the conversations that core developers have and acquire the necessary talent to make the right judgement on how new upgrades or features can impact their offerings.

Technology risk

Financial firms will also need to manage technology risks that are based on deploying relatively new technologies in an open or semi-open environment. Product and technology managers will need to manage the challenge of encouraging adoption by partners, customers, and counterparties, while exerting control over how a technology stack evolves. The risk of introducing code that is relatively unproven is real, as evidenced by the various hacks and trading exploits of new code deployed in the DeFi space. Similarly, offerings built on smaller chains or private networks are subject to additional threats not viable on the major public chains, for instance the infamous 51% attack. The ability to evolve the technology while maintaining security and stability will be critical in digital asset applications.

Regulatory risk

Finally, financial institutions need to be aware of, and help shape, the evolving regulatory environment. This has been made more challenging by the wide spectrum of regulatory stances globally. For example, China has taken an aggressive stance against cryptocurrencies while Singapore has introduced policies encouraging crypto companies to build and offer regulated offerings. Changes in policies can impact how technology architecture is deployed and, more importantly, the profitability of new ventures. Firms that are considering an entry into the market will need agility in how they build their commercial models and acquire technology. This may include taking different operating and partnership models across various markets, or loosely coupling vended solutions to reduce the cost of change.

THE PATH AHEAD

It is clear that digital assets are going mainstream and will shape the evolution of financial services in the years to come. It remains to be seen whether they primarily do so in the form of open permissionless networks, clubs of closed networks formed by major financial institutions, or regulator-mandated networks. It also remains to be seen what role in the crypto ecosystem traditional financial services firms play, and what innovative products and services they deploy.

The opportunity to combine the technical properties of digital assets and the autonomous enforcement of business logic across participants and adversaries with the trust, reach, and balance sheet of major financial institutions is significant. Those that move early, share value with fintech and crypto firms that are solving legacy scaling, cost, and speed issues, and reach scale, will reap massive rewards.

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation.

For more information, please contact the marketing department by phone at one of the following locations:

Americas
+1 212 541 8100

EMEA
+44 20 7333 8333

Asia Pacific
+65 6510 9700

AUTHORS

Dan Jones
Partner
Digital and Financial Services
Dan.M.Jones@oliverwyman.com

James Gordon
Principal
Digital and Financial Services
James.Gordon@oliverwyman.com

Keat Lai
Independent Consultant
Keat.Lai@oliverwyman.com