

GAPCO

DIGITAL ASSET CUSTODY

The proliferation of digital assets poses new and sometimes difficult questions regarding safekeeping and security. We examine the challenges, solutions and potential best practices.

We have witnessed a marked shift in attitudes among institutions towards digital or crypto assets with the emergence of recognised security tokens - which meet the definition of a traditional specified investment such as deposits, shares or debt instruments - alongside cryptocurrencies and unsecured utility tokens.

Institutions interested in holding traditional cryptocurrencies – Bitcoin, Ethereum, Ripple, Litecoin and EOS being among the most well-known – have previously held back due to a lack of transparency around ownership, security concerns and a lack of institutional custody. The emergence of regulated, listed products such as Bitcoin futures has given financial institutions a low-risk entry point that does not require direct ownership. Citigroup's Digital Asset Receipt, modelled on the established American Depositary Receipt concept, is one such example.

Over the past two years the introduction of digital assets that replicate existing securities contracts, via the tokenization of real assets which are then held on a blockchain, has demonstrated a legitimate use case for such instruments. This in turn has driven the largest investors to focus on their custody options for all potential digital asset applications, with asset security and segregation and the local regulatory environment high among their key considerations.

Both in terms of technology deployed and any supporting operational processes, an investor must have full confidence that their custodian can ensure the safety of digital assets held on their behalf. In addition, local regulation and legal statutes must recognise digital assets within their investor protection and rights frameworks and - as would be the case for traditionally issued assets - provide effective safeguards against issuer and/or counterparty default, theft, fraud, unauthorised use, or other forms of asset misappropriation.

When it comes to custodians' capabilities around the safekeeping and servicing of such assets, only a handful of firms have launched digital custody offerings of varying scope. These include AON-backed Swiss fintech METACO; Anchor Lab's Anchorage; start-up Trustology; and, most notably, Fidelity Digital Assets, the digital asset trading and custody branch of Fidelity Investments, which went live in March 2019, initially supporting Bitcoin with a view to expanding into other cryptocurrencies.

It is clear that other banks and institutions have propositions in various states of maturity in terms of product strategy, design and launch plans. KB Kookmin Bank, South Korea's largest retail bank, is understood to be preparing launch digital asset custody services¹ that combine blockchain startup Atomics Lab's secure multiparty computation-based offering with its own internal control infrastructure and information protection technologies.

Bakkt, the ICE-backed bitcoin futures provider which earlier this year acquired the Digital Asset Custody Company, announced in late August that it would shortly begin offering customers secure storage for bitcoin as part of its "vision to bring institutional infrastructure to digital assets with an end-to-end regulated marketplace"² via the launch (set for September 23, 2019) of custody and physically-delivered daily and monthly bitcoin futures contracts in partnership with ICE Futures U.S. and ICE Clear US.

The traditional custodian banks continue to take a 'wait and see' approach, particularly in terms of client demand, while working with the Securities Exchange Commission among others to ensure regulatory clarity around the provision of digital custody. That cautious approach is understandable: the decentralization that underpins cryptocurrencies and other digital assets – what Fidelity Digital Assets has described as "a move back toward bearer assets"³ – presents unique challenges.

1. <https://yhoo.it/2kEdLZM>

2. <https://medium.com/bakkt-blog/cleared-to-launch-8dfc3e6f9ed0>

3. <https://www.forbes.com/sites/yoawilner/2019/04/01/digital-asset-custody-has-a-growing-ecosystem-to-make-it-easy/#274399a966dd>

TECHNOLOGY AND SECURITY CHALLENGES

Notwithstanding the technical challenges associated with integrating their existing IT infrastructure with the underlying DLT platforms, they must ensure that their products and service withstand close scrutiny from potential clients seeking reassurance that they are not exposing their investments to unnecessary and unmitigated risks.

There is also the question of how best to customize digital assets that exist as coded entries in an open (public) or closed (private) distributed ledger such as a blockchain. There are two options. Hot storage is when a client's digital wallet is connected to the internet and password secured. Cold storage, on the other hand, sees the digital asset transferred to an offline storage environment, removing it from the blockchain ecosystem for re-introduction at a later date.

Hot storage allows instantaneous access and trading of digital assets, but also opens asset owners to risk of cyberattack, whether via the theft of private ownership keys or access to digital wallets and the immediate transfer of the assets within. Security of hot storage can be increased

through multi-signature access requirements, with more than one access verification needed to transfer ownership; or multi-factor authentication that requires a randomised passcode to gain access.

Cold storage significantly reduces the risks posed by cyberattacks by introducing an 'air gap' between any digital assets and the live ecosystem. However, this slows down any trading application - a key consideration for institutional investors who may need to sell positions instantly. There is also the risk of physical loss or theft to consider, as well as the unique risk of magnetic attack, which can wipe storage mediums from a short distance.

Institutions looking to provide digital asset custody are consequently assessing hybrid approaches that can provide immediate access to funds that are underwritten by positions held in cold storage that can be physically protected in vaults and faraday cages.

THE REGULATORY PERSPECTIVE

In July 2019 the UK's FCA outlined a taxonomy for digital assets that separates cryptocurrencies and utility tokens from regulated security tokens, which offer investors the same protection as the financial instruments they represent. The issuance of security tokens would be assessed on a case by case basis; though a precedent for issuance of tokenised bonds has been set by the World Bank, which since August 2018 has issued AUD150m worth of development bonds on behalf of the Commonwealth Bank of Australia.

Specific criteria for any regulatory assessment include scrutinising the features of the underlying DLT technology as well as the custody options available to owners of the digital asset. The Financial Stability Board also summarised a number of regulators' viewpoints on additional criteria, including measuring exposure risk to digital assets, managing settlement risk and clearing of digital asset transactions, and valuation approaches for cryptocurrencies.

The taxonomy and treatment of digital assets varies by jurisdiction, but it is fair to say that regulators see themselves as playing an active role in overseeing trading activity in a DLT environment – especially given the cost-saving potential of regulatory roles being assigned directly in a permissioned blockchain.

Interaction between service providers and regulators is happening - but it is limited in comparison to other regulatory obligations such as MiFID 2, CSDR and SFTR, where industry collaboration is strong and there is also collective industry engagement with regulatory authorities via trade associations. As the demand for digital assets grows, we are confident that industry collaboration will increase and collective standards will be defined for all areas of trade lifecycle processing.

THE FUTURE LANDSCAPE

Looking forward, we will start to see the emergence of new digital ecosystems that closely resemble the market infrastructure models for traditional assets. Existing market infrastructures are looking to expand their capabilities to include digital assets, and create environments that allow for the trading, settlement and custody of digital assets along similar lines to traditional markets. At the same time, the opportunity exists for custodians in their own right to offer their services to participants using these emerging trading platforms.

However, whether this is achievable over the next three years will depend in large part on how regulations evolve - and whether arbitrage opportunities emerge due to differences in treatment and behaviour across jurisdictions, or whether there is a concerted effort by regulators to harmonise the treatment of digital assets through a common set of principles and standards.

There are two key risks that digital custody pioneers need to consider: namely, levels of market participation, and the underlying infrastructure risk inherent in emerging technologies. We expect the demand for digital asset custody to be driven by a mixture of buy side and sell side participation – institutional investors will look to digital assets to enable access to more markets, whereas issuers will look to attract larger markets. Custody providers will need to both time the introduction of their offerings carefully and clearly differentiate themselves if they are to make the most of this new opportunity while also ensuring regulatory compliance.

These pioneers will also need to consider the risk of attack on an unproven underlying infrastructure. While there have been digital custody solutions available for a few years now, the entry of larger players will inevitably precipitate more sophisticated and concerted attacks - and no provider will want to be the first to be hit, or to deal with the direct and collateral damages arising from any loss.

The onus will also be on regulators to scrutinise current and emerging technologies deployed in the exchange, transfer and storage of digital assets. If the necessary level of trust in digital custody is to be established, they must bring significant focus and energy to bear on the prioritisation of security measures across every aspect of new technology solutions to rebuff cyberattacks. They will also need to strike the right balance when it comes to encouraging new technology innovation and adoption while ensuring clients' digital assets are not at risk.

In conclusion, we are confident that – while interest across providers and market participants is nascent at this time - demand for and supply of digital custody will begin to increase once regulatory guidance around taxonomy, investor protection and transactional risk management have been clarified.

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