ASIA'S LEADING DIGITAL ASSET PLATFORM

OSL Custody

Custody for digital assets: Mapping the impact

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INTRODUCTION

The token economy is in transition. Major financial players are entering the scene. New digital asset products are being developed every day. Sentiment is slowly but surely turning positive and technology adoption is continuously increasing. But while these trends are welcome and necessary, they come amidst a range of challenges, from regular security breaches to unsustainable business models. This complex of conflicting issues is a pivotal moment of maturation for the industry. And one which is going to have a long-lasting impact on investors.

This white paper will discuss the role of custody solutions for digital assets, as one of the major drivers in this process of growth. Such solutions come at a propitious time, given the macro developments trending across the token economy:

1. Institutional interest in digital assets is at an all-time high
2. Regulatory bodies worldwide are working to promulgate industry regulations
3. Security has become an unconditional priority

In traditional finance, the amount of assets under custody has grown impressively over the past two decades, as the investment industry flourished. Now that the global investment community's attention is turning towards digital assets, the same kind of dynamic and robust growth is a real possibility. Custody solutions is an essential part of making that possibility a reality.

THE STATE OF THE MARKET

In April 2019 itself, the size of the digital asset market jumped some 25%, from a market cap of US$147bn to US$185bn[1]. By the end of May, it had risen to US$268bn[2]. In response, some are predicting a plateauing effect, which would usher in a kind of new normal and market floor for the industry. Others are saying this is just the beginning of another Bitcoin bull run. Regardless, the trading activity in and around this spike is said to involve just as many or more long-term investors as so-called "opportunity" investors. This is good news, given the emerging trend of Bitcoin as a store of value, and not only a speculative investment.

As the proverbial winter for the token economy ran roughshod over the digital asset investment landscape in 2018, the prospects for a warmer 2019 are clearly present. Trading activity is up, evidenced by a recent 60-70% increase in OTC client trading. And institutional interest[3] continues to be strong, which would provide the necessary push for product and services innovation to deliver on their demands.

1. https://www.nasdaq.com/article/the-state-of-the-crypto-market-cm1130158
2. https://www.coindesk.com/bitcoin-hits-new-2019-high-above-8900
3. https://www.newsbtc.com/2019/04/29/over-the-counter-brokers-see-surge-in-buying-activity-as-bitcoin-and-crypto-markets-stabilize/

Moreover, there are recent developments that have contributed to the uptick in dynamism. One is the continued mainstreaming of digital asset Contracts for Difference (CFD), which has been an important in-road into the token economy for many investors. Another is the increasing availability of banking and tax tools – for example, Ernst & Young's recent announcement of a tax filing tool for digital assets[4]; and BlockFi's January 2019 beta of a Bitcoin and Ethereum interest account, which attracted some US$10mn in deposits from retail and institutional investors alike[5]. A third is the slow but steady adoption of digital assets as a viable medium of exchange for transactions, as seen in Square's Q3 2018 approval of a patent for launching a digital asset payment network[6]. There are many others, including the JPM Coin, which is being used to facilitate instantaneous, blockchain-based transfer of payments between J.P. Morgan's institutional accounts; Silvergate Exchange Network (SEN), a real-time USD settlement capability from Silvergate Bank; and Signet, a digital payments platform from Signature Bank for commercial clients to conduct real-time payments.

Such developments lend to increases in trading and investment activity, which bring into view new threats and thus the need for forward-thinking solutions.

One major threat is hacking. CipherTrace puts Q1 2019 digital asset losses due to theft at some US$1.2bn, almost 71% of the entire US$1.7bn lost in 2018[7]. And that is just what can be publicly discovered and reported on. The real amounts could very well be much higher. Lending to the magnitude and success of hacking activity is a lack of security technology and infrastructure. According to CipherTrace, "a tsunami of tough new global anti-money laundering (AML) and counter-terror financing (CTF) regulations will roll over the crypto landscape in the coming year 2019." And according to Fidelity Digital Assets, "For institutions, the most pressing unanswered question is how — if they choose to hold digital assets for their customers — these assets will be secured. The answer is that full-service institutional custody solutions are needed — solutions as equally robust as those provided for traditional assets."

This latter point, about digital asset custody solutions being as robust as those for traditional assets, is salient. The establishment of congruency in such standards between traditional and digital assets is analogous to building a bridge between a developed and developing economy. Although the process of development is different, the ideals driving the development are the same. This process of bringing into use the best practices established in traditional finance will enable the token economy to flourish, or at least provide it with the best chance of doing so.

4. https://cryptodaily.co.uk/2019/03/ernst-young-announce-new-bitcoin-tool
5. https://www.forbes.com/sites/billybambrough/2019/03/05/crypto-challenger-bank-offers-bitcoin-interest-account-and-has-great-rates/#777e03363878
6. https://www.ccn.com/bitcoin-accepted-everywhere-square-wins-patent-for-cryptocurrency-payment-network
7. https://www.coindesk.com/crypto-crime-may-have-cost-sector-1-2-billion-in-q1-says-report

HOW CUSTODY WORKS IN TRADITIONAL FINANCE

The word custody comes from the Latin custodia, which means to “guard, watch or keep.” Custody service providers are in the business of holding and protecting the assets of their clients and servicing them accordingly. According to The Clearing House, the range of services a custodian provides an investor falls into four core areas:

1. Safekeeping and record-keeping services
2. Asset servicing
3. Transaction processing and settlement
4. Supporting banking

Custodians provide these services to a wide range of clients, including mutual funds, insurance companies, endowments, corporations, and more. The scope of their services covers both domestic activity – settling trades, investing, collecting income and recordkeeping. If a custodian operates internationally, they are responsible for coordinating with local, in-country custodians for the handling of securities specific to that market, as well as reporting to the end customer.

Operational risk management

To fulfil their obligations effectively, and given the transaction-based nature of custody services, providers espouse strict operational controls to hedge against transaction risk. These controls include the segregation of duties, dual controls, and accounting controls. Which are to protect against conflict of interest, corruption and manipulation, and the concentration of total transactional access in a single person.

Compliance

Another area where custody service providers add value is compliance. Many custodians in traditional finance operate globally, that is, they work across multiple regulatory environments. To ensure compliance in each market, many global custodians partner with sub-custodians – local, in-country banks, for example – to understand and align with local laws and regulations. This allows investors to use a custodian with global reach, as well as local knowledge, thereby increasing their investment opportunities.

Security

Security-wise, custodians of traditional financial assets provide on-premises and off-premises safekeeping. Because of digitalization, custodians no longer keep marketable securities in physical form; settlement happens at too quick a pace. The only assets kept in on-premises vaults are non-depository assets and miscellaneous assets like jewellery, art, and precious metals. These vaults are protected through rigorous security controls, which include alarm systems and physical safeguards. The off-premises safekeeping of assets involves locating book entries – which track client investment activities - in relevant depositories.

In the United States, for example, the Depository Trust and Clearing Corporation (DTCC) is for non-governmental equity and debt securities. Each country will have a different version of a DTCC. It is incumbent upon custody service providers to do their due diligence when locating assets off-premises, to ensure adequate controls and safeguards for their clients' assets.

In summary, custodians in traditional finance hold, protect, and service the assets of investors. They provide global access to markets and market participants, ensure compliance when investing domestically and abroad, and offer assets protections that would be otherwise unobtainable. It is an essential service offering and has been integral to the growth of the financial markets we see around us every day.

THE ROLE OF CUSTODY IN TOKEN ECONOMY

Digital assets, like traditional assets, require custody. And perhaps now more than ever. The rationale is similar, but the methods for delivering custody services are quite different, particularly given the decentralized nature of the blockchain technology associated with digital asset transactions.

As digital assets have increased in popularity over the past decade or so, the rate of growth has in some ways outpaced the development of the measures needed to keep them secure. This often meant that exchanges themselves took on the role of custodians to facilitate the ease of trading, as a kind of practical necessity for becoming a top-of-mind trading venue. The problem is that these exchanges eventually became prime targets for sophisticated hackers and proved liable to security failures. This deficiency has historically generated hesitation among institutional clients interested in acquiring digital asset exposure, but is now driving the development of independent custodial services, seen as an antidote to the present security challenges.

Anticipating regulations

Regulation is an important area of consideration when developing custody solutions. The good news is that current regulatory frameworks can be adapted efficiently for use in digital asset markets. For example, regulations related to securities transactions include minimum recordkeeping and confirmation requirements; this is to ensure that there is a track record of activity related to the assets under custody. For digital assets, such transparency is a must for institutional investors. With blockchain technology and the removal of intermediary approval requirements, the process for doing so has become streamlined.

Another area of regulation covers communications, where asset owners are provided information about their assets on a regular basis. Given the reporting needs of institutional investors, receiving updates about the activity of their assets under custody is essential for their own compliance and adherence to internal protocols.

A third important area of regulation concerns anti-money laundering recordkeeping and reporting. Certain transactions require strict screening and monitoring – for example, wire transfers – as they are often used for transferring “dirty money.” For digital assets, which have the potential to be used for money laundering, it is incumbent upon digital asset custodians to be uncompromising regarding any suspicious activity.

Enhancing security

The growing incidence of large-scale digital asset exchange hacks in recent years has made custody a necessary next step for improvements in security. Institutional investors need to know where their assets are at all times. The commonly used maxim, “don’t trust, verify,” certainly applies here. For institutional investors, improvements in measures such as multi-signature security protocols and the professional-grade segregation of individual accounts cannot come soon enough.

The time when exchanges could assume the responsibilities of custody are unfortunately over. The global investment community have watched billions of dollars vanish due to hacks. Professional digital asset custody, utilizing the battle-tested best practices from digital security and traditional finance is the answer.

Facilitating the inclusion of institutional investors

Most institutional investment into digital assets will take place in vehicles that require 3rd-party custodians as a party to the relationship. Purpose-built custodians will protect against digital asset specific threats and ensure institutions are able to fulfil their fiduciary responsibilities and keep client assets safe.

One way to ease the entry of institutional investors into digital asset trading is through partnerships between digital asset exchanges and established custodians of traditional asset classes. This would be a way to bring together the best in technical knowledge, historical experience, reputational integrity, and available resources.

Hedging against key threat vectors

The custody of digital assets needs to be protected against three key threat vectors, namely, physical, digital and operational.

PHYSICAL

The fact that a person can lose their private key, or their hardware wallet, and thus their digital asset holdings, is worrying. That they can be (and in some cases have been) robbed, kidnapped, or otherwise coerced into giving up their credentials, is cause for action. Custodial services can minimize this kind of risk through the rigorous monitoring of vaults for storing private keys.

DIGITAL
The private keys of digital asset wallets need state-of-the-art protection. As the value of digital assets has increased, the wallets holding them have become prime targets for hackers. Custodians hedge against this by air-gapping the hardware used to house private keys and adhering to military best practices around cryptography.

OPERATIONAL
Drawing from the best practices of traditional custody, measures such as the strict segregation of duties and multi-factor approvals and controls are being applied to prevent any single point of failure in carrying out custodial operations. Mitigating against the concentration of risk in the processes pertaining to the exchange and holding of assets is an essential function

Insurance for digital assets

The final component of a comprehensive digital asset custody solution is insurance. This is a last-resort measure, but a necessary one if an investor wants complete protection of their assets under custody. This provides assurance against the total loss of assets, in the event of hacks, employee theft, collusion, or fraudulent transfers. The best solutions will include crime insurance cover which is the most comprehensive type of cover for this asset class.

THE VALUE OF CUSTODY TO THE INVESTMENT COMMUMITY

According to Satis Group, the volume of digital asset trading activity is predicted to increase by 50% by the end of 2019. This would be a substantial development, given the liquidity it would facilitate and the amount of innovation the token economy would incur as a result. New players, new products, new levels of sophistication. Custody is slated to play the same role in this process as it did in the growth of traditional financial markets. The benefits can be summarized as follows:

1. The unification of a historically fragmented ecosystem. We are already seeing market makers and liquidity providers increasing the latency and improving the trading experience of exchanges. Siloed liquidity, a crippling issue in past years, is slowly finding resolution. Custody, as both a regulatory requirement and a security improvement, will help protect this process from hacks and other threats to its development.

2. Custody will facilitate a necessary division of labour between exchanges, which are experts in trading technology, and custodians, which are experts in protecting digital assets. This has the potential to improve the reputation of exchanges and safeguard them against the threats they currently face.

3. Increased confidence. Institutional investors, as mentioned, have historically been hesitant about investing in digital assets, not because they weren't interested, but because the risks of loss of assets was too high.

CONCLUSION

The token economy is at a pivotal point of maturation. The horizon is one of great possibility, and there is much excitement about its potential. But there remain serious security and regulatory concerns that need to be addressed to ensure the token economy continues to mature. How can security researchers further minimize the threat of hacking while being more business friendly? What currently unforeseen threats need to be discovered and accommodated for? These are the kind of questions custody providers are working to answer.

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