



asset servicing times

**Digital
Assets
Handbook
2021**

Full speed ahead

The growth of the digital assets market is indisputable with the industry's estimated value reaching \$239 billion, as measured by total cryptocurrency market capitalisation.

Research shows that digital assets are already disrupting traditional financial services, and they have a key role to play in the future growth of the sector.

In the first Asset Servicing Times Digital Assets Handbook, we explore how the rise of digital assets has caused attitudes to change with the industry starting to show a better understanding of the benefits to be had in this space.

As digital assets have come under fire with critics saying they can be used for illegal activities, exchange rate volatility, and vulnerabilities of the infrastructure underlying them, XReg examines the increase in regulation as the use and significance of digital assets and their underlying technology increase.

Blockchain is an integral component of a digital asset. On p38, Maddie Saghir discusses the role blockchain plays in making information near impossible to alter or hack.

Although the pandemic presented significant challenges, it has also been suggested that it accelerated the world's digital economy by several years.

We speak to Komainu (p18) and SECDEX Digital Custodian (p12) about their launch in 2020, as well as State Street's digital asset pilot with regulated cryptocurrency exchange, wallet, and custodian Gemini (p30).

As many countries expand or introduce regulation around digital assets, Alexandre Kech of Onchain Custodian discusses the amendments to the Payment Services Act 2019, which was passed by Singapore parliament on 4 January (p22).

Finally, on p34, Maddie Saghir also explores the Financial Action Task Force's new travel rule and some of the implications for digital assets as well as factors to consider.

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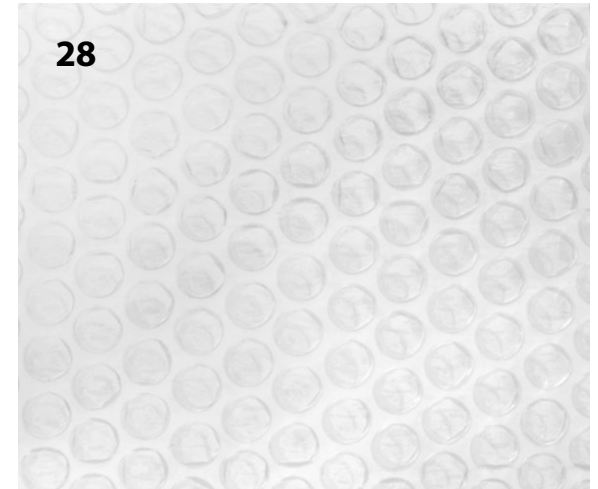
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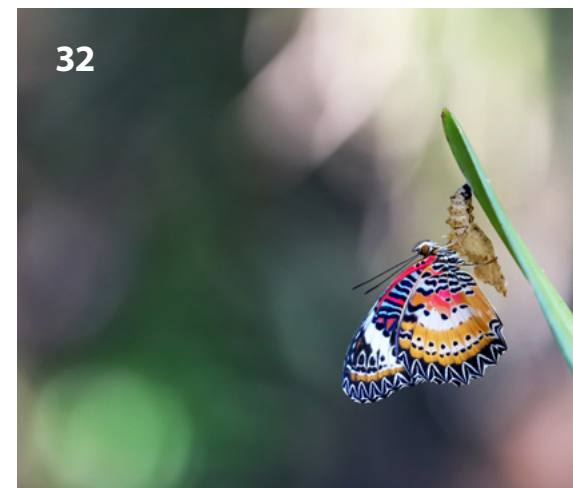
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As attitudes towards digital assets become more positive, the next few years will see the digital asset industry become more mature, with clearer regulations around digital assets and the establishment of a vibrant digital ecosystem

Becky Bellamy reports



The growth of the digital assets market has been indisputable with the industry's estimated value reaching \$239 billion, as measured by total cryptocurrency market capitalisation.

Research from Deloitte last year showed that digital assets are already disrupting traditional financial services, and they have a key role to play in the future growth of the sector.

The growth around digital assets has also sparked a change in attitudes within the industry.

Although there is scepticism towards pure crypto assets such as bitcoin, it is starting to shift as institutions like Fidelity and Nomura start to provide custody for those assets.

The scepticism around crypto stems from the 2018 cryptocurrency crash, which occurred after an unprecedented boom in 2017, when the price of Bitcoin fell by approximately 65 per cent during the month from 6 January to 6 February 2018.

However, the industry is starting to show a better understanding of the benefits blockchain can bring, especially towards automating workflows and more use cases are becoming apparent.

Simon Ong, director of product innovation, securities services at Standard Chartered, notes that digital assets have gained "much credibility among institutional and market infrastructure providers", with the recent announcements on successful proof-of-concept and collaborations among banks, fintechs and market exchanges in building up the new digital asset ecosystem.

If you discussed digital assets a few years ago, the conversation would solely focus on crypto assets. However, now with a flurry of new regulation around the globe, Benjamin Duve, head of digital assets and custody at Commerzbank, says digital assets can soon be a traditional security in a modern wrapping.

According to Deloitte's report, 50 per cent of asset managers expect to introduce cryptocurrencies to their funds over the next three years.

With this in mind, Justin Chapman, global head of market advocacy and innovation research at Northern Trust, says custodians will need to offer new, innovative digital solutions.

In the digital asset space, custodians operate in a similar fashion to traditional financial markets in that their primary role remains the responsibility for, and the safekeeping of customer's digital assets. The Deloitte research paper explains that this is achieved through safe key management, which allows the assets to be cryptographically secured.

However, it explains that unlike for traditional assets, an entity has custody of a digital asset simply by holding the private key on behalf of the asset holder, ensuring that it cannot be accessed by any other party.

"As custodians adapt to this transformation, the focus will be on better access to data for clients with actionable insights that help them make better investment decisions," Chapman explains.

As part of its efforts to meet the evolving requirements of clients, Northern Trust recently launched Zodia, an institutional-grade cryptocurrency custody solution, in partnership with Standard Chartered.

BNY Mellon also recently launched a digital assets unit announcing plans to build a new multi asset digital custody and administration platform, while Deutsche Bank has revealed it is exploring options around crypto custody after collaborating with Singapore fintech Hashstacs to explore a proof of concept related to the technological and practical feasibility of digital assets interoperability.

Trends

There are many types of digital assets that require adequate custody such as cryptocurrencies and stablecoins, tokenised assets, and now central bank digital currencies.

Historically in the custody space, there were few available secure custody solutions, and early investors were mostly comprised of

the tech/start-up community, some retail investors, as well as some wealthy individuals and family offices. But Samar Sen, head of digital products and data at Deutsche Bank Securities Services, suggests that has changed a lot now.

One of the bigger developments Sen explains is that regulators in many countries are now offering clear guidelines and licensing paths on how to offer digital asset custody in a responsible and regulated manner with investor protection in mind.

For example, in the US last July, the Office of the Comptroller of the Currency (OCC) declared that national banks and federal savings associations have the authority to provide cryptocurrency custody services to their clients. The OCC said it acknowledged the need for banks and other service providers to leverage new technology in order to meet clients' needs.

Traditional banks supporting digital assets are also on the rise. Banks like Northern Trust, BNY Mellon, Standard Chartered are offering digital custody services for clients, either through partnering with a digital asset infrastructure provider or developing these new capabilities in-house and offering them as a new custody model.

Standard Chartered's Ong says: "This is a result of increasing demand from institutional investors and asset managers who seek to diversify their portfolios for their clients."

He suggests the interest in cryptocurrency was also further propelled by the recent surge in bitcoin prices, which he says has spurred even greater client demand for access and exposure to crypto and digital assets.

With many new start-ups focusing on digital custody as well as more traditional firms starting to show interest, Chapman says: "Tokenisation of mainstream assets is something that might change the industry — it has the potential to allow a wider group of investors access to investments which were historically only available to larger institutions."

From a landscape made by several small players with basic offerings, Daniele Savarè, director of innovation and business solutions

at SIA, has also observed the growth that has taken place of a few big players with many value-added services.

Savarè explains: "They invested a lot to be able to offer more complete and secure solutions to satisfy institutional clients' strict requirements and to manage a large number of retail customers."

Most players are currently based in the US, some of them in Asia and very few in Europe, including the UK and Switzerland.

There is also a trend that solutions offered by big players are going beyond simple custody. Savarè says: "Brokerage services are set to offer fiat money in return for cryptocurrency and vice versa, staking, liquidity providing for example in decentralised finance, fiscal services and the collateralisation of digital assets to open credit lines."

"Relevant enhancements have been done around governance topics, implementing organisational schemes with segregated roles and operating models more in line with institutional clients' needs," he adds.

Challenges

The digital assets ecosystem is evolving at incredible speed with a constant stream of new assets introduced into the market, which could pose challenges.

Ong suggests this is especially challenging for digital asset custody institutions to keep up with and develop the technical requirement and operational agility needed to quickly embrace new requirements and standards.

Savarè suggests that major technological challenges stem from security, scalability and interoperability features, highlighting that much more still needs to be implemented mainly by small providers related to security.

Scalability is still a risk related to the foreseen volumes while interoperability across blockchain systems is probably the main challenge to guarantee the secure flow of digital assets among

different protocols satisfying characteristics of atomicity, consistency and settlement of transactions, he explains.

Many research and development teams and start-ups are working to address these issues, often in collaboration with corporates, which is expected to be a game changer in 2021.

One example of this is SIA's collaboration with Hex Trust to further strengthen its expertise and primary role in designing and delivering innovative infrastructures, primarily for the European financial community.

SIA aims to create an ecosystem where banks can manage their digital assets based on state-of-the-art technologies and comply with their internal procedures and regulatory requirements.

Building new services within the digital asset ecosystem will involve deploying new skills and technology stacks, which Sen explains will see institutions having to invest in the right talent and technology to ensure they can participate.

Another challenge identified is the lack of established market infrastructure and widely adopted standards around the digital ecosystem, which he suggests "facilitates the entire digital assets lifecycle from the primary issuance of the digital assets to secondary markets for trading and digital custody institutions for safe-keeping and settlement".

As digital assets are still not as liquid as traditional instruments like equity and bonds, Ong highlights there is still a concern among institutional investors around the ease of converting digital assets to fiat on demand.

He adds: "Moreover, the digital asset exchange still operates on pre-funded accounts for trading and uses the existing banking system to convert tokens to fiat, which further increases liquidity risk and introduces more cost for investors."

As private keys are the only proof of ownership of the public address where an investor's digital assets are stored, losing it would mean a loss of ownership to its associated digital assets.

"We see a safer and more efficient ecosystem for digital assets to be created in the near future which will encourage even more institutional and retail investors to invest in digital assets"

Despite new wallet solutions introduced in the market, Ong argues there is still a risk where investors could lose all their digital assets due to hacking.

Ong notes: "We see a safer and more efficient ecosystem for digital assets to be created in the near future which will encourage even more institutional and retail investors to invest in digital assets. A clear legal framework will also need to be created in each jurisdiction with clear direction on taxation, settlement finality and governance of the distributed network to further encourage the adoption of digital assets."

With an abundance of new digital assets, sitting on newly-installed technology, Sen suggests the industry will all experience an increase in hacking attempts.

"Advances in cryptography and use of military-grade security and highly controlled operating models should allow for a strong defence," he explains.

Standardisation of business rules and technical specifications is another area essential for developing a consolidated view of all digital asset holdings by institutional investors across multiple distributed networks and jurisdictions.

Digital Assets

Ong suggests that this provides visibility and clarity into their tax obligations and accounting requirements for their holdings.

Also agreeing, Duve says that the lack of standards is one of the biggest challenges around digital assets.

He says: "You do not know the exact specification of the 'chain' the most interesting and requested assets will be running on. This makes building the infrastructure difficult, as there is no industry standard and interoperability yet."

As different types of digital assets will sit on various public/private ledgers, interoperability becomes a key obstacle, according to Sen.

"Some companies are working to solve this. Furthermore, markets and regulators will need to co-operate on a global level to agree on standards and platforms to represent digital assets, for example, for security token issuances," he adds.

Changes ahead

Over the next five years, digital assets are set to become more mainstream. For custody, this could mean that digital asset custody could transform into digital asset banking.

Chapman says that custodians that have embarked on a digital strategy and embraced the new business opportunities "will drive innovation opportunities – helping to make sense of data and, as ever, safeguarding assets".

The industry will see a move towards a new standard and new ecosystems to evolve, not completely, but partly with new players and certainly with a few current ones missing out, which Duve says is "due to the opportunity to rethink the infrastructure and the decentralised nature and possibilities of the underlying technology".

In addition to evolutions related to digital assets as qualified as financial instruments, Savarè says he expects the industry will also see technological developments that will improve privacy and performance features.

He highlights that there will be more challenges on the regulatory side that could be opted for specific, tailor-made rules for tokenised asset markets.

Environmental, social and governance (ESG) topics will become more and more crucial, according to Savarè, who explains: "Some of these assets are energy-intensive and it is necessary to find a tradeoff between security and reliability issues when shifting to an approach not based on 'brute-force' and energy greedy, in line with governments' sustainability plans. If this is not happening, utilities and energy producers could take the opportunity to enter into this sector, with the risk of changing the current balance of power."

Meanwhile, Ong says in the next five years, he believes the digital asset industry will be at a more mature stage, with clearer regulations around digital assets and establishment of an end-to-end digital asset infrastructure and vibrant digital ecosystem.

He says: "There will be more new use cases developed on top of this new digital infrastructure, bringing greater efficiency gains and offering access to all markets 24/7, with real-time trading and instant payment rails to support the settlement and ownership transfer."

The current role of issuers, custodians, exchanges, brokers/dealers, central securities depositories and asset managers are also set to evolve.

New players such as wallet providers and blockchain hosting service providers will emerge, which Ong says will provide enhanced services and infrastructure needed to create an efficient end-to-end ecosystem for digital assets.

Overtime, Ong predicts that digital asset custody will "fully morph into digital asset banking, with more virtual and real assets with an intrinsic value that can be tokenised and exchanged at a transparent price on digital marketplaces, both centralised and decentralised exchanges as well as via peer-to-peer".

He adds: "More digital asset constructed financial products — such as collateralised loans backed by tokenised assets — will also be made available."

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BKM CREATIVE

Accelerating the drive to digital

Becky Bellamy reports

Komainu's Jean-Marie Mognetti discusses the firm's launch last year and why the global pandemic has accelerated the world economies' digital agenda by several years

Since its launch in June last year, what has Komainu been working on?

Since opening its top-tier digital asset custody solution services to third-party clients in June of 2020, Komainu has seen significant interest from two types of institutional clients. Institutions with existing exposure to digital assets are looking to mitigate the risks and complexities of having to self-custody digital assets, as well as institutions that have been leveraging an external or vendor solution. These institutions have now realised that Komainu could service their custody needs in a more secure, regulated, and efficient way.

Komainu has also seen significant interest from institutions that do not currently have any exposure to digital assets and are looking for the right partner to help them navigate the digital asset industry. Komainu is an attractive option for these types of institutions. From inception, our goal is to be the trusted partner for institutions wanting to gain access to the digital asset industry in a secure, efficient and regulatory compliant way.

We announced our involvement in initiatives that encapsulate the needs of institutions with and without exposure to digital assets at the beginning of 2021, starting with us being named as the custodian for CoinShares new line of physically-backed exchange-traded products (ETPs). CoinShares is an excellent example of a crypto native company looking to leverage a secure, regulated, and efficient platform to custody the assets backing their ETPs. We also announced that we will be working closely with the National Police Chiefs Council (NPCC) Cybercrime Programme, via a framework agreement. This agreement provides custody services for digital assets seized during investigations, providing an institution with custodial services where they previously did not exist. This framework agreement allows other members of the UK police force that are part of the NPCC to quickly sign on to a similar custody agreement. Both of these initiatives are great examples of how custody services for this nascent asset class can be leveraged by industry veterans and new institutional entrants alike to properly secure digital assets.

In short, Komainu never stops building and is always looking to provide custodial services to institutions of all types. Additional

developments will be shared with the marketplace in the near future.

Why was last year the right time to launch a digital asset custody business?

Even though the pandemic has presented significant challenges, it has also accelerated the world economies’ digital agenda exponentially. As such, it has been a landmark year for the acceptance of digital assets among institutions, with new corporate initiatives and balance sheet allocations being announced on a regular basis. This increased acceptance has perfectly primed the marketplace for us. While Komainu officially opened its business to third-party clients in June of 2020, CoinShares, one of the founding partners, has been trialling the system since the beginning of last year. Launching a business and servicing our first client during the escalation of the COVID-19 pandemic battle-tested our operating model. Our systems’ performance proved that Komainu could efficiently operate and service its clients even in the most challenging environments.

Providing excellent service to clients in these challenging times requires effective internal policies and control frameworks, resilient business processes, and an agile and experienced leadership team. These integral aspects for any business looking to succeed were in place prior to the start of the pandemic, fortunately for Komainu. We are confident that the company’s track record throughout 2021 will lay the foundation for Komainu to establish its reputation as a leading digital asset custody solution for institutional investors.

How are you competing with existing larger custodians in this space?

When launching Komainu, the three partners in this venture (CoinShares, Ledger, and Nomura) did not want to create another black box technology solution to market. Instead, they wanted to launch the first regulated turnkey solution for digital asset custody, tailored to meet the specific needs of institutional investors. Komainu fills a gap in a marketplace that was in desperate need

of an institutional-grade custody solution that is fully regulated, as existing digital asset custody providers only met a portion of an institution’s needs. These alternative solutions were not tailored to institutional clients’ specific needs. Komainu has been purposely built to be the leading, regulated and institutional focused digital asset custody solution, enabling traditional financial services providers to effectively gain exposure to this nascent asset class.

While Komainu has begun to establish itself as a challenger position amongst more established custodians, in terms of assets under custody, we believe that we are operating in a different segment. Compared to existing custody solutions, we have developed a unique offering that can be tailored to the specific needs of institutional investors and their clients.

What trends are you seeing from clients?

The growing acceptance of digital assets as a bona fide asset class among institutions has been very encouraging. Furthermore, the various developments and discussions around Central Bank Digital Currencies and Security Token Offerings have led financial services institutions, governments, regulators, and central banks to delve deeper into this emerging industry with increased interest. We have also seen the public perception of digital currencies change – from being referred to as ‘currency for the dark web’ in 2015 to ‘digital gold’ in 2020.

This shift in perception is illustrated by established institutions such as MicroStrategy, Square, and Tesla committing a portion of their corporate reserves into bitcoin. This trend is only just beginning. As institutions and corporates become more comfortable with this asset class, they will allocate additional capital to decentralised and immutable digital currencies as a means of portfolio diversification.

Furthermore, we have seen increased experimentation and pilot projects around tokenised assets, ranging from traditional securities to alternative investments such as fine art (NFTs) and precious metals (GoldToken by MKS). Komainu is the ideal partner for institutions wishing to gain access to the digital asset industry and can provide tailored solutions based on a clients’ specific needs.

How do you expect the digital asset space to expand?

The digital asset industry is still in its nascent phase, albeit having gained increased interest from the traditional financial services industry. To date, when you refer to digital assets most people think of bitcoin and other cryptocurrencies, however, Komainu believes in a world where every type of assets can be represented digitally and tokenised on a distributed ledger, thereby creating market efficiencies by reducing frictions and layers of intermediaries. Over the past year, we have seen significant progress being made, from both a regulatory and public perception perspective, to establish digital currencies as the next generation of financial products, signalling the beginning of a shift toward tokenised assets in finance.

What are the biggest challenges right now for this space?

There are various challenges in the digital asset industry, as in any nascent industry, but providing the first regulated digital asset custody solution for institutional investors is an important place to start. This is the foundation layer. We strongly believe that secure and trusted custody lays the foundation for any digital asset strategy and our solution will facilitate the adoption of this new asset class among institutional investors. With the right custody solution, our clients can experiment and innovate in their core businesses while ensuring that their digital assets are secure. Before we see the widespread adoption of digital assets, we will have to address other challenges, including the current lack of understanding and education in this space. At Komainu we will continue working closely with our clients and share our extensive expertise to assist them in their journey into the digital asset ecosystem. Furthermore, the current lack of clear and coherent regulation around digital assets in some jurisdictions is also a challenge. We work closely with regulators and policymakers around the globe to ensure we fully address their concerns, help them understand the unique benefits of digital assets and the underlying blockchain technology to create a regulatory environment that encourages innovation and the acceptance of this new asset class. Lastly, we believe that other areas of the digital asset value chain will have to be tailored to meet

“We strongly believe that secure and trusted custody lays the foundation for any digital asset strategy and our solution will facilitate the adoption of this new asset class among institutional investors”

the specific needs of institutional clients, something that we are actively working on at Komainu.

What will Komainu be working on for the next 12 months?

Over the next 12 months, Komainu will keep executing and delivering for our shareholders and our clients. We will look to actively scale the business with the goal to create the first global digital asset custody solution. Komainu will continue to actively build its client base and work with specific clients to help them with their initial foray into the digital asset industry.

Jean-Marie Mognetti
CEO
Komainu



A regulated future

Maddie Saghir reports XReg's Siân Jones and Ana James explain that there will be an increase in regulation as the use and significance of digital assets and their underlying technology increases

Are you seeing an increased appetite from institutional investors for digital assets?

Siân Jones: There are clear signs of an increasing appetite from institutional investors for digital assets to form part of their portfolios. During 2020 and into 2021, more companies started including digital assets as part of their treasury management strategy. Overstock and MicroStrategy have \$2 million and \$3.2 billion worth of digital assets. More recently, London-based asset manager Ruffer allocated a percentage of one of its funds to digital assets and, of course, Tesla's recent \$1.5 billion dive into digital assets caught headlines and the public imagination.

Digital assets have come under fire a few times with critics saying they can be used for illegal activities, exchange rate volatility, and vulnerabilities of the infrastructure underlying them. With this in mind, do you think there needs to be a regulation in place across Europe?

Ana James: As use and significance of digital assets and their underlying technology increases; as the value of digital assets climbs; and as global bigtech continues to engage with digital assets — such as Diem, initiated by Facebook and formerly called Libra — so, too, the interest of policymakers and regulators around the world is being aroused.

A host of policy issues are being considered, such as monetary sovereignty, financial stability, consumer protection, market integrity, money laundering, and so on.

You can see this in recent statements made by Biden's pick for Secretary of the Treasury, Janet Yellen, and the President of the European Central Bank (ECB), Christine Lagarde. Similarly, there is increased scrutiny, driven by the G20, by multinational government organisations such as the Financial Stability Board, the Bank for International Settlements, the Organization for Economic Cooperation and Development (OECD), the International Organisation of Securities Commissions (IOSCO), the Financial Action Task Force. This scrutiny is mirrored across EU institutions and bodies — at the European Commission, in the Parliament, at the ECB, the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) — and in member states. While many acknowledge the innovative potential of digital assets, such as improving financial inclusion, improved efficiency in market infrastructures, and greater transparency, the primary focus is on identifying and mitigating risks. Inevitably, such scrutiny leads to increased regulation, in many cases emulating the sort of regulation that exists in traditional finance.

One can always cite money laundering and terrorist financing concerns across all asset classes and sectors. Digital assets are, of course, not immune, but data suggests money laundering involving digital assets is markedly lower than for traditional assets and fiat money. For example, a recent study published by Chainalysis showed that the overall percentage of criminal activity in all cryptocurrency transactions in 2020 accounted for only 0.34 per cent, down from 2.1 per cent the previous year.

Despite the inherent pseudonymity in many blockchain systems, digital assets are not a particularly smart means to launder money due to the equally-inherent ability to instantly track and trace

“Digital assets are not a particularly smart means to launder money due to the equally-inherent ability to instantly track and trace transactions”

transactions. Following the money in traditional systems takes considerably longer, with investigations often taking months and years.

It is true some digital assets — most notably, crypto-currencies — are characterised by high volatility. For this reason, they are mostly used for speculative investment. But, at the other end of the spectrum, there are digital assets whose value is pegged to fiat currencies — often termed stablecoins. In between, lies a broad array of digital assets whose value is referenced to baskets of currencies and other assets or whose value is determined by more fundamental drivers such as the utility of a service or application. Central banks, too, have launched digital versions of their currencies, such as Sweden and China with Central Bank Digital Currency pilots of the e-krona and digital yuan (the DCEP). Even the European Central Bank recently launched a consultation on proposals for a digital euro which it expects to be piloted soon.

There can be no doubt regulation is coming to digital assets. It already is, and there will be more on the way. In September 2020, the European Commission proposed a Markets in Crypto Asset (MiCA) Regulation which seeks to bring all forms of digital assets (what they call crypto-assets) and related activities within scope. The EU-wide regulation is already working its way through the legislative process, and it is only a matter of time until it comes into force. Another proposal, published at the same time, is the European DLT Pilot Regime for market infrastructures (PRR). The PRR seeks to relax restrictions on the use of distributed ledger technology by traditional market infrastructures and, so, enable broader use of digital assets to potentially drive market efficiency. In time, this could significantly impact the way that markets operate and the range of assets traded in traditional markets.

Pursuing its digital finance strategy, on 24 September 2020, the EC adopted legislative proposals for a Regulation on MiCA. What is being proposed with the regulation?

Jones: MiCA is intended to provide a legal framework for all digital assets that are not already covered in EU financial services legislation, and all activities involving these digital assets.

It sets rules relating to digital asset issuance and their offering to the public. It lays down more stringent prudential requirements relating to stablecoins, which it categorises as either e-money tokens or asset-referenced tokens, and yet more robust requirements for those deemed significant — those considered to be systemically important.

MiCA also provides for the licensing of crypto-asset service providers. These are firms that provide trading platforms and other intermediation services, similar to that in traditional financial services governed by the Markets in Financial Instruments Directive (MiFID).

What benefits could MiCA bring?

James: MiCA will bring much needed legal certainty to the sector and, with a single regulatory approach across the whole European Economic Area (EEA), it will reduce market fragmentation and regulatory arbitrage. It will help legitimise digital assets and service providers, opening up the sector to a broad range of institutional players. Digital asset businesses will be able to passport their activities across the single market. Clear rules will make it easier to raise funds and trade digital assets. Public trust will grow, setting

the way for continued growth in the use of digital assets. They will become normalised.

However, without a more innovative approach to achieve regulatory outcomes, some of the advantages and innovative potential of digital assets (and their underlying technology, blockchain) will be diminished or, even, eliminated. This will represent a significant lost opportunity; a huge shame. Sadly, the commission's aim of supporting innovation is not the same as promoting it.

Do you think the EU wants to tackle the regulatory obstacles posed by the decentralised nature of the networks by integrating DLT into the existing EU legal framework?

Jones: You ask a fascinating question. First and foremost, one needs to understand that not all digital assets are decentralised, and not everything that is labelled decentralised is so. Very few digital assets are truly decentralised.

Most financial services regulation is designed to hold individuals accountable. Regulators need people to achieve desired regulatory outcomes, and they need intermediaries to ensure those outcomes can be met. The challenge with truly decentralised finance is that, by definition, there are no accountable persons and

no intermediaries. Regulators will, generally, consider substance over form, so digital assets that are not genuinely decentralised will be regarded as anything else. A security token will, mostly, be regarded as a financial instrument and treated accordingly. But a genuinely decentralised digital asset, without a traditional, identifiable issuer cannot be regulated as if it had one.

MiCA, as currently proposed, seeks to capture decentralised finance (DeFi) as far as possible by, for example, requiring issuers to be legal entities if a digital asset is to be offered to the public or traded on a market platform in the EU. At the same time, it acknowledges that digital assets without an issuer fall outside regulatory scope. It will be interesting to see if some of the proposals currently being discussed by the council (comprising Member State governments) reshape this thinking.

What are the current challenges with this regulation? The existing financial services regulation was not created with DLT in mind, could this be an issue?

James: There are challenges at the intersection between MiCA and MiFID, particularly in how different member states interpret financial instruments. This has a bearing on what, in some cases, constitutes a crypto-asset.

There is probably unnecessary complexity in some digital assets being supervised both at national and pan-European levels.

And there are challenges and some confusion in the proposed transitional arrangements for stablecoin issuers.

Importantly, MiCA provides scant legal certainty for DeFi. This innovation needs to be addressed in equally innovative ways if the stated aim of providing a level playing field is to be achieved.

Now that the UK is no longer part of the EU, would it come down to the FCA to create a regulation like this in the UK? Would it be a case of the regulators filling in the details of the perimeter that the government has set?

Jones: Primarily, this is a matter for the UK Government. Digital asset service providers were brought into the UK's anti-money laundering (AML)/combating the financing of terrorism (CFT) regime at the beginning of 2020.

Currently, HM Treasury is running a consultation on the UK's regulatory approach to digital assets and stablecoins.

The consultation proposes a regime for stable tokens used as means of payment and to bring certain DeFi activities within the regulatory framework.

The UK-EU Trade and Cooperation Agreement, which sets out the future relationship between the UK and the EU, does not include financial services.

It will be interesting to see whether or not, going forward, the UK pursues a policy of aligning with the EU on financial services, with a view, perhaps, of securing equivalence.

We may know in the next few months. Whether or not this has an impact on digital assets very much depends on the political direction.

At this time, it is too early to say what this may mean.

Do you think new regulations in this area could heighten the barrier of entry to this category?

James: Regulation nearly always creates barriers to entry in every sector. While regulations such as the PRR seek to remove some obstacles, it will inevitably become harder and more expensive for digital asset issuers and service providers to operate in Europe and elsewhere.

“MiCA, as currently proposed, seeks to capture decentralised finance as far as possible by, for example, requiring issuers to be legal entities if a digital asset is to be offered to the public or traded on a market platform in the EU”

Siân Jones
Senior partner
XReg



“While regulations such as the PRR seek to remove some obstacles, it will inevitably become harder and more expensive for digital asset issuers and service providers to operate in Europe and elsewhere”

Ana James
Policy consultant
XReg



A change in mentality

Ralph Achkar of State Street suggests that although initial interest for servicing crypto currency was only from the alternative space, there has been a mentality shift with increased demand from the more traditional client segment

Becky Bellamy reports

Demand and Development

Could you explain more about State Street's digital asset pilot with Gemini?

Digital assets is an umbrella term for crypto currencies, security tokens, and anything like stable coins.

At State Street we have been particularly focused on digital assets servicing including the custody space; the pilot is a practical first step to investigate the digital custody space.

Even the largest custodians, including State Street, have not actually moved into that space yet because of the uncertainties around it.

On one side you have the uncertainty about regulation and on the other side, the uncertainty revolves around what the client is demanding.

We found that by conducting a pilot with a reliable partner in the market is a first good step to investigate that space. It gives us the ability to connect our systems and build the operational knowhow.

All of the original systems today were not designed to handle a blockchain world, as an example, such systems require reconciliation, a concept that is not needed in the blockchain world.

The pilot was a good step in connecting existing systems to the onchain world to see how the workflows would look like. It was useful to find out the gaps and how we connect.

It was also a good chance to expose our operating teams to the features and characteristics of an asset that lives on chain. For example, We are used to a corporate action but we are not used to forks or airdrops that could happen for an onchain asset.

Meanwhile on the market side, there has been a lot of noise about the level of client activity in the digital asset world. We needed a way to filter this noise towards zooming in and focusing on where the real client demand is.

Therefore, having a pilot and talking to the clients about it and the model used is a good idea to gain these types of insights.

“All of the original systems today were not designed to handle a blockchain world, as an example, such systems require reconciliation, a concept that is not needed in the blockchain world”

In terms of competitiveness, I would say players could fall behind if they don't collaborate and explore new opportunities but this won't happen in the immediate future. There is both an opportunity as well as a threat of such a new asset form. If we are not able to handle this new form then it is a threat for us as well. In addition, this new form will open opportunities across the value chain — in the issuance and in the primary markets. If the banks are not geared up to handle this asset form then we will miss these opportunities.

Even central banks are reacting to this space and are talking about central bank digital currency so it is highly unlikely that banks wouldn't react to that as well.

Are you seeing a growing demand for crypto currency custody services or at least an increase of interest?

The demand for servicing crypto currency has been interesting and evolving. It started a few years ago in the alternative space rather than from the more traditional funds that we service who were not particularly interested in such an asset class. However, the alternative segment was asking for such services. About seven to eight months ago the mentality shifted, and we are now seeing increased demand from our more traditional client segment looking at the asset class and saying 'this is interesting and I would like you to service that'.

That being said the demand two years ago was to directly serve underlying cryptocurrencies i.e. to go and buy bitcoin and request for that to be serviced. The demand has shifted. Today, The traditional client segment is still unsure if they could hold bitcoin, for example, but they are more certain that they could hold a structured product that is based on an underlying crypto currency. Today clients are asking for their structured products with crypto underlying to be serviced. Such Structured products can be exchange traded products, like funds or notes, where the underlying is a crypto currency.

There hasn't been a sudden surge in demand instead it has been a trickling of requests coming in.

We are also seeing a demand for security tokens but it remains a very small market. It is moving and it is behind the crypto market. Our clients are looking to find a good use case for such security tokens.

Is there any other work that you are doing within the crypto currency space at State Street?

We are looking at servicing the demand that comes from our clients. As our clients move to invest in the asset class, we need to increase our focus on the services that are needed there.

They are along the lines of accounting type services and custody services.

We are also working on a few pilots using security tokens. This is where the activity is happening right now.

How do you see the digital asset space expand over the next three to four years?

The immediate future will revolve around crypto currency because this is where the liquidity is. It will evolve from the retail space and the alternative space holding the cryptos directly, to

more traditional clients looking to get indirect exposure to that asset class. For example, buying exchange-traded products (ETPs) or exchanged-traded funds (ETFs).

There will be a demand for such products based on crypto currencies in the immediate future. The second area that will continue to see activity is around payments, not only the central bank payments but also the commercial payments that are leveraging the new digital asset form. There are some very interesting models that are emerging. Whether they are peer to peer, or faster models or payment models that are 24 hours. These models are probably going to stay with us. They are not here for just a short period of time.

In the medium to longer term, we will start seeing token representation of existing instruments such as the equities and the bonds and other assets that we service today. We will eventually see new instruments that are much harder to issue today because they are costly and take a lot of time, emerge in native tokens forms to provide the economic exposure desired by investors.

Today we are seeing lots of private securities in token forms. It is still very hard to trade them and have liquidity in secondary markets but eventually that needs to change as well. The servicing needs around these would also need to change, which in turn would change what we are doing today and it would invite new players to the market.

Do you think it is important to collaborate with fintech firms in the digital asset space to explore those avenues?

The collaboration between incumbents and fintechs is actually needed not only for digital assets but across the board — spanning all of the new technologies, like digital assets or artificial intelligence (AI). It brings the ability of smaller firms including fintechs to scale quickly and leverage distribution capabilities and the client access that an established player has. It also enables established players to leverage the innovation and dynamic capabilities of fintechs.

The field of digital assets is moving quickly at all levels; not only at the technical level but also at the legal and regulatory level. If we only look internally to get our legal and compliance and operating teams ready then we would actually be missing the mark. It is better to open up these conversations and channels with the rest of the industry including fintechs. At the same time, such fintechs could leverage some of the existing relationships, access and reputation that comes with working with a large bank like State Street.

“Today we are seeing lots of private securities in token forms. It is still very hard to trade them and have liquidity in secondary markets but eventually, that needs to change as well”

Ralph Achkar
Managing director, digital product
development and innovation
State Street



Broadening the scope of innovation

Alexandre Kech of Onchain Custodian discusses the amendments to the Payment Services Act 2019, which was passed by Singapore parliament on 4 January

Cryptocurrencies have found it hard to shake their associations with the darknet. From the time they burst onto the scene, bitcoin and other crypto-related businesses have been portrayed as enablers of money laundering and other criminal activities. There are for sure bad players in the crypto space, as in any industry, but not more than other industries. In fact, due to the complete traceability of transactions on most blockchains and the new anti-money laundering/combating the financing of terrorism (AML/CFT) regulations being implemented by industry, it is expected that over time there will be less illicit activity facilitated by crypto than traditional finance.

But scandals continue to dominate the news headlines: hacks, cyberattacks and lapses in governance that could only happen in the freewheeling world of crypto. Though the virtual asset industry is maturing quickly, there are still some years to go before all actors are regulated and operating at an institutional-grade level. This highlights the importance of working with entities that support the regulated vision of virtual assets and building the enterprise-grade infrastructures that are essential for institutional adoption.

Blockchain technology brings efficiency to many outdated processes in banking, capital markets and trade finance. The many pilots and implementations by reputable players such as the Australian Securities Exchange (ASX), Singapore Exchange (SGX) and J.P. Morgan, as well as the central banks around the world that are experimenting with the issuance of central bank digital currencies (CBDC), are testimonials of that.

The latest institutional interest in bitcoin and other virtual assets from the likes of PayPal, Square, DBS, Microstrategy and others, will continue to drive crypto toward mass scale adoption. Responsible actors are getting ready for this, with 25 out of 39 Financial Action Task Force (FATF) member countries having already implemented the revised FATF standards for money laundering and counter terrorist financing of virtual assets. Standards development is also advancing in areas such as data transfer and virtual asset identification. This significant progress is making the space much more interesting to institutional players.

Singapore, in particular, is fast becoming one of the jurisdictions with the most exhaustive and well-designed regulation and licensing regime for entities dealing with virtual assets, while still allowing the industry to grow in a safe and compliant way.

MAS broadens the scope of licensable digital payment token services

Early November 2019, the Monetary Authority of Singapore (MAS) announced the introduction of a bill into Parliament to amend the Payment Services Act 2019 (PS Act). The PS Act, which regulates the provision of different payment services, was enacted in early 2020. This includes traditional fiat money payment businesses but also those involving digital payment tokens, for example, virtual assets, such as bitcoin, and stablecoins like USDT or XSGD. The latter are deemed e-money as per a majority of law firm opinions.

On 4 January 2021, the bill was passed by Singapore parliament. MAS describes the objective of the PS Act as follows: “Providers of such payment services are required to hold a licence and comply with requirements that are calibrated according to the risks that specific payment services and business models pose. These include requirements to mitigate key risks and concerns relating to money laundering (ML) and terrorist financing (TF), loss of money owed to consumers or merchants due to insolvency, fragmentation and limitations to interoperability, and technology and cyber risks.” An important point to note, is that the PS Act does not cover tokenised securities which remain under the Future and Securities Act.

Entities operating one or more of the newly regulated services — like Onchain Custodian has since 2018 — had the opportunity to request an exemption from the licence while they applied for it. Hundreds of entities have been granted the exemption, but not all exempted entities aim to get the DPT Service licence that is required if the company intends to deal with virtual assets. A little more than 100 of them have ticked that box.

The primary purpose of the amendment to the PS Act is to implement the enhanced international standards adopted by the FATF in June 2019. Ultimately, its aim is to make sure all digital payment token (DPT) Service Providers are caught under the PS Act and are following the various notices dealing with the prevention of ML/TF. Other notices that must be followed (which are equally as essential) include PSN07 Notice of Conduct and PSN08 Notice of Disclosure and Communication, to name only two.



Alexandre Kech
CEO

Onchain Custodian and co-chair
Global Digital Finance Custody Working Group

Singapore Focus

The amendment to the PS Act identifies three new services which have been added to the expanded definition of DPT Services requiring a license:

Transfer of DPTs

This addition covers entities incorporated in Singapore but offering DPT transfer services between clients outside of Singapore. Avoiding service or process-based regulatory arbitrage has been an objective of MAS. Another example of that is the current consultation on the New Omnibus Act for the financial sector. It aims, among other purposes, to regulate virtual asset service providers (VASPs) as defined by FATF, that are established in Singapore, but are providing services only outside of Singapore.

Provision of custodian wallet services for DPTs

The industry was expecting this addition. And some, like Onchain Custodian whose core business is custody of DPT and other virtual assets, were eagerly awaiting it. The potential impact may even go beyond enabling identified custodians, such as Onchain, to operate in a fully licensed way. Indeed, “the provision of custodial wallet services” might also catch any service provider with control over the cryptographic private key to any wallet holding a client’s DPT, and with the ability to access or execute a transaction. Even if the provider only owns part of the cryptographic key to a multi-signature wallet or a multi-party computation wallet, the provider might be deemed to have control, hence, they might fall under the provision of a custodial wallet.

Some companies, whose primary business is not to safe-keep virtual assets though it is essential to their offering (like exchanges), might decide to work with a licenced custodian. Indeed, building an enterprise-grade custody infrastructure is costly and operationally complex.

Custodians are an essential part of the growing virtual assets space. Their focus on the secure, auditable safekeeping of customer assets contributes to the institutionalising the offerings

of other players in the ecosystem, such as exchanges or funds. Custodians also provide the right level of transparency, security and professionalism required by traditional institutional players and corporates entering the space, for whom self-custody is not sound or even possible, due to regulatory requirements.

Facilitating the exchange of DPTs without possession of money or DPTs by the DPT service provider

This addition covers advisory, that is, inducing or participating in inducing to buy or sell DPT. It is likely also to include decentralised exchanges (DEX), or at least, those identifiable companies incorporated in Singapore that are offering services facilitating the matching of orders to allow a person to buy or sell any DPT through a DEX.

That one will likely lead to a flurry of legal opinion requests as depending on the company, the operational set-up and the offered service, the answer might be different.

The amendment also provides MAS with additional powers to impose measures on DPT service providers, as the industry evolves, when the regulator’s teams identify new risks. MAS acknowledges the innovative nature of the virtual assets industry and wants to be ready to tackle any emerging risks in an efficient and agile way.

The industry is split into two camps: Those who believe it is too much and too soon and those who welcome this clear regulatory framework. However, both camps agree that regulation is necessary to ensure clarity and protection for consumers, allow growth via broader adoption by retail and institutional markets, and enable the long-term sustainability of cryptocurrencies and other virtual assets.

One thing is sure, with such regulations, it means that cryptocurrencies such as bitcoin and other virtual assets are here to stay. It is excellent news knowing the potential that cryptographic tokenisation on the blockchain offers for the future of banking, finance, and so many other industries.

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Creating a safer environment

Maddie Saghir reports With challenges around the FATF's new Travel Rule, such as 'Sunrise', it marks an extremely important requirement in the world of digital assets

Cryptocurrencies, which represent a new form of a digital asset based on a network that is distributed across a large number of computers, have come under fire a few times with critics saying they can be used for illegal activities, exchange rate volatility, and vulnerabilities of the infrastructure underlying them.

The increasing global use of cryptocurrency means that more needs to be done to fight anti-money laundering (AML), among other challenges.

The global money laundering and terrorist financing watchdog Financial Action Task Force (FATF) sets international standards that aim to prevent illegal activities and the harm they cause to society.

As a policy-making body, the FATF works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.

As part of its work FATF created 'Recommendation 16' in 2012 with the objective of preventing terrorists and other criminals from having unfettered access to wire transfers for moving their funds. It works to detect the misuse when it occurs to ensure that basic

information on the originator and beneficiary of wire transfers is immediately available.

More recently, the FATF introduced the 'Travel Rule', an update to the previous FATF Recommendation 16, which covers cross-border and domestic wires.

Although there are challenges around this Travel Rule, such as the 'Sunrise' issue, its main aim is to prevent money laundering from the proceeds of illicit activity, making it an extremely important requirement, especially in the world of digital assets.

FATF Travel Rule

Some experts assert that the FATF's June 2019 plenary, signalled disruptive changes to the cryptocurrency landscape especially its virtual asset service providers (VASPs).

The FATF agreed to pursue further work to strengthen the FATF Standards on countering the financing of proliferation by requiring jurisdictions and private sector entities to understand and

mitigate their proliferation financing risks, as well as by enhancing requirements for domestic cooperation and coordination on proliferation financing.

FATF says it has conducted extensive analysis on a range of proposals, but has agreed to prioritise this work moving forward.

Other options considered included new requirements to use criminal justice measures and financial intelligence, expanded targeted financial sanctions tools, and more effective mechanisms to ensure international information sharing on proliferation financing activity. The FATF agreed to potentially consider these other options at a later date.

Meanwhile, jurisdictions under FATF had to provide sufficient information and solutions for this by June 2020.

Over 200 jurisdictions around the world have committed to the FATF Recommendations through the global network of FSRBs and FATF memberships. The FATF relies on a strong global network of FATF-Style Regional Bodies (FSRBs), in addition to their own 39 members.

Experts say that despite 200 countries being signed up to FATF, only 35 were able to report their transposition of Travel Rule legislation in June last year, which has been put down to the implementation challenges and the COVID-19 pandemic.

Consequently, the FATF has issued a new 12-month review set to conclude in June 2021.

This review is set to allow the virtual asset industry and FATF to deal with new challenges and establish interoperability between technical solutions.

Implications for digital assets

FATF's updates addresses combatting the financing of terrorism (CFT) and AML challenges associated with the increasing global use of cryptocurrency. The update also helps law enforcement

“One of the challenges for VASPs is to adapt and implement compliance requirements swiftly and effectively”

agencies better track malicious users who may abuse cryptocurrency for illicit activities such as money laundering.

According to experts, the Travel Rule's regulatory focus means that it will have specific implications for VASPs, such as cryptocurrency exchanges and digital asset custodians.

Onchain Custodian, headquartered in Singapore and a member state of FATF, explains that the Monetary Authority of Singapore (MAS) has included elements of the Travel Rule into the Payment Services Act (PSA).

This is specifically in the MAS Notice PSN02 where the ordering institution needs to provide the name of the value transfer originator, the value transfer originator's account number, the name of the value transfer beneficiary, and the value transfer beneficiary's account number.

Onchain Custodian explains that where the value of transfer exceeds \$1,500 (SGD), then the ordering institution needs to provide additional information including:

- The value transfer originator's (i) residential address, or (ii) registered or business address
- The value transfer originator's unique identification number or
- The date and place of birth, incorporation or registration of the value transfer originator

Onchain Custodian is working on platform enhancements to align its process with the recommendations from FATF and regulation guidelines by the MAS.

In order to do so, it is working with service providers as its partners to create a system that will allow it and its clients to meet the regulatory requirement. These partners include Accuity, Merkle Science, CoolBitX and Notabene, among others.

“One of the challenges for VASPs is to adapt and implement compliance requirements swiftly and effectively while maintaining business operations at full pace and capacity,” says Michael Ou, founder and CEO of CoolBitX.

Ou affirms: “Sygna Bridge greatly reduces the implementation strain of meeting Travel Rule guidelines through a modular application programming interface architecture, flexibility, and the ability to adapt the product to meet VASP needs.”

“We are delighted to be able to assist Onchain with their Travel Rule implementation, from mapping scenario analysis through to integration.”

Given that the purpose of the Travel Rule is to prevent money laundering from the proceeds of illicit activity, Onchain Custodian says it is not just another regulatory requirement to them that they are implementing for licensing purposes.

“No upstanding VASP would be willingly complicit in allowing cryptocurrencies to be used as a value transfer vehicle to facilitate crimes such as children pornography, human trafficking, drug trafficking or the financing of terrorists,” says Onchain Custodian.

Pelle Braendgaard, CEO of Notabene, adds: “We are seeing a shift among customers from viewing the Travel Rule as a compliance obligation to seeing it as a competitive advantage.”

“The addition of a counterparty layer brings more trust to transactions, and product teams are starting to explore the possibilities this brings in terms of better UX for their users.”

Factors to consider

The Travel Rule of Recommendation 16 means the creators and beneficiaries of all digital fund transfers should exchange descriptive information and will be applied to all VASPs, financial institutions, and mandatory organisations but this is anticipated to come with a number of challenges.

Indeed, experts say the journey toward the implementation of the Travel Rule has not been easy for the VASP sector.

The Travel Rule was first introduced in 1996 by the Financial Crime Enforcement Network (FinCEN), a US federal bureau requiring banks and money services businesses to share information of both the originators and beneficiary tied to payments of \$3,000 and higher.

Designed as an AML requirement for traditional banks means that applying it to cryptocurrencies is one such challenge. Cryptocurrencies operate on a fundamentally different technology stack.

Many banks have SWIFT, the global provider of secure financial messaging services, or other similar channels to exchange originator and beneficiary information as part of the message payload, but VASPs do not have that luxury.

According to Onchain Custodian, crypto payment rails operate on independent and autonomous blockchain infrastructures which do not cater for the transport of a lot of information.

“Despite the enormous challenges this mismatch has posed, the crypto industry has taken significant steps to build data standards to be able to transfer the required information as mandated by the FATF. A great number of technical protocols have been created to enable the movement of that information, but several challenges remain,” explains Onchain Custodian.

One such challenge is the ‘Sunrise challenge’, which relates to the way in which different member countries have responded in different ways to the FATF Travel Rule globally. Some say that while a few nations are taking the initiative, others are taking a more cautious wait-and-see approach.

In turn, countries could potentially implement the Travel Rule months and possibly years apart resulting in the ‘Sunrise’ issue. Experts expect that countries will balance their crypto regulatory frameworks against domestic legislation, infrastructure and market considerations.

Weighing in on this, Onchain Custodian notes: “Most jurisdictions have translated or are translating into law the Travel Rule, but they do so at a different pace, with different requirements.”

For example, the transaction volume threshold above which the Travel Rule applies, varies greatly between countries.

This is a problem, explains Onchain Custodian particularly as the crypto business is cross-border by nature, so having to juggle with different implementation deadlines and requirements across jurisdictions do not help achieve the common goals between policymakers, regulators and industry.

“Regulators should be conscious of this challenge and enable well-intentioned players in their market to gradually implement the Travel Rule rather than hoping for a 100 per cent approach from a specific date,” says Onchain Custodian.

Meanwhile, there is the issue of interoperability which poses the question: with so many different technical protocols, how can an originating VASP send information to the recipient VASP in a secure and automated way?

While this may seem like a rudimentary query, Onchain Custodian highlights that to provide context, it is as though one could not call an Android phone user with their IOS device.

“In the end, there is no singular protocol that will dominate, so there is an urgent need to ensure interoperability between them to benefit VASPs and implementation of the Travel Rule itself,” says Onchain Custodian.

Additionally, experts have identified two major challenges in the field of private wealth management. Firstly, there is the need to prove that a private wallet actually belongs to an identified

“Regulators should be conscious of this challenge and enable well-intentioned players in their market to gradually implement the Travel Rule rather than hoping for a 100 per cent approach”

customer when this customer withdraws from a VASP to its private wallet.

Onchain Custodian comments: “Solutions are coming, but it is not an easy process to put in place, so again, some leniency would be welcomed as we explore the best approaches with input and insights from the VASP industry.”

Secondly, FATF and some jurisdictions are now looking at similar know your customer requirements and AML/CFT standards for non-custodial wallets, as they are for VASPs.

There are consultations and other reach-out for comments and so experts suggest the hope is that the industry’s feedback will be given greater consideration than it was when the Travel Rule was introduced.

Onchain Custodian believes this is likely, now that the industry, as decentralised it may be, has proven to the regulator that it can work together for the common good.

Transformation is coming

An abundance of partnerships and collaborations as well as increased popularity all point towards a transformational change in the digital assets space

Maddie Saghir reports



Technological Developments

Transformation on a large scale is coming to the digital assets space. Increasingly popular, the infrastructure around digital assets in technology, regulation, and custody is certainly on the rise.

While technology is already an essential part of a digital asset, industry participants are finding ways to improve their offerings in this space, and although digital assets have had its fair share of criticism, with some saying they can be used for illegal activities, exchange rate volatility, and vulnerabilities of the infrastructure underlying them, the opportunities of digital assets are being realised.

Indeed, some experts have given them praise for their portability, divisibility, inflation resistance, and transparency.

Speaking from a Singapore perspective, Alexandre Kech, CEO Onchain Custodian, says: "With regulation in place in most tier 1 financial centres such as Singapore, with mature and entre-prise grade infrastructures having been developed the last two-three years such as custodians, and with the economical and financial uncertainties due to the printing of money by central bank, we do see an increase of interest from institutional investors such as financial institutions and corporates."

According to Kech, family offices and affluent investors are also now buying bitcoin and other digital assets as a way to diversify their portfolio.

Running alongside this interest in digital assets, regulators are starting to take it seriously. Kech notes that in Singapore, the Monetary Authority of Singapore has established a licensing framework for digital payment token service providers as part of the latest version of the Payment Services Act.

Meanwhile, other countries such as Malaysia or Thailand have also worked on ensuring actors such as exchanges or custodians are registered or licensed and treated as the financial institutions they are. Over in Europe, Germany is working towards implementing the Markets in Crypto Assets (MiCA) regulation.

"These regulatory regimes include requirements around the prevention of money laundering and financing of terrorism which

leverages the transparency of blockchains and bank like transfer of beneficiary and ordering customer information,” says Kech. With growth in digital assets on the rise, innovation and technology is certainly bubbling in this area.

The importance of blockchain

Blockchain is an integral component of a digital asset. The system of a blockchain records information in such a way that makes it near impossible to alter or hack. It is a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain.

Cryptocurrencies represent a new form of a digital asset based on a network that is distributed across a large number of computers. This decentralised structure can allow them to exist outside the control of governments and central authorities.

Blockchains, which are organisational methods for ensuring the integrity of transactional data, is an essential component of many cryptocurrencies.

Jerald David, president at Arca Capital Management, explains: “Blockchain is a distributed software network that functions both as a digital ledger and a mechanism enabling the secure transfer of assets without an intermediary.”

So in terms of whether any other technologies could be used as for digital assets to record and validate transactions, David affirms: “Digital assets only exist because blockchain is being used to record and validate transactions. There are several other technologies like Excel that can also be used to record and validate transactions, but in order for it to be considered a ‘digital asset’, it must use blockchain.”

Although limited to the blockchain, there are lots of opportunities associated with this piece of technology.

For example, Allfunds Blockchain, the blockchain technology arm of Allfunds, is set to advance blockchain technology for the fund

industry with its new partner and ConsenSys, the Ethereum software company. The solution includes advanced privacy features that enable participants in a blockchain network to control who is allowed to see information, and what nodes participate in the consensus validation of data containing confidential information.

And Allfunds and ConsenSys aren’t the only ones, BNP Paribas has also recently made moves in this space with its collaboration with Eastspring Investments, the Asian asset management business of Prudential, and Singapore-headquartered fintech firm Hashstacs (STACS) to implement a blockchain-driven solution.

Also in this year alone, technology company n-Tier has launched a new consensus-based reference data blockchain solution. Using a private blockchain to establish a consensus across firms on key data elements, n-Tier says the new solution will reduce reference data management costs and errors.

The movement in this space indicates that blockchain technology is continuing to show its worth for opportunities and use cases.

“Our market is moving at a frenetic pace. Blockchain technology has the potential to change finance in every sense of the word. Here at Arca, we always say, what the internet did for information, blockchain will do for asset transfer. Blockchain will allow for instantaneous transfer of assets globally creating a more connected, faster, simplified and inclusive global financial system,” comments David.

David suggests this creates tremendous opportunities on so many levels and is a paradise for individuals and companies that want to shape the future of commerce, finance, payments, insurance and other industries.

The Arca US Treasury Fund is a great example of this. Arca started with the notion that they could take a traditional financial structure — a closed-end fund — and could enhance the usability of the structure by introducing blockchain, which resulted in a faster, blockchain-based and more efficient product.

“We have barely seen the tip of the iceberg in terms of how impactful blockchain will be,” David says.

But there are some drawbacks and challenges too, and although experts say blockchain technology is not a difficult technology to conceptually understand, traditional finance can be wary of new technology and disruption.

Therefore, David notes that a lot of education has to be done to get companies and investors to participate in a system using blockchain solutions and the processes need to be defined.

“One challenge this presents is that we are creating the rules as the technology is only being developed. Interoperability between blockchains remains an open question as does regulation and how digital assets will be governed has not been finalised,” David adds.

Opportunities and new solutions in the pipeline

There are a number of opportunities for the development of digital asset infrastructure that could have the potential to transform how financial transactions are conducted.

While financial services have been embracing blockchain for the past decade, early adopters included DTCC and ASX who announced their intentions to re-create their backend technologies dating back over five years ago.

DTCC believes it is key to foster industry-wide collaboration and aligning the technology with the core principles of mitigating risk, enhancing efficiencies and driving cost efficiencies.

Today, there are even more participants involved in proof of concept (POC) and exploring ways to increase the efficiency of financial transactions.

According to David, one such place the market is seeking a solution is for a US Dollar leg for interbanking transactions. The timeline to settle trades between counterparties takes multiple days and includes a lot of manual effort.

David suggests that if one were to use a digital security like ArCoin as a proxy for that US Dollar leg, then one

can implement a blockchain-based solution to achieve significant savings.

Elsewhere, digital assets financial services company Diginex and Itiviti, a technology and service provider to financial institutions worldwide, have unveiled a new front-to-back trading, portfolio, and risk management solution called ‘Access’ to allow investors to manage their portfolios using institutional technology that is tailored specifically for cryptocurrencies.

The cryptocurrency solution will enable the trading of cryptocurrencies and crypto derivatives across several platforms.

The launch of Access comes as institutional investors are making a wholesale shift into digital assets, driven by dwindling returns in traditional assets and escalating fiscal stimuli fueling the rising concerns about inflation, according to Diginex.

Other partnerships can be seen in the industry working towards creating a solution around digital assets too. For example, Thomas Murray has launched a new digital asset solution in partnership with Alphaplate, a crypto market-maker and proprietary trading firm. The partnership will assist institutional asset owners, fund managers and service providers to understand the capabilities and associated risks of trading and holding digital assets.

All of this indicates that transformation on a large scale is coming to the industry.

David comments: “Financial Institutions, Back End Service Providers, Trading Desks, Exchanges, and even DTCC have all been experimenting with distributed ledger technology and how they can improve their offerings. Blockchain technologies offer efficiencies that reduce cost, intermediaries/dependencies, and time. The holy grail for markets is an end-to-end solution that allows for straight-through processing from trade execution to settlement and clearing. It’s coming.”

With huge transformation and growth coming in this area, this market is expected to expand at a rapid pace.

Time is limited

Becky Bellamy reports **Hirander Misra of GMEX suggests the time for unregulated digital exchanges is limited with the EU, Abu Dhabi Global Market in the United Arab Emirates, Bahrain, Malaysia and other jurisdictions working on frameworks**

What trends have you seen in the digital asset space since launching in May?

The financial markets are rife with too many intermediaries — I am not saying intermediaries are bad, but we need less of them that are more efficient to reduce frictional costs — and even those ventures embracing blockchain in terms of permissioned ledgers primarily are doing so just using the old centralised model they have been accustomed to for decades. On the other hand, the decentralised exchanges and broader decentralised finance (DeFi) plays struggle to match liquidity flow.

Beyond this we are beginning to see the convergence of B2C and B2B beyond the C2B2B constructs we have seen over the last few years and as such the challenge is to optimise retail and wholesale activity in capital markets using the best facets of both centralised and decentralised technology and services. The old and the new world will have to coexist for the foreseeable future and with multiple blockchains and legacy networks, the gap has to be bridged between both worlds. Solutions that address this not just with technology, but also at a transactional business flow level as well as addressing the cross border regulatory requirements, are the ones which will then lead to a fundamental change in the capital markets space.

Participants in financial markets run their own services, including custody in silos and moving assets between these participants is cumbersome, slow and expensive resulting in inefficiencies. As institutional players increasingly come into the market there is a need to make this interconnection more efficient. The solution is to link digital exchanges and digital banking with new product

creation across nodes (jurisdictions) aligned with traditional and fintech services.

Why did you select Seychelles to license your digital custody business?

As Seychelles seeks to establish itself as a global financial technology hub, with the aim of becoming a financial centre that can truly differentiate itself from the rest and become a gateway to Africa, GMEX Group is already leading numerous initiatives in Seychelles, with one of those being the SECDEX Digital Custodian.

We chose Seychelles to be regulated because the Financial Services Authority (FSA) has implemented a fintech regulatory sandbox which provides a regulated environment within which companies can carry out fintech-related financial services. This combines well with existing capital markets licences such as the securities exchange licence which SECDEX Exchange has in place.

Looking ahead at how this is further enhanced, the Central Bank of Seychelles (CBS) is supportive of fintech and is leading efforts to formulate a National FinTech Strategy for Seychelles, in collaboration with the Ministry of Finance, Trade, Investment and Economic Planning and the Financial Services Authority.

As part of its mandate to regulate and oversee, as well as modernise the National Payment System, the CBS aims to embrace the rapid pace of fintech, while ensuring it is properly regulated and subsequently help payment service providers to leverage technological innovations in the financial sector to maximise economic growth.

Seychelles has made significant progress since 2008 to actively reform its National Payment System to include automation of systems. As part of the Seychelles National Payment System vision and strategy (2016 to 2020), one of the strategic focus areas include the issue of regulations to provide guidance for electronic money and to promote, encourage and provide opportunities for the use of affordable electronic means of making payment.

In addition, there is substance in terms of crypto activity in Seychelles and while most is unregulated, we saw this as an opportunity to harness business based on a proper regulatory framework. The Crystal Blockchain released a report in July 2020, which categorises cross-border transactions of bitcoin (BTC) based on their 'country of origin'.

Due to Binance and Huobi, a vast majority of the 33 billion worth of bitcoin is sent via exchanges Seychelles. According to the same report, about 45 per cent of bitcoin transfer volume originated from the G-20 countries, which include the world's 20 biggest economies. By contrast, tiny Seychelles covered 31 per cent of the global volume in the first half of 2020.

The most active international trade routes are Seychelles — EU, Seychelles — US, Seychelles — South Korea, with each connection producing volumes in excess of \$2 billion.

SECDEX Digital Custodian (SDC) has gone live under this regime as Africa's only regulated digital custodian and the only operational multi-token custodian operational in the Middle East.

This underlying conducive environment combined with our business strategy means that in a short space of time it is signing up deals as per below and there is news in the public domain that it already has over half a billion USD of assets in custody.

How do you ensure the safekeeping of digital assets?

Most crypto ventures in this space are unregulated and are run by start-up firms with little or no track record and questionable

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balance sheets. We are not. We also within the group have a comprehensive set of services with full offshore capabilities.

Coming from a regulatory background as a senior management team and by virtue of the parent company, GMEX Group, we are accustomed to running a robust and secure market infrastructure.

As part of our regulatory approval process, we undertook a full institutional risk assessment and came up with a robust risk management policy and framework. Risks addressed include reputational risk, operational risk, market risk, regulatory compliance risk, credit risk, technical risks and force majeure with risk mitigation actions defined.

We made a full assessment of the attack vectors for cryptocurrencies and a wide range of digital assets and how to address this based on our own knowledge of best practice and the knowledge of crypto hacks that had arisen over the last few years.

SDC caters for a broad range of digital assets, including security tokens and cryptocurrencies such as Bitcoin for customers choosing to put their digital assets in its safe custody, with robust layers of security to prevent fraud and misappropriation. Wallet keys and key backups are stored with strong encryption. SDC services the

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London data centres. This is a standalone Wallet Subsystem accessed only via the Wallet Manager API.

What does your partnership with Distichain provide?

Partnerships are going to be increasingly important in the blockchain space and the technology lends itself to achieve that. One plus one really can make eleven to create a network of network effects. Each organisation can play on its strengths and leverage the strengths of the other to minimise investment and time to market and provide better services to its client base and a better return to investors.

The pandemic has created some real opportunities in certain sectors. Trade finance is one such opportunity and I know banks have various initiatives, but there really is an opportunity to reinvent the existing model as opposed to replicate on blockchain what they already do with a little more efficiency. Add to this automation of manual processes and the ability for sellers to then easily launch multiple marketplaces and link to buyers as a B2B play, as part of a GUI and API based model integrating into multiple services at the back end, will be game changing.

Distichain addresses this and integrates with SECDEX Digital Custodian so we can run secure distributed ledgers for such marketplace activity to ensure that the settlement between buyers and sellers is optimised.

The partnership has gone live with an integrated Distichain B2B trading engine and SECDEX services solution set, enabled by the GMEX Fusion hybrid centralised and blockchain distributed ledger technology suite. The ecommerce platform and secured digital wallet technology stack also includes digital custody and escrow financial institute licenses, as well as secure banking.

Currently, traders are limited by traditional payment methods such as low credit card limits, wire transfers, and lengthy and complex letter of credit solutions. Delivering advanced blockchain-based payment technologies, the SECDEX, GMEX and Distichain combination

is aiming to provide secure, swift, and seamless global trading with reduced risks.

The wallet integration creates a unique experience in the digital B2B trading journey, as buyers and sellers connected to Distichain's trade engine have the capability to transact large amounts securely. Verified buyers, upon receipt of the purchase order and generation of the smart contract, will be able to pay for the goods purchased instantly by payment transfers on the agreed due dates.

What are the biggest opportunities in the digital assets space?

The time for unregulated digital exchanges is limited. We are already seeing that on the crypto derivatives side, and even crypto itself, more regulation with the EU, Abu Dhabi Global Market (ADGM) in the United Arab Emirates, Bahrain, Malaysia and other jurisdictions working on frameworks. I know the decentralised purists cite that this goes against the ethos of crypto being democratised, however, the way that institutional markets work, a regulated approach is expected by investors and both centralised finance and DeFi will combine to create some great opportunities and innovation.

We are beginning to see real innovation in the creation of regulated structured products in the digital assets space, with a trusted underlying set of assets, in a way that is attractive to investors as a diversified portfolio wealth management play. It is also attractive for market making as there is an ability to arbitrage and hedge the underlying. As an example, we are using our affiliate Digital Investment Fund PCC to back digital bonds on a fund cell with diversified assets under management from real estate on the one hand and mega exchange-traded funds (ETFs) on the other hand. Such instruments, beyond being vehicles for a capital raise, can then be traded on digital exchanges such as SECDEX Exchange and held in digital custody in custodians such as SECDEX Digital Custodian.

We are seeing a trend to create value out of immobile assets, such as art, so that by being tokenised they can be used as collateral and as tradable instruments fostering opportunity for new financial asset classes. We also see more innovative derivatives coming

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digital custody needs of both private and institutional clients (including third party exchanges, marketplaces and financial institutions), by handling custody, escrow services, automated transfers, balance confirmations and account related requests.

To reduce the risk of intrusion, SDC has implemented wallet clusters. A cryptocurrency wallet is a collection of private keys, acting as digital addresses, used to store cryptocurrency or move it from one wallet to another. A wallet cluster consists of several wallets. SDC is using three types of wallets, which include:

Hot wallet: This is for one-time use to transfer digital assets in/out of SDC

Warm wallet: This is used to hold the operational level of digital assets, needed to give the user a good response time should they request a withdrawal

Cold wallet: This is for holding the majority of the digital assets, and whose private keys will be mainly in an offline state so that the risk of unauthorised is reduced

The solution uses multi-tiered hardware secured module (HSM) wallets and is deployed at fully redundant secure well established

into play, such as Hash rate derivatives, allowing miners to hedge exposure, much like it exists for other commodities.

We are also seeing and very much involved in creating hybrid instruments that are both traditional and digital. Many investors are more conventional and also have systems and processes that take time to change.

Providing digital products with a traditional wrapper around them, so that such investors get exposure to digital assets without the need for knowledge and systems relating to them, is going to be a major trend in the more immediate term.

Other macro trends are banks increasingly going into digital assets, both on the wholesale and retail side, as well as into digital custodial services with cryptocurrencies gaining the most traction and security tokens predicted to follow.

Another macro trend is traditional exchanges wanting to go into digital assets and, beyond the technology, need to seek regulatory,

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operational and business level guidance and have the ability to integrate external digital processes into their current non-digital activities. Such exchanges have their own central securities depositories to hold assets on behalf of clients.

This presents a big opportunity to tokenise and package existing assets whilst integrating the new digital/crypto rails with traditional payments rails to facilitate effective settlement.

Looking ahead, how do you see the digital asset space expanding in the next five years?

The advent of new technologies is greater than ever before, such as blockchain, artificial intelligence (AI), internet of things (IoT) and Quantum computing enabled by an increase in cloud computing. We will see greater convergence of these technologies (for example, blockchain smart contracts are driven by data and AI) to foster a fourth industrial revolution but how does one transition to Society 5.0 from this?

“Society 5.0” refers to the fifth stride in human civilisation evolution to create a ‘super-smart’ future society which leverages the technological innovations of the current fourth industrial revolution to achieve economic advancement and embed these in society to solve people’s problems so that they can live better lives.

Society 5.0 addresses a number of key pillars: infrastructure, fintech (including blockchain), healthcare, logistics and AI.

Nations which harness this effectively will become the super societies of the future. Taking fintech to the next level will be essential for such enablement to reinvent the way financial services are conducted.

Digital asset fintech hubs can play a key part in that enabled by policy and regulation as such hubs will increasingly interconnect with each other to become ‘smart digital fintech hubs’.

This new-age digital infrastructure will have the power to assist in the economic recovery as it will bring hundreds of millions of the most underprivileged and displaced members of society into a new digital financial system.

Domestically this will facilitate the development of local expertise in digital assets and related services as well as attracting the most innovative international fintech companies and greater foreign investment into countries which embrace this construct.

The positive effects of this will be job creation, associated GDP growth and export of this knowledge to interconnect and enhance other similar hubs.

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Hirander Misra
Chairman and CEO
GMEX Group



