Investment Management Association of Singapore Investment Conference and Masterclass 2024

October 2024

Contents

Introduction

Formed in 1997, the Investment Management Association of Singapore (IMAS) is the representative body of investment managers. It seeks to spearhead the development of the asset management industry in Singapore by fostering high standards of professionalism amongst practitioners and creating public awareness of, and interest in, the industry. As part of such efforts, IMAS organises an annual investment conference where speakers are invited to share on prominent matters in the industry.

At this year's IMAS Investment Conference 2024, Masterclass 2 explored technology that is on its way to revolutionise the asset management space: blockchain technology and tokenisation. Designed for C-suite, senior leaders, and heads of business units, Masterclass 2 brings together various thought leaders and industry experts to discuss and share how blockchain and tokenisation not only represent an opportunity unlock greater efficiencies and lower costs in the asset management space, but also introduces novel technological and regulatory risks that need to be addressed.

Executive summary

This report sets out the key themes that were explored across the various sessions.
What can be gleaned across the sessions is that:

1. Blockchain technology and tokenisation can revolutionise the financial markets.

Blockchain technology and tokenisation has the potential to revolutionise the financial markets, including the asset management space. Benefits include more efficient and decreased settlement times, facilitating smaller purchase sizes by allowing for fractionalisation, and allowing for increased scalability and personalisation of financial products etc.. This can ultimately lead to greater market efficiency, lower costs, and increased accessibility to financial markets.

2. Fragmented implementation may hinder growth.

However, there is recognition that additional time and effort by all stakeholders is required before we can unlock the full potential of blockchain technology and tokenisation. While there are efforts to implement and mainstream such technology in financial markets, empirically, there has been an observation that many are independent, siloed efforts, which leads to a high degree of fragmentation across the industry. This fragmentation may actually have the opposite effect of increasing costs and lowering efficiency.

3. Stakeholder collaboration is key.

It is therefore important that stakeholders work together to drive collaboration and common usage of blockchain technology and tokenisation. We have already seen increasing collaboration and concerted efforts towards the development of regulatory clarity, stable infrastructures, and some degree of standardised protocols both within the local financial markets and on a cross-border basis. Key examples of such efforts include the Monetary Authority of Singapore's Project Guardian, which brought together financial institutions and regulators across different jurisdictions in a collaborative effort to run pilots across asset classes to explore open and interoperable digital asset networks, establish standardised policies and protocols for to manage risks, and support responsible innovation; and HSBC's Evergreen 2, a concerted effort between various financial institutions, law firms, and the Hong Kong Monetary Authority to issue bonds on a digitally native platform, the success of which is a proof of concept supporting the scalability of digitalising bonds and bond issuances. To this end, what is needed are long-term, committed partners and stakeholders who are able and willing to invest in infrastructure upgrades and collaborate on a commercially viable digital asset infrastructure.

4. Legal frameworks are fragmented across jurisdictions but can be navigated to ensure a successful token offering.

We discussed the legal approach and presenters generally agreed that understanding the legal framework was crucial in ensuring that there is appropriate legal infrastructure to support the tokenisation and offering of tokenised funds and using blockchain technology across jurisdictions. It was recognised that the laws are fragmented across jurisdictions due to the different approaches taken by policymakers/lawmakers. A standardised approach across all jurisdictions in the treatment of blockchain technology and tokenisation is unlikely in the short term. Stakeholders must have due regard to existing regulations in the financial markets and services space, as such principles remain applicable to new technologies, but must also keep an eye out for updates and changes.

To ensure the smooth implementation of tokenisation projects and constructive communication with regulators, there is a need to effectively navigate the regulatory landscape on blockchain technologies and tokenisation. To this end, it is important to ensure that you have an effective legal partner familiar with the current and upcoming regulatory landscapes and trends across relevant markets to assist with the legal matters that may arise in the course of implementing your tokenisation project.

Speakers

Alan Lim
Head, FinTech Infrastructure Office,
Monetary Authority of Singapore

Marita McGinley
Head of Digital Asset Strategy, Schroder
Investment Management (Singapore) Ltd

Rajeev Tummala
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Decoding the future of finance: asset tokenisation use cases and trends

Decoding the future of finance: asset tokenisation use cases and trends

Alan Lim
Head, FinTech Infrastructure Office,
Monetary Authority of Singapore

Overview

When presented with the words "tokenisation" and "blockchain", a poll of 60 participants from the asset management industry showed that they associated "tokenisation" with matters like efficiency, transparency, fractionalisation, cryptocurrency, T+1 etc.. The participants also asked questions on the various benefits of these technologies:

Which asset classes would benefit most from tokenisation?

How does tokenisation benefit the customers of asset manager?

What are the potential benefits and challenges of standardising the representation of tokenised products?

The participants' responses reflect three broad narratives surrounding tokenisation:

1. Distributed ledger technology and tokenisation is a form of **transformative technology**
2. Tokenised assets are emerging as **new investment opportunities**
3. Blockchain technology might herald more efficient, **alternative financial systems**

Source: Figure 1 - Excerpt of poll questions from Masterclass 2. Prepared by IMAS.

Yet, it is apparent that blockchain technology and tokenisation have not attained their full potential, particularly in the asset management space. This session sheds some light on why this might be so, and how the industry might be able to collectively pursue the actualisation of blockchain technology and tokenisation's potential.

Key Takeaways

Takeaway 1:
The restraints on blockchain technology and tokenisation

Beyond the hype surrounding the crypto-asset narrative, there have been attempts to lean into the other narratives, such as in the enterprise and traditional finance space.

However, the difficulty is that these efforts are **small, siloed, and independent**, limiting its growth and fragmenting the existing financial infrastructure. The solution is clearly to connect these efforts on an industry level, but the **costs of doing so are too great** and this gives rise to an inertia against such a monumental effort. This does not address the true potential for blockchain technology and tokenisation, and the industry is unable to fully realise the potential and benefits offered.

What is needed to actualise the potential of tokenisation is:

- Building regulatory clarity
- Developing risk mitigation strategies
- Finding opportunities to utilise tokenisation across asset classes

Project Guardian is a good example of taking such steps forward. By supporting a collaborative pursuit to bring together different financial institutions and regulators across jurisdictions, Project Guardian endeavours for the creation of an **inherently connected market**, which sets a strong foundation for developing standardised regulation and approaches to addressing novel risks, and an environment for **responsible innovation** in the space. This looks to extend the potential of such technologies beyond the cryptocurrency narrative, by linking up the public and private sectors for a more cohesive effort to drive the adoption and realisation of asset tokenisation.

Takeaway 2:
Bringing tokenisation and blockchain technology into the mainstream.
In the asset management space more work needs to be done to mainstream tokenisation. The below are a few key areas that can be worked on to facilitate the mainstreaming of tokenisation:

1. Infrastructure. Today's choices for deployment are: (i) to use systems run by individuals or small organisations, which are inherently limited in scaling; or (ii) using a public permissionless blockchain which would remove such limits and one can scale simply by deploying on it, but there is an issue of accountability for such systems. Hence, there is a need to figure out an infrastructure balance both ends of the spectrum and provide stable support for deployments.

2. Standardisation. There needs to be a standardisation of protocols, and a harmonisation of cross-border regulatory requirements (e.g. conflicts of law issues in deployment). This would support cross-border implementation and greater mainstreaming on a larger scale.

3. Commercial viability. Some efforts in tokenisation disregard its commercial viability and in the long run may result in tokenisation not being developed into a profitable business for certain market players. This may not be the most sustainable way to bring tokenisation mainstream. One aspect of this that can be explored down the line is bringing the benefits of tokenisation to the end users of asset managers – such as through increased investment options and opportunities, lower costs, and more liquidity – that could support the mainstreaming of tokenisation.

Different players will have different strategies in adapting to these new trends and innovations in the financial sector. To be able to adapt better and incorporate tokenisation into their future strategies, however, there is a need for organisations to push the envelope, allowing different arms of their business to work together to figure out the relevant risks and operational mechanics of tokenisation in an intentional and calibrated way.

Source: Figure 2 - Excerpt of poll questions from Masterclass 2. Prepared by IMAS.

Takeaway 3:
The importance of existing regulatory principles.
From a regulatory perspective there is a need to understand novel issues (e.g.: the issuance of digital native financial products), and whether and how existing regulations apply. It was recognised that there was a need to balance over regulation with no regulation. It was observed that distributed ledger technology, blockchain, and tokenisation realised most of its benefits (efficiency, lower costs etc.) from being unregulated. However, there is a general observation that regulations are needed for financial market stability and investor protection.

Given that much of the agility that is offered by DLT derives from the absence of a regulatory layer – how much will this be compromised once regs kick in?

Further, another way to look at this is to **consider that regulations could help maximise the benefits with greater transparency and protection**; and the corollary is that to best enjoy these, the **regulatory costs have to be kept low**.

Perhaps leveraging technological innovations like smart contracts, compliance by design etc. would be best for doing this rather than removing regulations. Existing regulation does not become redundant just because there is new technology. The standard considerations and principles still apply, and can be used as a reference point to assess new risks and how to address them. The regulatory space will be explored in further detail in the below sessions.

Demystifying blockchain: unlocking the potential of digital assets for asset management

Overview

Distributed ledger technology, tokenisation, and digital assets – how much do we actually understand these? Part of the difficulty in mainstreaming tokenisation and blockchain technology is the lack of understanding, which prevents the realisation of their full potential to transform the financial industry in a meaningful way. This session seeks to explain the key features of these distinct yet complementary concepts, and uncover their benefits and use cases around us. Perhaps with a stronger understanding of blockchain technology and tokenisation, it can allow for better utilisation of the technology to fully unlock their potential, particularly in the asset management space.

Demystifying blockchain: unlocking the potential of digital assets for asset management

Marita McGinley
Head of Digital Asset Strategy,
Schroder Investment Management (Singapore) Ltd

Rehan Ahmed
President, Marketnode

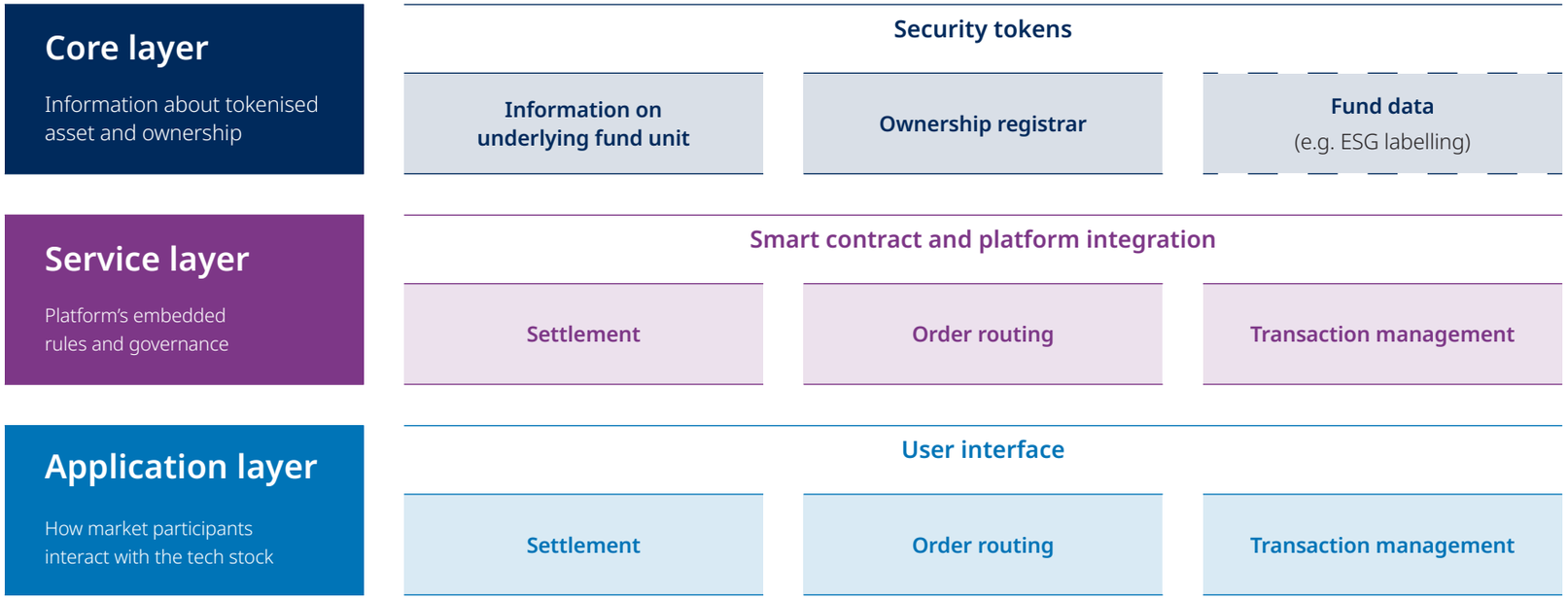
Key Takeaways

Takeaway 1:
Understand the basics.
These are the must-knows when discussing blockchain technology and tokenisation:

- **Distributed ledger technology.** Commonly referred to as a blockchain – underpins all the activity in this space, and is fundamentally a shared distribution data base that unlocks various efficiencies (reducing duplication, for instance) by allowing us to maintain a common data set in a cryptographically secured way. It contains a core layer, service layer, and application layer.

- **Tokenisation.** A financial mechanism and means of representing an asset on a distributed ledger. It can be a tokenisation of an existing asset, or an asset that is already on-chain.

- **Digital assets.** The outputs of tokenisation. There is a large spectrum, including cryptocurrencies, security tokens, tokenised funds, and digital monies. There is no one type of digital assets and they all have their own unique risk and return profiles. Digital assets have two key parts: a core layer (i.e. the asset itself) and a service layer (i.e. the rules embedded in the token and what the asset can do). The value of the token is based on a combination of both as these layers, together, affect the utility of the token.



Source: Figure 3 - Financial Stability Board (2023), Marketnode analysis. Please note that these components are indicative and non-exhaustive.

- **Smart Contracts.** These are self-executing smart codes that are used for automation in a blockchain ecosystem. Real-life use cases could include automated coupon payments in bond tokenisation, or even used for detection in AML/KYC systems.

Others

Wallet

A wallet is a digital tool/account that allows users to interact with a blockchain network. It facilitates the management of a user's cryptographic keys and addresses, enabling them to send receive and store digital assets securely

Layer 1

The main Layer 1 blockchains like Ethereum have a massive user base and multiple concurrent transactions to process per day. The transactional demand has led to a deterioration in throughput and the cost for transactions to increase substantially

Layer 2

A Layer 2 chain is a secondary chain that extends the base chain leveraging the base layer chain's decentralised security and rolls up transactions on the main chain, reducing costs and increases throughput

Side chain

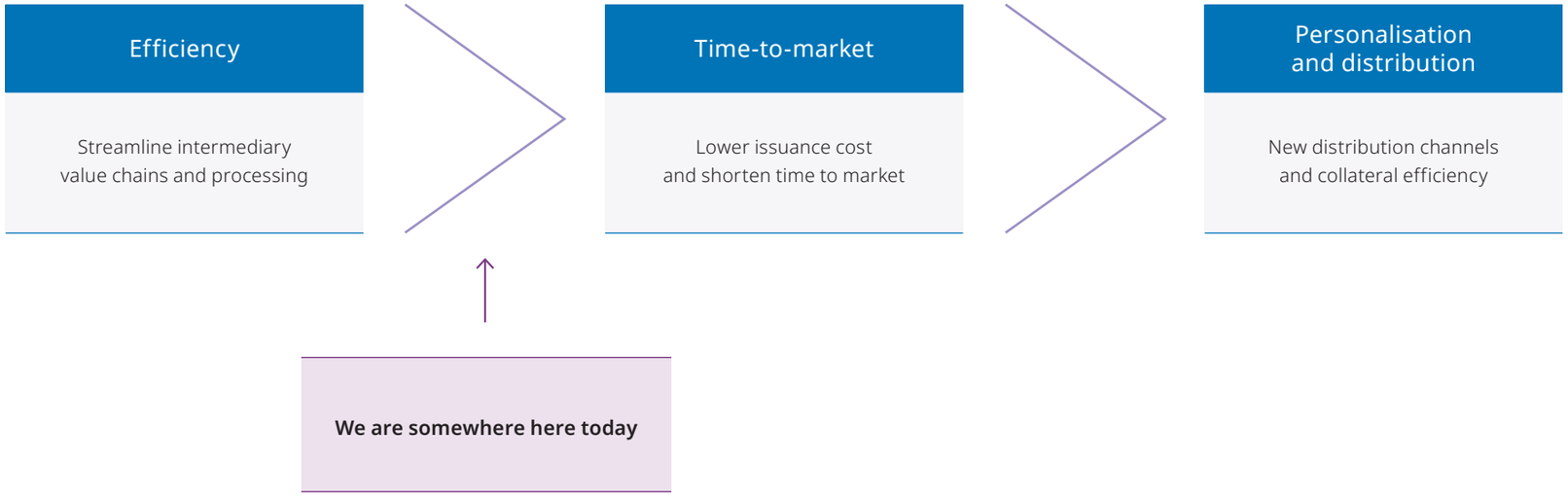
Side chains work similarly to Layer 2 chains however implement their own consensus mechanismand are connected to the main chain via a bridge

Bridge

Blockchain bridges are platforms that enable the transfer of data and assets across different chains. These are achieved through different patterns and are one of the most susceptible components in the blockchain ecosystem

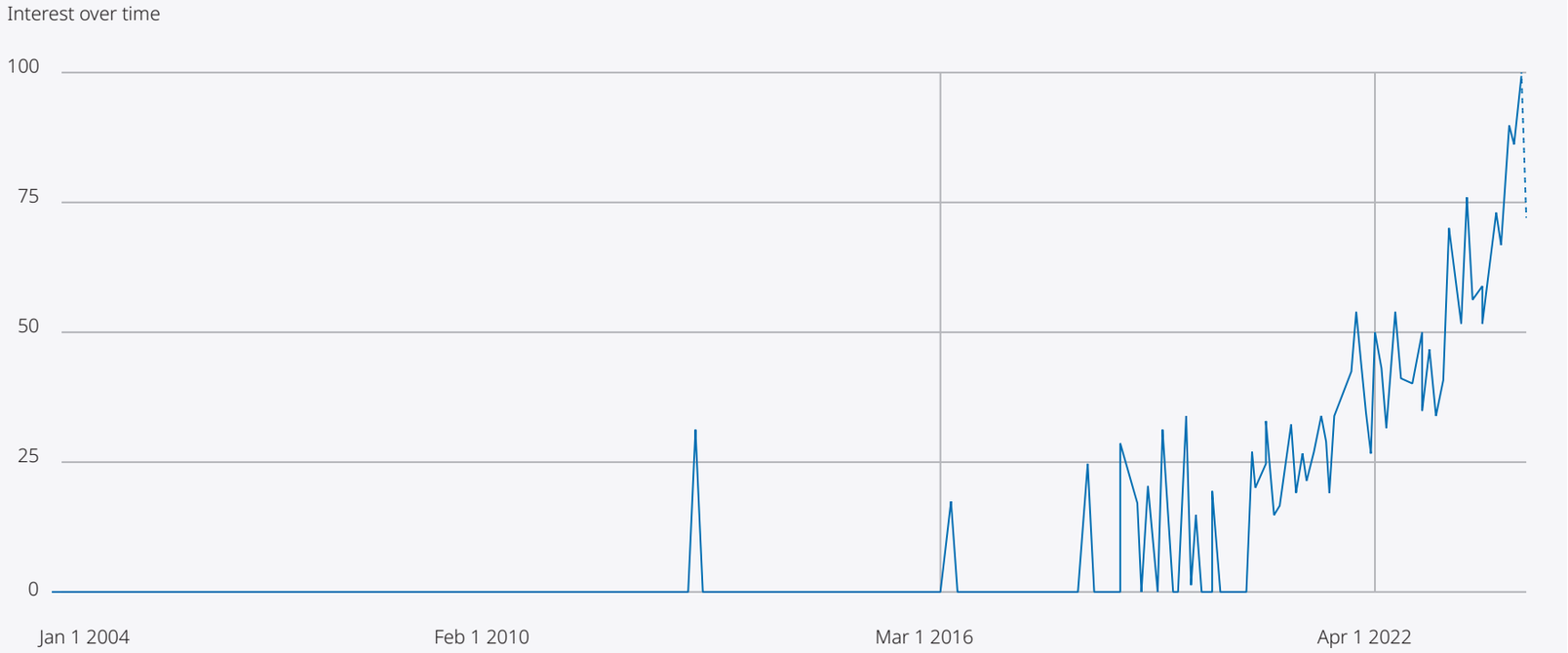
Source: Figure 4 - Slides on various tokenisation concepts prepared by Schroders.

In terms of benefits, tokenisation allows for a transition from a one-dimensional to a two-dimensional asset and **enables a model of a broader, more composable design space, for the next generation of finance**. Tokenisation's potential can largely be encapsulated in three stages, as seen in the figure below. At the moment, we have just uncovered the efficiencies of blockchain technology and tokenisation, reflecting how there is still much potential to unlock!



Source: Figure 5 - Slides on the potential of tokenisation prepared by Marketnode.

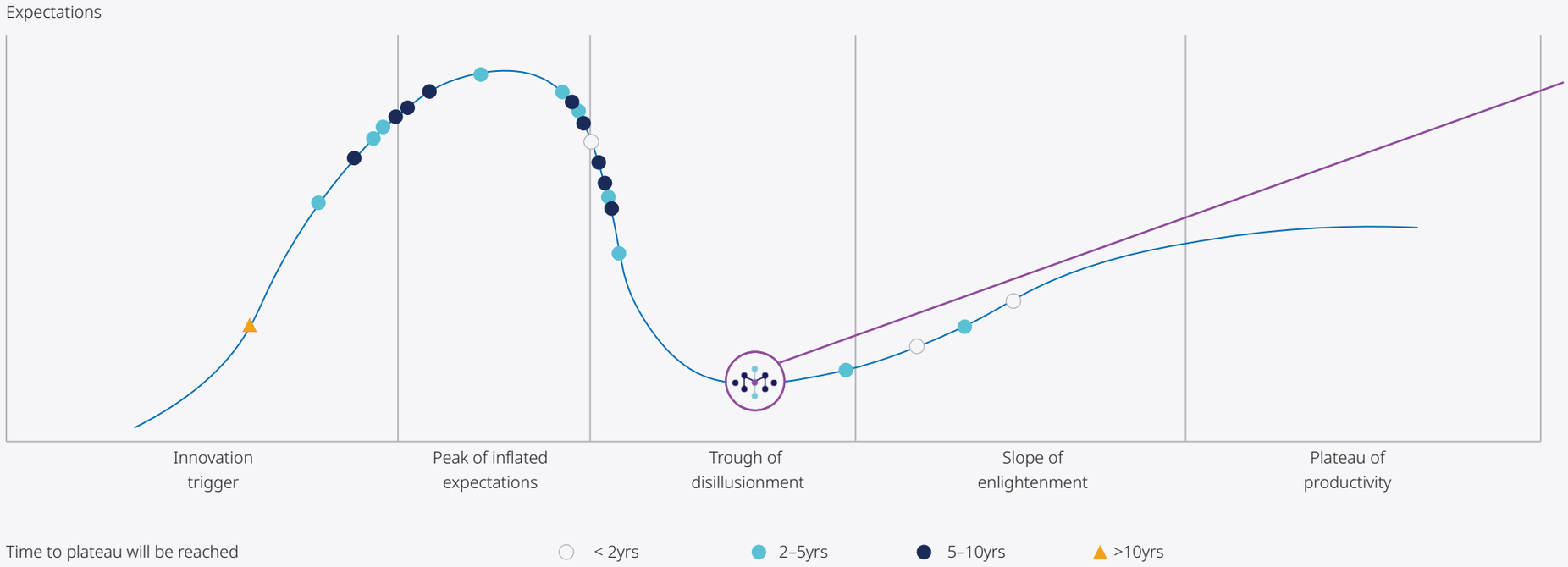
Takeaway 2:
Movement trends, and the uptake of tokenisation.
If we look at the general public's interest in "asset tokenisation", there is a generally increasing trend since 2016.



Source: Figure 6 - Google Trends retrieved by Marketnode reflecting the increasing interest in tokenisation.

Using also the Gartner Hype Cycle, Marketnode's thesis is that tokenisation is at the "Trough of Disillusionment". The key trend indicating movement towards the "Slope of Enlightenment is when the **market starts to converge on a joint operational model**. At this point, the key indicator is that stakeholders start to come together and stop running the proofs of concepts in siloes. There are promising trends in this direction, as evidenced by Project Guardian which has sought to bring together various financial institutions and regulators on a cross-border basis to explore the potentials of blockchain technology.

What this means for the financial services industry is that there needs to be, and there potentially will be, a **more harmonised effort in developing blockchain platforms and technologies, leveraging off strong industry and policy collaboration** to unlock the potentials of blockchain technologies.



Tokenisation: USD 1.6tn opportunity by 2030[1]

Source: Figure 7 - Gartner Hype Cycle for Blockchain and Web3, 2022 (2022). [1]Relevance of on-chain asset tokenization in 'crypto winter', BCG, ADDX (2022). Note: The analysis does not include crypto assets. Retrieved by Marketnode.

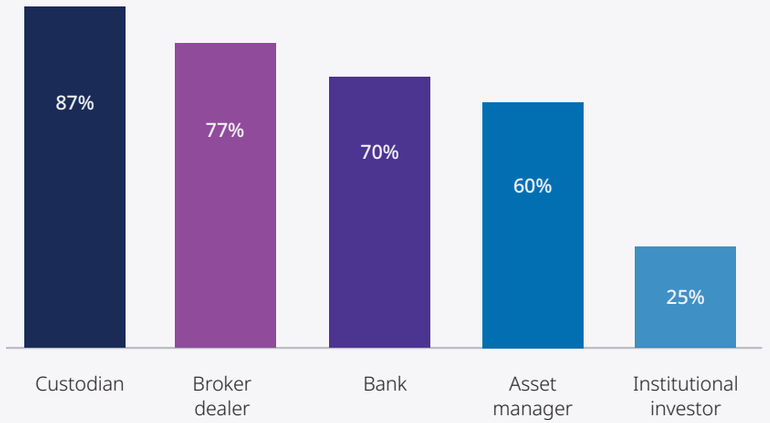
Takeaway 3:
Specific asset classes for tokenisation.
When it comes to tokenisation, there is the idea of the asset, and its wrapper. Using a recently popular product as an example – Bitcoin ETFs represent placing digital assets into a traditional financial wrapper; but this reintroduces old constraints (e.g. trading hours) to a product that does not on its own possess such constraints. This restrains the potential of tokenisation and digital assets. Hence, many players like Schroders are trying to **take traditional assets and place them in digital wrappers** – the tokenisation of traditional financial assets.

The goal is to have traditional financial assets in a digital wrapper to allow the unlocking of new, innovative products unbothered by traditional constraints like settlement time and trading hours. There may be some assets that are more amenable to tokenisation than others. This is largely based on potential for improvement as a result of tokenisation; for instance, the tokenisation of funds is a big topic for asset managers due to the potential improvements to settlement time, distribution, and number of intermediaries. For instance:

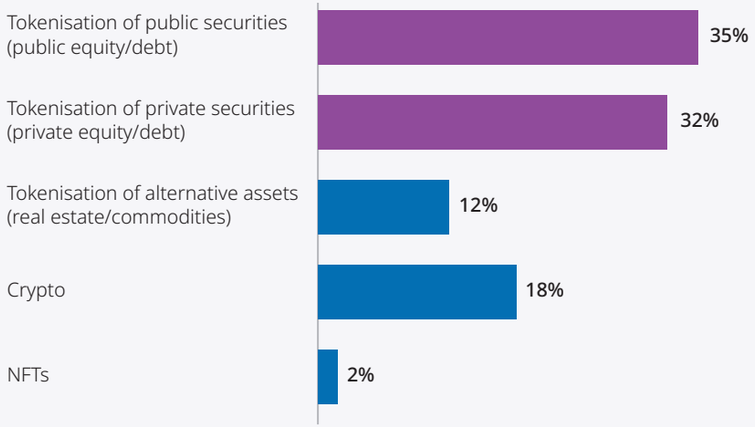
- The tokenisation of bonds makes sense because the returns are shorter term, and there are many deterministic workflows associated with bonds (such as coupon payments) that can be automated via the use of smart contracts etc., and this makes bonds more palatable for tokenisation at this stage.

- In the asset management space, asset managers such as Schroders are also trying to translate what is done in portfolio management entirely on-chain. This involves an inquiry into how asset managers can build capabilities on-chain, such as record keeping, valuation, execution, and client servicing.

Most segments report that they are engaging with digital assets



67% expect fastest growth to be in tokenisation of public/private securities



	Bonds	Loans	Funds	Structured products	Equities	Carbon markets	Trade finance securitisation
Intermediaries present	Y	Y	Y	Y	Y	TBD	Y
Settlement time	T + 2	T + 20	T + 5+	T + 10	T + 2	T + X	T + 2
Issuance frequency	High	High	Varied	High	Low	Low	Low
Enhance distribution	Low – medium	N/A	Y	N/A	N/A	N/A	N/A
Suitability for tokenisation	●	●	●	●	●	●	●

Source: Figure 8 - (Top): Citi Securities Services Evolution 2023 white paper (2023); (Bottom): Marketnode internal estimates an evaluation (2023) Retrieved by Marketnode.

Takeaway 4:
Choice of technologies.
A key question for many intending to venture into the digital assets space is the manner and mode of deployment – which type of blockchain to use, what are the risks of each etc..

How do you choose which blockchain to use...to build your token e.g. Ethereum or Solana?

Specifically for capital markets use cases, would CBDC or a bank consortium-led stablecoin initiative be easier to scale and deploy?

Fundamentally, the manner and mode of deployment needs to be **suitable for the nature, scale, and complexity of the asset manager and its tokenisation plans**. There is no "one size fits all" solution. The choice of blockchain would have to be selected **based on the features/trade-offs suitable for the specific use case**. The table sets out broadly, the overview of public and private blockchains and the considerations that would be applied / disapplied.

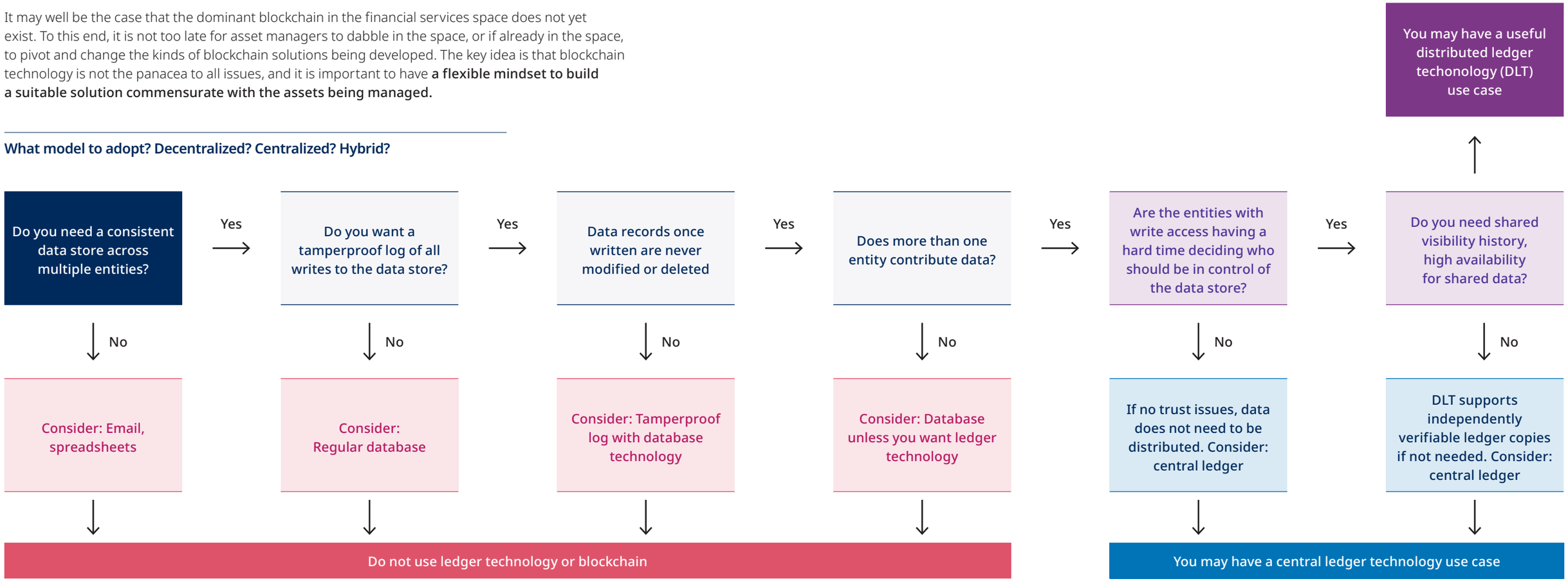
	Public blockchain	Private blockchain
Accessibility	Anyone is free to join and participate in the core activities of the blockchain network including reading, writing, adding blocks, and auditing the network's activities	Only selected and verified participants can join the network
Control	Decentralised and managed by a community of users with no single point of control. Once blocks are validated, entries can't be edited or deleted	Centralised and controlled by a single entity or organisation. The operator may have the rights to override, edit or delete entries on the blockchain
Transparency	Transparent as all transactions are visible to anyone on the network	Private as only authorised users can view the data and transactions on the network
Anonymity	Users can remain pseudonymous	The identities of the people involved in the transaction are known
Data visibility	All transactions are visible on the network	Access to the network is restricted and controlled
Security	Highly secure and resistant to attacks, due to the decentralised nature of the network and use of cryptography	Secured with cryptography

	Public (permissionless)	Private (permissioned)	Hybrid	Consortium
Advantages	– Independence – Transparency – Trust	– Access control – Performance	– Access control – Performance – Scalability	– Access control – Performance – Security
Disadvantages	– Performance – Scalability – Security	– Trust	– Transparency – Upgrading	– Transparency
Use cases	– Cryptocurrency – NFT	– Supply chain – Asset ownership	– Medical records – Real estate	– Banking – Research – Supply chain
Market interaction	– P2P – B2C – G2C/G2G	– B2B – B2C – G2G (High security)	– B2B	– B2B – G2G (High security)

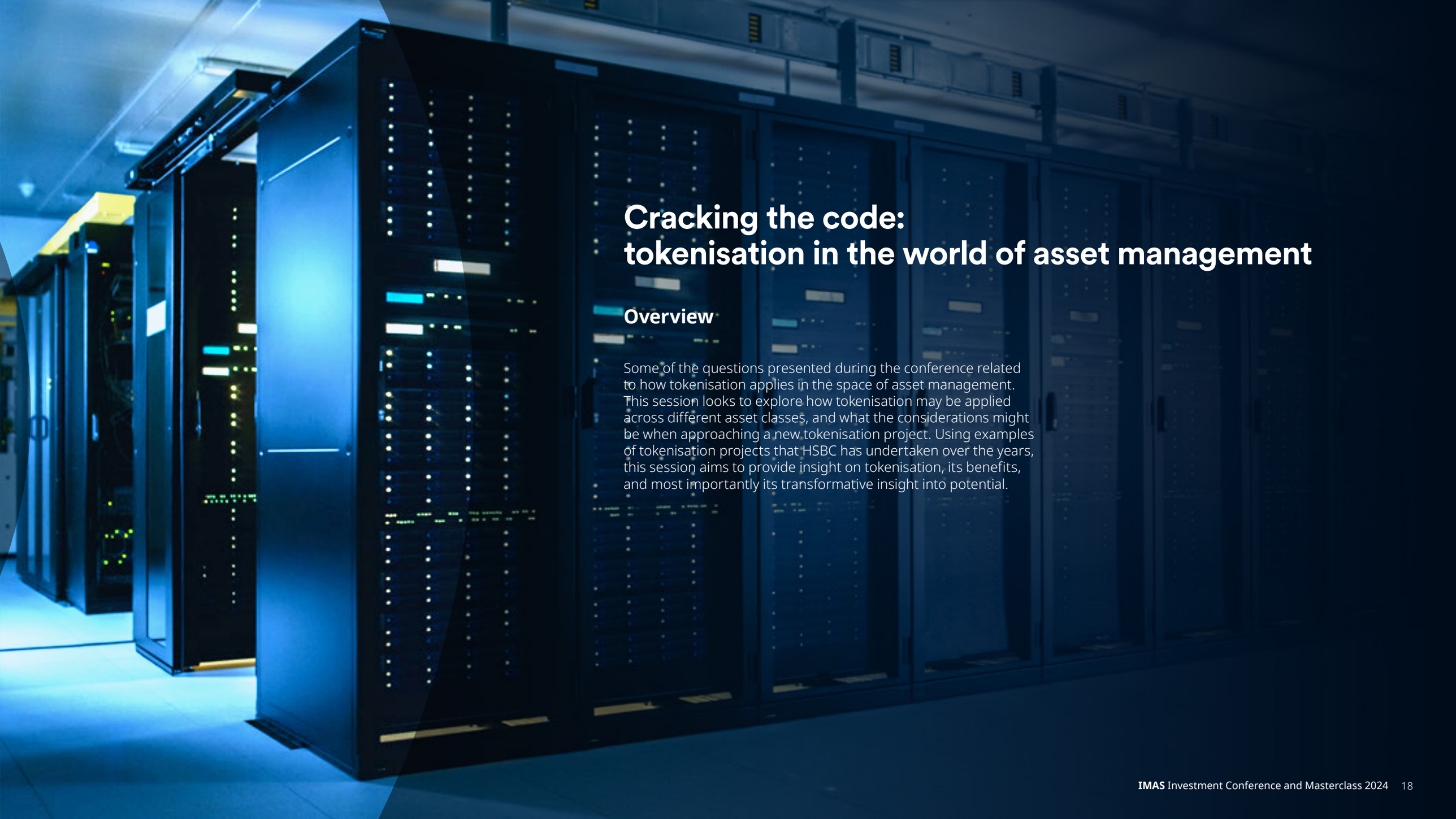
Source: Figure 9 - Excerpt of poll questions from Masterclass 2. Prepared by IMAS. Figure 10 - Key features of private and public blockchains. Retrieved by Marketnode from https://www.dock.io/post/public-vs-private-blockchains. Figure 11 - Considerations for blockchain types, retrieved by Marketnode from Blockchain for Businesses: The Ultimate Enterprise Guide (TechTarget).

It may well be the case that the dominant blockchain in the financial services space does not yet exist. To this end, it is not too late for asset managers to dabble in the space, or if already in the space, to pivot and change the kinds of blockchain solutions being developed. The key idea is that blockchain technology is not the panacea to all issues, and it is important to have **a flexible mindset to build a suitable solution commensurate with the assets being managed.**

What model to adopt? Decentralized? Centralized? Hybrid?



Source: Figure 12 - Considerations for blockchain types, retrieved by Marketnode from Goldman Sachs, 'Blockchain technology foundation for the next innovation wave' (2021).



Cracking the code: tokenisation in the world of asset management

Overview

Some of the questions presented during the conference related to how tokenisation applies in the space of asset management. This session looks to explore how tokenisation may be applied across different asset classes, and what the considerations might be when approaching a new tokenisation project. Using examples of tokenisation projects that HSBC has undertaken over the years, this session aims to provide insight on tokenisation, its benefits, and most importantly its transformative insight into potential.

Cracking the code: tokenisation in the world of asset management

Marita McGinley
Head of Digital Asset Strategy,
Schroder Investment Management (Singapore) Ltd

Rajeev Tummala
Head of Digital, Asia & MENA, HSBC Securities Services

Key Takeaways

Takeaway 1:
Asset representation over the years.
Asset representation has been changing over the last 50 years. It started with paper-based assets, which later through various technologies (relational database management systems, electronic registers etc.) became dematerialised assets. We are now moving towards digital assets. The changes today seem in line with what we have seen before – where the back-end functionalities improved to allow for more front-end benefits.

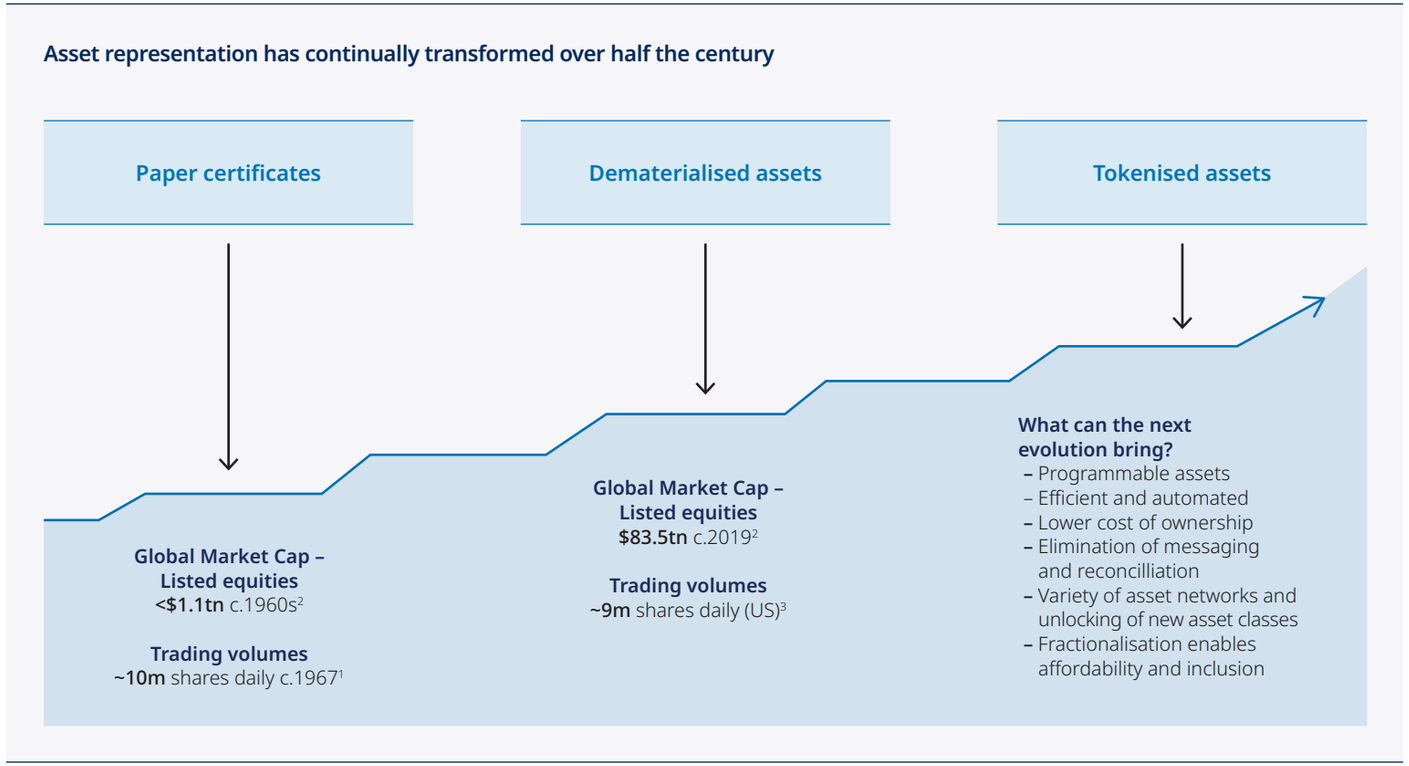
Yet, tokenisation goes beyond that. It does not simply maintain registers of ownership or lower prices. It also **manages the life cycle of digital assets as seamlessly as possible**. There is often value leakage across the value chain as every party is trying to convert information that they understand into one that their system understands – the hand/takeover of information is inefficient. Tokenisation therefore brings a **common data model which every participant across the value chain can adhere to**, allowing for a lower cost of ownership and doing away with the inefficiencies of having to convert existing data.

One point to note is how this evolution is in line with some macro-trends:

1. Most individual investors are used to getting what they want, and when they want. People want intangible goods much faster, and in smaller sizes.

2. The world is moving towards larger quanta of funds, rather than just large funds (and potentially smaller funds). A way this can be done is by having customised, personalised funds. Rather than high value, low volume, we are moving to high volume, low value.

To this end, if asset managers are to stay in line with these trends, the backbone of the industry infrastructure needs to change and become more scalable. Tokenisation is the envisaged solution.



Source: Figure 13 - Prepared and analysed by HSBC, citing the following sources. [1]https://www.dtcc.com/~/media/Files/PDFs/DTCC-Dematerialization-Whitepaper-092020.pdf.
[2]https://data.worldbank.org/indicator/CM.MKT.LCAP.CD?end=2020&start=1975. [3]https://www.cboe.com/us/equities/market_share/

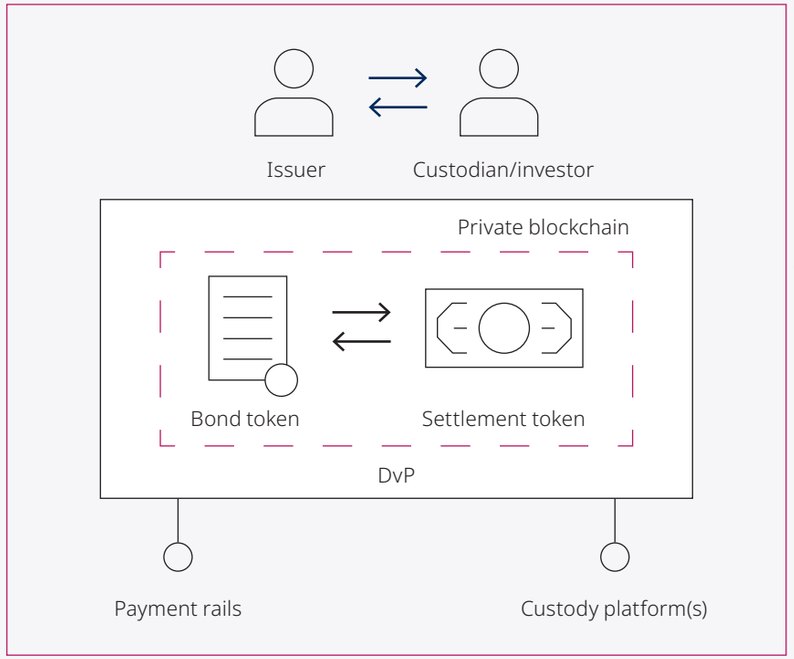
Takeaway 2:
HSBC's tokenisation journey.
As a starting point, there is an acknowledgement that the current infrastructure is well-run, but it is slow compared to the new systems and macro-trends and preferences. A reason for this is precisely because it is well-run. There is a need to ensure that there is risk management and controls to make sure nothing breaks and no mistakes are made; but at the same time, we are also taking steps to ensure that progress is being made to improve our infrastructure.
Part of those steps are:

1. HSBC Orion, HSBC's strategic platform for asset tokenisation designed to operate with both private and public blockchains.

What is HSBC Orion

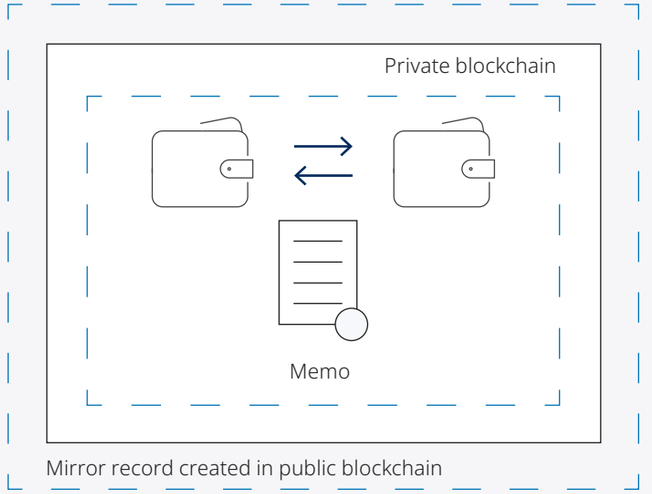
- HSBC's strategic platform for asset tokenisation
- HSBC Orion is initially operated out of Luxembourg, but will be extended to other global locations
- Entirely developed, owned and controlled by HSBC
- A secure, private, permissioned blockchain acting as the legal register and an additional public blockchain acting as a memorandum of holdings
- A tokenised bond issued by the European Investment Bank was launched on HSBC Orion in Jan 2023
- The HKSAR Government issued 4 digital green bonds using HSBC Orion in Feb 2024

A secure HSBC environment



- Fiat cash is transferred using a settlement token connected to payment rails
- Manages issuance, coupon payment, trading and redemption
- The private blockchain is the legal resigter
- Access to the environment is controlled by HSBC

Connected to a public blockchain



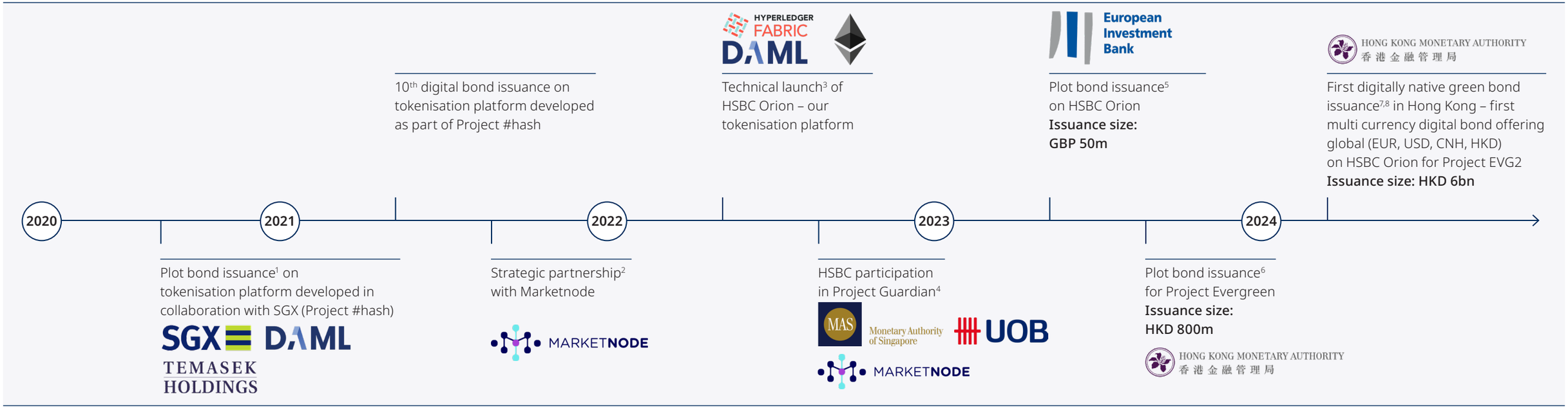
- Memorandum of holdings
- Not the legal register of holdings
- Anonymous

Key features

- Primary issuance
- HSBC's on-chain payments solution
- Asset servicing
- Payment infrastructure connectivity
- Secondary market settlement
- (Optional) Public blockchain connectivity

Source: Figure 14 - Overview of HSBC Orion, prepared by HSBC.

2. A series of HSBC tokenisation and issuance projects



Issuance	Platform	Type of network	Custody and asset servicing	Distribution
EIB Digital bond	HSBC Orion	Private permissioned and public blockchain	Direct participants on HSBC Orion e.g. HSBC, RBC, BNPP	HSBC Orion, secondary market
HKMA Green bond EVG1	Goldman Sachs DAP	Private permissioned blockchain	HSBC and other platform participants	GS DAP
HSBC Structure note (as part of Project Guardian)	Polygon	Public blockchain	Digital exchanges e.g ADDX, HSBC Digital, Assets Custody (future)	UOB, WPB (future), other wealth managers
HKMA Green bond EVG2	HSBC Orion	Private permissioned blockchain	Direct participants on HSBC Orion e.g. HSBC, BOC, ICBC, CACIB	HSBC Orion, CMUP, (exisiting CSD),Euroclear/Clearstream

Source: Figure 15 - Prepared by HSBC, citing the following sources [1]https://www.sgxgroup.com/media-centre/20200901-sgx-collaboration-hsbc-and-temasek-completes-pilot-digital-bond-olam. [2]https://www.about.hsbc.com.sg/news-and-media/hsbc-partners-with-sgx-andtemasek-digital-asset-venture-marketnode. [3]https://www.gbm.hsbc.com/-/media/media/gbm-global/gbm-refresh/gbm/about-gbm/media-releases/announcing-hsbc-orion.pdf. [4]https://www.about.hsbc.com.sg/news-and-media/hsbc-marketnode-uob-partner-on-fully-digital-issuance-of-wealth-products. [5]https://www.about.hsbc.com.sg/news-and-media/hsbc-marketnode-uobpartner-on-fully-digital-issuance-of-wealth-products. [6]https://www.eib.org/en/press/all/2023-030-eib-issues-its-first-ever-digital-bond-in-british-pounds. [7]https://www.hkma.gov.hk/eng/news-and-media/pressreleases/2023/02/20230216-3/. [8]https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/02/20240207-6/.

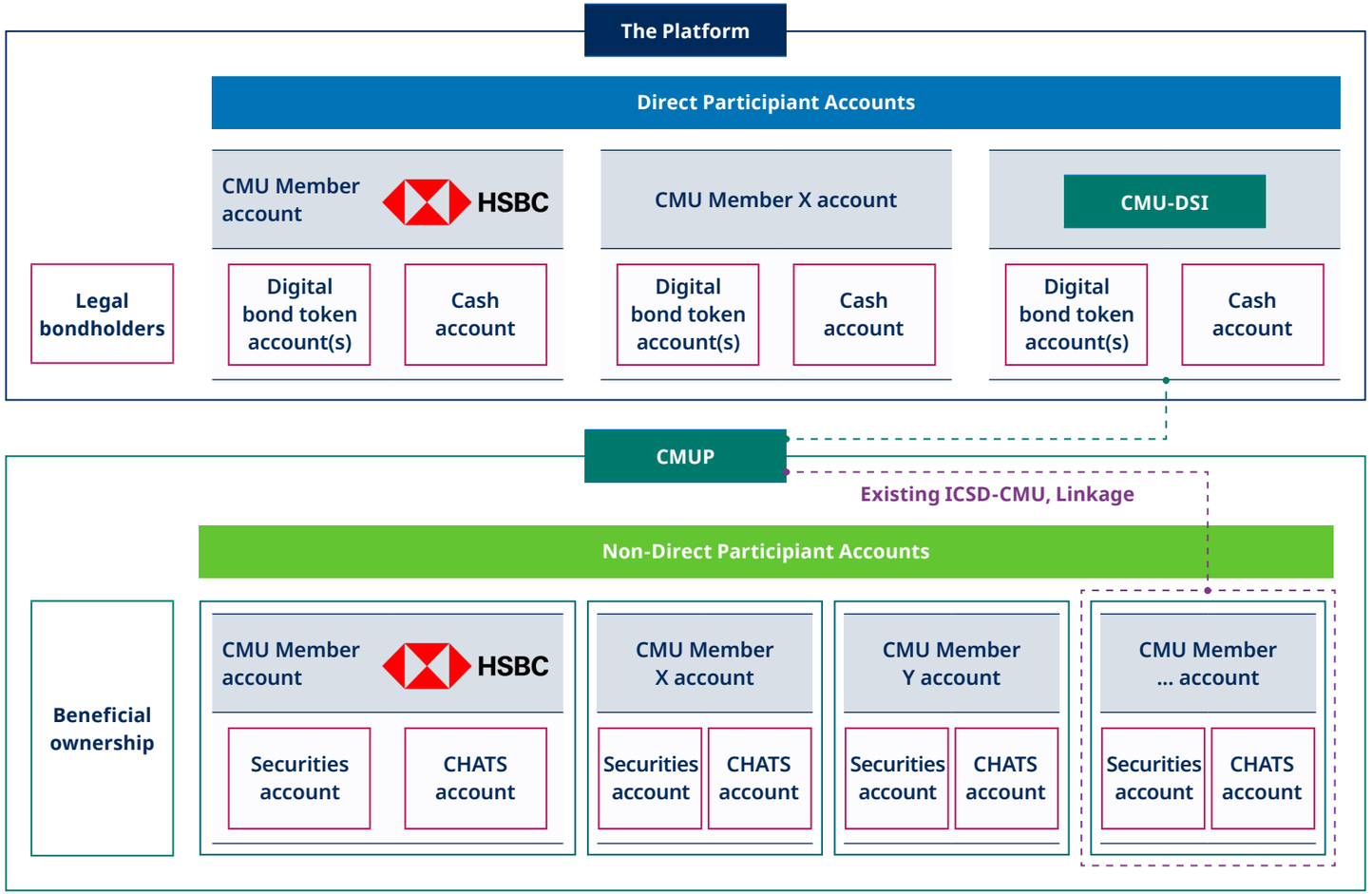
Takeaway 3:
Significance of Evergreen 2.
The projects undertaken primarily explored bond issuances, and culminated in Evergreen 2, which used HSBC Orion for the issuance and settlement of HKSAR Government Digital Green Bonds. This was a project that involved various stakeholders such as financial institutions, legal advisers, and the Hong Kong Monetary Authority.

For the digital assets space, Evergreen 2 marked the following:

1. First multi-currency digital bond issuance in EUR, HKD, CNH, and USD globally.
2. First digitally native bond issuance in Hong Kong.
3. First time anywhere that linkages to International Central Securities Depositories (Euroclear/Clearstream) have been used by a bank-based platform for a digital bond issuance.
4. First digital bond that is widely distributed – to more than 50 investors including asset managers, banks, insurance companies, private banks, and other non-financial institutions.

Evergreen 2 therefore is the proof of concept for the potentials of blockchain technology and tokenisation in bond issuances and how it can be mainstreamed in the traditional financial space allowing for various benefits, most notably broadening investor participation, streamlining issuance processes, removing intermediaries, incorporating standardisation elements, and integrating other regulatory elements with digital assets platforms (in this case green bond disclosures).

More importantly, it also reflects how concerted efforts in development and innovation between various stakeholders in a collaborative way can aid in actualising the potential of blockchain technology and tokenisation.



Source: Figure 16 - Diagrammatical representation of Evergreen 2's linkages and components, retrieved by HSBC from Hong Kong Monetary Authority - HKSAR Government's Digital Green Bonds Offering (hkma.gov.hk).

Takeaway 4:
Bond issuances, and further use cases.
There might be a question at this point – why tokenise bonds? When faced with a new tokenisation project, there has to be an asset class picked, and bonds being one of the least electronic-friendly asset classes, it would allow for the greatest improvements viz the issuance and settlement infrastructures based on blockchain technology and allow generally for a more efficient lifecycle management. For instance, smart contracts enable programmable features to facilitate or automate processes relating to the bonds; cryptographic encryption provides added security; there can be greater transparency with auditable transaction log.

That said, there is a need to explore further use cases beyond bonds. For certain use cases, the focus may not be on lifecycle management, but simply taking existing assets' end points and turning them into tokens. Such use cases will not involve the issuance of the underlying assets or lifecycle management, but will simply allow people to have greater accessibility via tokenisation of the end product. This stays in line with the trend that people want to get their hands on assets in shorter periods of time, and whenever they want it. Certain such use cases might be exchange-traded funds, money market funds, or structured note products.

Issuance	Distribution	Life management/ Asset servicing
– Costs reduced in data management, reconcilliation, settlement, administration – Reduction in time-to market to issue	– Efficiency improved – speeding up processes by permitting transactions without need for one or more trusted intermediaries – Reduce the costs and effort to distribute products – To lower minimum investment amount leading to wider access to investors	– Elimination of multiple intermediaries – Eliminaiton of manual processing – Automated reconciliation

Relevant to issuers:

- Operational efficiency leads to quicker settlement
- Potential mirror public blockchain leads to greater transparency can provide valuable holding information to issuers when they consider liability managment exercises
- Digital asset platform can be a step towards disintermediation:
  - Potential cost reduction
  - Reduced effort for issuers as issuers will need to face less intermediaries
- More features will be unlocked as early adopters continue to lead the development of the industry, and the technology continue to advance leading to more possibilites

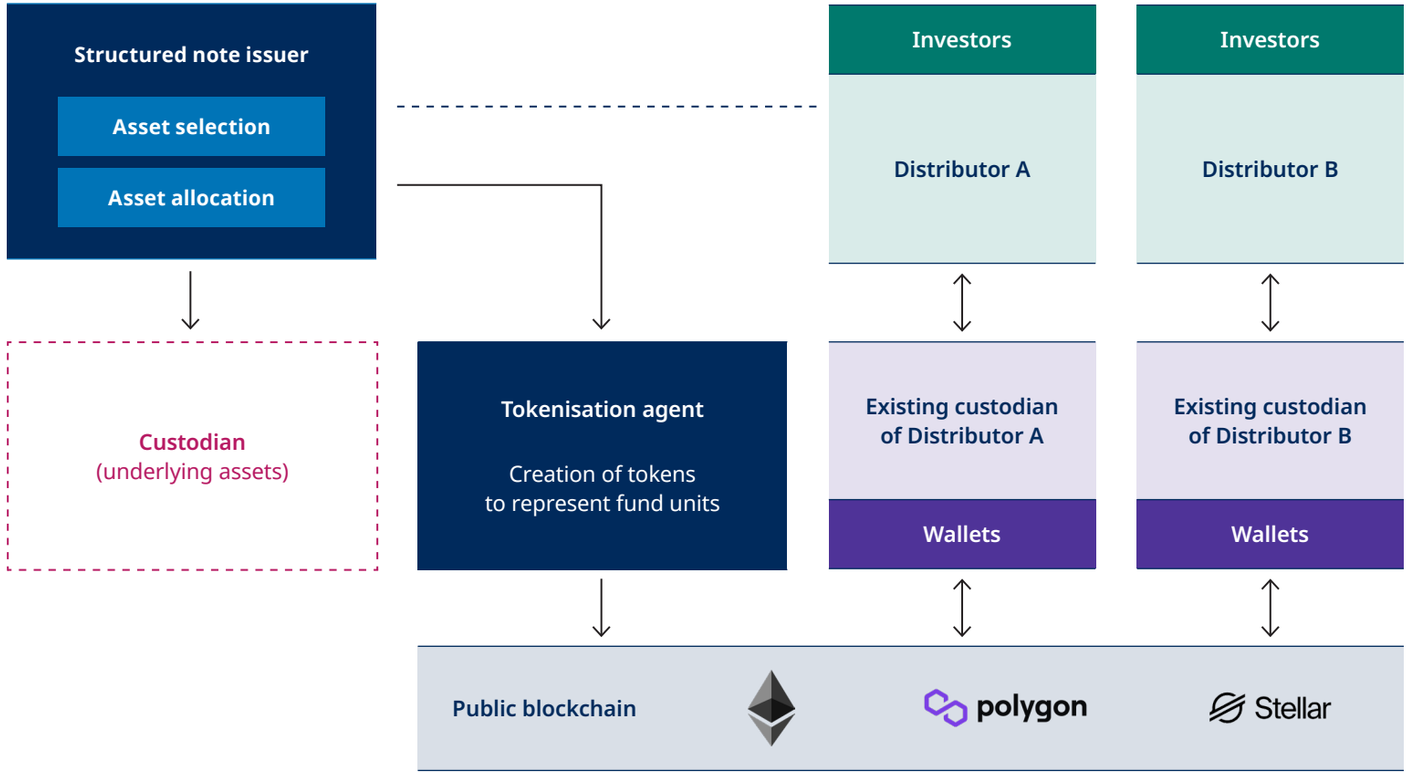
Relevant to investors:

- Investor will generally welcome quicker settlement (primary and secondary)
- Digital asset platform represents a modernisation of the traditional bond infrastrucutre and such digital bond issuances will likely increase. Investors will benefit from preparing in advance for this (front loading the preparation work when the market is still developing):
  - Investors such as Fidelity has embraced distributed ledger technology and have begun to invest in tokenised bond to drive the tokenised bond adoption
  - A digital asset platform that is immutable and tamper-resisitant better protects the property rights of investors

Source: Figures 17 (Top) and 18 (Bottom) - Benefits of bond tokenisation, prepared by HSBC.

Use case: Structured note tokens

Public blockchain compatible tokens

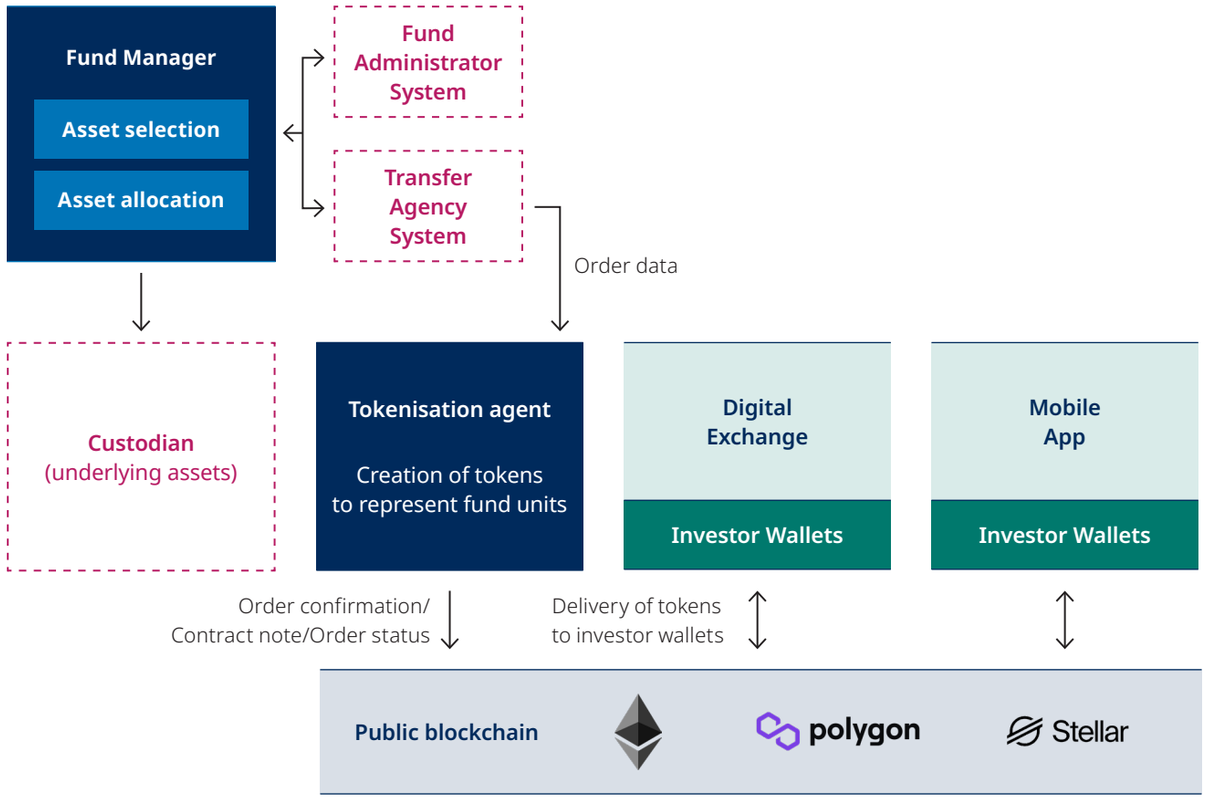


Source: Figure 19 - Diagrammatical representations of further use cases, prepared by HSBC.

In terms of regulation, existing regulation is sufficiently clear that the relevant market players need to come together to consolidate the principles and deploy it on a digital infrastructure. While there may be differences in traditional and digital financial infrastructures, there is no need for a new set of laws, only a clarification of discrete points. Opportunities for such clarifications will definitely come up in the future.

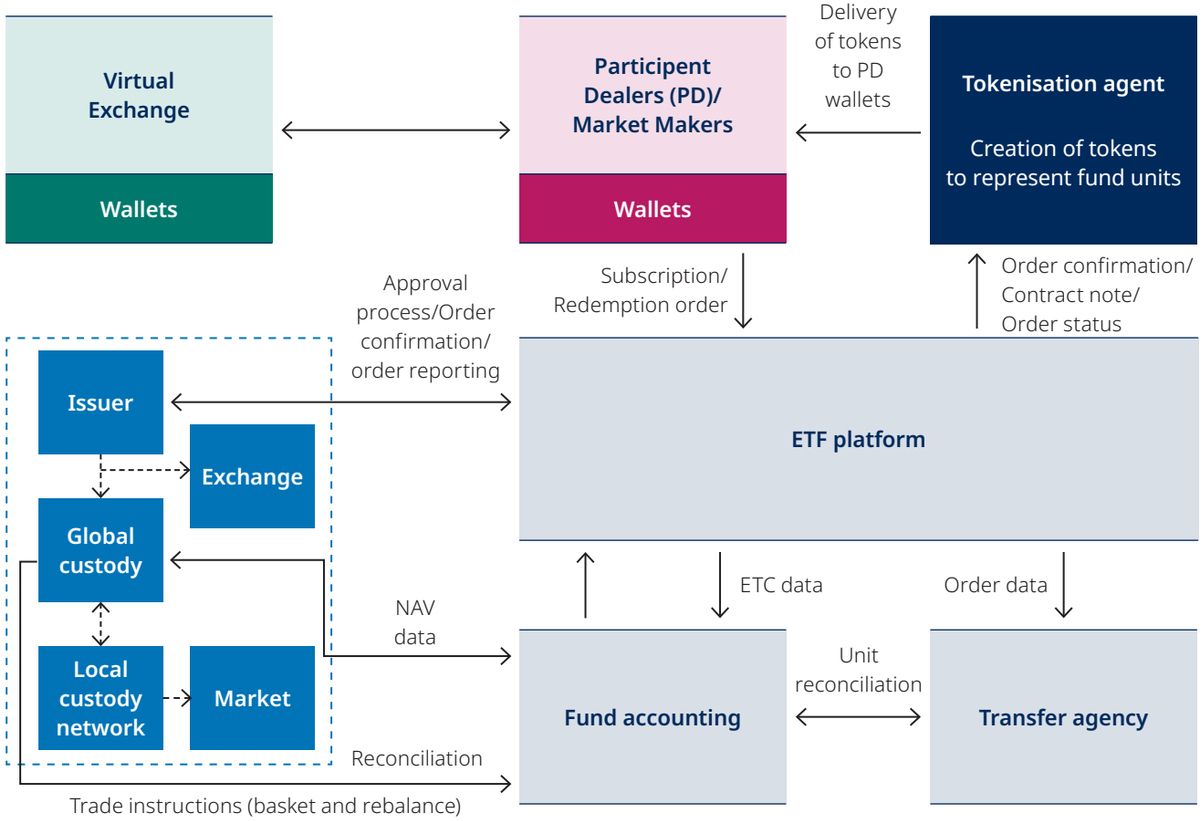
Use case: MMF tokens

Public blockchain compatible tokens



Use case: ETF tokens

Public blockchain compatible tokens



Source: Figures 20 (Left) and 21 (Right) - Diagrammatical representations of further use cases, prepared by HSBC.

Navigating the global regulatory trends and developments in digital assets

Overview

Across all discussions of blockchain technologies and tokenisation, a recurring point is how regulations play a part in fostering the right environment for unlocking their potential. As might have been gleaned from the previous sections, the point to take home is that existing regulations provide fundamental principles and stable starting points to develop blockchain and tokenisation in the traditional financial spaces, such as for asset management; but what exactly does that entail and what are the actionable points?

In the last few years, we have had a chance to work with financial institutions to look at how to actualise the potential of tokenisation and use of digital assets. Universally, there is no standardised set of laws you can refer to for digital assets and tokenisation, and there is no one-size fits all approach, but there are some questions you can ask yourselves when navigating the regulatory and legal issues using the acronym SMART, as will be broken down and explained in 5 key takeaway points.

Navigating the global regulatory trends and developments in digital assets

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Digital assets

S	M	A	R	T
Smart technologies. – Usage of blockchain (e.g. public vs. private) – MLETR	**Marketing** – Jurisdictions involved – Type of investors	**Assets** – What does a payment token represent? – Underlying assets – Payment mechanisms	**Risks and Regulations** – Evolving and differing regulatory approaches – Technology and data risks	**Transactions** – Smart contracts – Issues beyond the code

Key Takeaways

Takeaway 1:
S: Smart technologies.
When approaching a new tokenisation project (or even reviewing an existing one) the first question to ask is what exactly is the technology being used. For instance:

1. **What technologies are you utilising in the digital asset / tokenisation project?**
2. **What are the legal issues based on the technology being utilised?**
3. **What does your technology do, and will it allow you to fall within the ambit of the legal definitions in your jurisdiction / other jurisdictions?**

Using blockchain technology as an example in such an application:

- If you are using blockchain technology in your tokenisation project, one legal point to consider is the Model Law on Electronic Transferable Records. Fundamentally, a blockchain is a ledger – a record of certain transactions. Legal issues that one might consider are: is it a legal record? Will it be recognised if used in court?
- It is important to look at the structure and function of your blockchain. Taking a private blockchain for example – it may allow the person who is running the network to change the records (i.e. not immutable), and this would raise questions about reliability in assessing the legal status of the ledger.
- In this regard, the Electronic Transactions Act 2010 used to only recognise electronic records, but since 2011, it also recognises electronic transferable records and instruments (such as promissory notes). This represented an effort to follow the Model Law on Electronic Transferable Records, in the hopes that globally there will be a convergence to follow the same, and ultimately set up a degree of cross-border recognition.
- In terms of identifying trends, the trajectory here appears to be the creation of the right conditions to facilitate ours and our counterparts' digital economies. In this regard, we understand that G7 countries are now looking at adopting this. To the end that our counterparties also adopt these, we can also spur third parties to adopt the same.

Taking a step back from the example, the key takeaway is to map out discretely the **technologies utilised**, **corresponding legal issues** and what **regulatory trends** might be relevant to consider.

Source: Figure 22 - Summary of the SMART approach, prepared by Baker McKenzie.Wong & Leow.

Takeaway 2:
M: Market and Marketing.
The next questions to ask are in relation to which markets you intend to launch the project, to whom you will be marketing, and what activities will be carried out. As alluded to in other sessions, there is no harmonised approach to assess these regulations, and this most likely will not be developed anytime soon to a point where a single approach will be acceptable across all, or even most, jurisdictions. Hence, there will likely be regulatory issues triggered, and there is a need to undertake various analyses. Some questions to ask are:

1. **Where you have a tokenised asset, who are you going to offer it to? Is it going to be purely institutional clients, high-net-worth clients, or even the retail public?**
2. **Where are these persons located? Will the offerings and marketing be done on a local, or cross-border basis?**
3. **In the market, how will the regulators view the technology being utilised, and the digital assets being offered?**

As an example, if the tokenised assets are intended to be offered overseas, a couple of things commonly considered in our experience are:

- There is room to check if you can service persons from another jurisdiction as long as you are not there on the ground, such as on a reverse solicitation basis; or use a local distributor or partner that is adequately licensed to market.
- If there are prospectus or registration requirements, you could consider whether there are exemptions for certain investors, such as sophisticated investors or institutional investors.
- There may be specific digital assets laws that catch all kinds of digital assets, or depending on the characteristics of the tokenised assets, it could also be caught under security regulations – both may have differences in rules and regulations.

To this end, it would be helpful to have a partner or consultant who has **deep expertise and a strong relationship with regulators** to help figure out the current approach, and whether there will be changes to the regulations as well.

Takeaway 3:
A: Assets.
Hinted at M above, the characteristics of and rights attached to the digital asset play an important role in understanding what regulatory requirements apply.

1. **What asset does the token represent? How is it looked at and characterised from a legal perspective?**
2. **What are the underlying payment mechanisms (e.g. delivery versus payment, real-time atomic settlements)? How would these payment mechanisms work together with your token?**

A digital token could represent various asset classes – bonds, funds, and bank liabilities to name a few – or it could be a natively issued asset. **The "asset" question requires you to know how the regulators look at the digital token based on the technology itself and the underlying structure of the tokens or even the asset it represents**. The key idea is to understand the same token from the lenses and perception of the various jurisdictions.

From a payments perspective, the payment mechanisms may also trigger local regulations. For instance, in many jurisdictions, e-money and digital currencies are regulated too, and the question then is whether the payment mechanisms associated with your digital assets would trigger these payments regulations in a certain jurisdiction, and whether it would do the same in another jurisdiction.

To this end, it is **helpful to keep in mind the existing rules and regulations surrounding traditional financial assets**. Let's say that you intend to offer tokenised funds on a cross-border basis – the starting point will be the usual rules as the principles will still apply, just that there may be an overlay with regard to the digital element.

Takeaway 4:
R: Risks and Regulations.
Risks and regulations is an important area as blockchain technology and tokenisation have introduced novel risks and regulatory concerns to the fray, which are also constantly changing as new benefits are uncovered and potential is unlocked. Hence it is important to ask:

1. **What are the various risks that need to be addressed? Examples that can be considered are: cross-border risks, technology risks, and also data risks.**

Laws are constantly changing to address new products and services and ways of distribution – this can be seen through Project Guardian where various stakeholders are brought together for the MAS to assess whether regulatory changes need to be made. If you had begun a digital assets project a year ago, you might be due for a regulatory review for changes to the relevant laws and regulations.

Takeaway 5:
T: Transactions.
Blockchain technology is generally safe and reliable – but there is still a risk, as seen from the hacks of digital asset wallets and exchanges. There is a need to assess how these risks can be addressed based on the technologies used and transactions carried out. Based on our experience, these might be the questions to raise:

1. **What is the transaction about?**
2. **Does it involve smart contracts? If so, what are the considerations beyond just the codes?**

Using smart contracts as an example: if you are utilising smart contracts for the automation of certain deterministic functions, it is necessary to consider how the courts have viewed it.

- There is no such thing as a simple contract – there is a whole set of written and common laws that govern contracts. The same applies to smart contracts.
- As it pertains to smart contracts, in recent years, we have seen the courts focus on the mistakes surrounding smart contracts. The question is whether a mistake should be recognised, and therefore the transaction undertaken should be unwound and made voidable.
- It would then be necessary to consider if this affects the viability of deploying smart contracts in your ecosystem and the purposes for which it is utilised, especially if the transactions could trigger such points of law.
- In this space, there are also trends to look at for case law, the main one here being that a common law doctrine of the law of mistake is being applied onto smart contracts. One thing that can be gleaned by the application of a common law concept to the digital assets space, is that it reflects the regard to be had to the fundamental regulatory framework people are already used to.

These are issues that asset managers should keep in mind and account for in their approaches for their projects.

As might already have been gleaned from the SMART approach above, the regulatory takeaway is that the **fundamental frameworks still apply**, and one just has to apply it alongside the necessary overlays. Generally, the tokenisation and digital asset projects that asset managers and other financial institutions are pursuing can in fact be done – it is just a matter of looking into the relevant frameworks and executing the projects within applicable legal boundaries. **To this end, legal partnerships and cooperation are crucial.**