



Tokenisation: Threat or Opportunity for CSDs

Americas' Central Securities Depositories Association

ACSDA

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What is Tokenisation

Blockchain – Distributed Ledger Technology – guarantees that once you buy tokens representing an asset, no single authority can erase or change your ownership – your ownership of that asset remains entirely immutable.

Tokenisation

Tokens can be classified in various ways. For simplicity, we settled on the four below:

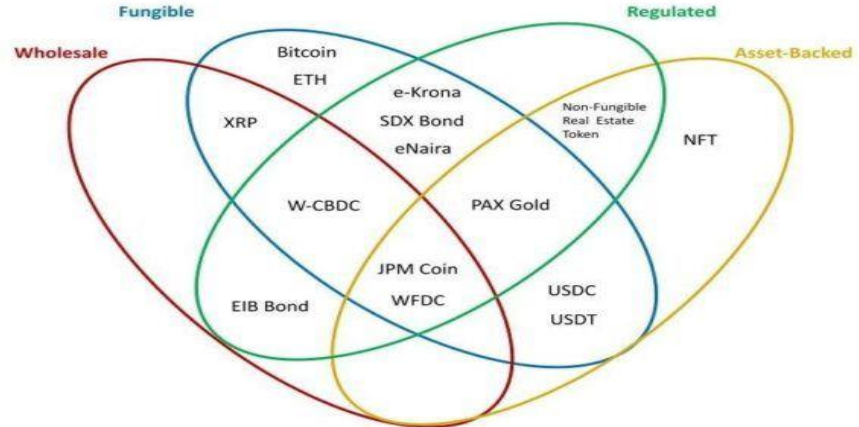
• **Wholesale vs retail:** *Is the token used mainly for wholesale or retail transactions?*

• **Fungible vs non-fungible:** *Can the token be substituted 1:1 for another one of its type?*

• **Regulated vs non-regulated:** *Is the issuer registered or associated with a domestic authority?*

• **Asset-backed vs non-asset-backed:** *Is the token redeemable for its underlying asset outside the DLT network?*

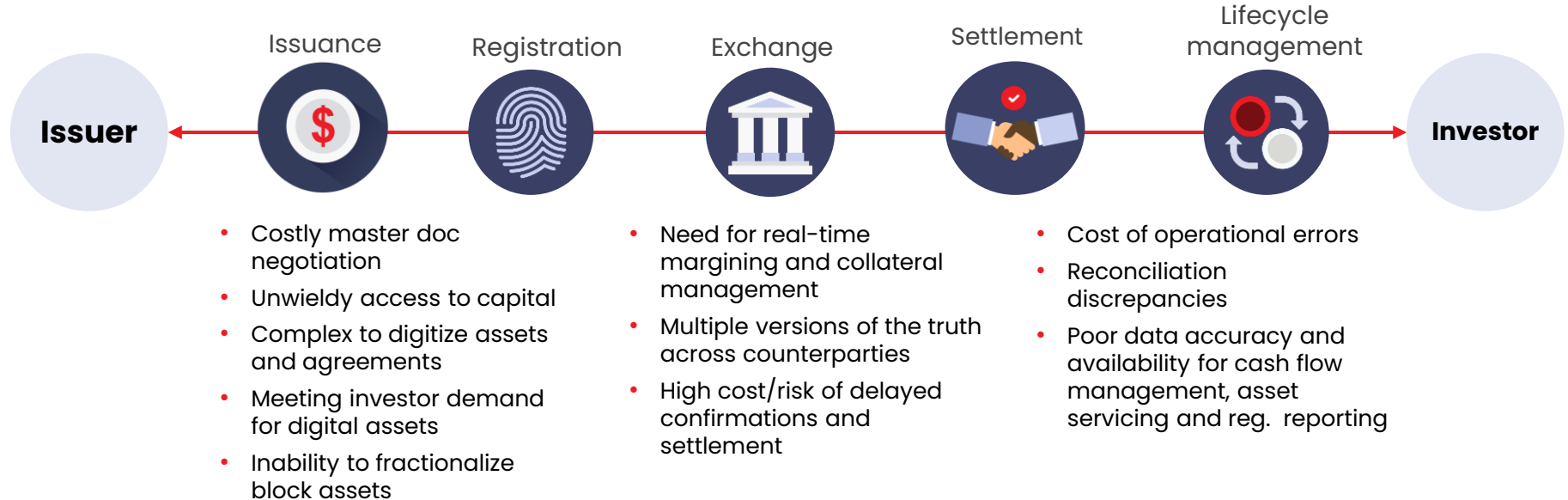
Asset tokenization is the process by which an issuer creates digital tokens on a distributed ledger or blockchain, which represent either digital or physical assets.



Source: R3, "Tokens: not just for the subway anymore"

Why is Tokenisation important

Process automation has focused on internal processes but not cross-firm processes where information, money or securities need to be exchanged between firms.



Opportunity: Expand services across the lifecycle, deliver new market utilities and explore new asset classes

DLT Adoption Is Driving Innovation Across the Asset Lifecycle

Pre-Trade

- Transparency and verification of holdings
- Reduced credit exposures
- Simpler KYC via look-through to holdings

Post-Trade

- No central clearing for real-time cash transactions
- Reduced margin / collateral requirements
- Fungible use of assets on blockchains as collateral
- Auto-execution of smart contracts

Trade

- Secure, real-time transaction matching
- Immediate irrevocable settlement
- Automatic reporting and more transparent supervision for market authorities

Custody & Servicing

- Primary issuance directly onto a blockchain
- Richer central datasets with flat accounting hierarchies
- Fund subscriptions / redemptions processed automatically on the blockchain
- Simplification of fund servicing and administration

Threat to CSDs

Central Securities Depositories can perceive DLT / Blockchain as a potential threat in several areas of the assets lifecycle. Specifically, around:

Issuance

Issuers could potentially issue tokenised securities on the blockchain / Distributed Ledger which could remove the need for a central depository.

Conclusion: not entirely as the Ledger chosen needs to have the credibility and trust of a CSD

Settlement

Settlement processes can be disintermediated by DLT technology.

Conclusion: The settlement process can be accelerated by using DLT technology. Nonetheless, parties still need to trust who governs the network to transfer / settle the assets.

Safe keeping

Safe keeping / Custody could lose importance as some participants can self custody their digital assets in their wallets.

Conclusion: Whilst participants can self custody, there are some security and trust that is better ensured by a Central, regulated party in a permissioned, private network.

What's missing for wider adoption

Regulation has been seen as a blocker for wider adoption of DLT amongst CSDs and other market participants. The lack of standards on how to treat these digital assets from accounting, prudential, legal and operational perspectives has also been described as a blocker.

Regulation

Regulation now becoming an enabler in many jurisdictions, with Sandboxes and Pilot Regimes.

Market participants are now being encouraged to experiment this technology, as it can remove or reduce some systemic risks.

Standards

Standards are being actively developed by market participants. Regulators and Industry bodies are collaborating to develop standards that can be widely adopted and recognised.

These are key to achieve interoperability between networks.

Opportunity for CSDs

CSDs can continue to offer their most valued service to their respective networks: **Trust**. The technology allows for CSDs to remain central providers of trust in their decentralised network of many participants.

Risk Reduction

The securities lifecycle management can be managed effectively at lower risk. For example, settlement acceleration or reconciliation removal can reduce capital at risk and / or remove or reduce operational errors.

Cost Reduction

DLT and Blockchain is a technology that can help reducing costs significantly, by removing steps in manual processes such as reconciliation or governance, mutualising efforts and corda can minimising the energy consumption footprint also.

Revenue Opportunity

By bringing some existing processes into DLT, traditional CSDs businesses can expand to new asset classes (native digital) and / or move across the value chain to provide more value to the network of participants.



Real life examples

R3 DLT adoption



SIX Digital Exchange (SDX)

CHALLENGE

- Most exchanges lack capacity to build their own digital asset exchange platform
- There is a financial risk of uncertainty, low trust and high transaction costs
- Building your own exchange brings complexity of regulation, oversight and documentary requirements

SOLUTION

- SDX is a fully integrated issuance, trading, settlement and custody infrastructure for digital assets, regulated by FINMA
- With Corda Enterprise, SDX integrates digital asset trading, settlement and custody on a secure, simple and instantaneous infrastructure
- Corda enables SDX to facilitate trades on public marketplaces and conduct private transactions peer-to-peer between users

RESULTS



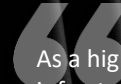
Riskless trading and atomic settlement



Reduced cost of collateral requirements, asset servicing, and data



FINMA regulated out of the box



As a highly regulated and trusted financial market infrastructure provider, SDX must operate at the highest levels of security and stability. Corda has been designed specifically to satisfy these requirements.

SVEN ROTH, CHIEF DIGITAL OFFICER, SIX DIGITAL EXCHANGE



Learn more [here](#)

SOLUTION

CHALLENGE

- One of the areas of exposure remaining in the settlement system today is the risk of a sudden event that could affect the transfer of cash or ownership of securities from trade execution through trade settlement.
- In a settlement cycle, one of the greatest risks affecting market forces is a product of time. As a shortened settlement cycle decreases the amount of time between trade execution and settlement, the degree of counterparty, credit and default risks is lowered.
- The current T+2 settlement cycle is a convention of market practice, which means the biggest challenge of moving to a shortened settlement timeline will be process and procedure

- Accelerating settlement for all “regular way” trades to just one day after the trade, T+1 will decrease the amount of capital and margin required to be deposited at NSCC, the U.S. equities cash market central counterparty (CCP), for risk management purposes, while still preserving the efficiencies of guaranteed settlement and multilateral trade netting. By using DLT the settlement cycle can be accelerated to T+1.
- Corda is the permissioned and private solution that enables the following results:
 - Risk Reduction: While a shorter settlement cycle would deliver reduced margin requirements to the industry and lower costs for investors, the systemic and process improvements needed to achieve T+1 would also enhance market resilience.
 - Margin Reduction: For broker/dealers, a move to T+1 would lead to a significant reduction in margin and collateral requirements.

Learn more [here](#)

RESULTS



A move to T+1 will also make the proceeds of securities transactions available to end investors faster.



Reduced cost of settlement and margin



DTCC is one of the most regulated FMIs in the world

CHALLENGE

- LSEG is the biggest exchange group in world.
- This significant network can be leveraged in multiple ways and is better managed with technology that allows to bring the whole network
- Existing services can be offered via this network, extend and monetise new services to participants

SOLUTION

- LSEG becomes a business network Corda Business Services Operator (BSO)
- Significant Capital Markets partnership. Corda acknowledged as LSEG's de-facto standard DLT.
- Multiple Cordapps to be added once BSO in production.
- Big prize being when they launch and deliver their own Cordapps post trade both LSEG & LCH.
- Vast opportunity for green field growth across Refinitiv network

Learn more [here](#)

RESULTS



Launch of the LSEG business network



Deliver Cordapps to post trade both LSEG & LCH.



Regulated network to extend products and services to participants

CHALLENGE

- The electronic trading industry is still burdened with low liquidity across many assets
- Investors have a limited choice of investable assets and SMEs have limited options to raise capital
- As electronic trading has advanced, the post-trade processing is still inefficient

SOLUTION

- Archax tokenizes traditional securities and enables the tokenization of alternative assets to provide liquidity to previously illiquid assets such as art or real estate
- Investors can interact with Archax through its customized front-end user interface or catalog of APIs
- Archax chose Corda for post-trade processing because of its tested performance and proven track record in financial markets

RESULTS

1st

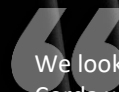
FCA-regulated exchange for fractionalized & tokenized digital assets



Enables the issuance and trading of tokenized alternative assets



Tokenized capital raising for SMEs creates liquidity and democratizes market participation



We looked at all the different blockchain providers and Corda was an obvious choice. In our view, Corda Enterprise is clearly one of the key blockchains that will revolutionize traditional financial markets..

SIMON BARNBY, CMO, ARCHAX



CHALLENGE

- Dematerialization of securities and digitization of issuance processes is at the forefront of the financial industries' digitization. This transformation requires a new digital generation of financial market infrastructure.
- D7 is a regulatory compliant, fully digital post-trade platform for financial institutions to issue electronic securities leveraging digital instruments, a digital description of the securities.

SOLUTION

- D7 provides a fully digital alternative to conventional physical issuance and processing of securities. DBAG thereby aim to digitise the financial products itself, unlocking great efficiency benefits for our customers and the market as whole.
- As a cloud-backed DLT-ready platform, it enables market participants to digitise their financial products
- D7 is enabling customers to use one network for multiple businesses, operated under one single rulebook.

RESULTS



Digital issuance of financial products for market participants



Reduced cost of issuance and lifecycle management



D7 platform is fully compliant with Regulation requirements



Digital Securities Issuance Sandbox

R3 Accelerator



R3 Digital Securities Issuance Accelerator

The Digital Securities Issuance platform shows the **lifecycle of a tokenised asset on Corda**. Issuers create digital tokens on the distributed ledger that can represent physical or digital assets.

Building a pilot solution for Alfa Bank

- Demonstrate the lifecycle of an asset on the tokenization platform through the various stages
- Leverage R3's digital securities issuance platform and customize to meet your business requirements
- Corda integration enables final transfer of value between at volume and scale applicable to the largest global businesses
- R3 Professional Services can custom build your solution and host it in a secure environment to enable testing between your business and your counterparties



ASSET LIFECYCLE



CREATE AND ATTEST MEMBERSHIPS

DEFINE AND PUBLISH A TOKEN TYPE

OBTAIN TOKENS

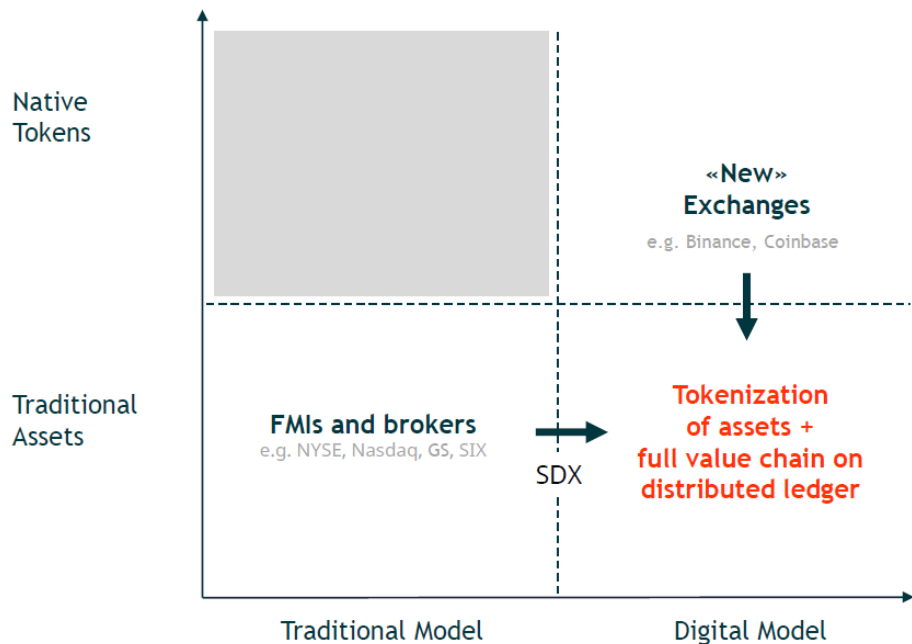
TRANSFER TOKENS

REDEEM TOKENS

SDX

a SIX company

Fully integrated issuance, trading, settlement and custody infrastructure for Digital Assets, regulated by FINMA



Functionalities:

1. Issuance of assets
 - Digitization of assets
 - Issuance of units
 - Cap table management: Single Source of Truth
2. Order entry to marketplace
 - Reservation of holdings
3. Trade & Settlement
 - Immediate settlement at match
 - Delivery vs Payment in one atomic transaction
4. Custody
 - Wallet management
 - Withdrawal of liquidity

Building the Digital Ecosystem: FMI's such as CSD's, CCP's and Financial Exchanges

CORDA DRIVING TRANSFORMATIONAL INNOVATION OF MARKET ICONS

Regulated Market Infrastructure - Institutional Grade Assets - Professional Financial Participants

Digital Market Infrastructures

Dedicated and purpose built greenfield **digital infra spanning part of or full asset trade lifecycle** incl. Issuance, Registry, Custody, Asset Servicing & Settlement.



Settlement Acceleration

Purpose built infrastructure to accommodate post execution lifecycle from "match to settle" workflow through single mutualised infrastructure

DTCC (ION)
SDX
ARCHAX
Paritar

Business Service Operator

Established FMI extended with OTT Corda deployment specifically to deliver a wide range of external CorDapps to its pre-existing ecosystem (think Appstore)



London
Stock Exchange Group



Thank you

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