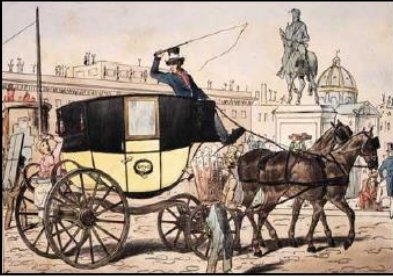






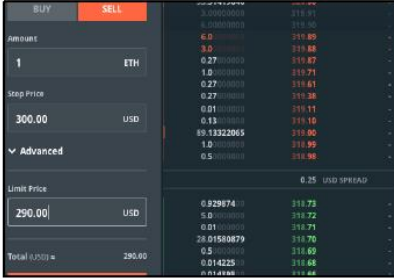



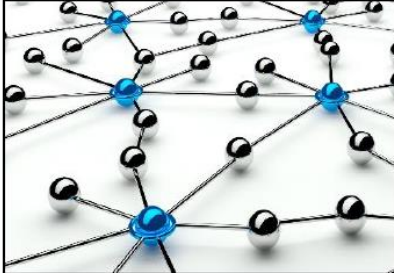


AECSD/IAEx

# DLT/BLOCKCHAIN in Post Trade – Hype or Reality?

5 September 2019

# Digitization changes society and economy from manual to digital

	Mobility	Music	Photography	Markets
Manual				
Electronic				
Digital				

# DLT > BLOCKCHAIN > BITCOIN

## DLT



- is used to **document specific transactions**
- any number of **equivalent copies** of the ledger can be **maintained decentrally** by different parties
- data stored as **continuous expandable list of records**, newly added transactions are included in all copies of the ledger
- **different consensus mechanisms** possible to agree on current status of the ledger/ new transactions

## Blockchain



- is **one of the best-known DLT implementations**
- data stored as **"blocks"** **linked together as a "chain"** using cryptographic techniques
- each block typically contains a cryptographically secure **"digital fingerprint"** of the previous block
- blocks include **immutable timestamp and transaction data**

## Bitcoin



- is the **first blockchain application** and world's leading cryptocurrency (for means of digital payment)
- transactions are legitimized without trusted third party/ counterparty (**peer-to-peer**)
- agreement on a transaction is achieved via **proof-of-work**, where the miners compete with each other to solve a cryptographic puzzle

# Characteristics of Distributed Ledger and Blockchain technology



## Peer-to-Peer Transfer

No need for an intermediary



## Instant settlement

Trading, trade execution, netting and settlement, can all occur at the trade-entry level



## Security

Cryptographic code & consensus mechanism



## Robustness

No single point of failure



## Token & Smart Contracts

Token as “digital cargo container” with Smart Contracts to execute and move value autonomously

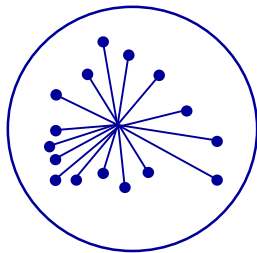


## Transparency & Auditability

Transparent movement of securities, visible to all the participants

# The digital economy is heading towards decentralisation

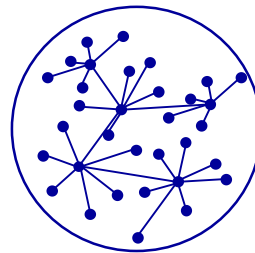
Central Platform Economy



2010



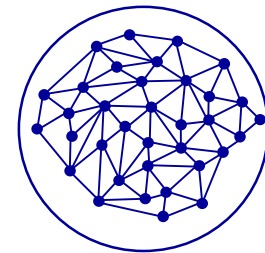
Sharing Economy



2015



P2P Economy



## From

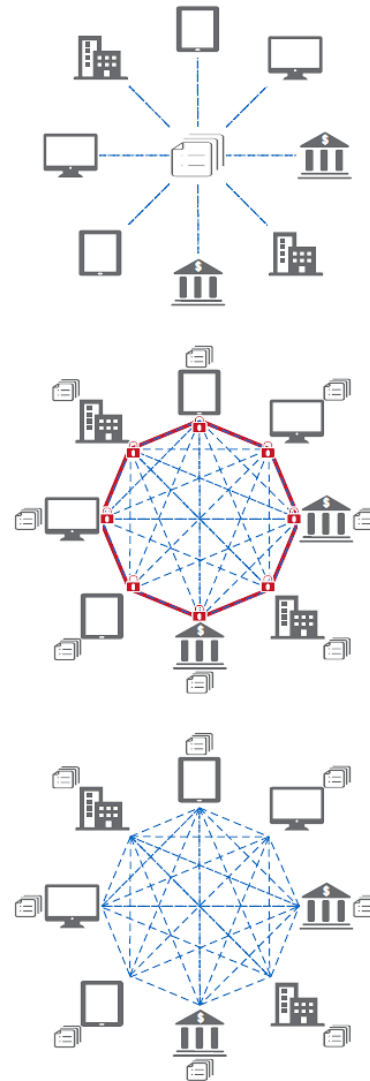
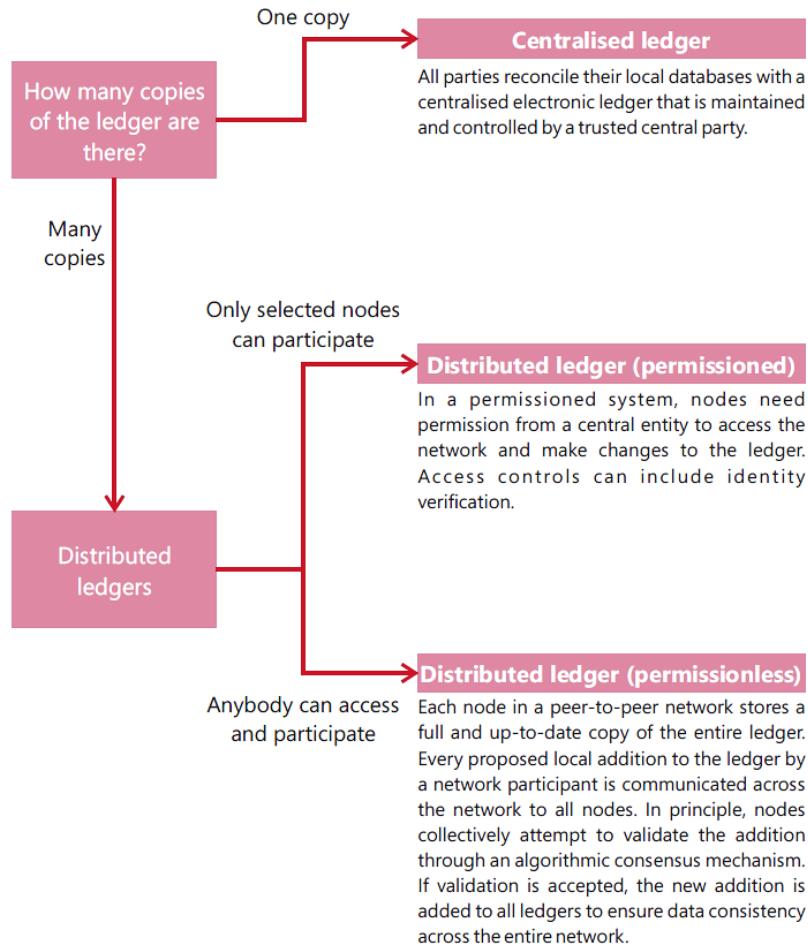
- Centralized infrastructure
- Economy of central platforms
- Governance by central party
- Intermediaries



## To

- Decentralized infrastructure
- Economy of open innovation platforms
- Peer-to-Peer governance
- Less intermediaries

# Is there a future for CSDs?



# Opportunities for AECSD members

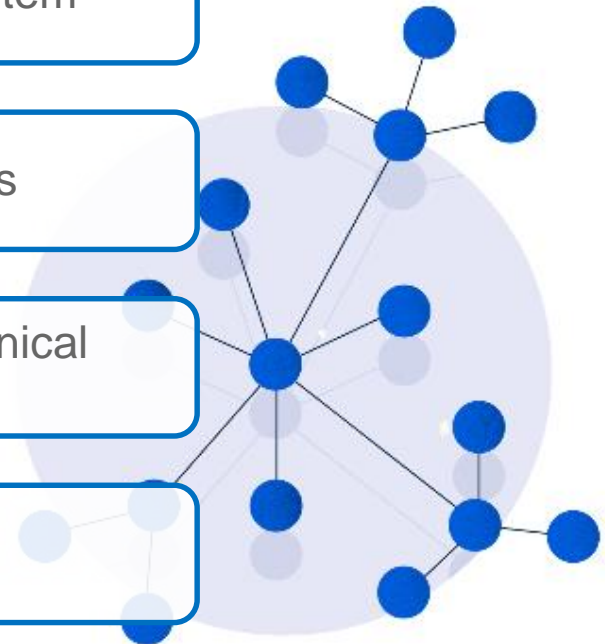
Decentralized private permissioned ledger over different geographies

CSD as a gatekeeper providing access to the system

Consensus algorithm, uniform business standards

Common interledger standards or protocols, technical interoperability between the ledgers

Specialized asset services

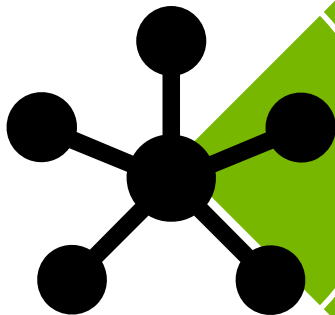


# Use Case: ASX Private Permissioned Ledger



Replacement of Australian Stock Exchange's CHES

Clearing, settlement, asset registration, and some other post trade services

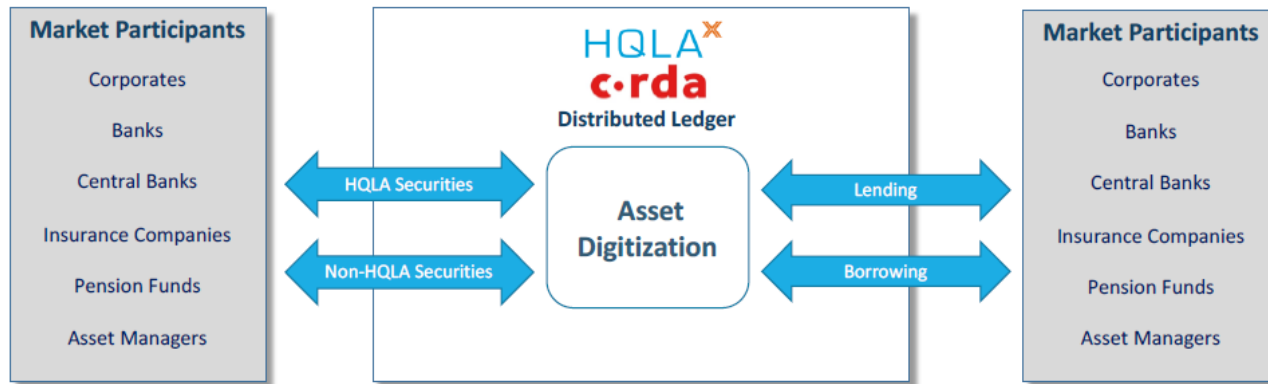


## BENEFITS

- Reduced costs;
- Simpler and more secure investor access;
- Promote innovation and open standards;
- Ensure ability to integrate with counterparties;
- Reliability and streamlining of the processed

# HQLAx Business Model

HQLA<sup>x</sup> is using distributed ledger technology (DLT) to digitize baskets of assets and create a standardized post trade solution to help market participants **redistribute liquidity more efficiently**



**EASY**



HQLA<sup>x</sup> creates a layer of interoperability among custodians to permit seamless collateral exchanges

**FAST**



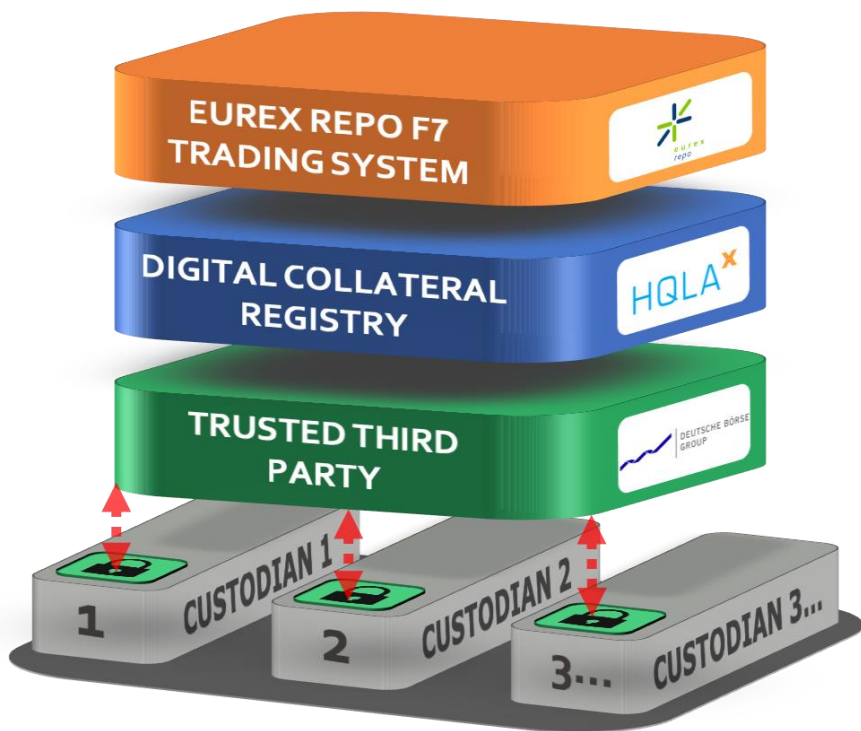
HQLA<sup>x</sup> allows “atomic” transfer of collateral exchanges in real time

**EFFICIENT**



Capital efficient for banks reducing capital costs

## Operating Model



### EUREX REPO F7 TRADING SYSTEM

- Eurex Repo electronic trading market (new segment for HQLA<sup>X</sup> collateral swaps)
- Ability to enter specific opening/closing date & time (to the nearest minute)

### DIGITAL COLLATERAL REGISTRY

- Enables atomic change of ownership of baskets of securities
- Delivery vs Delivery "DvD"

### TRUSTED THIRD PARTY (TTP)

- Holds baskets of securities at multiple custodians on behalf of beneficial owners
- Management of exposure requests to triparty agent services

### CUSTODY LAYER (Triparty Agents and Custodians)

- Safekeeping of securities in accounts opened by the TTP
- Collateral management of securities in and out of segregated TTP accounts



**Thank you.**

**Maria Nikulina**

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