



New Technology Day

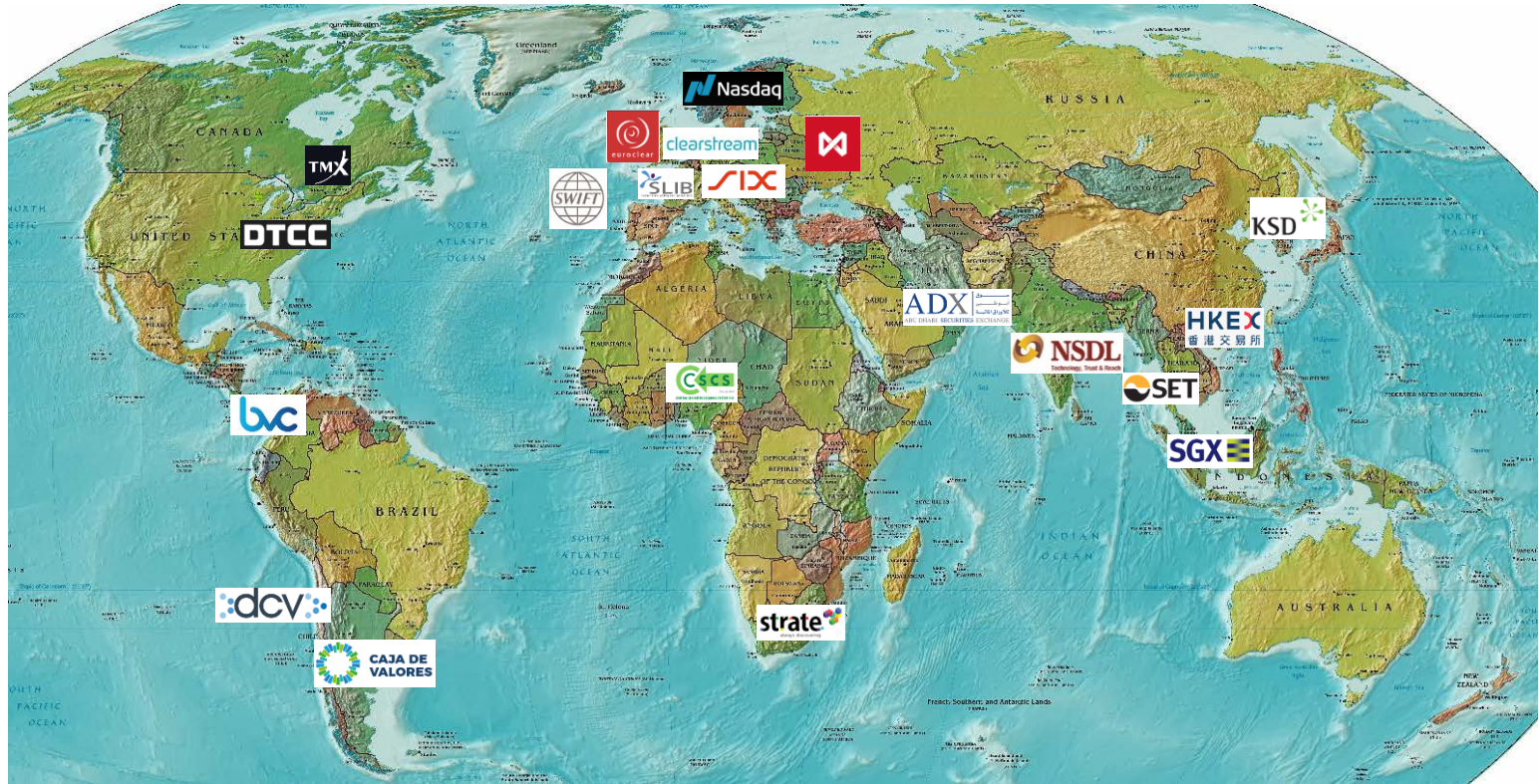
ISSA Report: Infrastructure for Crypto-Assets:
A Review by Infrastructure Providers

SIX - Urs Sauer, ISSA Working Group Chair
“DLT – Principles for Industry-Wide Acceptance”

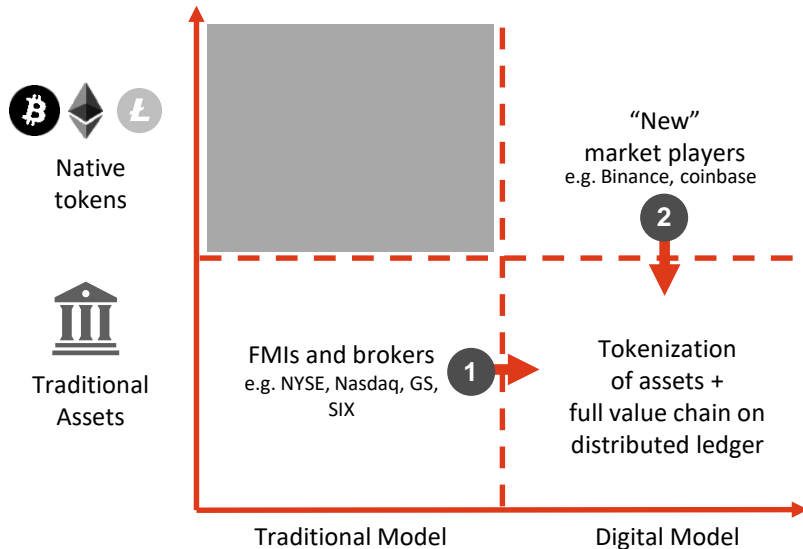
A look back

- **ISSA** Symposium in 2016 Distributed Ledger Technology (DLT) as a main focus
- At SIBOS 2016 in Geneva, under the leadership of NSD and Strate, 12 CSDs met for the first ever “pre-SIBOS CSD DLT Workshop”
- A core working-group of NSD, Strate, NASDAQ and SIX established itself
- DCV (Chile), Caja de Valores (Argentina), SWIFT and SLIB joined the group and published via ISSA the product requirements for: "General Meeting Proxy Voting on Distributed Ledger" in December 2017

Current working group members



Observations on DLT developments























1 Incumbents (FIMs & brokers, etc.) moves

- Bringing traditional market activity onto distributed ledgers
- Starting tokenization of assets and payments
- Aiming to achieve resource efficiencies and increased transparency and simplicity along the value chain

2 “New” market players moves

- Bringing public-blockchain assets to the traditional universe of investors
- Leveraging their digital market infrastructure and services for the traditional asset space threatening/disintermediating of incumbents business models

1 DLT plans by traditional market infrastructure players

Player	Announcement	Announced
 	<ul style="list-style-type: none"> Jointly develop prototypes for securities settlement based on blockchain technology Prototypes support the settlement of securities transactions, payments, interest payments and repayments at the maturity of a bond 	Oct 2018
 	<ul style="list-style-type: none"> Announced Bakkt, a global platform and ecosystem for digital assets including clients BCG, Starbucks, Microsoft and others Combining regulated infrastructure with institutional and consumer applications to create open ecosystem that brings transparency and trust to unregulated markets 	Aug 2018
  	<ul style="list-style-type: none"> Partnership to provide Delivery versus Payment (DvP) capabilities for settlement of tokenized assets across different Blockchain platforms Will deploy Blockchain technology to efficiently link up funds transfer and securities transfer, eliminating both buyers' and sellers' risk in the DvP process 	Aug 2018
	<ul style="list-style-type: none"> Will launch full end-to-end and fully integrated digital asset trading, settlement and custody service SIX Digital Exchange ("SDX") will enjoy the same standard of oversight and regulation as current SIX FMI companies 	July 2018
   	<ul style="list-style-type: none"> Developed a joint proof of concept to make the use of securities for margins calls more efficient, leveraging Blockchain or other DLT technology 	June 2018
 	<ul style="list-style-type: none"> Integrated payment solution using a distributed ledger on Chain's Blockchain technology Nasdaq New York is supporting existing digital assets exchanges, and announced a technology deal (surveillance technology) with Gemini in April 2018 	May 2018
	<ul style="list-style-type: none"> Bringing cryptocurrency trading to the mass market by launching a zero-fee trading app Smartphone app, called 'Bison,' will be free to use as of fall 2018 	Apr 2018
  	<ul style="list-style-type: none"> Will release a Blockchain-based securities lending platform on R3's Corda Blockchain Deutsche Börse also considers offering cryptocurrency related products to their customers 	Mar 2018
 	<ul style="list-style-type: none"> Chicago's two largest derivatives exchanges started listing Bitcoin futures as a response to growing investor demand 	Dec 2017

2 In parallel, new market players such as Binance and coinbase are entering the market for traditional assets



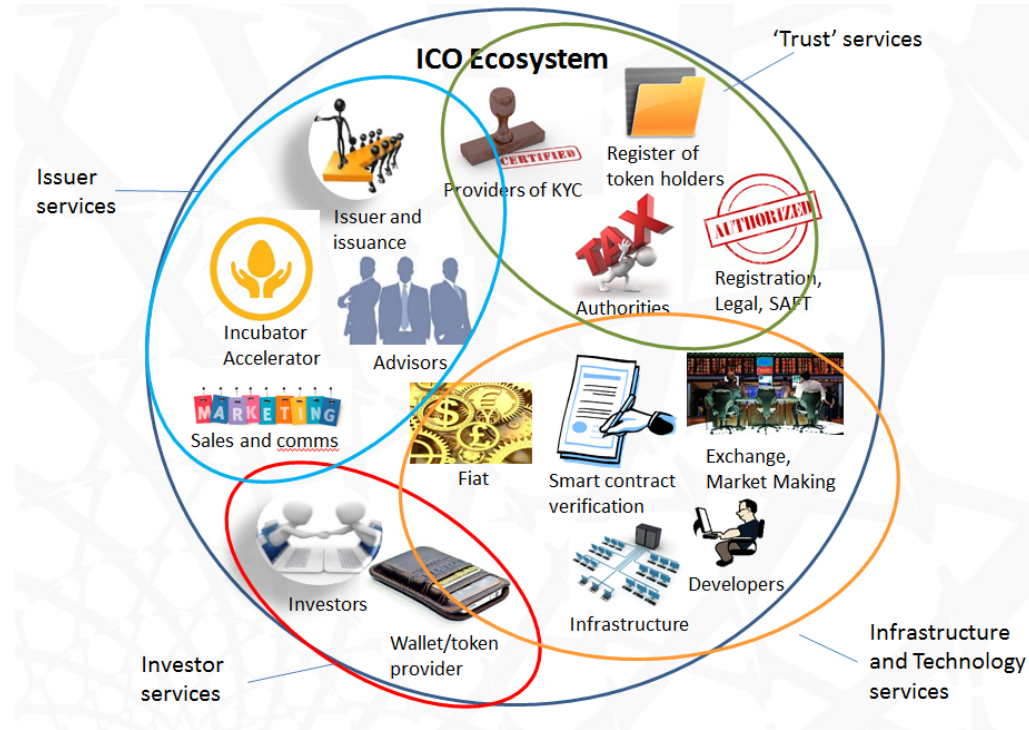
- Largest crypto currency exchange (based on trading volume) with expected profit up to USD 1bn in 2018
- Partnering together with Malta Stock exchange to create the world's first decentralized global stock exchange
 - Based on the Ethereum Blockchain
 - Allows companies in the EU to create tokenized securities called Equity Token Offerings
 - Enables companies to use the Blockchain to legally raise funds from customers

The logo for Coinbase, consisting of the word "coinbase" in a white, lowercase, sans-serif font, centered within a dark blue rectangular background.

- Bitcoin broker that provides a platform for traders to buy and sell bitcoin with fiat money, as well as Bitcoin exchange and wallet provider
- Continuously expanded its offering to cover the full value chain:
 - Acquired a broker license in the US in June 2018, allowing them to list ICO tokens.
 - Launched cold-storage and custodial service for digital currencies in July 2018, following the acquisition of three fintech companies
- Coinbase vision, COO
“Ultimately, we can envision a world where we may even work with regulators to tokenize existing types of securities, bringing to this space the benefits of cryptocurrency-based markets”

Beyond Binance and Coinbase, an estimated 500+ digital asset exchanges have already been established

A new ecosystem is developing



Findings in our ISSA report

- Lack of trust in the integrity, safety and efficiency of the crypto-asset markets is a major obstacle to investment in them by institutional investors
- The missing regulatory and legal frameworks are re-enforcing the lack of trust
- Prevention of catastrophic loss of private wallet keys is a major obstacle
- Services by FMI's in a DLT environment can only be offered through a permissioned network

Findings in our ISSA report

- FMI's definitively have a role to play in in a decentralized world:
 - Integrity of issuance process
 - Safe settlement (settlement finality challenge in a DLT environment)
 - Standardization
 - Interfacing with existing centralized infrastructures
 - New forms of governance and network operations
 - Regulated offerings
- Mutualization of compliance costs by FMI's (KYC, AML, Sanction Screening) and the risk reduction achieved with it could become a major benefit for our industry

Outlook

- Enrich our most recent report with input from (global) custodians
- Establish a work stream for “safekeeping of crypto assets”
- Establish a work stream for “settlement of crypto assets”

Access to the **ISSA** ports

<https://issanet.org/e/3/reports-and-documents.html>

Current working group members

ADX	Abu Dhabi
BVC	Colombia
Caja de Valores	Argentina
Clearstream	Germany/Brussels
CSCS	Nigeria
DCV	Chile
DTCC	USA
Euroclear	Brussels
HKEX	HongKong
KDD	Slovenia
KSD	South Korea

NASDAQ Nordic	Nordics, Baltics, Iceland
NSD	Russia
NSDL	India
SET	Thailand
SGX	Singapore
SIX	Switzerland
Strate	South Africa
TMX	Canada
SLIB	France
SWIFT	Brussels

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