K&L GATES

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Fintech for Asset Managers: Blockchain's Transformation of the Asset Management Industry and its Future as the Next Wave of Digitisation Approaches

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VERY BRIEF INTRODUCTION TO THE BLOCKCHAIN

WHAT THE BLOCKCHAIN IS

- A "Distributed" or "Shared" Ledger
- A technology platform for holding data and authenticating data *securely, transparently, and immutably.*

WHAT THE BLOCKCHAIN IS <u>NOT</u>

- Bitcoin, etherium or digital currencies
- Mt Gox or the Dark Web

HOW MANY BLOCKCHAINS ARE THERE?

- Many – hundreds, thousands
- "The Blockchain" underlies Bitcoin - Other digital currencies
- Blockchains can be public or private, permissioned or open

WHAT ARE CRYPTO CURRENCIES?

- Applications that work on the Blockchain

WHAT ARE OTHER APPLICATIONS?

- Recording deeds, stocks, and other valuable ownership records
- Tracking supply chains for pharmaceuticals, diamonds, foods, wine
- Voting records; identity records; lotteries and gaming
- Many uses still not known

WHY IS THE BLOCKCHAIN IMPORTANT?

"Few predicted the profound effect [the internet] would have on society. Today, blockchain—the technology behind the digital currency bitcoin—might seem like a trinket for computer geeks**. But once widely adopted, it will transform the world**." *Ginni Rometty, IBM CEO*

WHY SHOULD ANYBODY CARE ABOUT BLOCKCHAIN AND DLT?

"The blockchain allows us to, for the first time, build systems and technologies that run between different organisations that don't trust each other and bring them to consensus. **It's not often there's a breakthrough in computer science**. There are waves of hype all the time, but it's not often that there's something new. …It just becomes self-evident that **there's a massive opportunity in finance**, wherever firms record the same data that their counterparts do, and then have to manage it, that this blockchain technology…can be used to massively simplify and reduce that cost and complexity by just doing it once and knowing for sure that what you see is what your counterpart sees." *Richard Brown, CTO at R3*
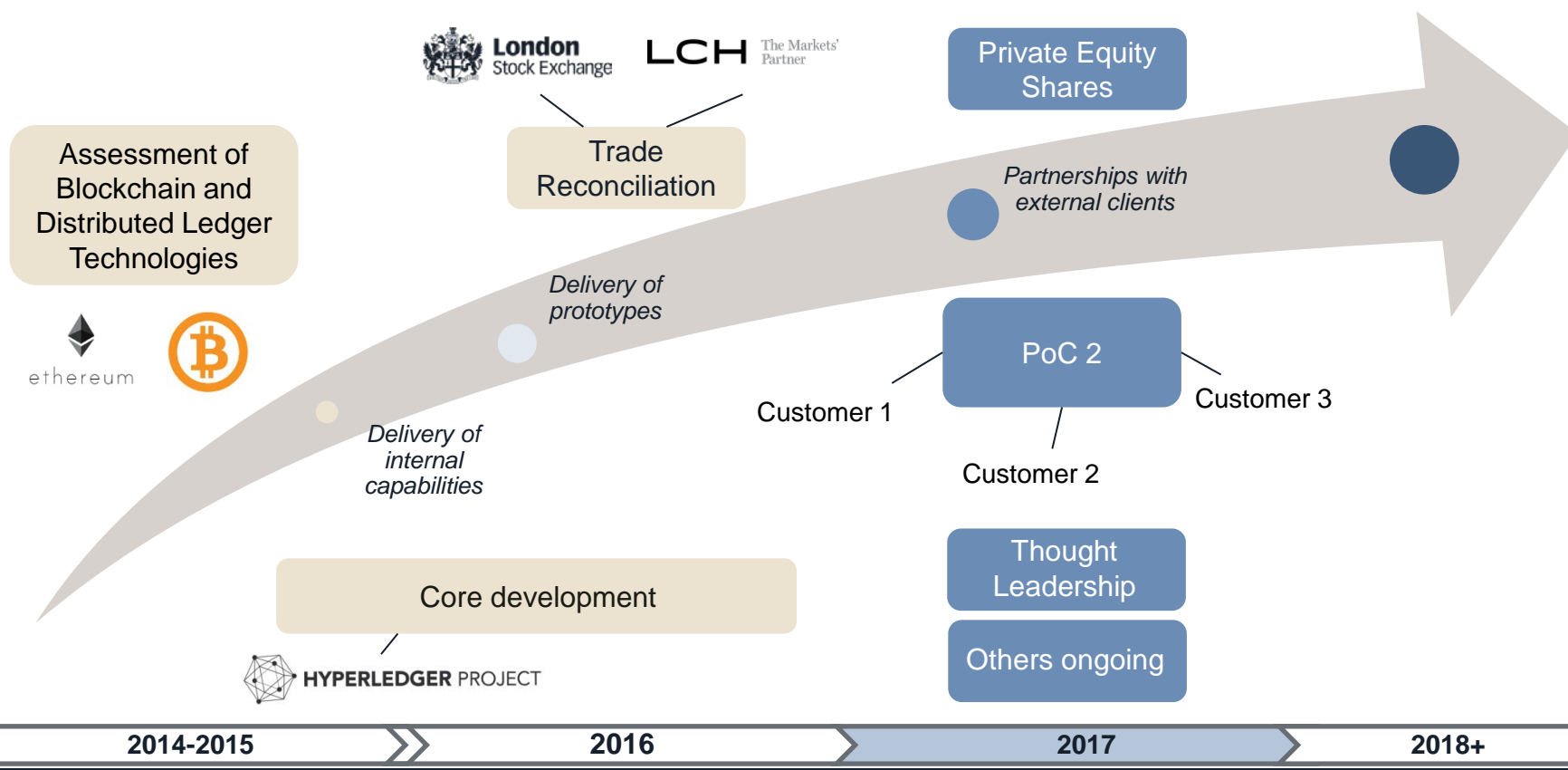
BLOCKCHAIN DEMONSTRATION

LSEG, DLT positioning and thoughts

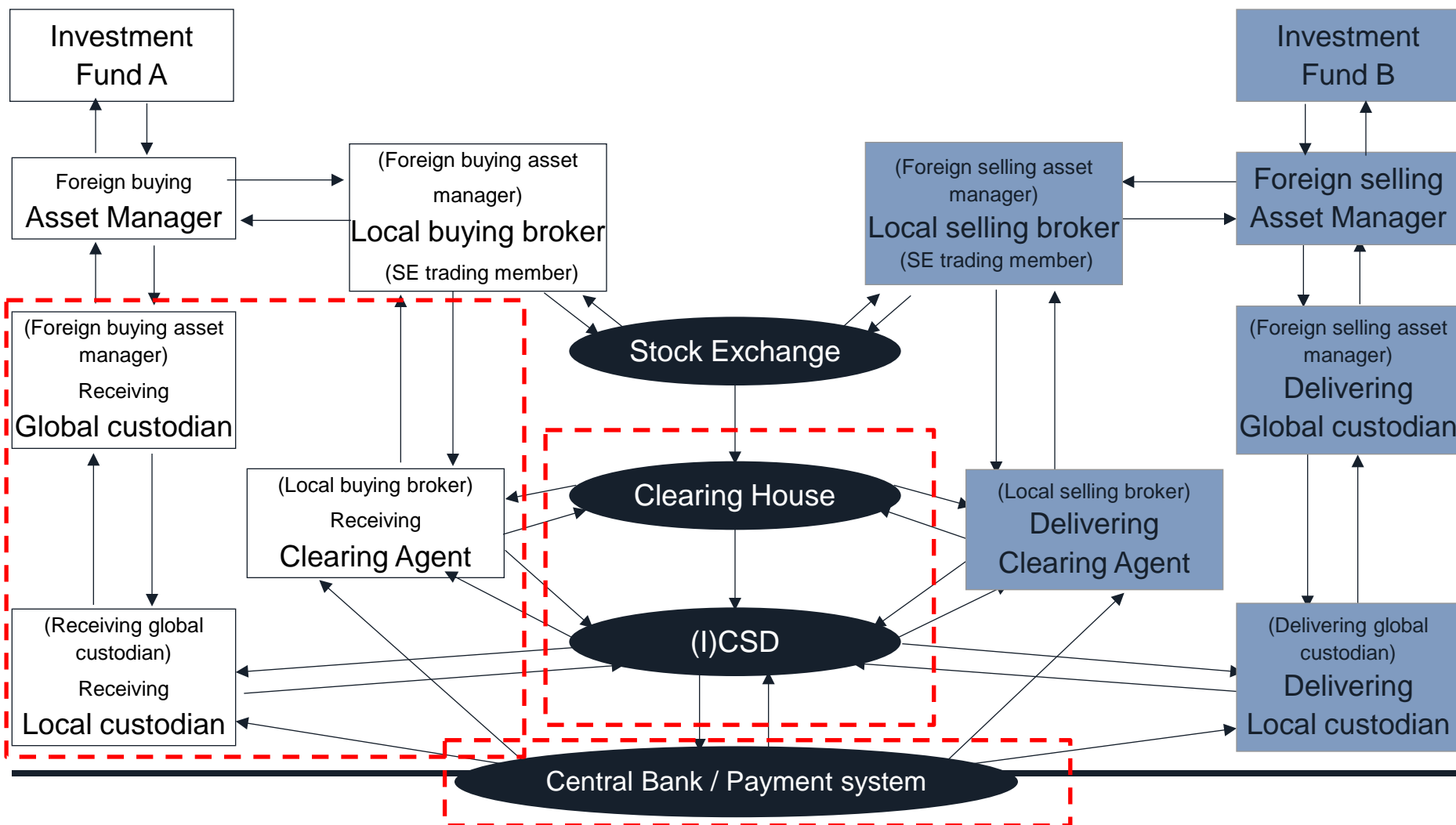**Q4 2017**

LSEG: Distributed ledger's story

London Stock Exchange Group

Business Value and Innovation

PoC / Prototypes → **Business Applications** → **Evolution of Market Infrastructure**

Technology | Technology | Regulation

Assessment of Blockchain and Distributed Ledger Technologies

Trade Reconciliation

Private Equity Shares

Partnerships with external clients

Delivery of prototypes

PoC 2

Customer 1 — Customer 3

Customer 2

Delivery of internal capabilities

Core development

HYPERLEDGER PROJECT

Thought Leadership

Others ongoing

| 2014-2015 | 2016 | 2017 | 2018+ |

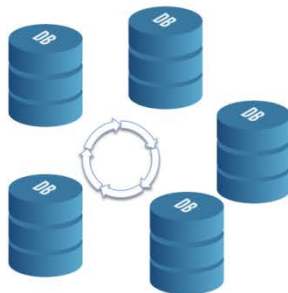# Market Infrastructure is a dynamic and multi-layered environment

London Stock Exchange Group
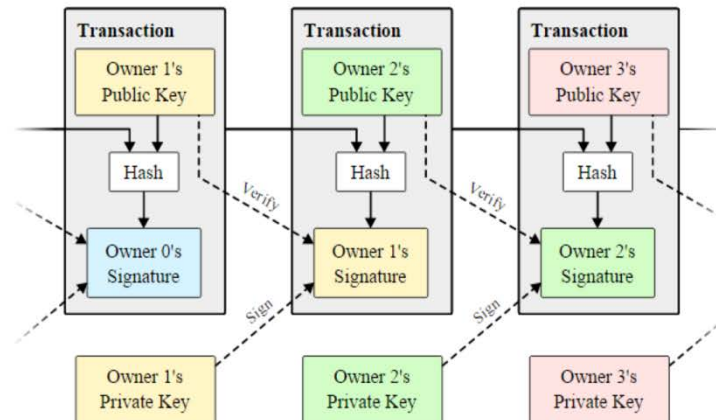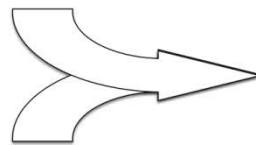
What we're on about: Distributed Ledgers

Distributed ledgers are a combination of two old technologies

Distributed Fault-Tolerant Databases
(e.g. Castro/Liskov 1999)

Digital Signatures
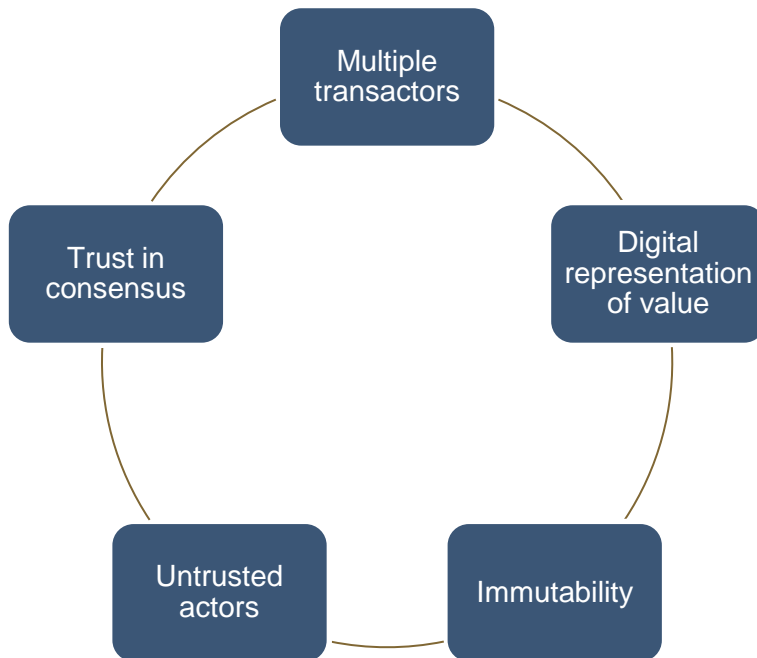(e.g. FIPS - DSS, 1994)

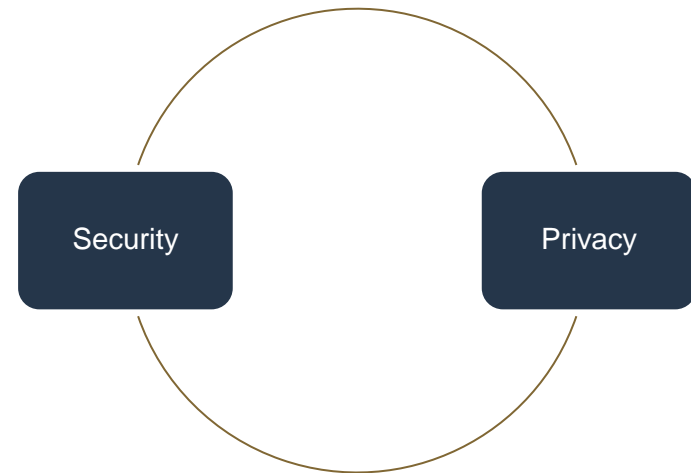# How do we think about DLT use cases – some criteria

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Multiple transactors

Digital representation of value

Trust in consensus

Untrusted actors

Immutability

(+)

Security

Privacy

Beyond P2P – A potential model

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Investors

Investment

Asset issuance under regulatory framework

Issuer

Regulator

DLT Enabled Model

Pricing & potential secondary market

Registrar / Asset Services

Exchange

Additional services

SSS status and finality

Other Programme

CSD
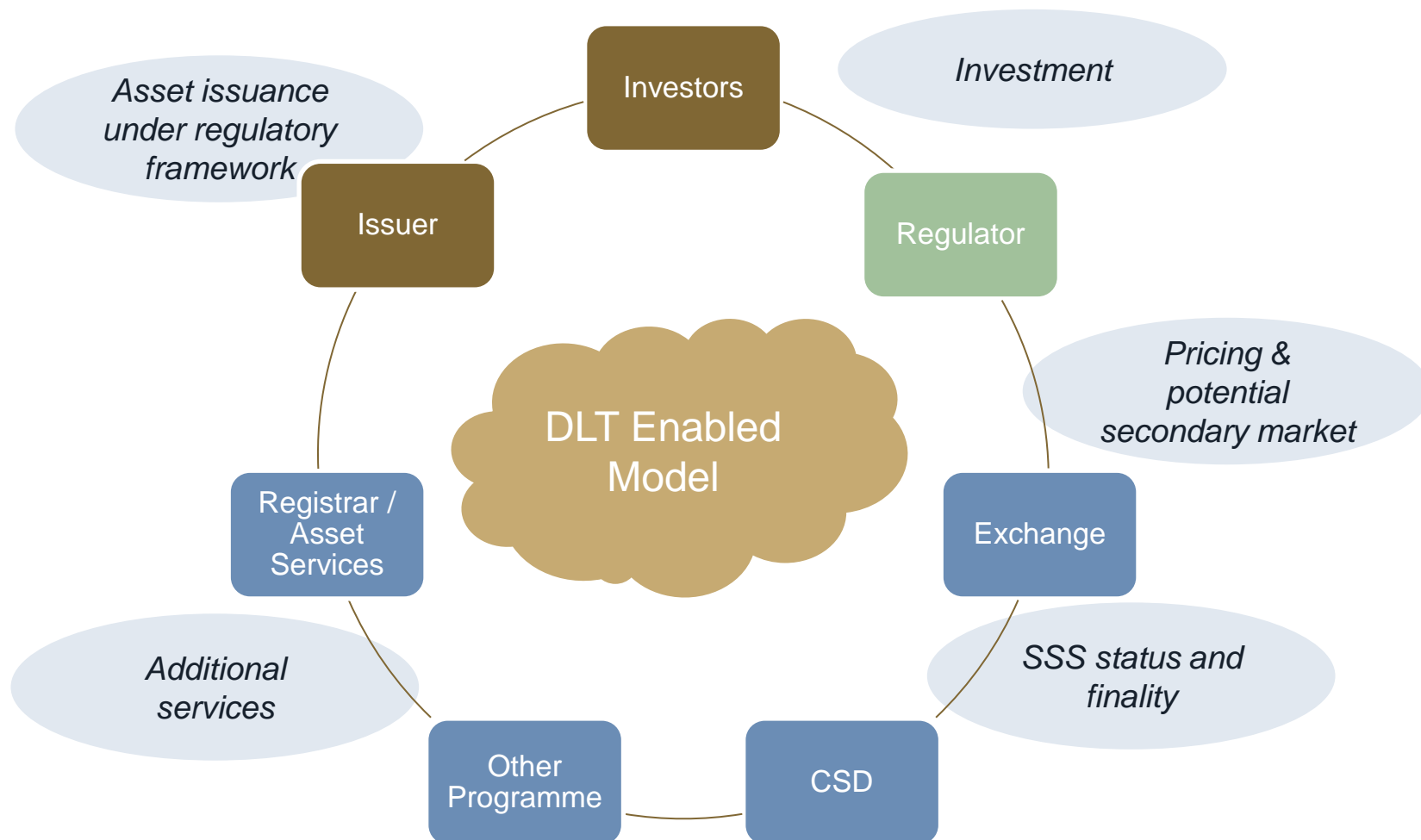
LSEG Post Trade Italy PoC

Rationale

- Majority of shareholders of not listed issuers hold certificates in physical form (this is quite common in Italy)

- Certificates in physical form are safe-kept at a Notary office or in own vault

- Holding certificates in physical form presents several obstacles

Scope

- Stock certificates tokenized as digital assets on Blockchain, in accordance with the current legal requirements for the de-materialization of assets

- Shared distributed ledger to support advanced functionalities such as real time shareholding, securities transfers, data security/segregation

PoC's benefits

- **Allow** real time shareholding information to issuers, CSD and regulators: issuers are constantly aware of beneficiary owners connected to the business network.

- **Support** and facilitate funding processes

- **Reduce** complexity in change of ownership of certificate (no longer through notary functions)

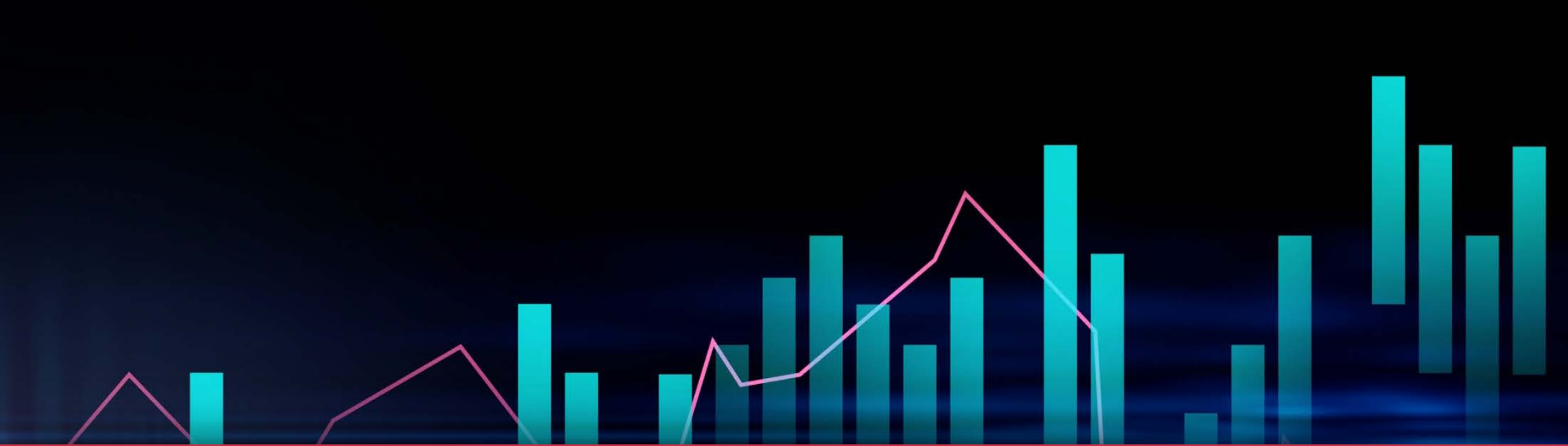- **Reduce** regulatory/fiscal reporting overhead for SMEs

LSEG Post Trade Italy PoC

Technology	Business
• Prove **DLT capability** to properly answer to technology requirements:	• Prove **DLT capability** to implement a solution enabling to support business growth on the issuance process. The key identified elements are:

Technology

- Prove **DLT capability** to properly answer to technology requirements:

  - ✓ **Data segregation**: segregation and separation of data is crucial for financial services because several participants could be members of a Blockchain network but with different roles and duties

  - ✓ **Interoperability**: a new solution DLT based should be integrated with legacy systems in order to leverage its full capability to interact with systems platforms already working.

Business

- Prove **DLT capability** to implement a solution enabling to support business growth on the issuance process. The key identified elements are:

  - ✓ **Process Efficiency**: a faster and cheaper process than the current one

  - ✓ **Process Innovation**: a system enabling to automate the systematic update of the shareholders identification book

  - ✓ **Business Opportunity**: a system could facilitate the development of a security private placement network among issuers and institutional investors.

THANK YOU