

blockchain

rethinking business




an NTT DATA Company



A photograph of a staircase with a dark metal railing. The steps are highlighted with a bright teal color, creating a strong diagonal line across the frame. A person's legs and feet, wearing dark pants and light-colored boots, are visible as they ascend the stairs. The word "context" is overlaid in the center of the image.

context



Blockchain will fundamentally
change the way we do business.

Every CEO, from every industry,
wants to know about Blockchain.

what really matters

Programmable

1

- assets
- trust
- ownership
- money
- identity
- contracts
- records

Based on

2

- decentralization
- disintermediation
- distributed ledgers
- cryptography
- consensus

Affecting

3

- governance
- value creation
- transmission value and property
- transparency
- security
- cost structure
- flexibility

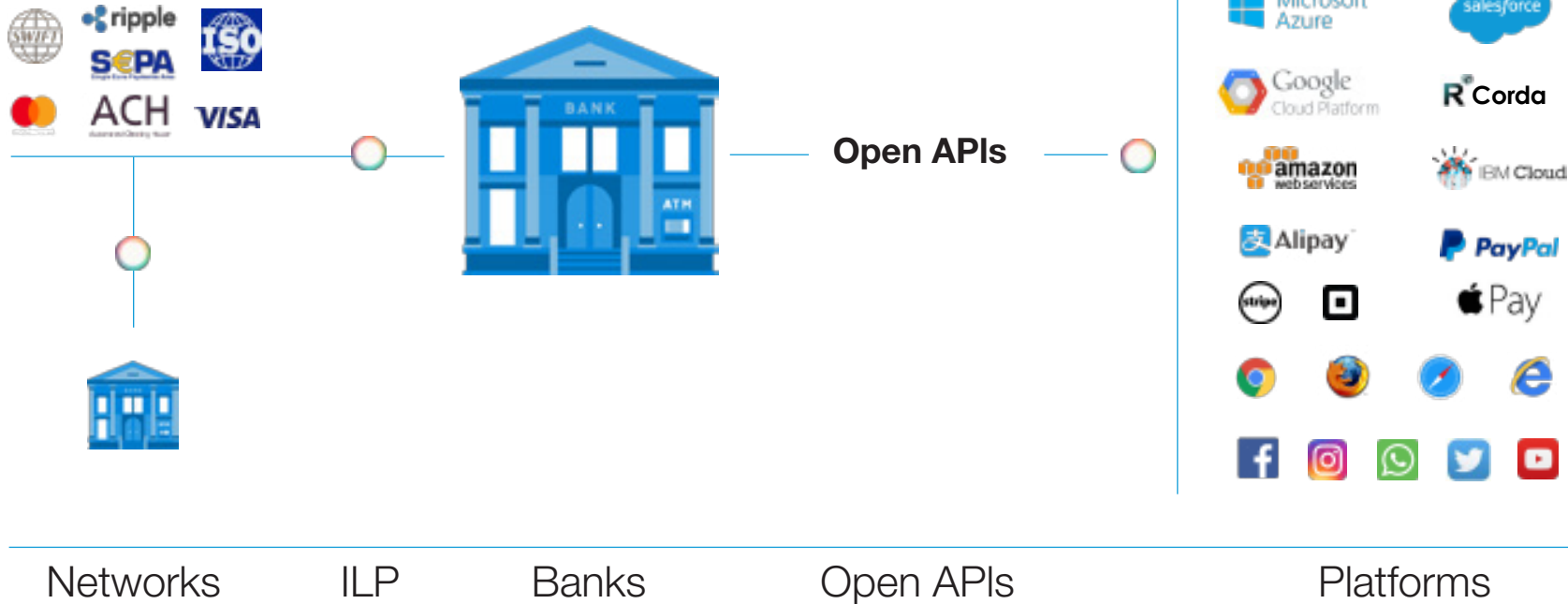
Blockchain.

The Genesis of the Internet of Value.

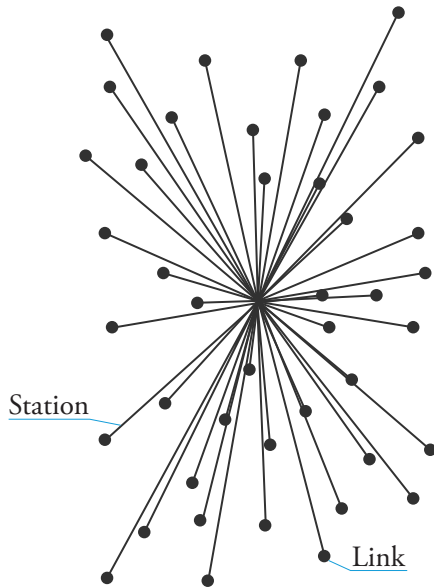
Standards



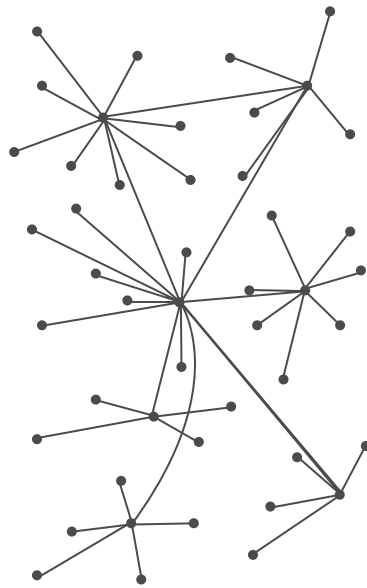
Internet of Value



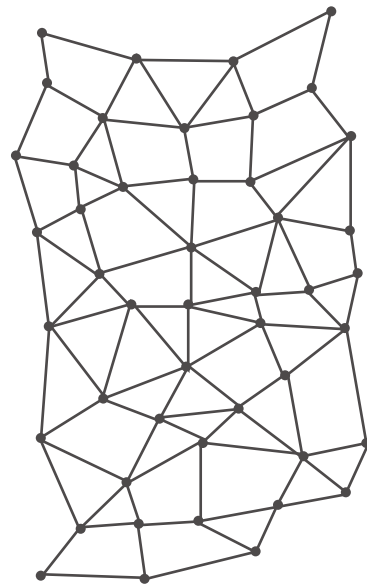
Decentralization



CENTRALIZED
(A)



DESCENTRALIZED
(B)



DISTRIBUTED
(C)

blockchain

Definition:

“Ledgers – or decentralised databases – are systems that enable parties who don’t fully trust each other to form and maintain consensus about the existence, status and evolution of a set of shared facts.”

Blockchain

What issues does it solve?

1

trust

- Distributed consensus & trust.
- Trusted middlemen, but with any middlemen.
- Collective that securizes the network, and in which everyone has the same voting power.
- Mining is voting.

2

consensus

“What do we choose for lunch today?”

The distributed computation paradigm.

Two main analogies

The Byzantine
Generals Problem.

Paxos.

“How can we adress the consensus issue between parties that don't trust each other?”

the double spending issue

- Problem: Replicability of electronic money.
- First approach: BitGold – Nick Szabo (1998) – Just a Paper.
- Bitcoin – Satoshi Nakamoto (2008) – Network goes live in 2009.

How does Blockchain solve the double spending issue?.

“Blockchain transactions are not about sending an asset from one database or storage to another, but about writing a change of ownership in a shared database.”

Key Features

1 Distributed/Decentralised

There is no central operator. Participants in the network share a common protocol for executing transactions in a bilateral basis.

2 Consensus Mechanism

All transaction validators in the network come to agreement on a set of rules to execute transactions in a time-stamped decentralised settlement process.

3 Immutability

Transactions that are executed cannot be reversed. Rules for dispute resolution and remediation are established in advance.

4 Interoperability

Blockchain networks can be integrated with all type of ledgers, operated by financial institutions or central banks.

5 Identity based

Digital signatures enable participants to authorise and verify transactions and positively identify transacting counterparties.

6 Cryptographic Security

Accounts, balances and transactions are secured by the most advanced cryptographic techniques

smart contracts

What are they?

- Self-executed that lives in a distributed database.
- IF/THEN logic.
- 3 Main Features:

1 Autonomous. 2 Self-Sufficient. 3 Decentralization.

Example:

Insurance for flight delay, that send the payment when the flight is cancelled or delayed, without any middlemen involved.

smart contracts. polemic.

“What happens if we sign a legal contract that self-executes in 3 years from now without anyone being able to stop it, and regulation changes by then, making it illegal?”



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our vision

“

The electric light did not come from the continuous improvement of candles

Oren Haran

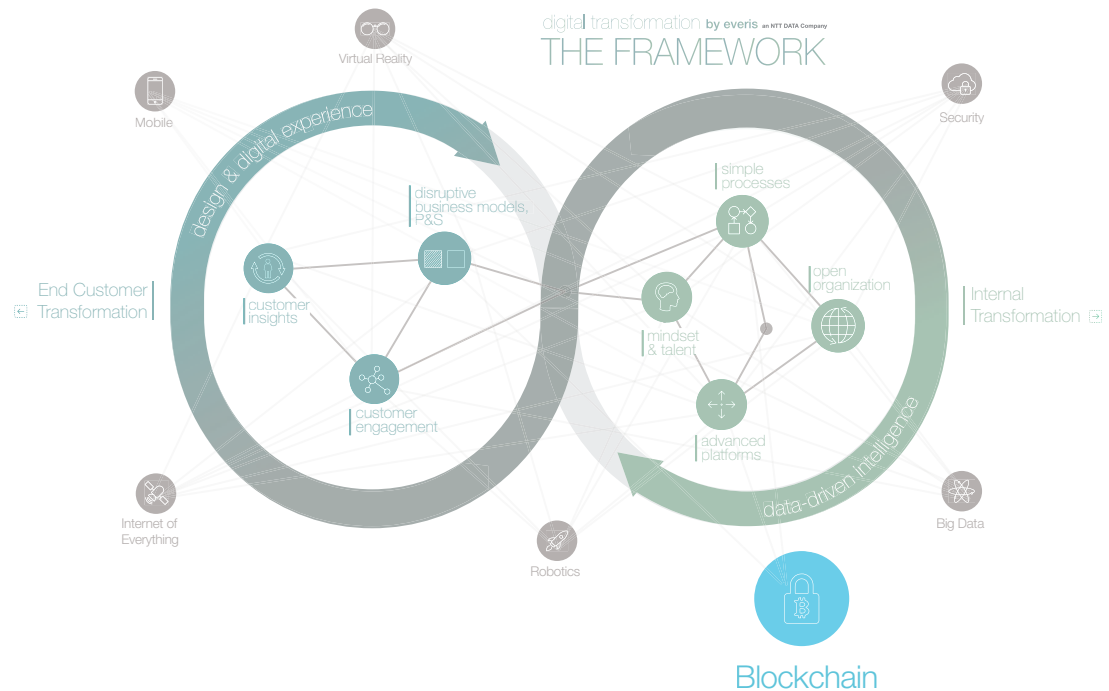
”

A large, light blue graphic of an opening and closing quotation mark, with the text centered between them.

Building new applications on the blockchain is about 80% business process changes, and 20% technology implementation.

William Mougayar

digital transformation framework



practice true blockchain

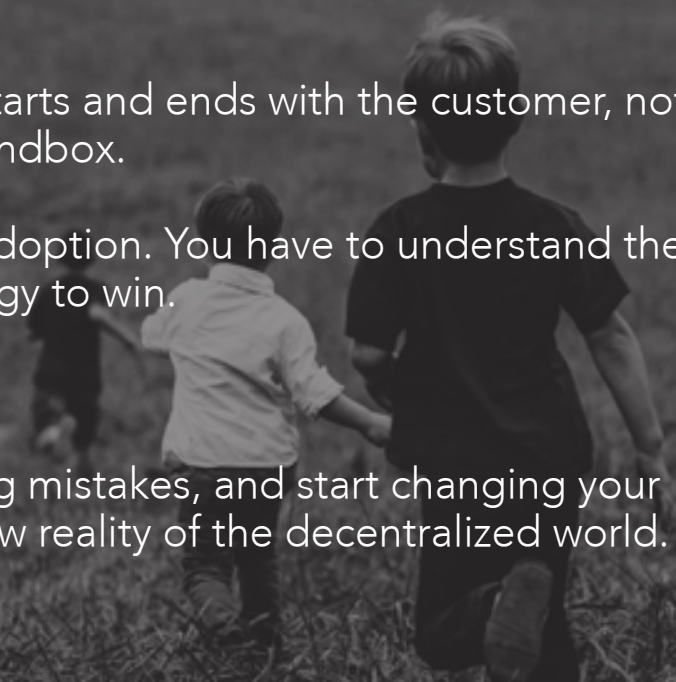
We believe the key to success is not just technology - it's business processes, culture change, and understanding the customer.

We believe that success starts and ends with the customer, not a proof-of-concept in a sandbox.

Markets lead the way to adoption. You have to understand the market AND the technology to win.

Strategy comes first.

Start learning, start making mistakes, and start changing your culture to embrace the new reality of the decentralized world.



our philosophy

purpose

We ask questions.

empathy

We look for customer pain points and desires.

disruption

We use service-design thinking and do some quick prototypes to get feedback.

pragmatism

We build the relevant minimum-viable product you can test on actual users soonest.

it's all about people

The background of the slide is a grayscale photograph of a chessboard with several chess pieces. Overlaid on this image are several semi-transparent teal rectangular blocks of varying sizes. The word "assets" is written in a large, white, lowercase, sans-serif font, centered horizontally and partially overlaid by the teal blocks.

assets

Blockchain assets

Use cases



Blockchain Discovery



Regulation advisory



The Garage



Innovation Lab



The Blockchainers



Blockchain discovery



Discover Blockchain opportunities to make transactions in a safe and reliable way through a participative workshop to dive deep into this new technology.

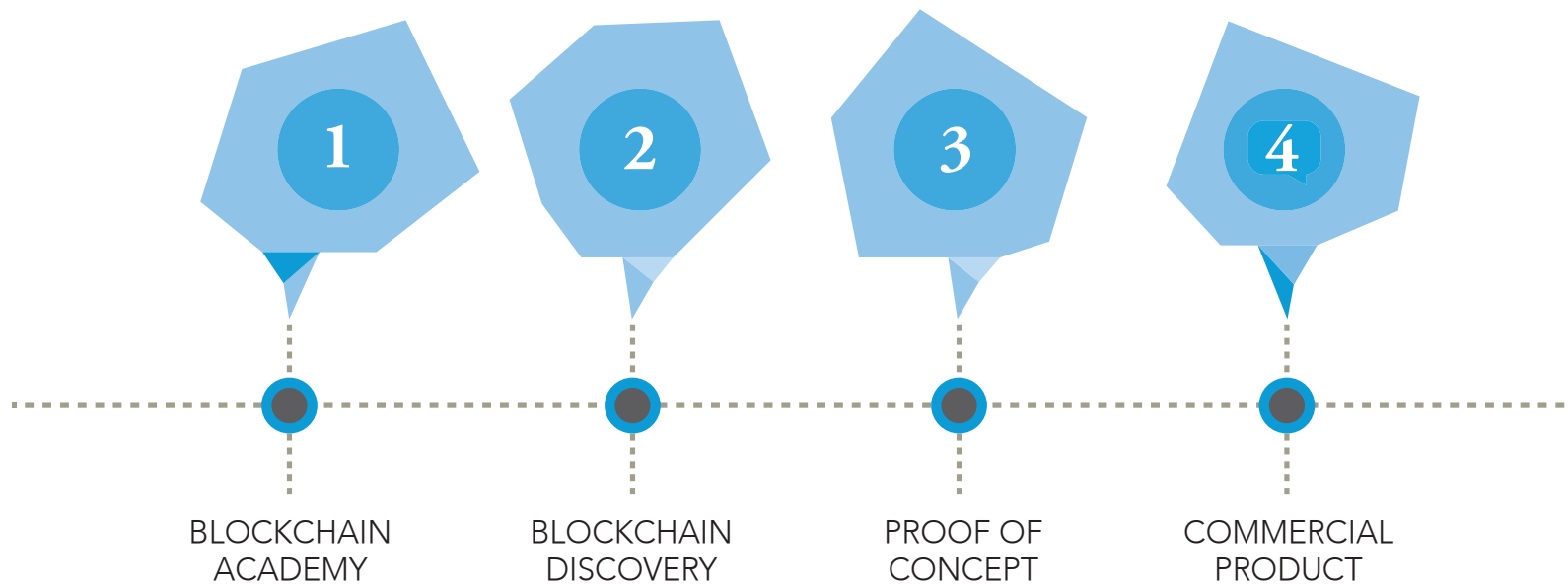


blockchain academy



blockchain workshops

Our roadmap



“Become a Blockchainer” Programme

The objective of our training programme is to qualify employees from different disciplines and markets, as well as different knowledge levels in Blockchain technology, to apply its power in the companies' areas and processes as well as identifying new opportunities in their current market or new ones.

Module 1: Functional Workshop

The objective of this workshop is to explore Blockchain through three different levels.

What is Blockchain?

Where does it come from?

Problems Blockchain solves

What possibilities does it offer?

Best-practices in the banking sector

Module 2: Technical Workshops

The objective of this module is to qualify technical employees throughout two workshops (Basic and Advanced).

Cryptography and cryptocurrency

Consensus mechanisms

Transactions automation

State of art

Test environment: notarization and smart contracts

Practical applications



Functional Workshop

Blockchain applied
to business

People

Innovation, Banking/
Trade-finance, Legal, Risks,
IT and Business deci-
sion-makers.

Requirements

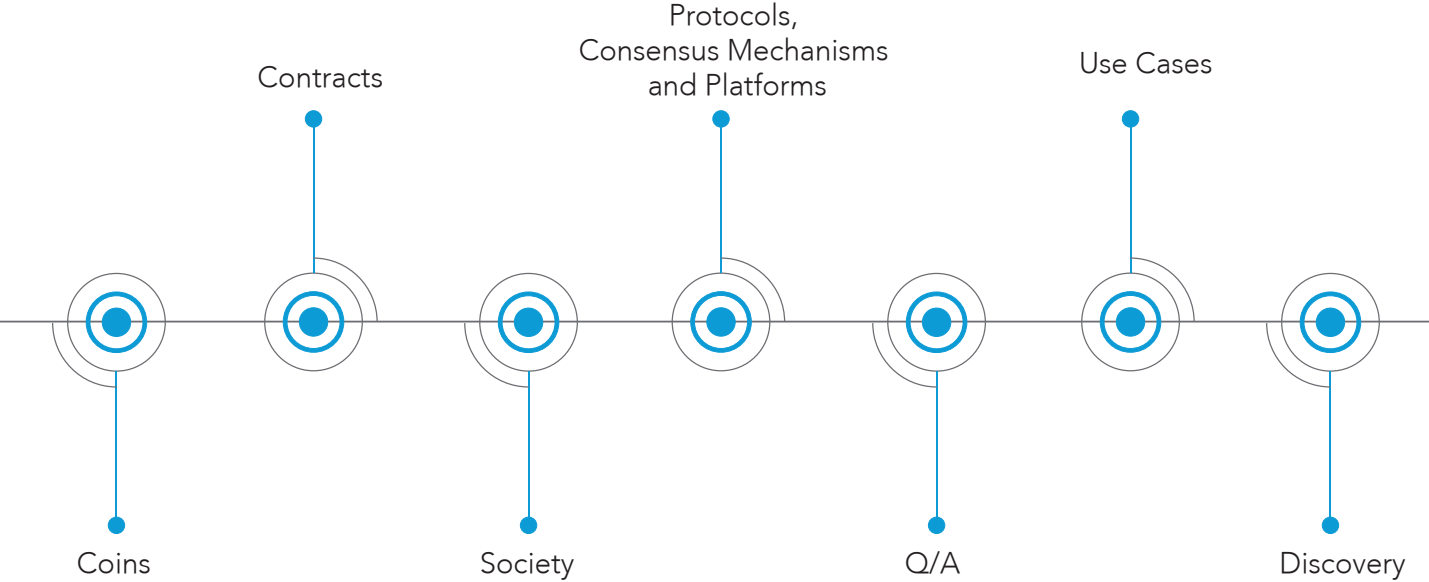
Download Bitcoin Wallet
app.

Material

Laptop and/ or mobile
phone

Groups

Maximum 25 people.





Basic Technical Workshop

Basic Technical Introduction to Blockchain

People

Technical decision-makers from different areas, technical/ scientific/ engineering profiles.

Requirements

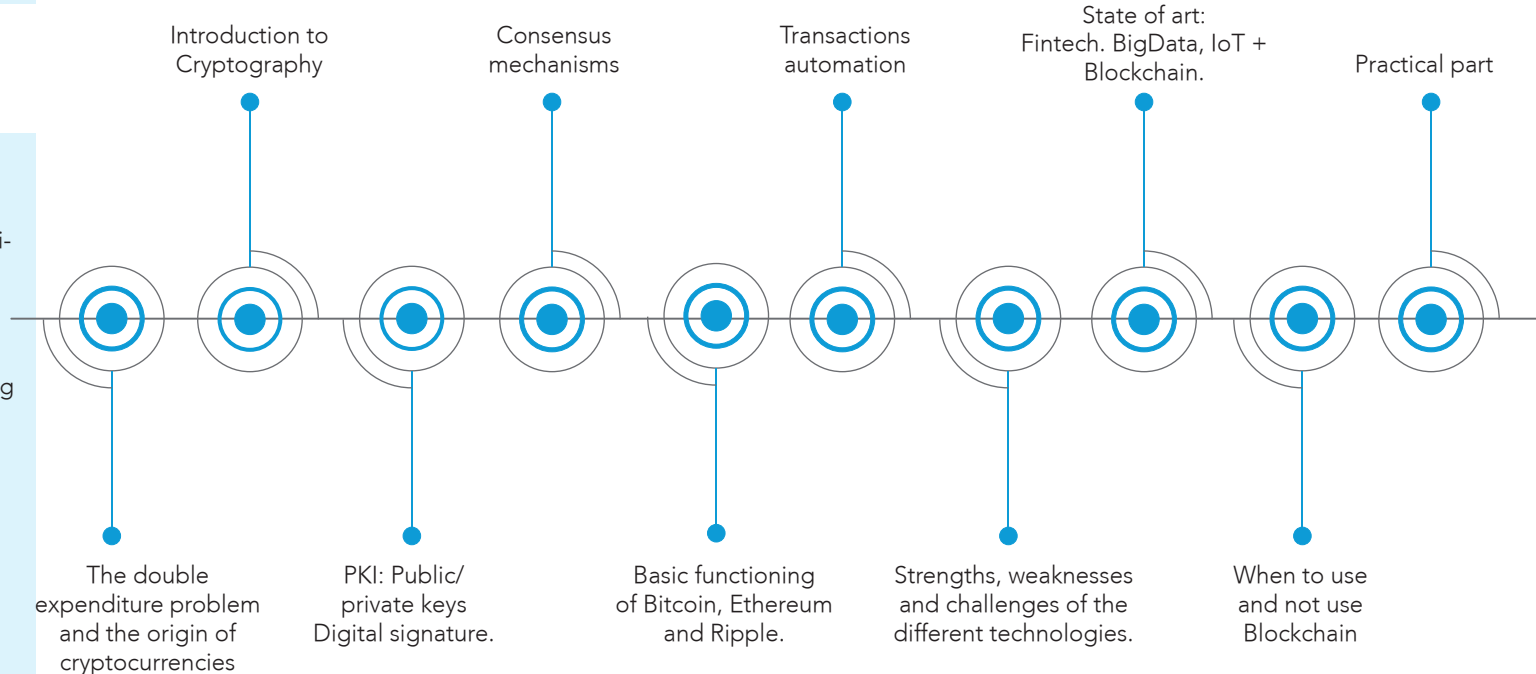
Programming or computing technology knowledge. SQL/NoSQL databases.

Material

Laptop and/ or mobile phone

Groups

Maximum 25 people.





Advanced Technical Workshop

Advanced Technical Introduction to Blockchain

People

Technical decision-makers from different areas, technical/ scientific/ engineering profiles.

Requirements

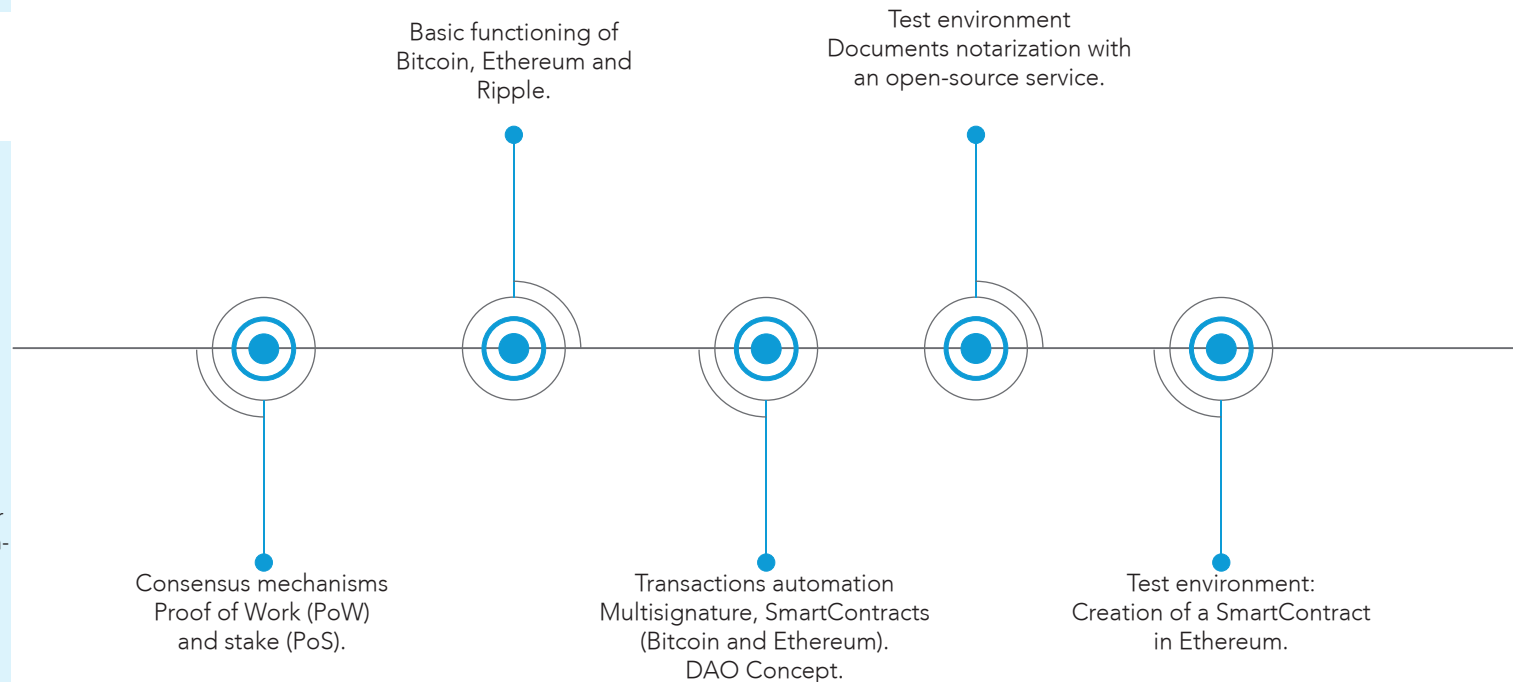
Medium- high programming knowledge (Java, Javascript), systems (servers) -devops-, SCM Git, DB NoSQL.

Material

Laptop with linux/osx terminal or a compatible environment in windows. Optional with virtualbox/ docker installed.

Groups

Maximum 25 people.



What will we learn?

- Understand the evolution of technologies and markets.
- Understand the differential value of Blockchain against previous models.
- Evaluate the operating difficulty and feasibility to implement Blockchain in our business.
- Get to know the best-practices for different fields.
- Understand the current limitations of technology and its maturity state.
- Learn how to program a Smart Contract.
- Learn how to develop models based on Blockchain matching the current legal standards.
- Learn how to notarize documents through Blockchain.
- Installation of a private test environment with transactions explorer.

discovery experience

space mission

THE MISSION



travel time: 4 hours



3 stages

THE CREW



ground control
in charge of encouraging
the participation of everyone



the engineers
experts in different
fields of knowledge



the captain
leader of the project,
must know the challenge
and the team very well



8 - 12 astronauts
experts in the different
processes, they will give
support to the captain

DISCOVERIES



mission journal
Blockchain in
a nutshell

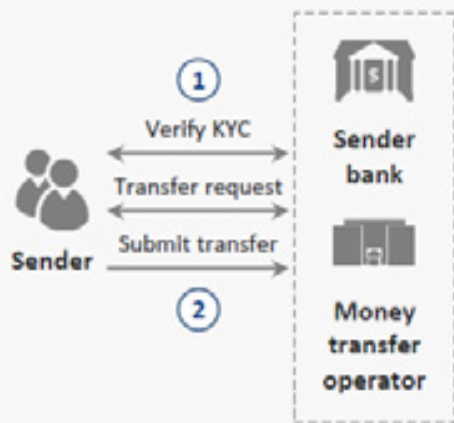
stardust
Case studies of
best practices

mission debrief
Blockchain Action Plan

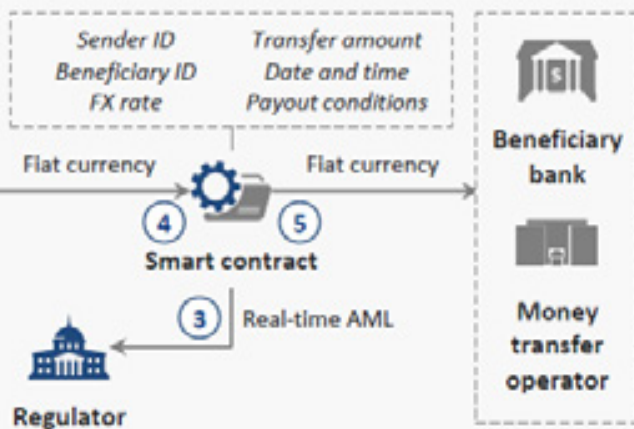
USE CASES

GLOBAL PAYMENTS

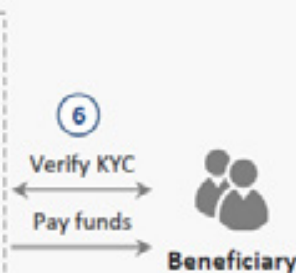
Initiate relationship



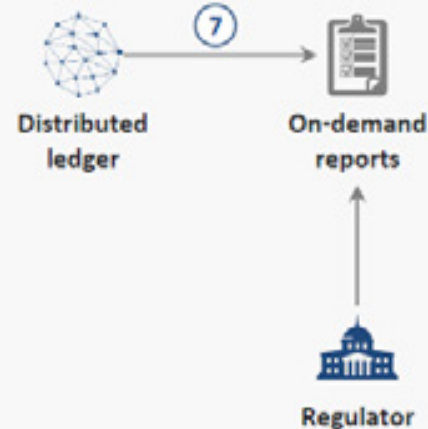
Transfer money



Deliver funds



Act post payment



TRADE FINANCE

Establish payment terms



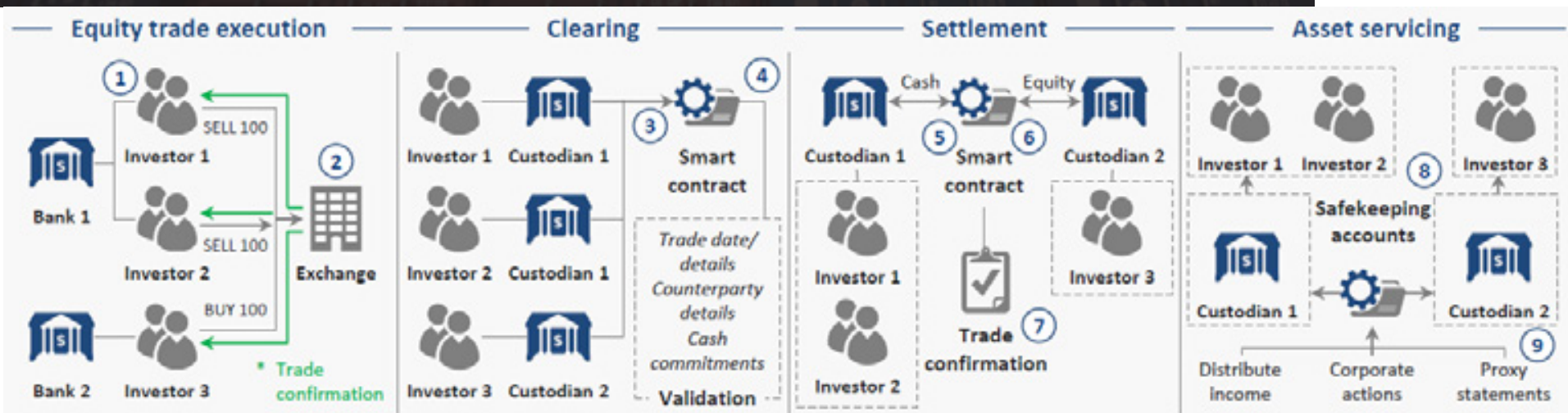
Deliver goods



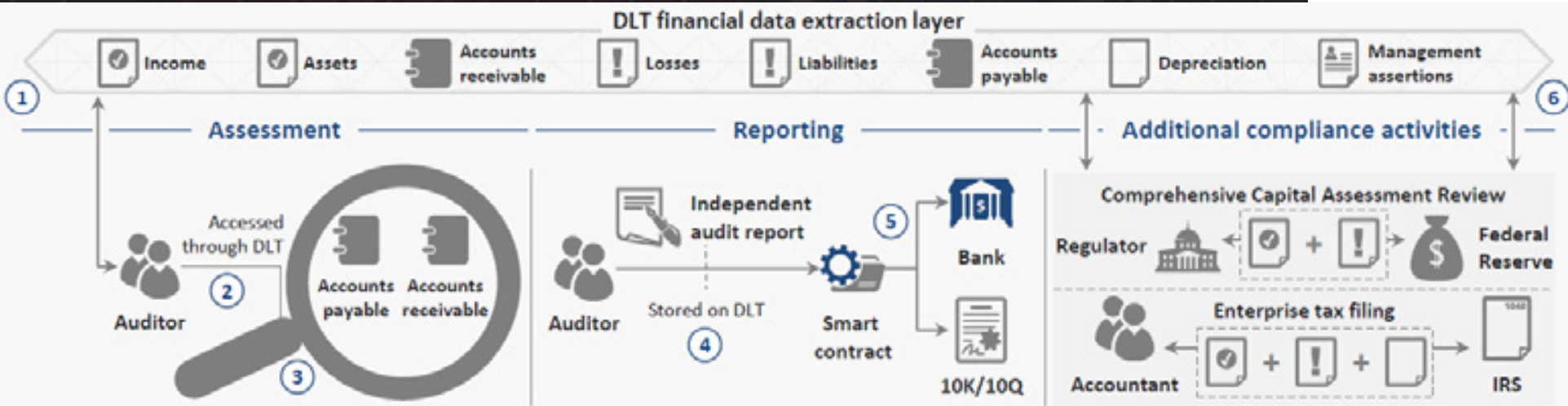
Settle on terms



POST-TRADE RECONCILIATION



AUTOMATED COMPLIANCE





regulation



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PSD 2

- Extension of scope beyond Europe, and in the definition of a "Payment Institution
- Open APIs: Third Party account access
- Security of online payments & account access

BASEL

- Strengthen Bank Capital Requirements
 - Increase bank liquidity
 - Decrease bank leverage

MIFID 2

- Increases transaction reporting complexity and scope
- Major challenge to operations, technology and compliance teams for a larger segment of financial market participants

blockchain

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