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aka EUROPEAN EXPORT + TRADE BANK

AKA Investors' Meeting 2016

Blockchain Unchained

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Deloitte

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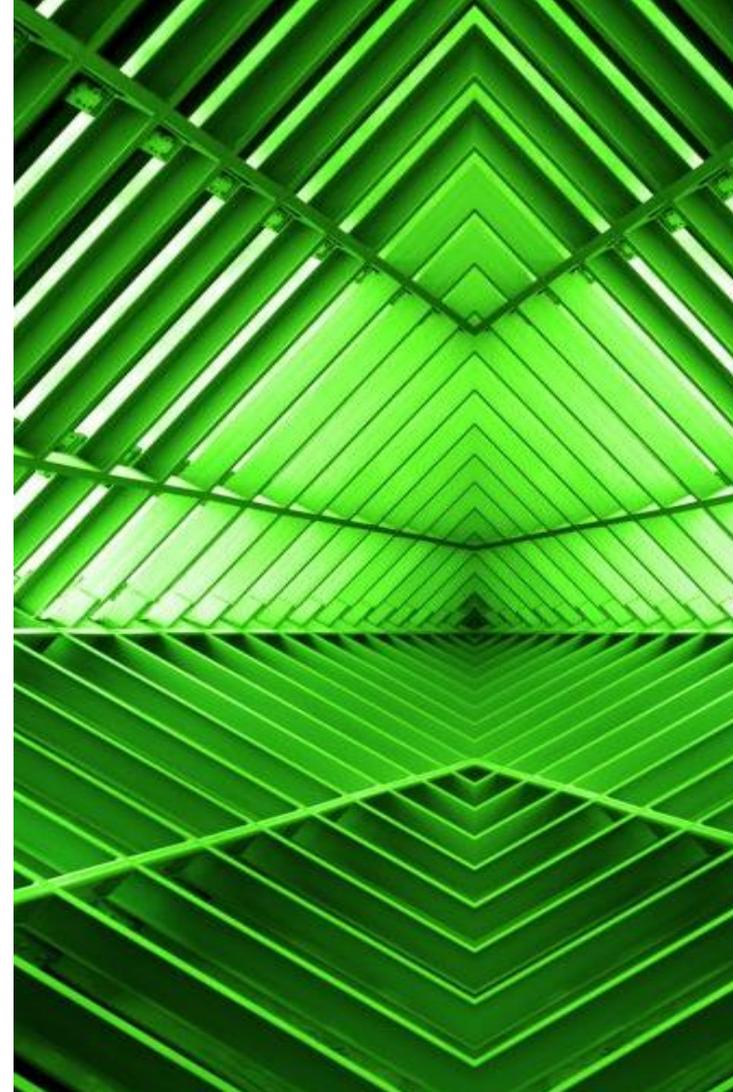
Topic
Which problem does Blockchain solve?
How does Blockchain work?
Which technology platforms exist for Blockchain?
How are our clients responding?
Which scenarios should our clients and we prepare for?

Which problem does Blockchain solve?

Asset ownership and transactions in history

Blockchain is a quantum leap for asset transactions / proof of ownership
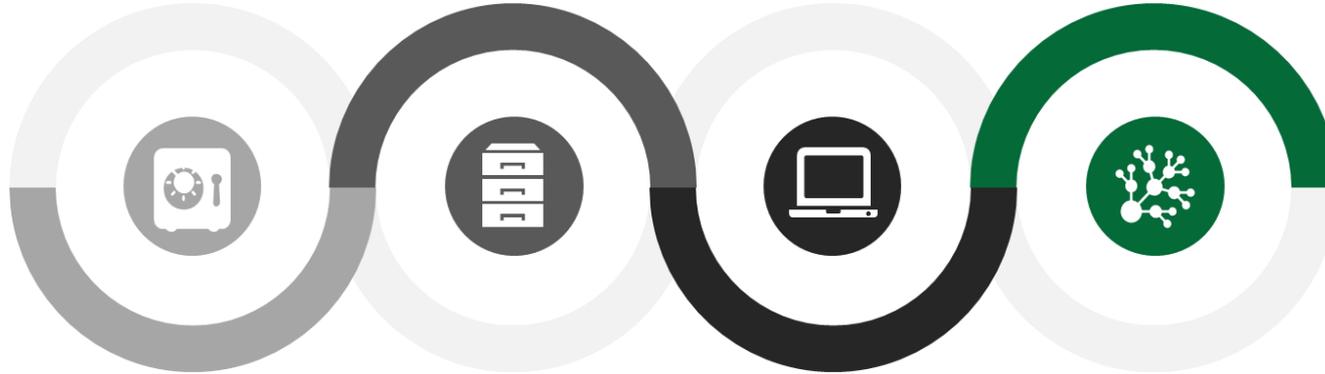
Physical proof of ownership

Proof was made by physical existence
–
(German „besitzen"
= sit on top of the asset)

Analog proof of ownership

Proof by analog paper documentation
–
e.g. Land registry, registered securities

Digital proof of ownership

Proof by digital centralized databases
–
e.g. Apple Music, Bank Account

Blockchain proof of ownership

Proof of work in the Blockchain
–
immutable track of all transactions

Executing & securing transactions is
- A trillion € business
- The raison d'être of entire industries, e.g. FSI
- A central element of the organization of our societies and a legitimation of the state as such
- A source of frustration, inefficiency, gatekeeping and rent extraction

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Blockchain enables asset transactions

Internet **exchanges information** whereas Blockchain **exchanges assets**

Information

PDFs

Docs

PTT Slides

Voice

Photos

Internet transfers information by duplication

+

Assets

Money

Bonds

Art

Stocks

...

Swaps

Property

The Blockchain is an immutable, distributed ledger
designed to transfer assets P2P
thereby discarding intermediaries

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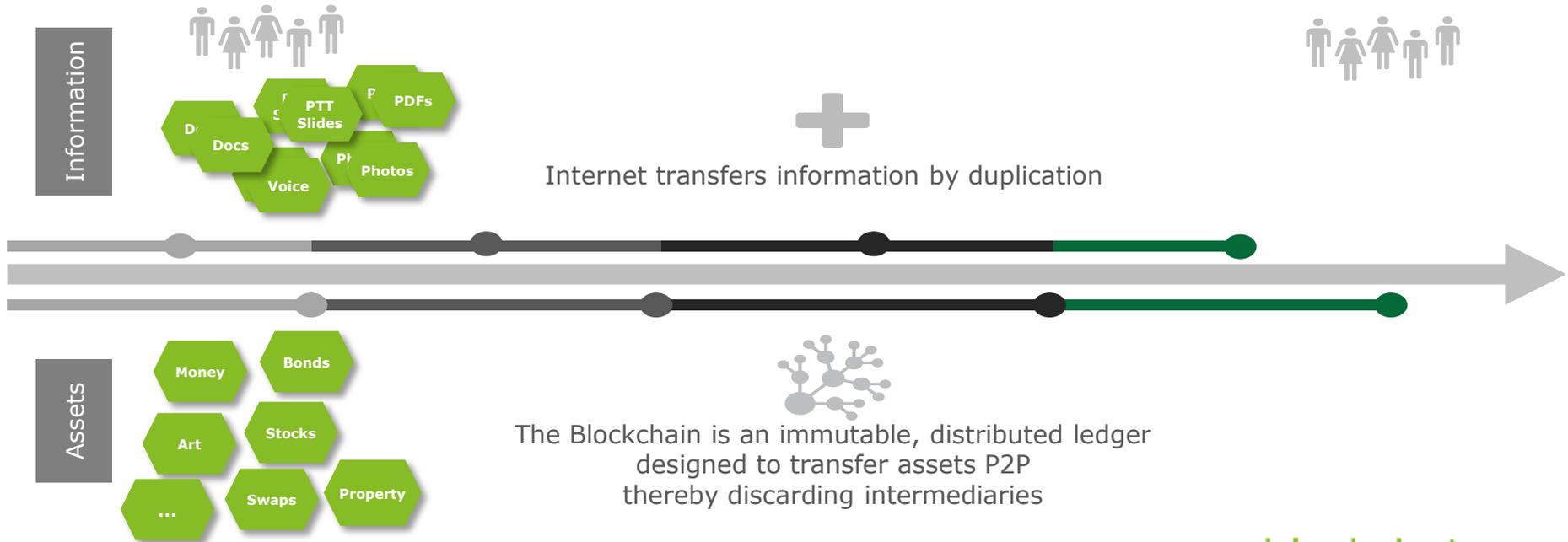
How does Blockchain work?

How does a transaction in a Blockchain work

Adding a transaction into a Blockchain follows 8 steps

1

Transaction

Two parties agree on an transaction

3

Verification

Nodes verify if the transaction is valid based on the rules of the network

5

Proof-of-Work

Miners solve a complex mathematical puzzle - proof of work - potential solutions must prove the appropriate level of computing power was drained in solving

7

Verification

Other miners verify the authenticity of the proof of work

2

Broadcasting

The transaction gets broadcasted to 'miners' (a network of decentralized computers) for processing

4

Structuring

Transactions are gathered in blocks of pending transactions. A block contains a reference to a previous block and a group of transactions . The sequence creates a secure, interdependent chain

6

Broadcasting

The successful miner broadcasts its proof of work to other miners

8

Adding the Block

The verified block of transactions gets immutable added to the Blockchain

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What is a Blockchain?

A Blockchain is a digital, chronologically updated, distributed and cryptographically sealed record of all data transfer activity

Digital
Almost any type of information can be expressed in digital format. Subsequently referenced through a ledger entry.

Chronologically updated
Permanent time stamped each block points and refers to the data stored in the previous block in the chain, so all blocks are linked to one another.

Distributed
Identical copies of all records are shared. Participants can independently verify information. Verification processes are not dependent on a centralized verification. If one node fails, the remaining can continue to operate ensuring availability and reliability.

Cryptographically sealed
Permanent time stamped each block points and refers to the data stored in the previous block in the chain, so all blocks are linked to one another.

1. Near Real Time

2. Less third party

3. Distributed ledger

4. Irreversibility

5. Cencorship resistant
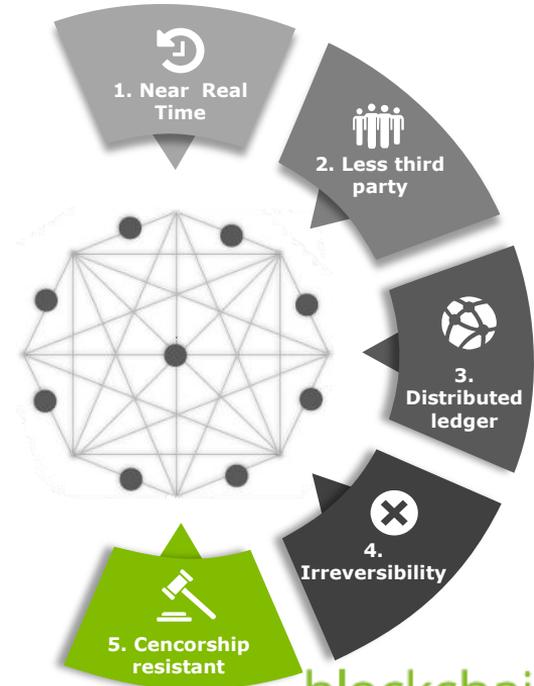
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Which technology platforms exist for Blockchain?

Examples of Blockchain platforms

The field is still growing and new platforms emerge on a weekly basis

Protocol Features

	Bitcoin	**Ethereum**	**Hyperledger**
Functional capabilities	• Cryptocurrency	• Notary (hash-stamping) • Smart Contracts • Digital Assets	• Modular, support pluggable components at each layer
Consensus mechanism	• Byzantine Fault Tolerant (trustless)	• Byzantine Fault Tolerant (trustless)	• Trust required
Access and Permission	• Permissionless	• Permissionless • There are permissioned derivatives	• Permissioned

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How are our clients responding?

Investors & leading industry players are focusing on Blockchain

There are strong concentrations on consortia to set standards in the market

$1B+

Venture Capital Investments

Blockchain VC Investments are comparable to early investments in the Internet.

More than a billion dollars in VC has flowed to 120+ Blockchain-related startups

$363 — Blockchain 2014
$250 — Internet 1995
$690 — Blockchain 2015
$638 — Internet 1996

VC Investment activity in Blockchain (in Mio $)
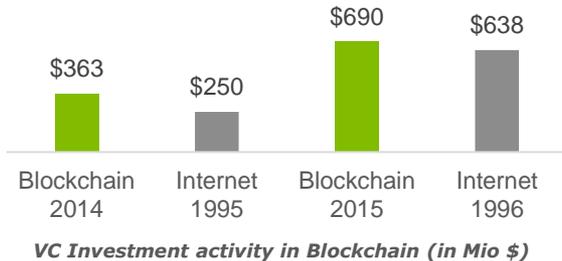
Cost Savings

Predictions say Blockchain could reduce banks' infrastructural costs by $15-$20 bn a year

Market movements

An increasing number of our key clients are joining consortia like R3 to investigate Blockchain or to set standards (hyperledger)

R3

Hyperledger

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Our vision and goals

Position Deloitte as the leading trusted partner of our clients in all areas impacted by the rise of Blockchain technology

Become the Center of Excellence for Blockchain technology in Deloitte Germany that builds the capabilities to advise our clients in the business, legal, tax risk, and audit impacts of Blockchain and to support them in all areas of its adoption

Global cooperation

Serving all industries

University Partnerships

Ecosystem of startups

AERS

Consulting

Financial Advisory

Tax & Legal

As One

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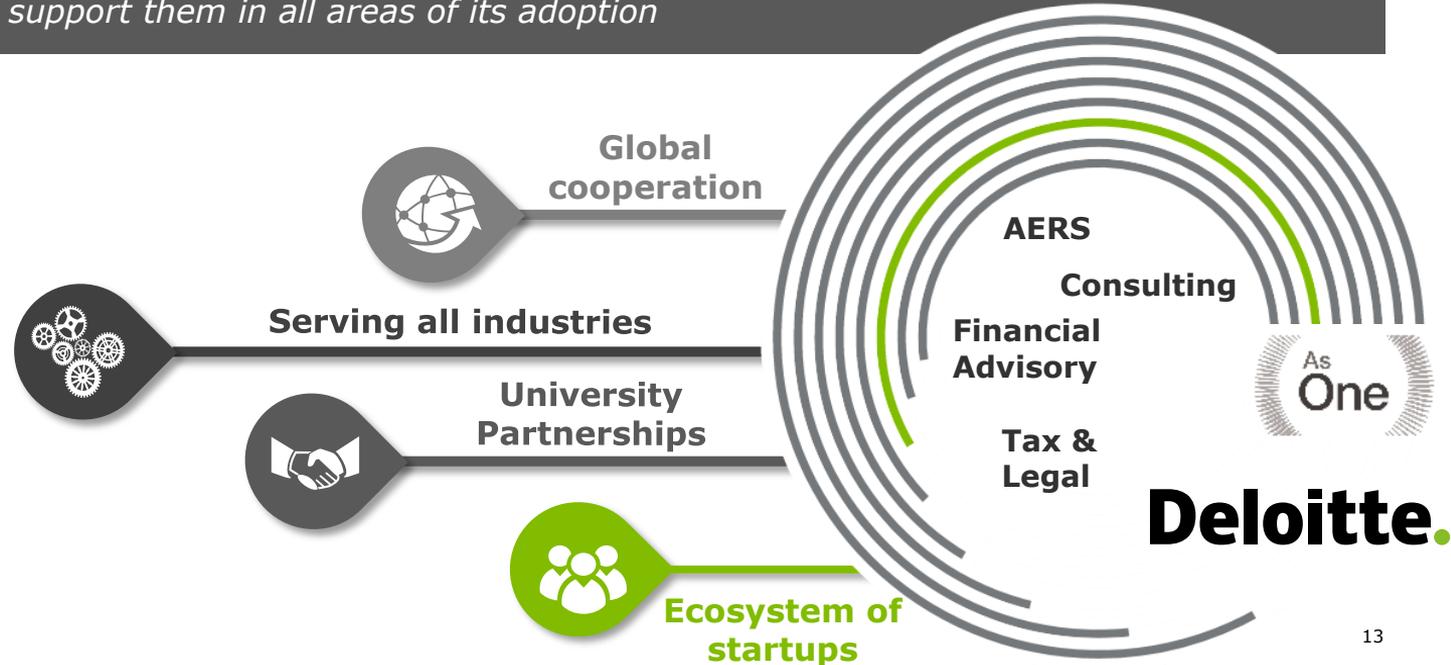
Which scenarios should our clients and we prepare for?

Scenario Overview

There are no technical Restrictions

Blockcracy

Survival of the biggest

Restrictions

Trust in the established System

Technical

One-eyed among the blind

Niche evolution

Institutions have lost the peoples trust

People have trust in the established System

Technical Restrictions can not be solved

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