



Blockchain: Disruptive Innovation or yet another Gimmick?

Michel MAQUIL

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Sarasota

Warning

In this presentation I refer to sources mentioned at the end of the presentation.

The views expressed reflect only my personal opinion as well as the opinion of the mentioned sources.

Sarasota April 2016

Challenges in Capital Markets

- Current limitations of the capital markets based on a multitude of intermediaries and market infrastructures
 - Multiple versions of the Truth (requires consolidation by banks);
 - Vulnerable to Technology Threats (Cyberattacks);
 - Unnecessarily complex;
 - Not equipped for 24h/7d-w/365d-y processing.

Challenges in Capital Markets

Challenges

- Banks too expensive (exorbitant costs due also to regulation, IT legacy systems, etc);
- Banks and other intermediaries under huge pressure to bring down costs;
- Investors enjoying dramatically improved information, want quick access to investments;

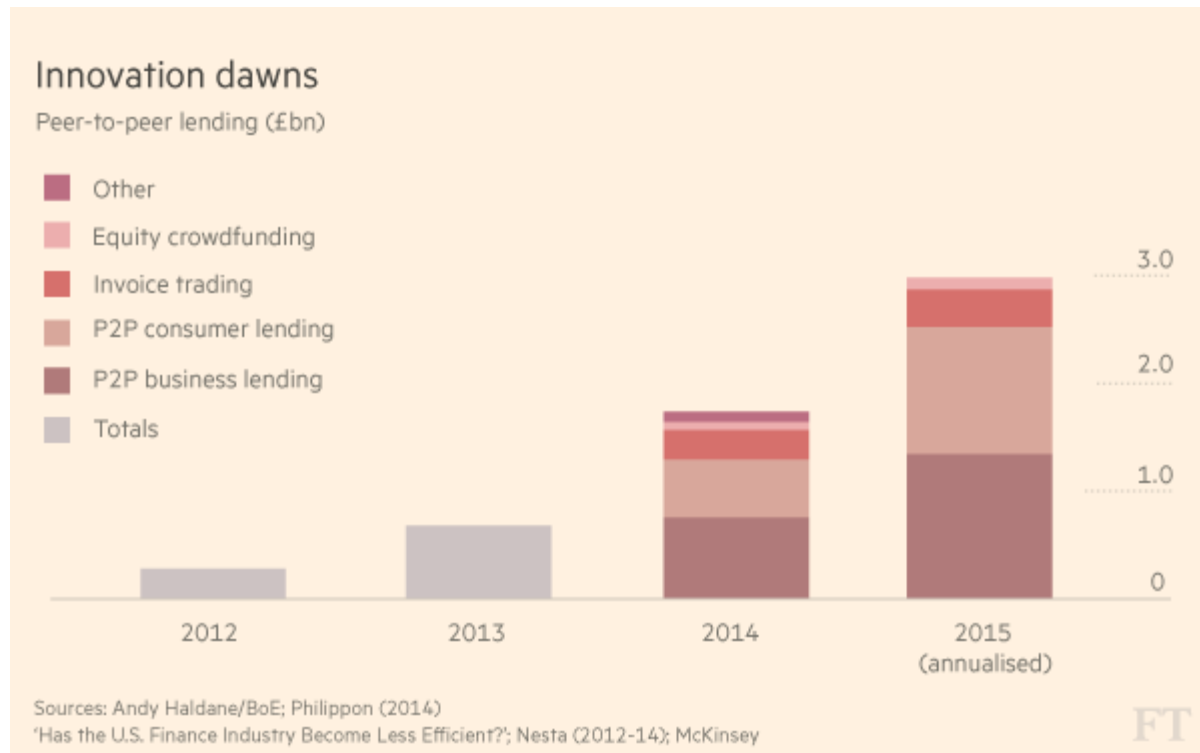
Fintech

What is 'Fintech'

- Fintech portmanteau of financial technology applying to an emerging financial services sector in the 21st century.
- Originally applied to back-end of established consumer and trade financial institutions.
- Now the term includes any technological innovation in the financial sector, in financial literacy and education, retail banking, investment and even crypto-currencies like bitcoin using blockchain technologies.

Read more: [Fintech Definition | Investopedia](#)

Fintech:source of innovation



Blockchain Definition

- A Blockchain is a cryptographic, or encoded, ledger comprising a digital log of transactions shared across a public or private network

Source McKinsey & Company

Blockchain Definition

A blockchain is “a technology that allows people who don’t know each other to trust a shared record of events”.⁴ This shared record, or ledger, is distributed to all participants in a network who use their computers to validate transactions and thus remove the need for a third party to intermediate.

From ancient ledger.....

- Ledger have been at the heart of commerce since ancient times
 - Clay tablets
 - Papyrus
 - Paper
 - etc

...to digital distributed ledgers

- An asset database
- Shared across a network of multiple sites, countries, institutions,...
- Participants have access to own copy of the ledger
- Changes are reflected in all copies
- Applies to financial, legal, physical, etc assets
- System of signatures or keys allows for access and to make changes

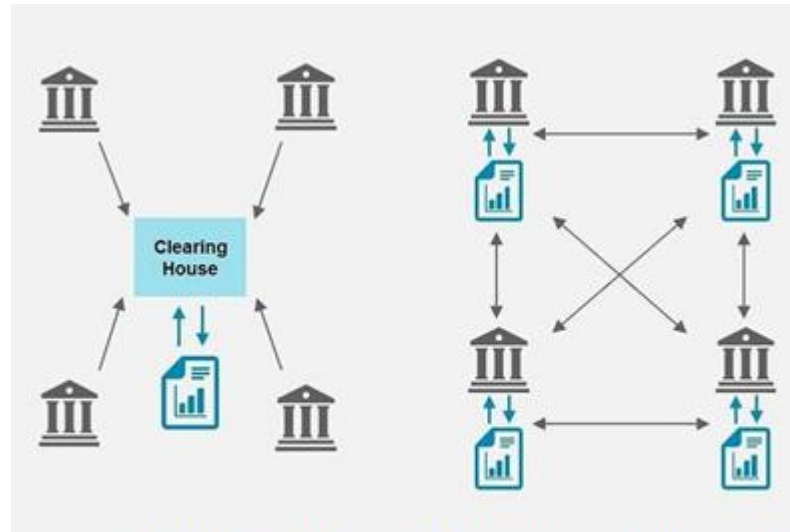
Why blockchain?

- Algorithms allow transactions to be aggregated in blocks
- Blocks are added to a chain

Who can use Blockchain?

- Governments: collect taxes, deliver benefits, issue passports, etc
- Health systems,
- Banking: payment systems, csd, custodian bank, etc

Current System versus Blockchain

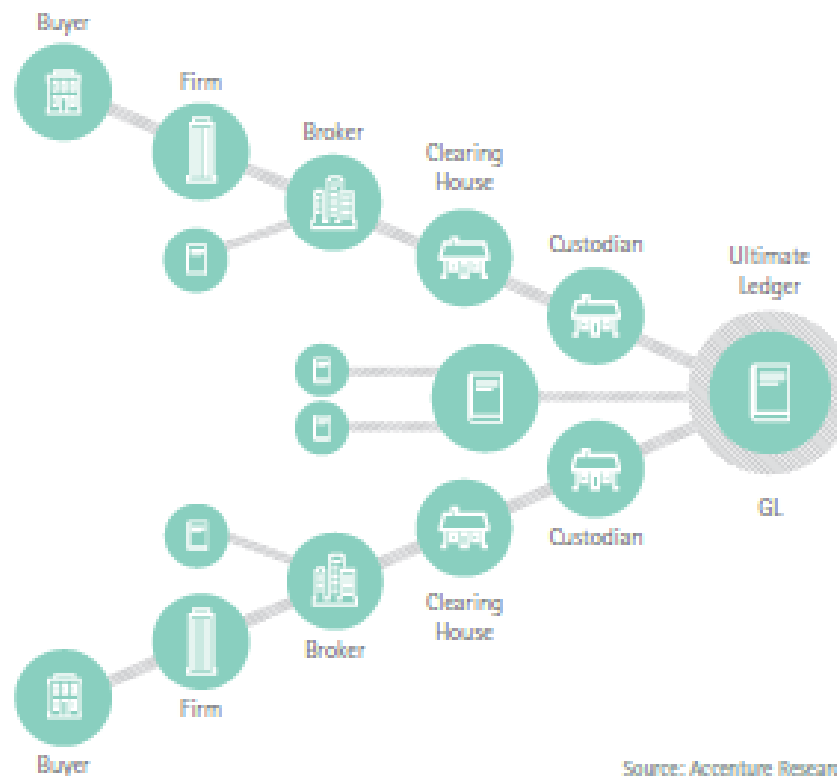


A distributed ledger, right, is a network that records ownership through a shared registry

Oliver Wyman

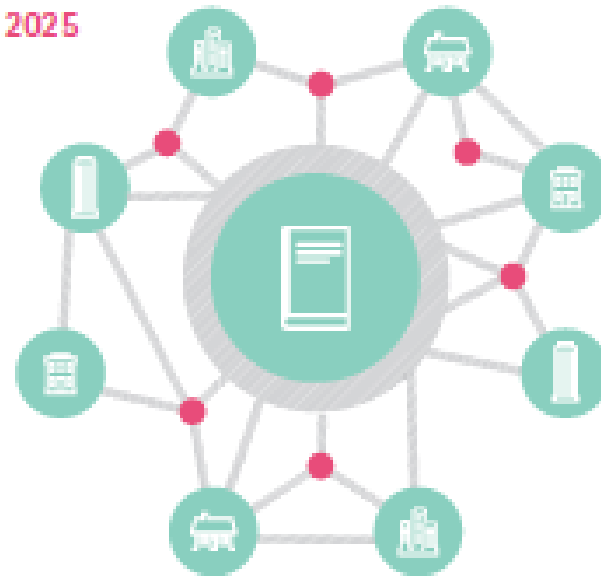
Current System versus Blockchain

Figure 2: Capital markets today



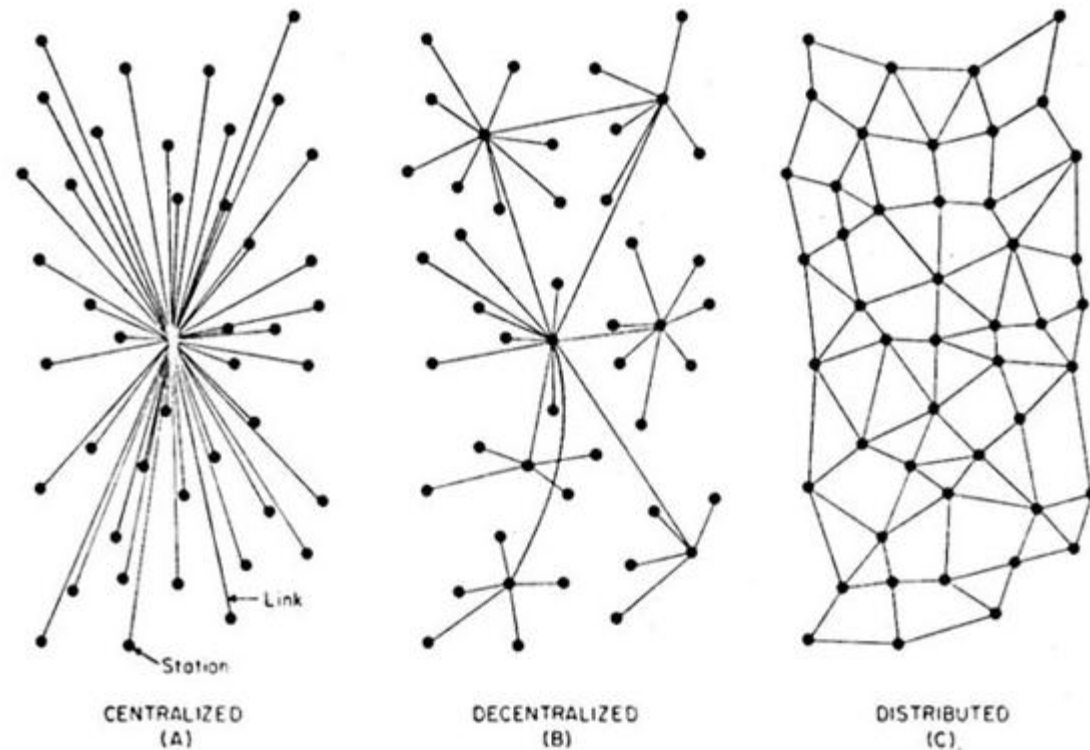
Current System versus Blockchain

Figure 3: Capital markets in 2025



Source: Accenture Research

Blockchain: How does it work



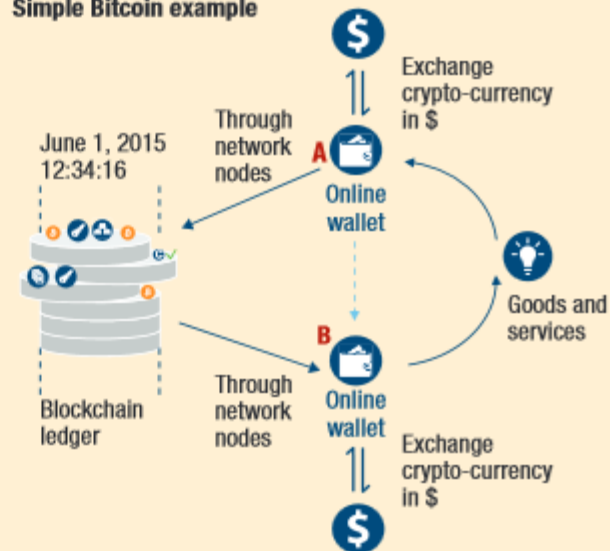
Blockchain: How does it work

The blockchain

- A distributed public digital ledger that maintains, through cryptographic proof, a continuously growing secure list of transactions that is replicated repeatedly.
- A transaction network that potentially can be used by financial institutions and consumers to transact directly.
- Well-suited for applications requiring a rapid, permanent time and date stamp such as:
 - Payments
 - Financial asset transfers
 - Smart contracts
 - Ownership splits and notary services
- A technology that brings substantial benefits in terms of speed, security, transparency, convenience and cost.

Source: McKinsey & Company

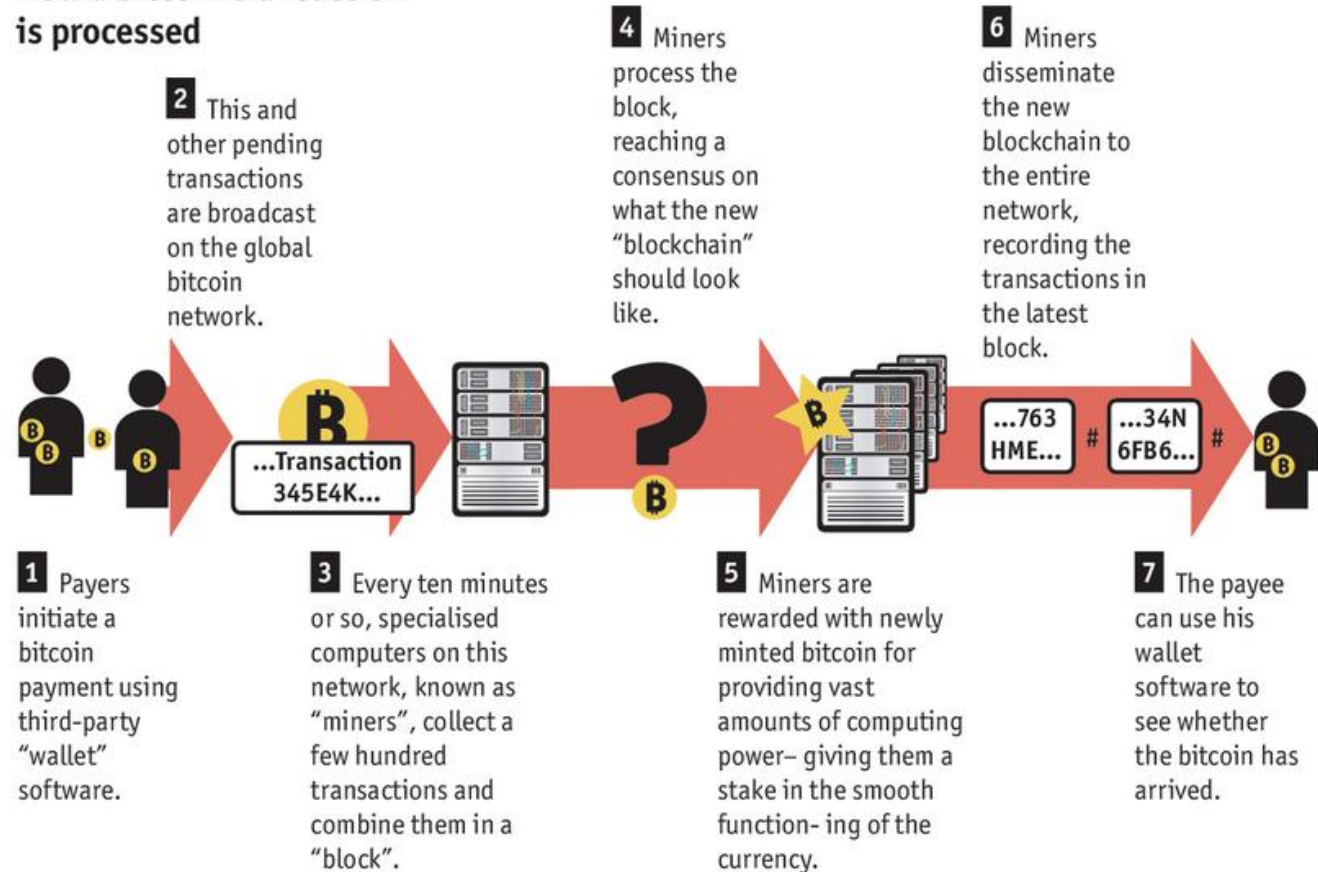
Simple Bitcoin example



The decentralization of the transaction system will have an important impact on the way business is conducted throughout many industries.

Blockchain and the Bitcoin

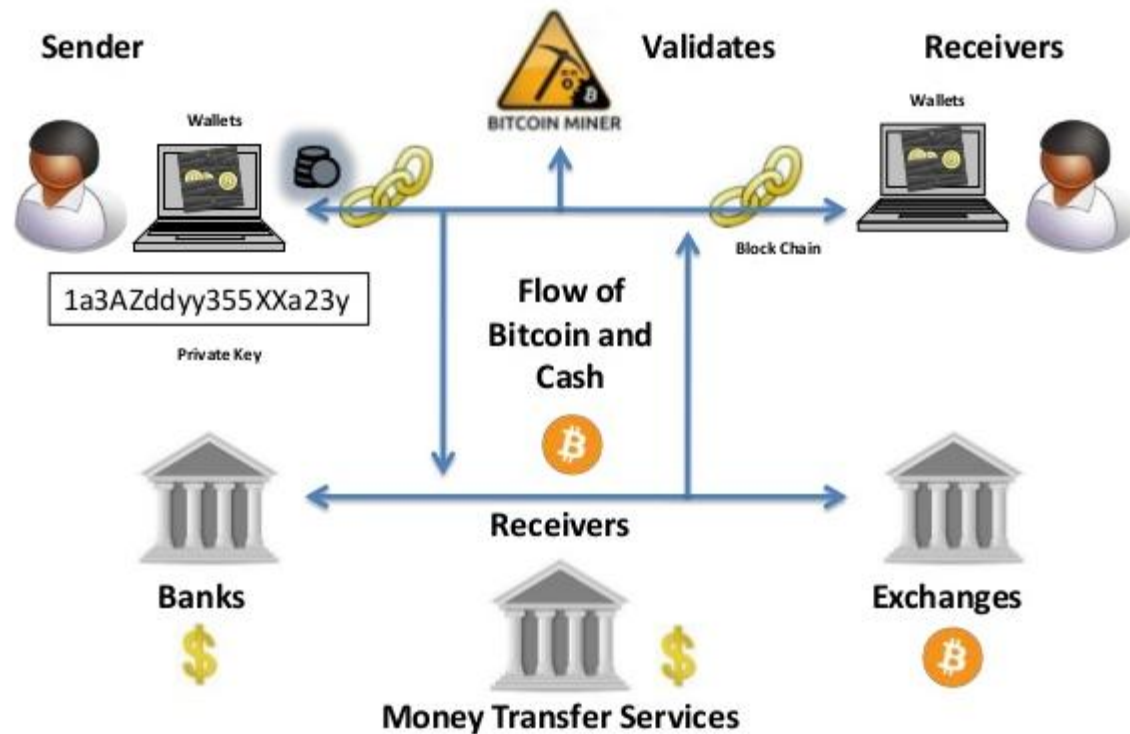
How a bitcoin transaction is processed



Economist.com

Blockchain and the Bitcoin

How Does Bitcoin Work?



Blockchain in Capital Markets

- Faster Clearing and Settlement
- Ledger Consolidation
- Consolidated Audit Trail
- Reduction in Systemic Risk (prefunding prior to trading)
- Operational Improvements in the Middle and Back Office
- Account-handling Efficiency
- Redundancy of Book Entry Systems

Beyond the Hype: Blockchain in Capital Markets McKinsey&Cy

Blockchain and other Projects

Key issue in the Blockchain applications

Identify counterparties in an
unambiguous manner,

Have public freely available Identifier
(Open Data)

=> LEI can play a pivotal role

Blockchain and other Projects

Legal Entity Identifier (LEI)

- The LEI is a unique 20-character alphanumeric code based on the ISO 17442 standard developed by ISO, which is assigned to legal entities that are counterparties to financial transactions. The LEI code itself is neutral, with no embedded intelligence or country codes.
- Actually some 430,000 such LEIs have been delivered worldwide (US only 105,000) to entities mainly active in derivative markets

Blockchain and other Projects

Four key principles underlie the LEI:

- It is a global standard;
- A single, unique identifier assigned to each legal entity active in financial markets;
- It is supported by high data quality;
- It is a public good, free of charge for all users.

The reporting of LEI and Legal Entity Reference Data is conducted daily by LEI issuing organizations using the Common Data File format.

Reaction of the Market From scepticism.....

2013

JPMorgan Chase CEO denounces bitcoin as 'terrible,' predicts its downfall

Published time: 23 Jan, 2014 22:33

Edited time: 26 Jan, 2014 11:18

[Get short URL](#)



JPMorgan Chase & Co Chairman and CEO Jamie Dimon.(AFP Photo / Chip Somodevilla) / AFP

Reaction of the Market

... Towards Realism in less than 2 years

2015

JPMorgan CEO: We Can Learn From Technologies Like Bitcoin

Yessi Bello Perez (@yessi_kbello) | Published on April 10, 2015 at 12:14 GMT

NEWS



Jamie Dimon, chairman and president of JP Morgan Chase, says his bank can learn from disruptive payment systems like bitcoin.

Dimon, famously dismissive of the digital currency, [made the comments](#) in his annual letter to JP Morgan shareholders, noting:

"You all have read about bitcoin, merchants building their own networks, PayPal and PayPal look-alikes. Payments are a critical business for us – and we are quite good at it. But there is much for us to learn in terms of real-time systems, better encryption techniques and a reduction of costs and 'pain points' for customers."

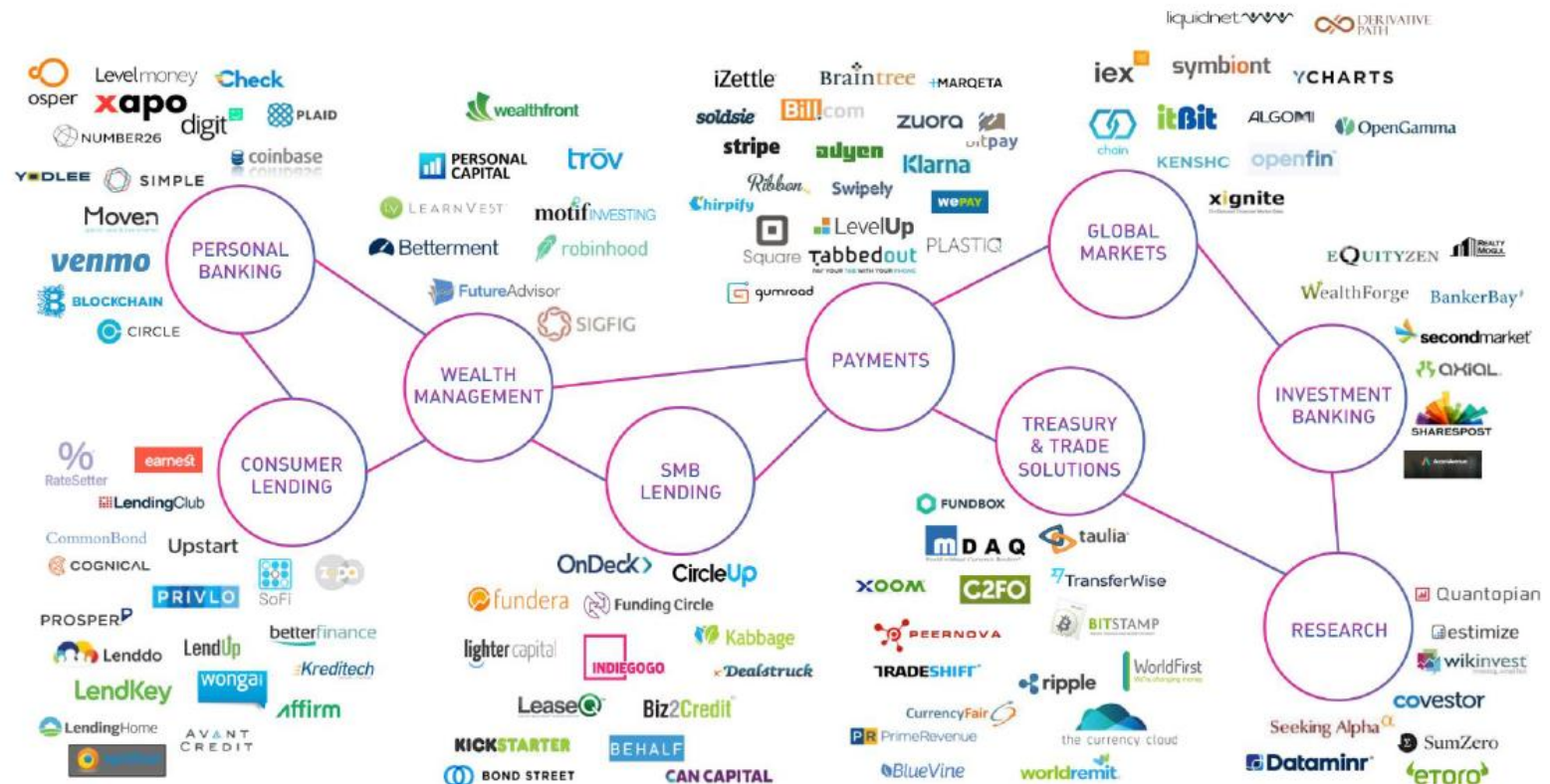
Fintech (and Blockchain) Financing worldwide

Figure 4: Global FinTech Financing Activity



Source: Accenture and CB Insights

Startups are disrupting financial Services by unbundling all of the Bank's core Offerings



Reaction by the Market Dec 15-Jan 16



The Global Adoption of Real-Time
Retail Payments Systems (RT-RPS)

Reaction by the market

Dec 15 – Jan 16



The global provider
of secure financial messaging services

 SWIFT in your country

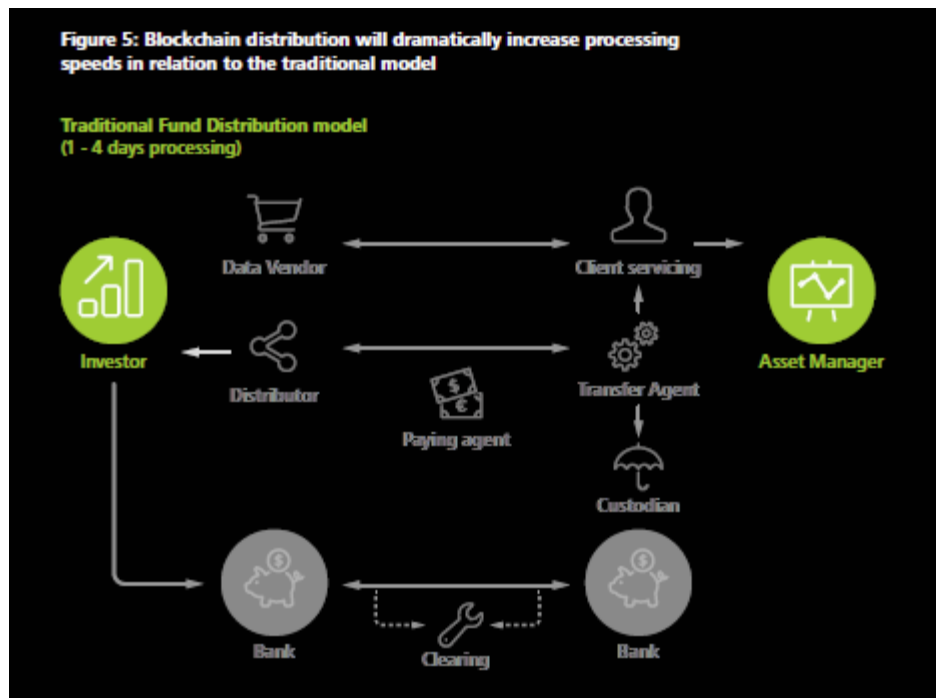


**smarter, simpler
cross-border payments**

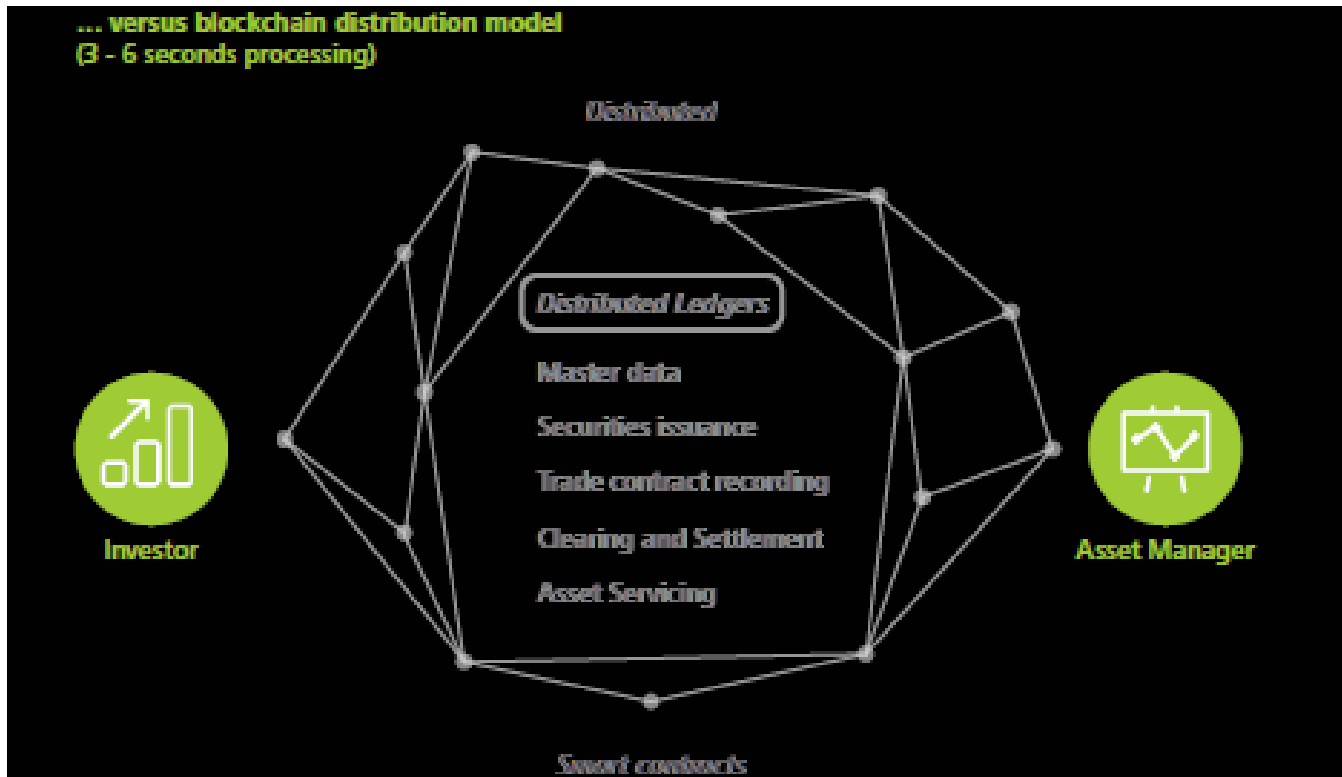
a service that will enable
fast, transparent and predictable
global payments

**making
real world
change**

Blockchain and the Fund Industry



Blockchain and the Fund Industry



Blockchain and the Banks

- Banks may lose much of their intermediary role to their customers;
- Banks may also win back activities from their suppliers (settlements, clearing, transfer agents, etc)
- Banks will certainly not be the first losers (if there are to be losers)

Bank take the Initiative

More than 20 banks have created a consortium named R3 to create a new, global ledger protocol out of Bitcoin software (Blockchain)

“Over decades, banks and other firms have built systems for themselves. [But] with shared or distributed ledgers, perhaps we can imagine a world where participants share this infrastructure, so rather than everyone running their own systems that have to be reconciled, we [will have] an open platform that multiple firms can connect to.”

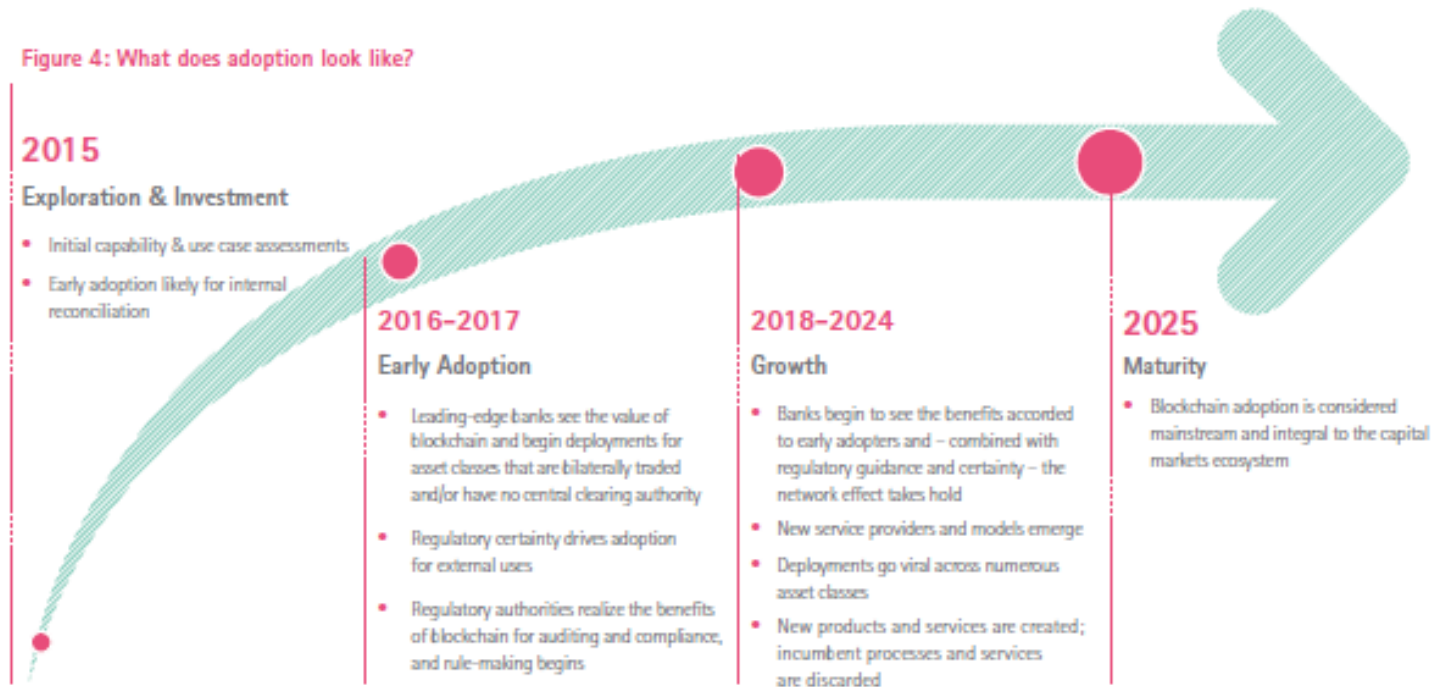
Richard Brown Chief Technology Officer R3

Blockchain and the Regulators

- Regulators can slow down the deployment of blockchain and blockchain like technologies;
- Regulators can be very supportive;
- Regulators can climb on the bandwagon and use new technologies for their purposes (ledger);
- Hopefully they will not ignore this rapidly emerging technology.

What does adoption look like?

Figure 4: What does adoption look like?



Source: Accenture Research



FT March 8, 2016

Good News – Fintech could disrupt Finance

Banking is currently inefficient, costly and riddled with
conflicts

by Martin Wolf

Source

- **The Global Adoption of Real-Time Retail Payments Systems (RT-RPS), White Paper, Swift 2015** <https://www.swift.com/node/4716>
- **How can FinTech facilitate fund distribution? Deloitte Luxembourg 2016** <https://www2.deloitte.com/lu/en/pages/technology/articles/how-can-fintech-facilitate-fund-distribution.html>
- **Cutting through the noise around financial technology, MyKinsey Company February 2016** <http://www.mckinsey.com/industries/financial-services/our-insights/cutting-through-the-noise-around-financial-technology>
- **CIO Explainer: What is Blockchain? By Steven Norton Wall Street Journal February 2, 2016** <http://blogs.wsj.com/cio/2016/02/02/cio-explainer-what-is-blockchain/>
- **Beyond the Hype: Blockchains in Capital Markets, MyKinsey Company December 2015** <http://www.mckinsey.com/industries/financial-services/our-insights/beyond-the-hype-blockchains-in-capital-markets>

Source

- **Blockchain in Capital Markets – The Prize and the Journey, Euroclear and Oliver Wyman February 2016** <https://www.euroclear.com/en/campaigns/blockchain-in-capital-markets.html>
- **Embracing Disruption – Tapping the Potential of Distribution ledgers to Improve the Post-Trade Landscape, DTCC, January 2016**
<http://www.dtcc.com/news/2016/january/25/new-dtcc-white-paper-calls-for-leveraging-distributed-ledger-technology>
- **Blockchain Technologies: Preparing for Change – High Performance Delivered Accenture 2015** https://www.accenture.com/us-en/~/_media/Accenture/next-gen/top-ten-challenges/challenge4/pdfs/Accenture-2016-Top-10-Challenges-04-Blockchain-Technology.pdf
- **Distributed Ledger Technology: beyond block chain, A report by the UK Government Chief Scientific Advisor 2016**
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf

Thank you for your attention

