

# Insights on innovation, fintech trends and blockchain disruption

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Senior Innovation Manager

June 2016



# Cautionary statement

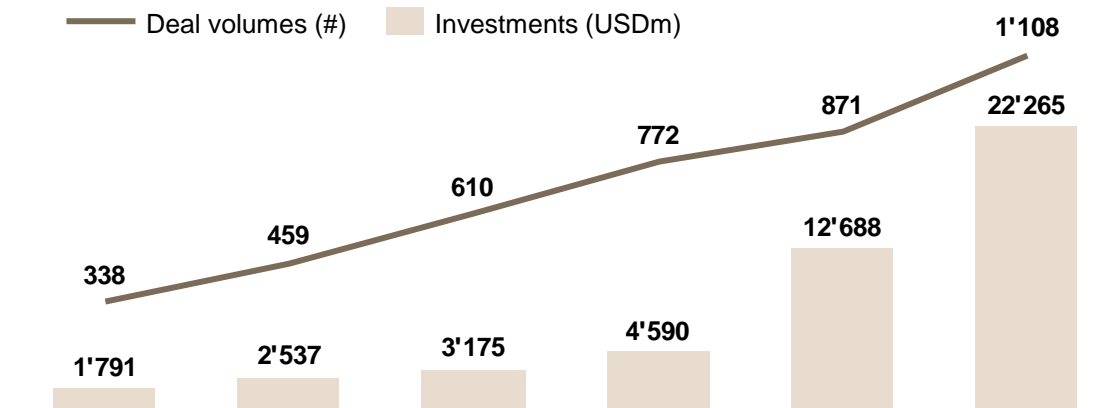
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The sequence in which the factors above are presented is not indicative of their likelihood of occurrence or the potential magnitude of their consequences. Our business and financial performance could be affected by other factors identified in our past and future filings and reports, including those filed with the SEC. More detailed information about those factors is set forth in documents furnished by UBS and filings made by UBS with the SEC, including UBS’s Annual Report on Form 20-F for the year ended 31 December 2014. UBS is not under any obligation to (and expressly disclaims any obligation to) update or alter its forward-looking statements, whether as a result of new information, future events, or otherwise.

# Digitization of consumer behaviour

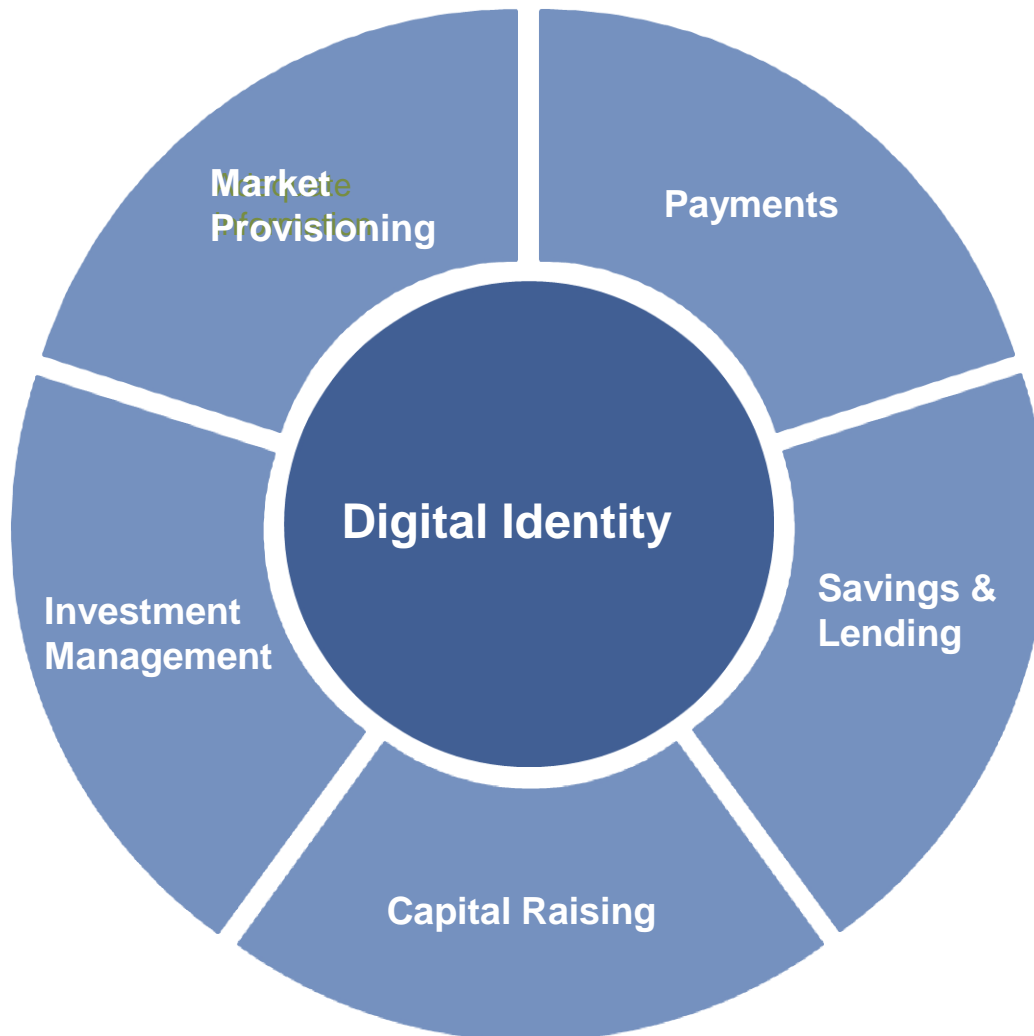


## FinTech Investments



# Disruptive technology & financial services

Financial Services disruption is greater than ever before

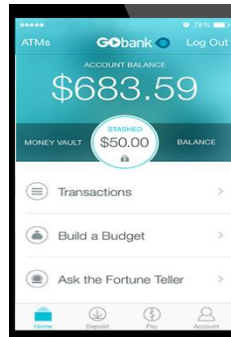


- 1 Universal banking model will become unbundled
- 2 Traditional term structuring and leverage **role of banks will be substituted** by new sources of capital
- 3 The **benefits of scale** will be eroded
- 4 Traditional mechanisms of **measuring customers' risk profile** will lose their efficacy
- 5 **Disruption** will not be a one-time event, rather a **continuous pressure to innovate**

# Digital attackers enter the banking market

## Digital Banks

According to McKinsey & Company, winners in the digital banking space could realize a profit upside of 40% or more and digital institutions that resist innovation could see up to 35% of their net profits erode.



## Digital Investment Managers



Black Rock is buying Future Advisor to operate within its Solutions Technology Platform. Betterment has 120,000 client accounts and \$2.52 in AUM. Wealthfront has 35,500 clients and \$2.51 B in AUM

## Digital Money Managers



Digital Money Managers use data aggregation to provide their customers with holistic views of their accounts. Intuit bought Mint, previously run by Yodlee, last year.

## Social Investing



1,048 wikifolios  
\$220M in  
invested capital



\$13.5M in AUM



2.75M users  
>120M trades



300,000 users  
creating content  
for audience of  
40M



\$2.6B in AUM  
500,000 accounts

## Digital Financial Advice



As of January, Personal Capital had \$1B in AUM making it ahead of all other start-up companies in this space.



# Disruptive technology themes and business trends

Artificial Intelligence  
step-changes functions  
and processes

Cloud and shared economy  
technology lowers cost to offer  
products and services

Customer Experience  
disrupted and bank's front-end  
disintermediated

Automation of client  
sales and services

## Machine Learning



## Marketplaces / API



## Mobile

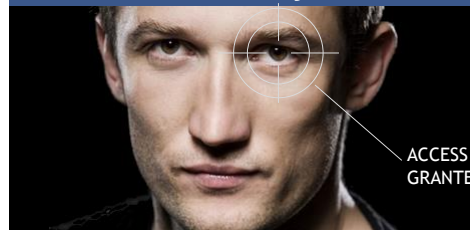


Crowd-sourcing  
of capital

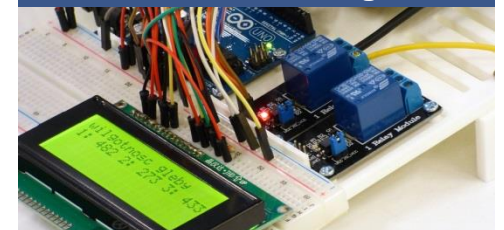
## Natural Language Processing



## Security



## Internet of Things



Digital utilities for  
financial services

## Data analytics



## Cloud

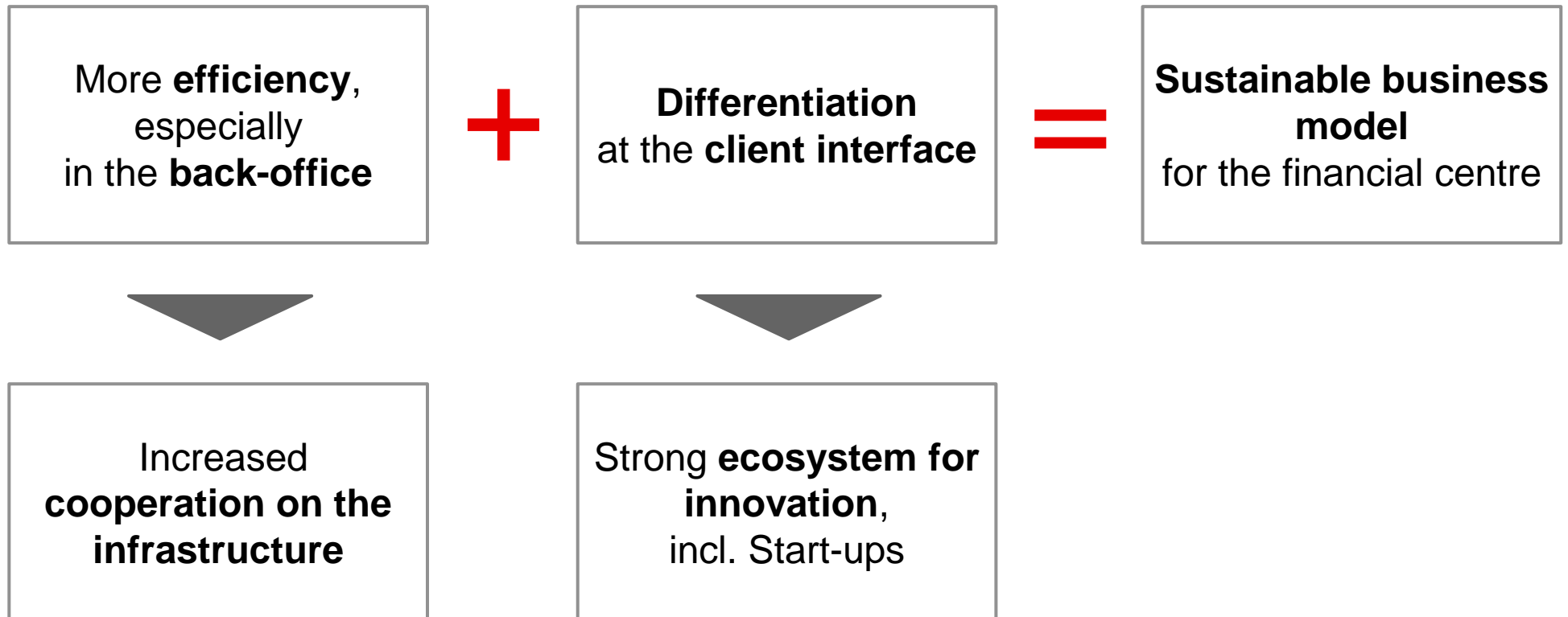


## Crypto-currencies / Blockchain



# The value chain will split up further

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# UBS starting from a strong position

**Largest Bank in Switzerland**



**Enormous outreach**



**Leading investment competence**



**Highest security standards**



**UBS Switzerland**

**Wealth Management**

**Investment Bank**



**UBS Wealth Management**  
Best Global Private Bank and  
Best Use of Technology  
2015



**UBS Neo**



**UBS Asia Pacific**

Best Private Bank in Asia  
2015



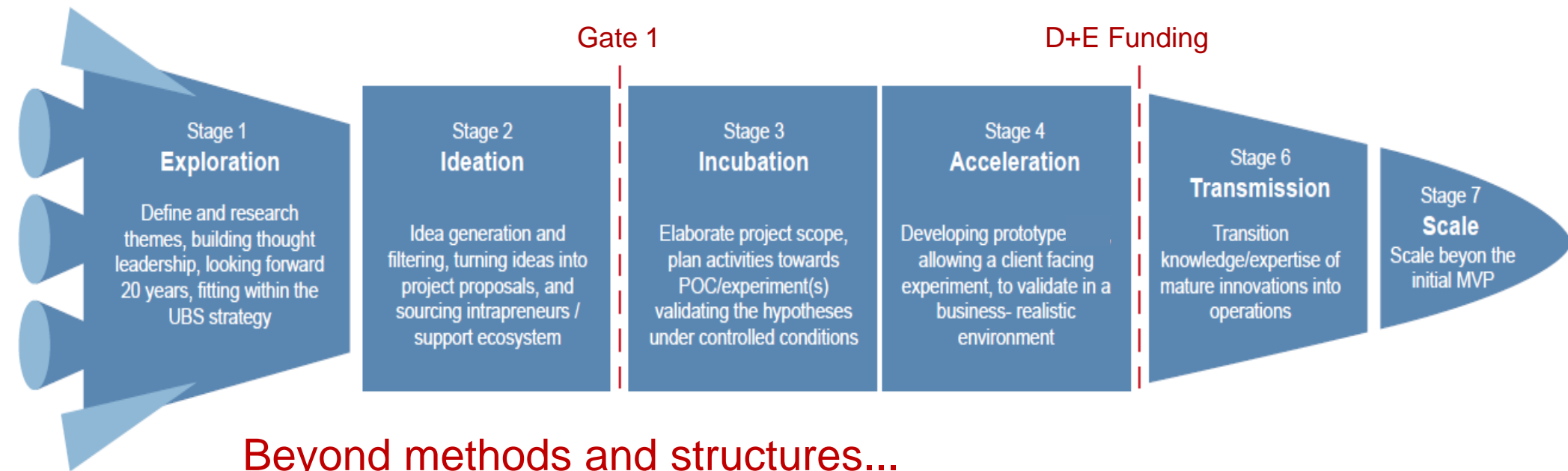
**UBS Asia Pacific**

Best Family Office and Asse  
Manager 2015





# Transforming Ideas into Business



## Beyond methods and structures...

- **Accelerator approach** – succeed and fail and learn faster
- **Leverage internal power** – we have excellent ideas and people in place
- **Build out our external ecosystem** and partnerships to extend our capabilities
- **Jointly drive innovation** with business and central functions
- **Don't stop** - Innovation is a multi-year journey

Source: UBS

# Innovation through collaboration and partnerships



**UBS Management**  
**Business Strategy and Execution**

**Start-ups**

**Open and approachable ecosystem**



**DIGITALZÜRICH2025**



**UBS Employees**

**Leverage of Internal expertise**

**Partners & Regulators**

**Shared vision and roadmap**



# UBS Future of Finance Challenge

## #UBSinnovate

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A global competition to seek out entrepreneurs, start-ups, and growing companies with innovative ideas and disruptive technologies to transform the banking industry.



The Client  
Experience  
Challenge



The Superior Offering  
Challenge



The Secure Banking  
Challenge



The Banking  
Efficiency Challenge

- ▶ **>90 million impressions** generated by the social media campaign
- ▶ **600+ submissions** entered for regional finals in Singapore, London, New York, Zürich
- ▶ **Internal collaboration** through evaluators and mentor program

# Emergence of global fintech hubs

There is vigorous competition between leading global financial and technology centres to dominate the fast growing FinTech market

**Leading global FinTech hubs are split clearly into two tiers:**

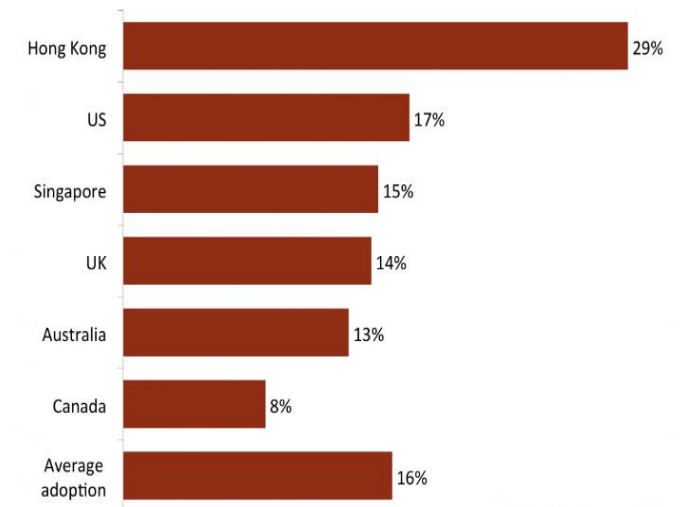
Tier 1 (London, Silicon Valley & New York)

Tier 2 (Singapore, Berlin, Australia and Hong Kong)

Region		2015 rank by ecosystem Attribute				Total points
		Talent • Talent availability • Talent pipeline	Capital • Seed • Growth • Listed	Policy • Regulatory regimes • Government programmes • Taxation policy	Demand • Consumers • Corporates • FIs	
UK		2	3	1	3	9
California (CA)		1	1	6	2	10
New York (NY)		3	2	7	1	13
Singapore (SG)		4	7	2	6	19
Germany (DE)		6	4	5	5	20
Australia (AU)		5	5	3	7	20
Hong Kong (HK)		7	6	4	4	21

Source: EY

**Top Fintech Adoption Rates, By Country\***



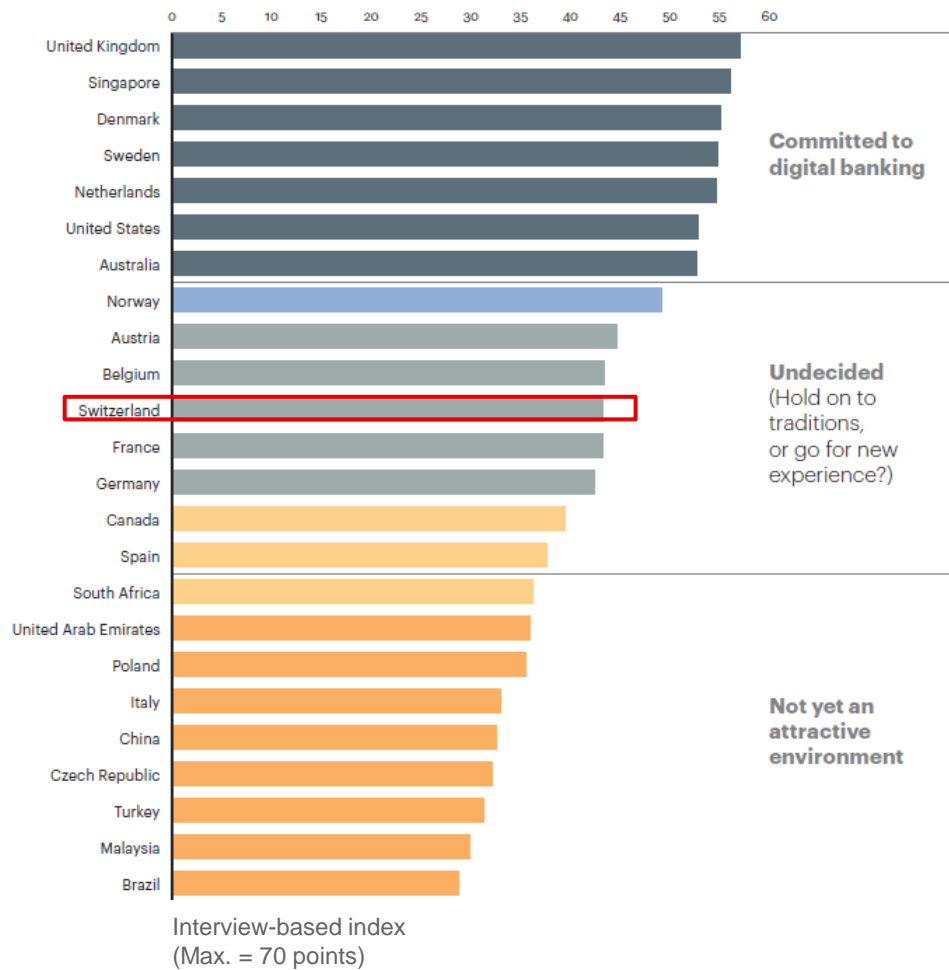
\*Percentage of digitally active people who used at least two fintech services in the last 6 months.  
Source: Ernst & Young, 2015

**BI INTELLIGENCE**  
BI Intelligence

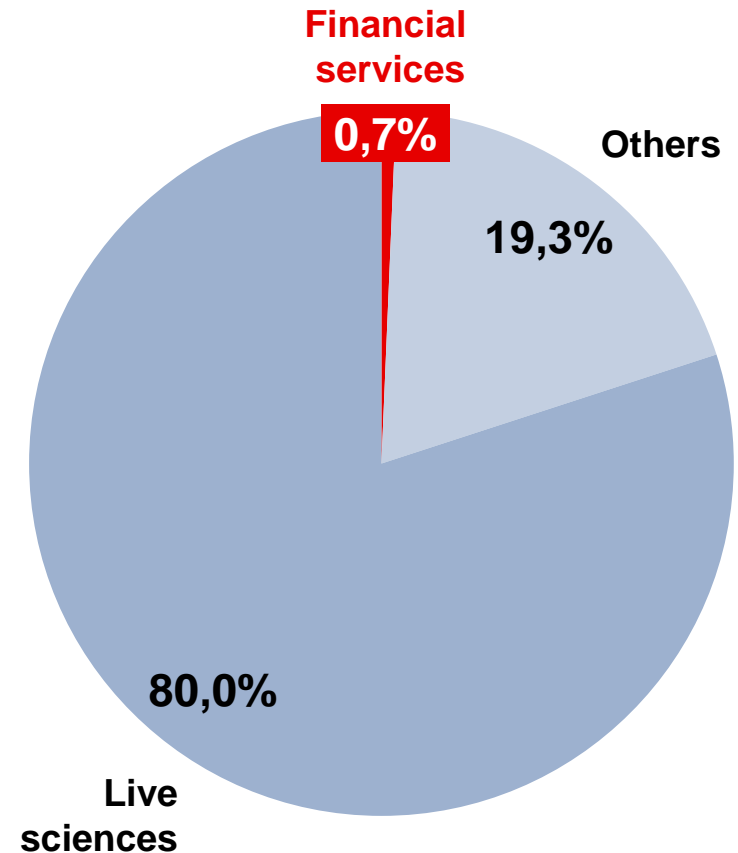
Source: BI Intelligence

# Local fintech landscape in Switzerland

## Moderate Digital Banking readiness<sup>1</sup>



## Less than 1% of Capital is invested in FinTech Startups



# Regulatory uncertainty remains a challenge for collaboration

What challenge did/do you face in dealing with FinTech/traditional financial companies?

## Traditional financial companies say:

**53%** IT security

**49%** Regulatory uncertainty

**40%** Differences in business models

## FinTech companies say:

**54%** Differences in management & culture

**47%** Differences in operational processes

**43%** Regulatory uncertainty

Source: "Blurred lines : How FinTech is shaping Financial Services" – Global FinTech Report March 2016 © 2016 PwC

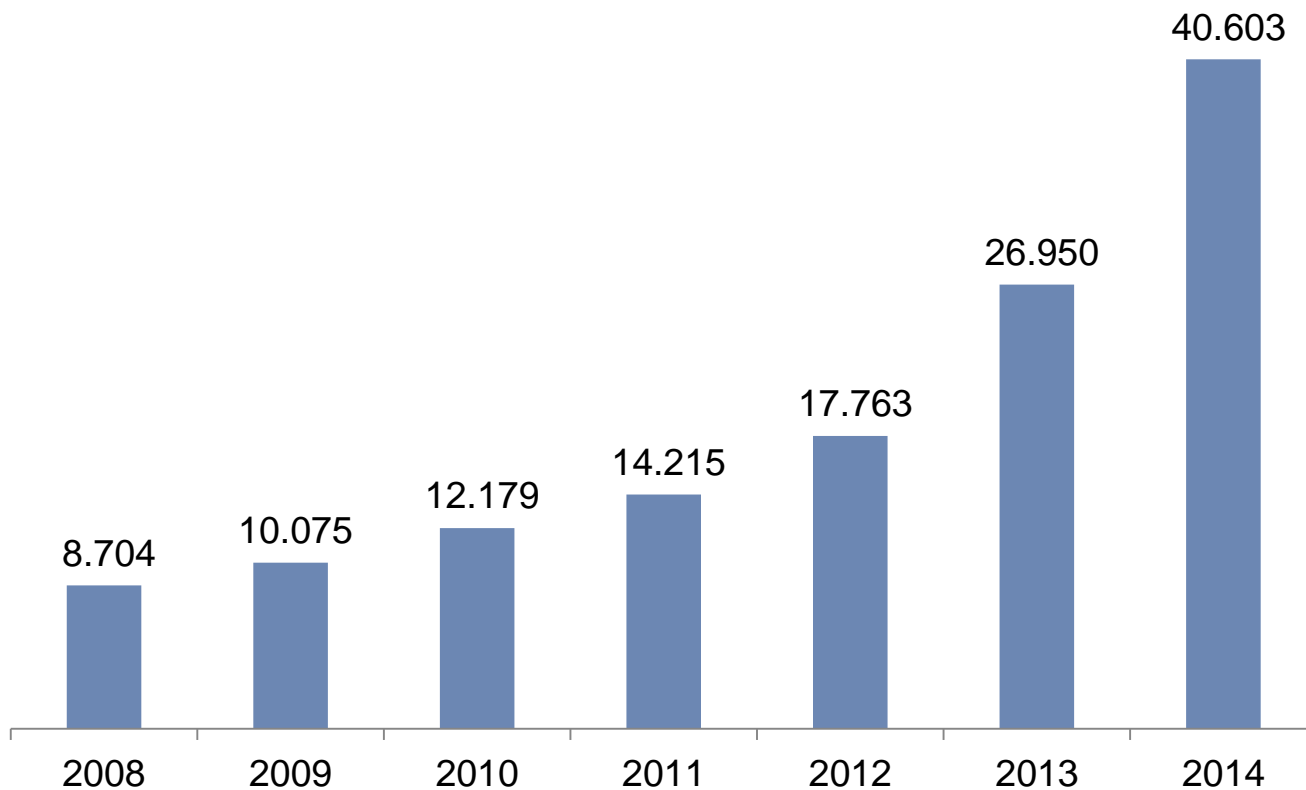


# Pace of regulatory change increased

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## Number of alerts issued by regulators worldwide

Alerts relate to updates to regulatory rulebooks and other announcements - policy papers, enforcement notices, speeches.



"The peak of regulatory change may be someway off" by David Craig © Thomson Reuters, March 2016

# Key areas that could benefit from regtech

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1. Risk data aggregation, management and regulatory reporting
2. Modelling, scenario analysis and forecasting
3. (Real-time) payments monitoring, reporting, blocking and tax compliance
4. Identity verification
5. Monitoring behaviour and organizational culture
6. Real-time trading on financial markets
7. Making financial institutions more aware of regulatory developments



**UBS**

Source: "RegTech in Financial Services : Technology Solutions for Compliance and Reporting" by Bart van Liebergen, Andres Portilla, Kristen Silverberg and Conan French  
© Institute of International Finance, March 2016

# Active and evolving role of regulators in recent years

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March 2015	<ul style="list-style-type: none"><li>• Australian regulator ASIC launches innovation hub (now in talks with FCA about RegTech)</li><li>• UK 2015 budget mandates regulators to support RegTech</li></ul>
April 2015	<ul style="list-style-type: none"><li>• ESMA publishes call for evidence on investment using digital currencies or blockchain technologies</li></ul>
July 2015	<ul style="list-style-type: none"><li>• Singapore regulator sets up FinTech and Innovation Group, incl. a "Technology Infrastructure Office" focusing on cloud computing, big data and blockchain</li></ul>
October 2015	<ul style="list-style-type: none"><li>• UK government invests additional GBP 10 million in blockchain research</li></ul>
November 2015	<ul style="list-style-type: none"><li>• FCA issues call for input on facilitating the development and adoption of RegTech</li></ul>
February 2016	<ul style="list-style-type: none"><li>• ECON report on virtual currencies calls for a horizontal DLT taskforce under leadership of the commission</li></ul>
March 2016	<ul style="list-style-type: none"><li>• BaFin publishes expert article on blockchain</li></ul>
April 2016	<ul style="list-style-type: none"><li>• MAS sets up a FinTech office to promote Singapore as a FinTech hub and provide assistance to the FinTech community</li></ul>

# Bitcoin - a risky business?

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“ Bitcoin’s Price Plummets As Mt. Gox Goes Dark, With Massive Hack Rumored

**Forbes – February 25, 2014**

“ Dark Net Drug Sales Using Bitcoins Are Booming After Fall Of Silk Road Marketplace

**IBTimes – June 10, 2015**

# Blockchain - part of the future of finance?

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“ Blockchain initiative backed by nine large investment banks.

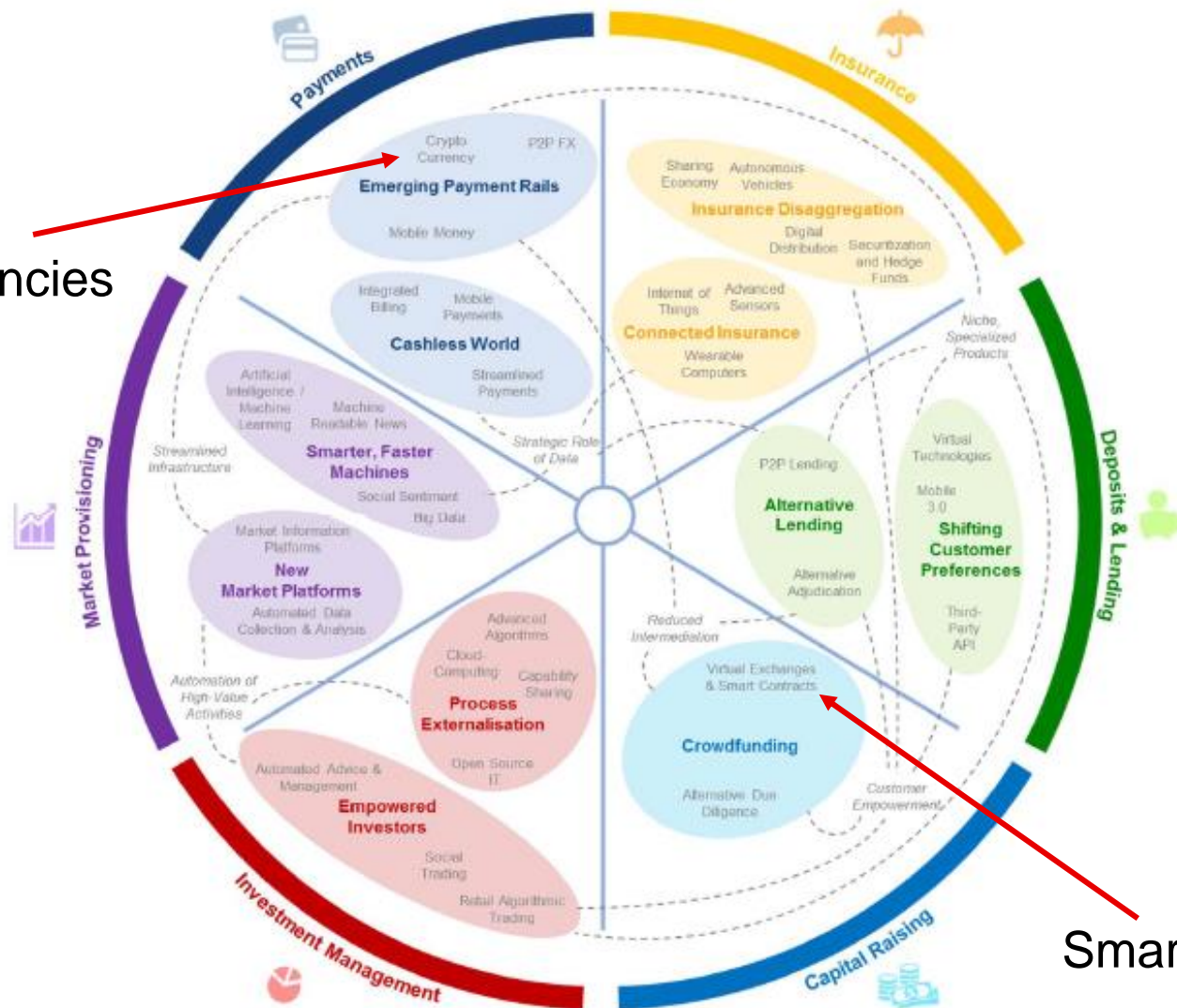
**FT – September 15, 2015**

“ Bank of England Economist Proposes National Digital Currency.

**CoinDesk – September 18, 2015**

# WEF Sees Blockchain as a business model disruptor

Crypto Currencies



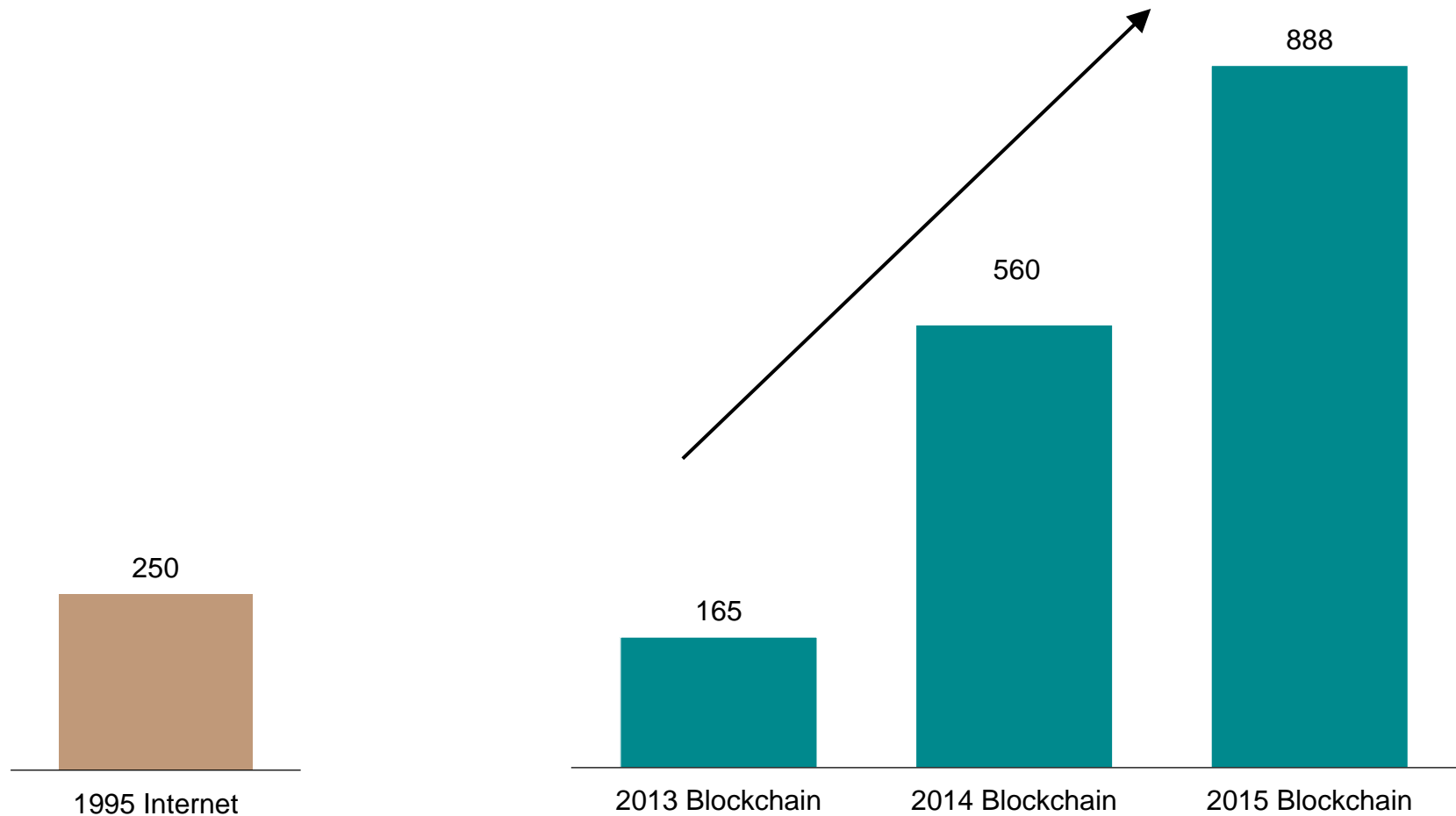
Smart Contracts

Source: World Economic Forum



# Blockchain Investments Increase

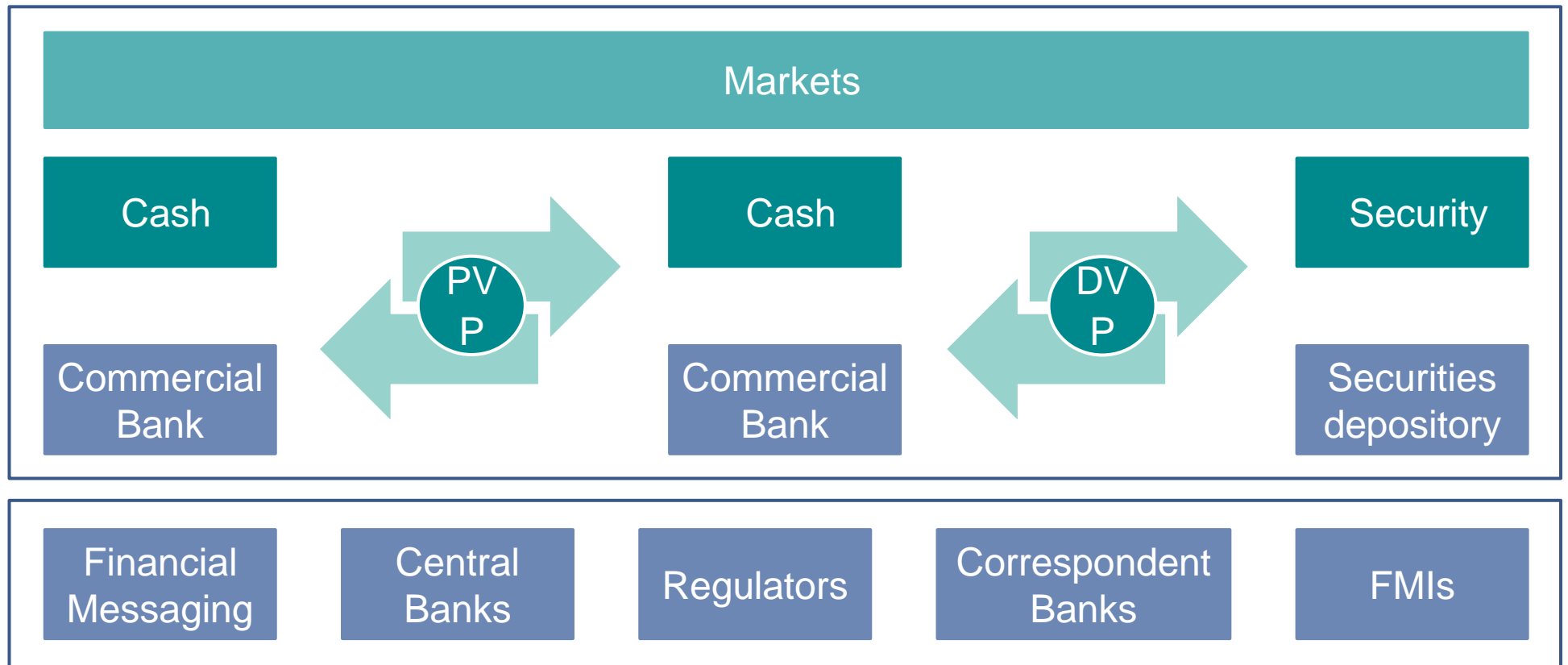
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Note: Venture capital investments (US\$m). Source: VentureScanner, December 2015

# Current operating model

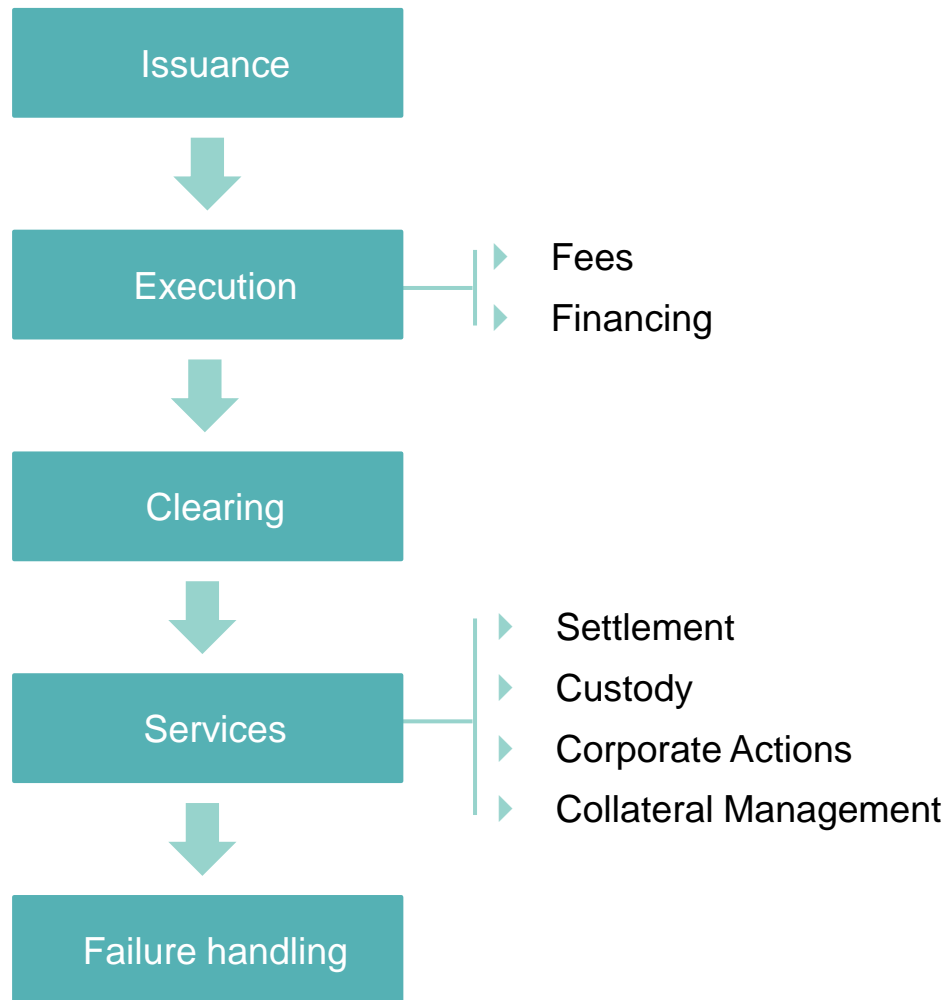
Central utilities mitigate risks and offer conveniences like electronic transfers



# Current operating model

Semi-automated, semi-proprietary process and related issues and risks

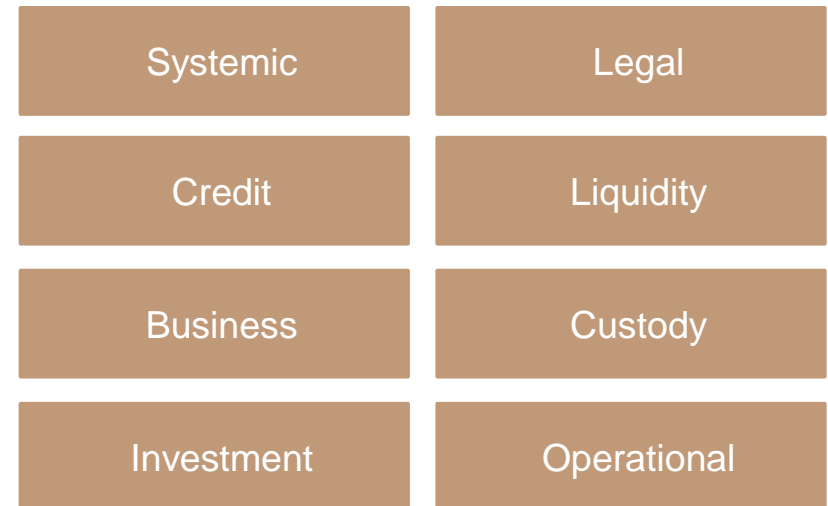
## Process



## Issues

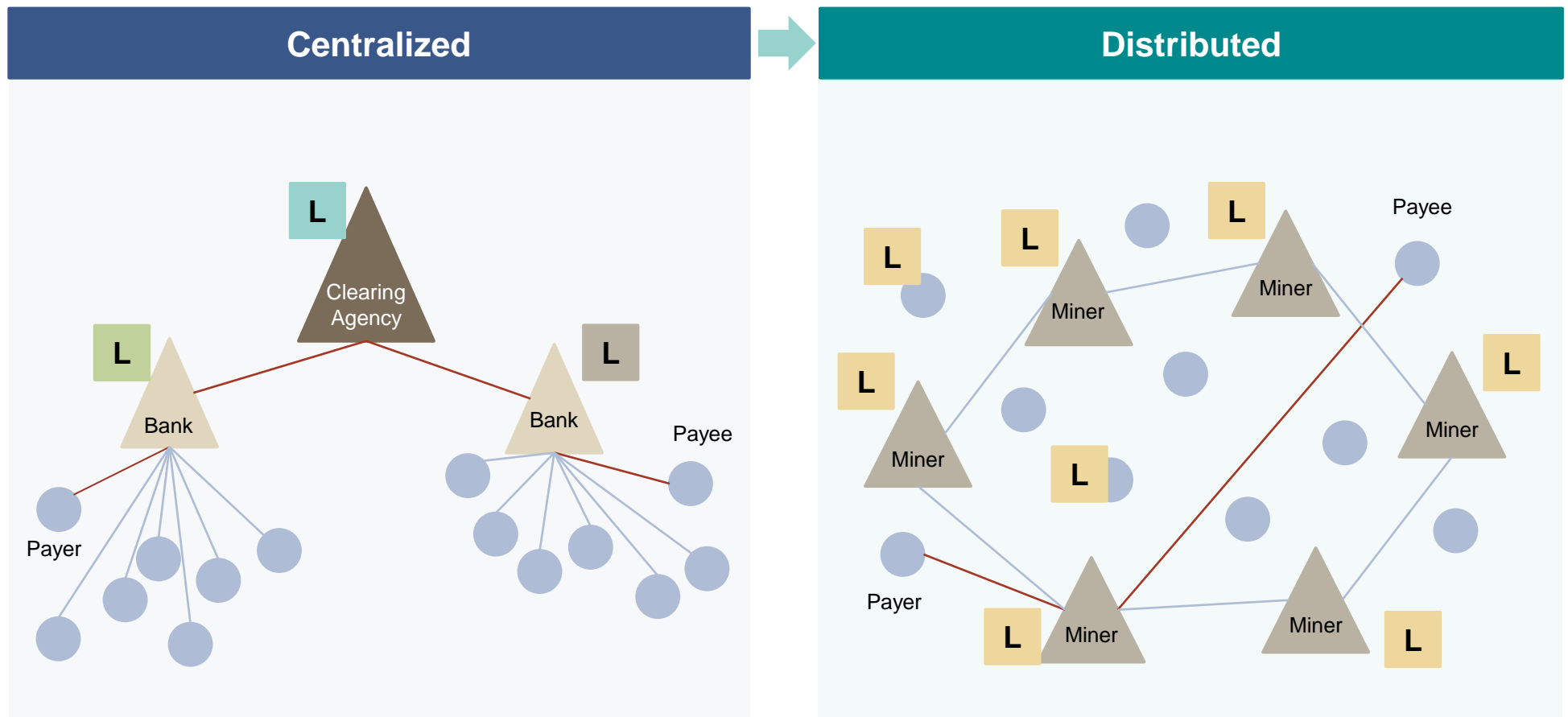


## Risks

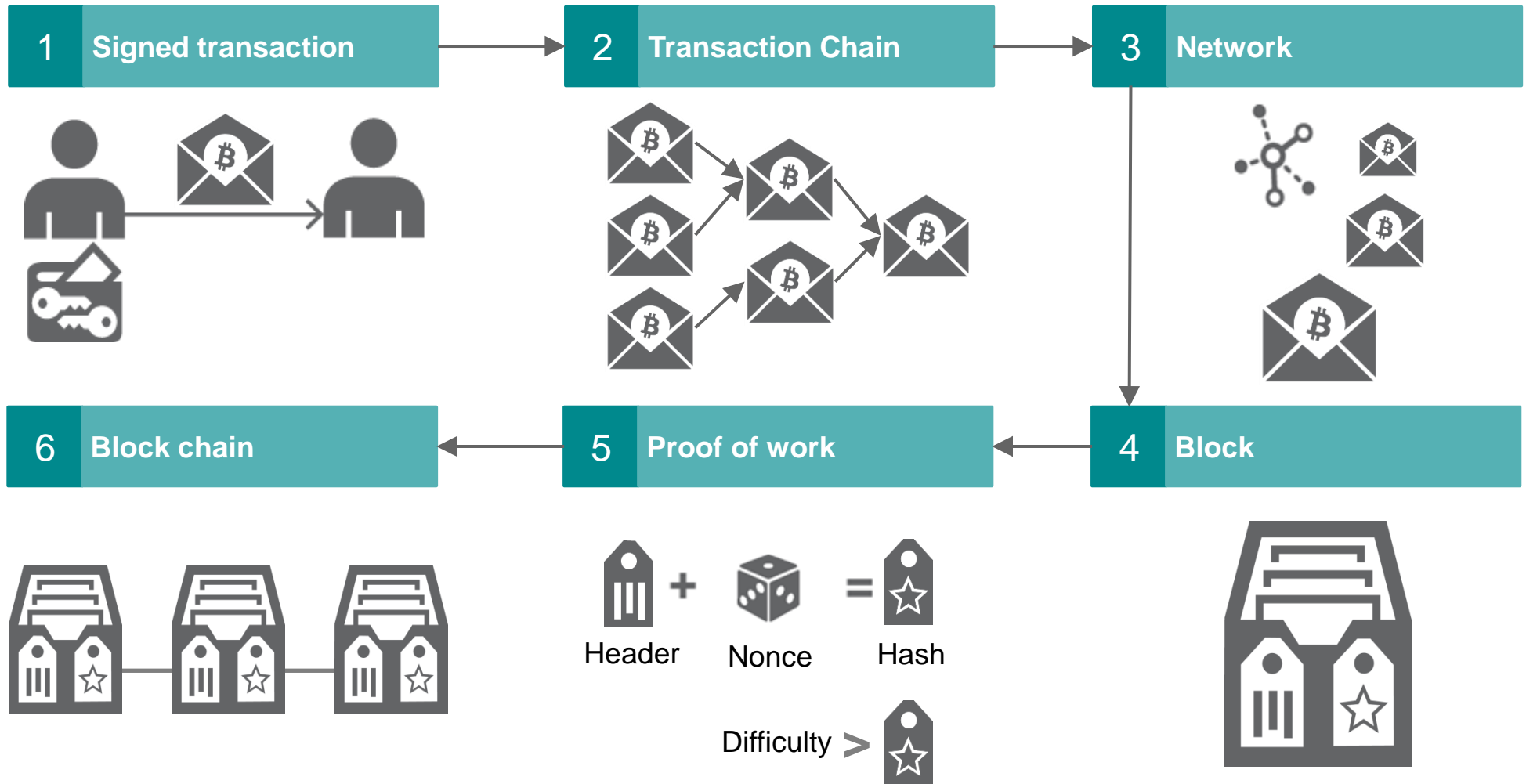


# Hypothetical Operating Model

Potentially mitigate some of trusted central utility's risks and issues by moving towards a distributed autonomous organisation (DAO) intermediation model



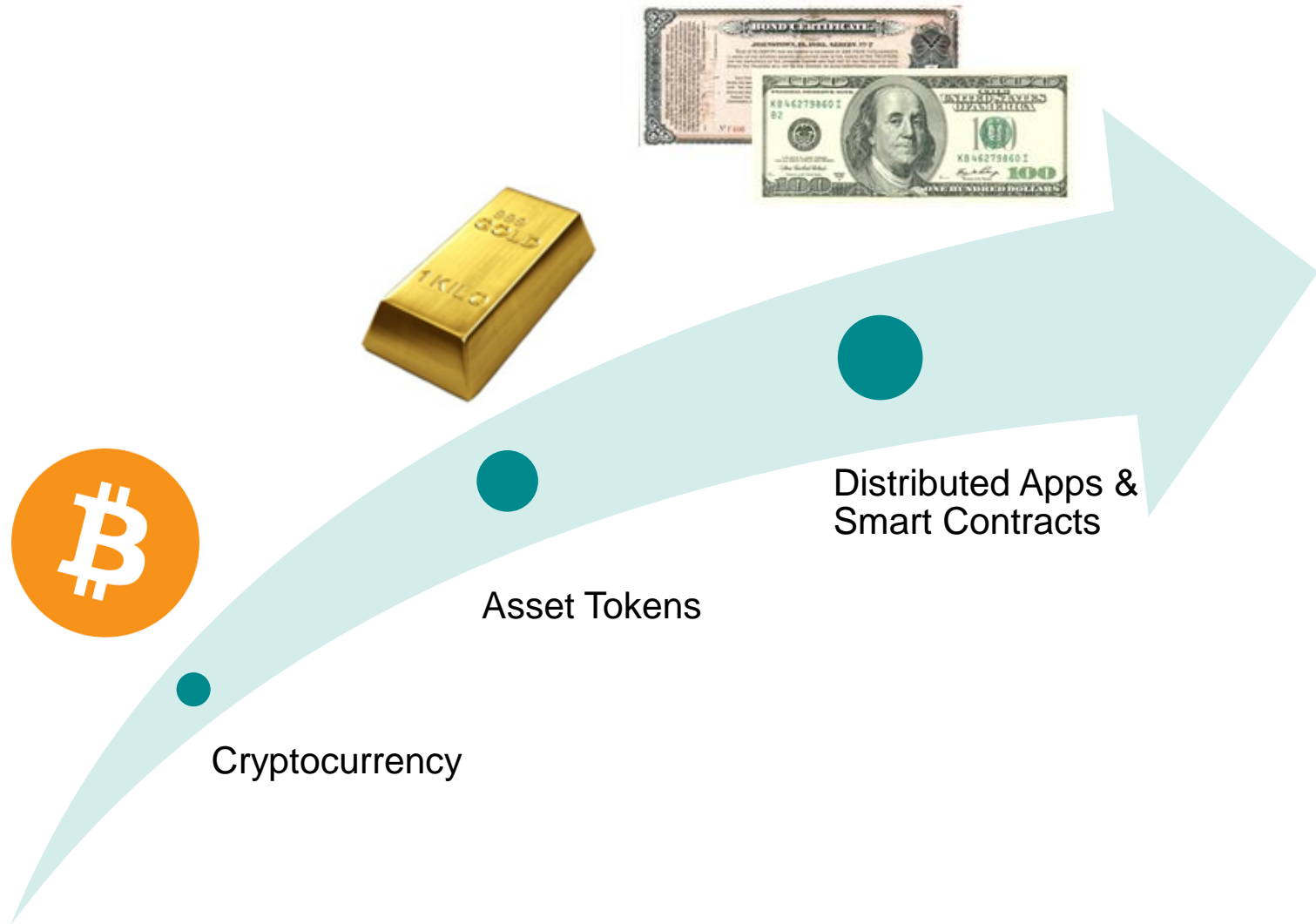
# Bitcoin blockchain explained



Source: <http://businessinsider.com>

# New blockchain protocols

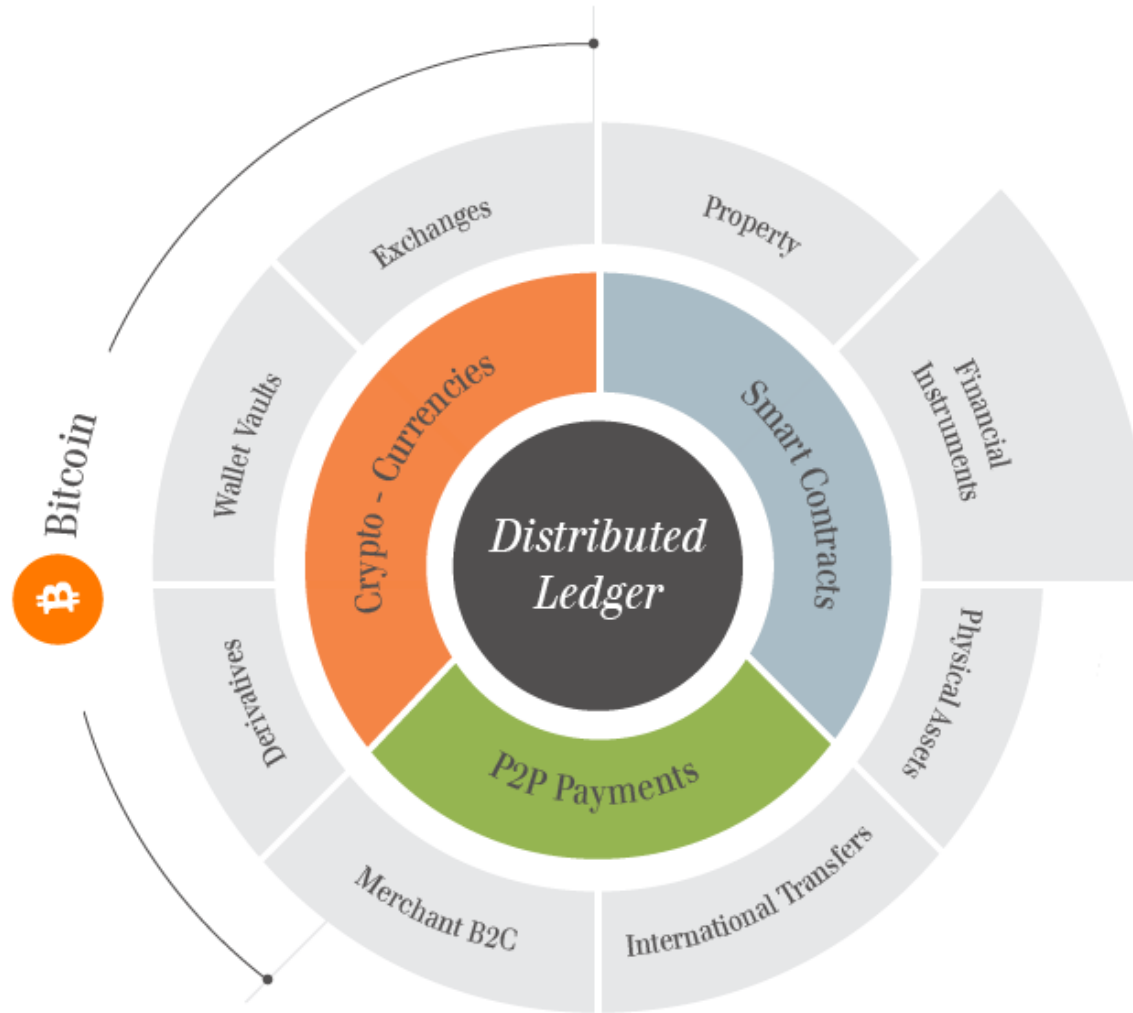
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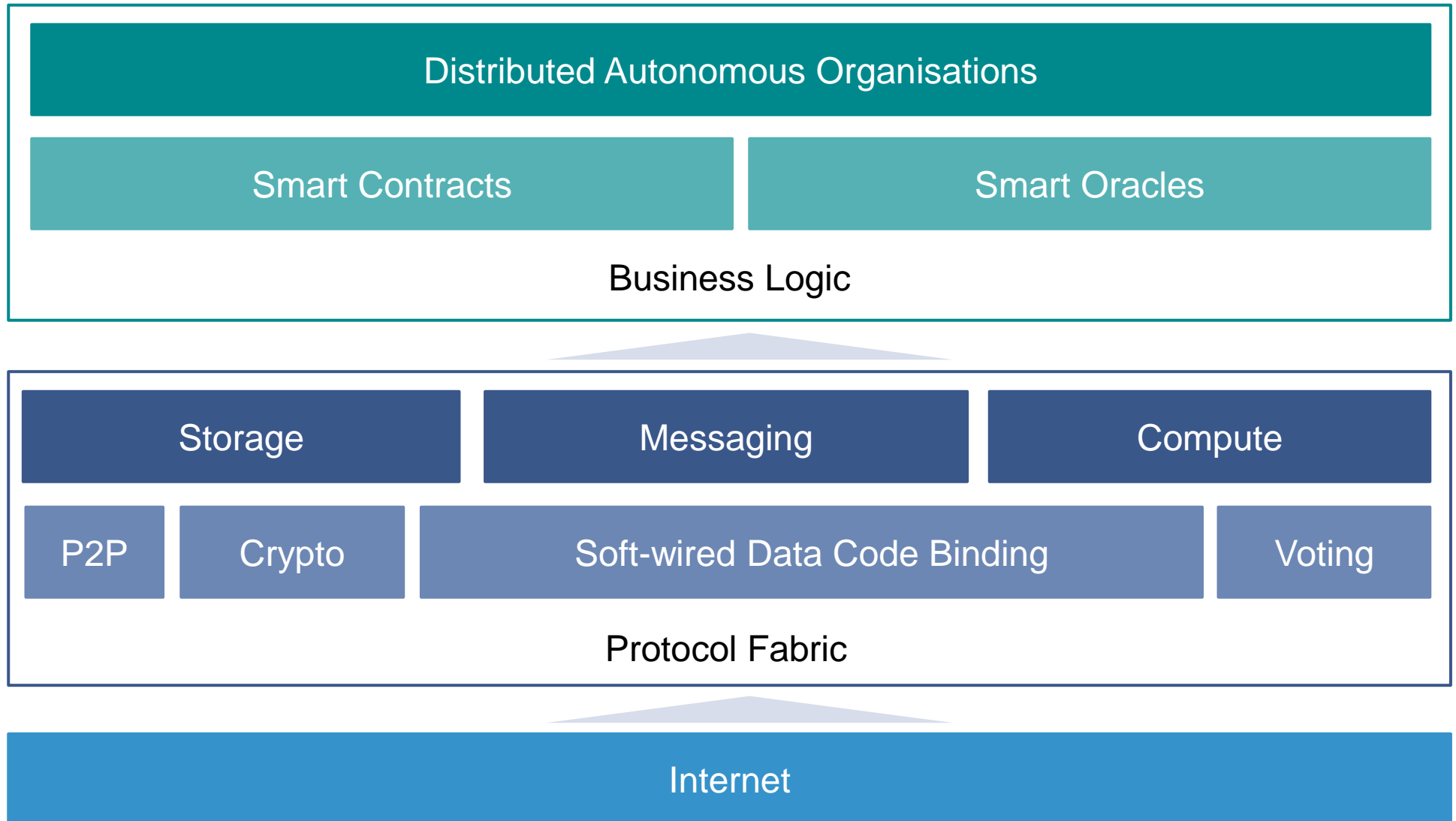
# Manage many real world assets on blockchain

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# Hypothetical operating model

Smart contract code can autonomously hold and transact own assets



# Potential benefits for State, Banks and Clients

	State	Bank	Client
Distributed	Reporting could become bi-product of doing business	No single point of failure solution	Possibly cheaper and open to competition
Autonomous	Regulatory compliance could be guaranteed by crowd executed code	Could reduce market participation costs and reduce risk of fraud	Possibly cheaper and safer financial transaction services
Automated	Could be used to automate business administration tasks like tax collection	Could reduce incidents of fails and associated manual intervention costs	Possibly cheaper and more reliable services also automating clients' administration tasks
Real time	Offers possibility of real time systemic risk analysis	Opportunity to improve liquidity management and collateral efficiency	Could reduce risk, improve capital efficiency and access to operating assets

# UBS Crypto 2.0 lab and team

On a pathfinder mission for better financial services

## Our Lab at Level 39



- ▶ Level 39 is the largest UK FinTech space with great access to talent and partners
- ▶ Collaborative workspace equipped for 12 people

## Our Lean Team



**Alex Batlin**  
Lead



**Ian Cusden**  
Senior  
Technologist



**Joseph Goulden**  
Technologist



**Paul Yardley**  
Business  
Analyst



**Robert Jones**  
Business  
Analyst



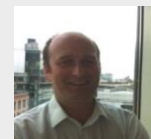
**Claudio Lisco**  
Project / Knowledge  
Manager



**Shane Williams**  
WM Lead



**Hyder Jaffrey**  
IB Lead



**Ian Bond**  
Ops Lead



**UBS Virtual Team**  
Business SMEs

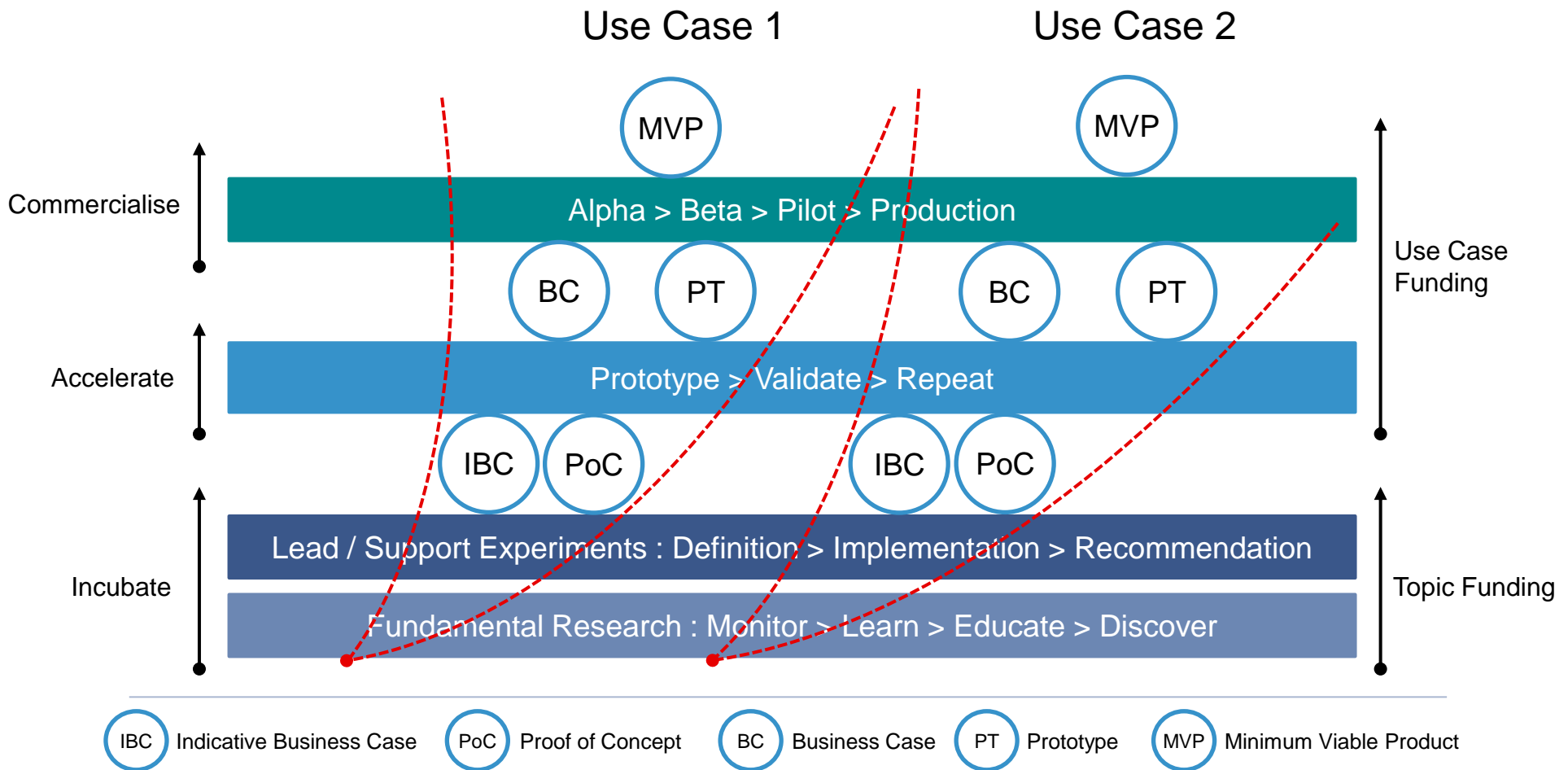


**UBS Virtual Team**  
Technology SMEs

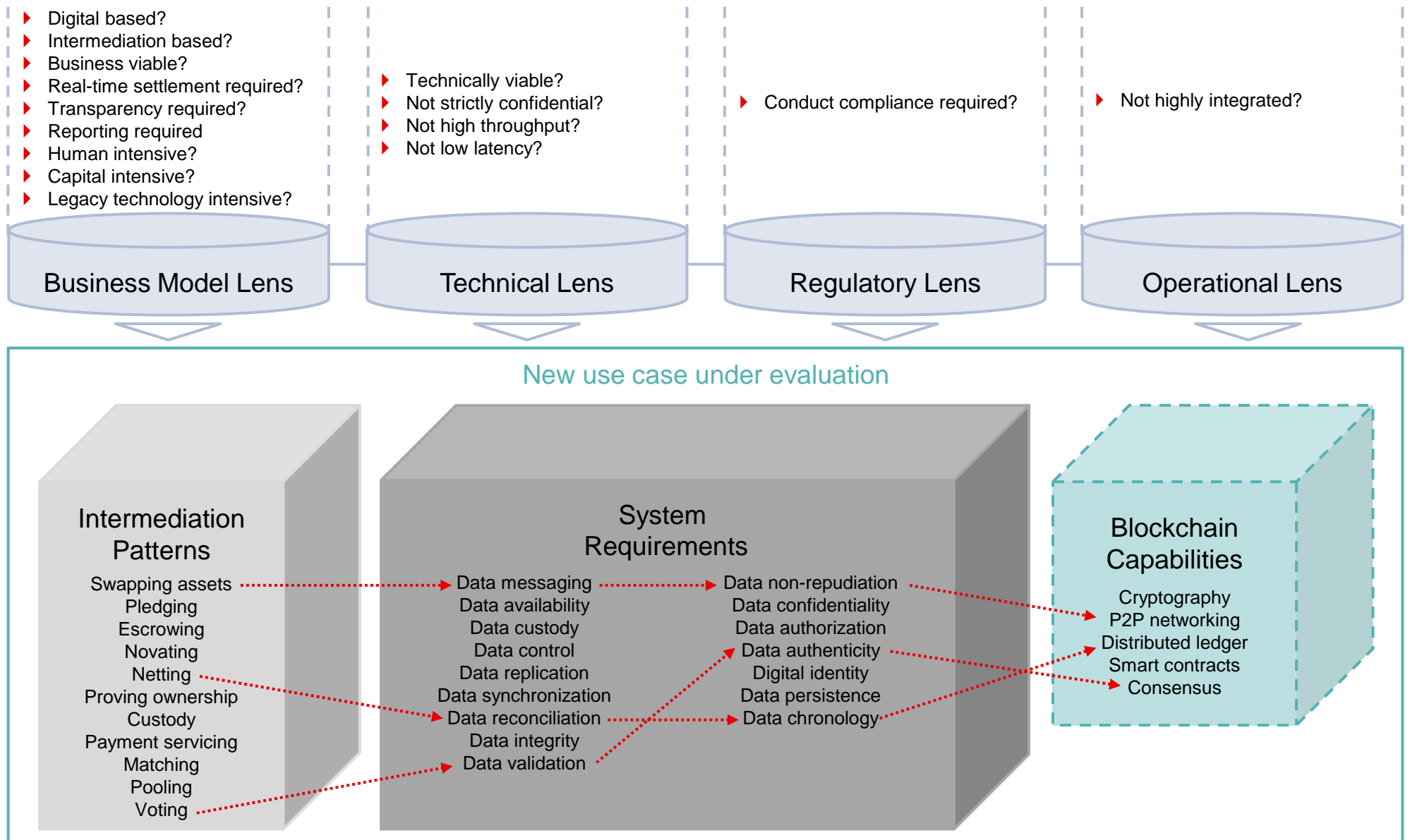


**L39 Community**  
Fintech Startups

# The lab drives ideas, experiments and spin outs

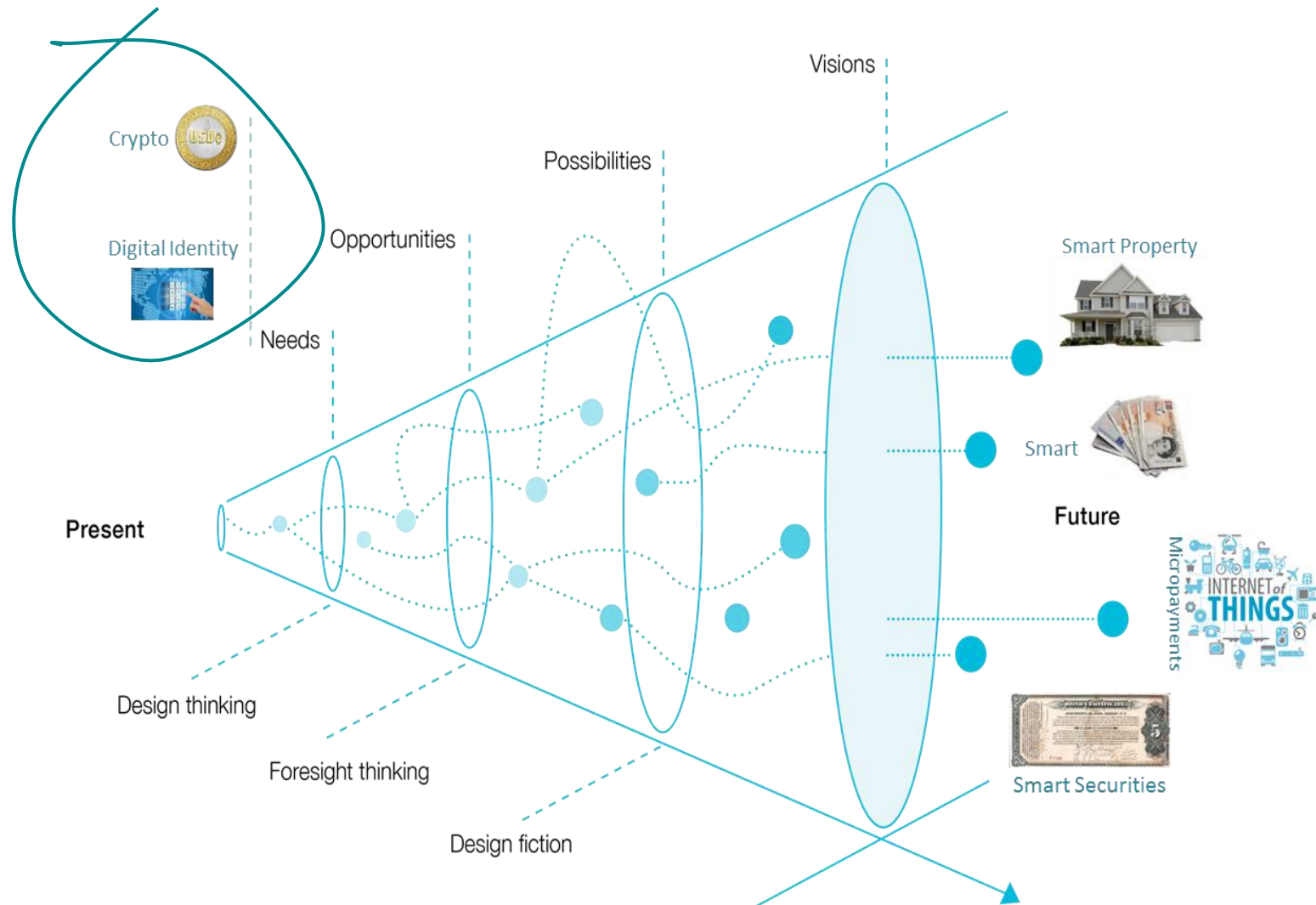


# Blockchain disruption evaluation framework

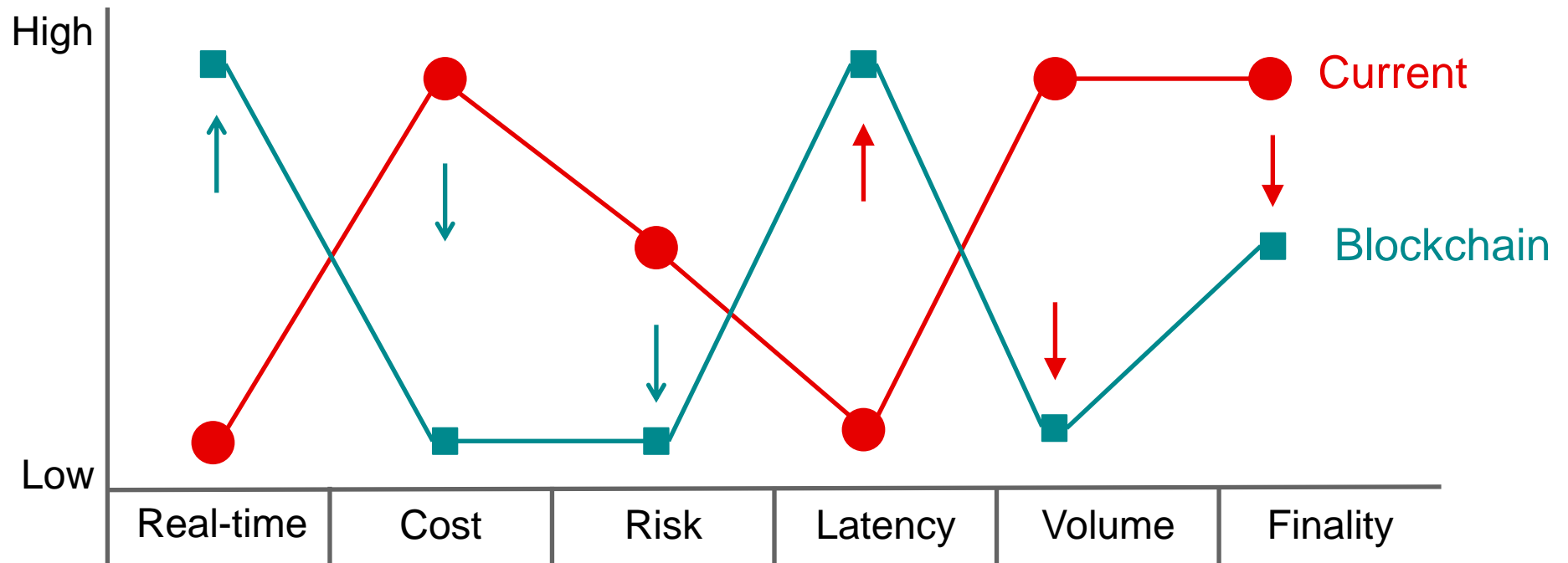




# On-chain fiat money and digital identity vision



# Strategic fit observations

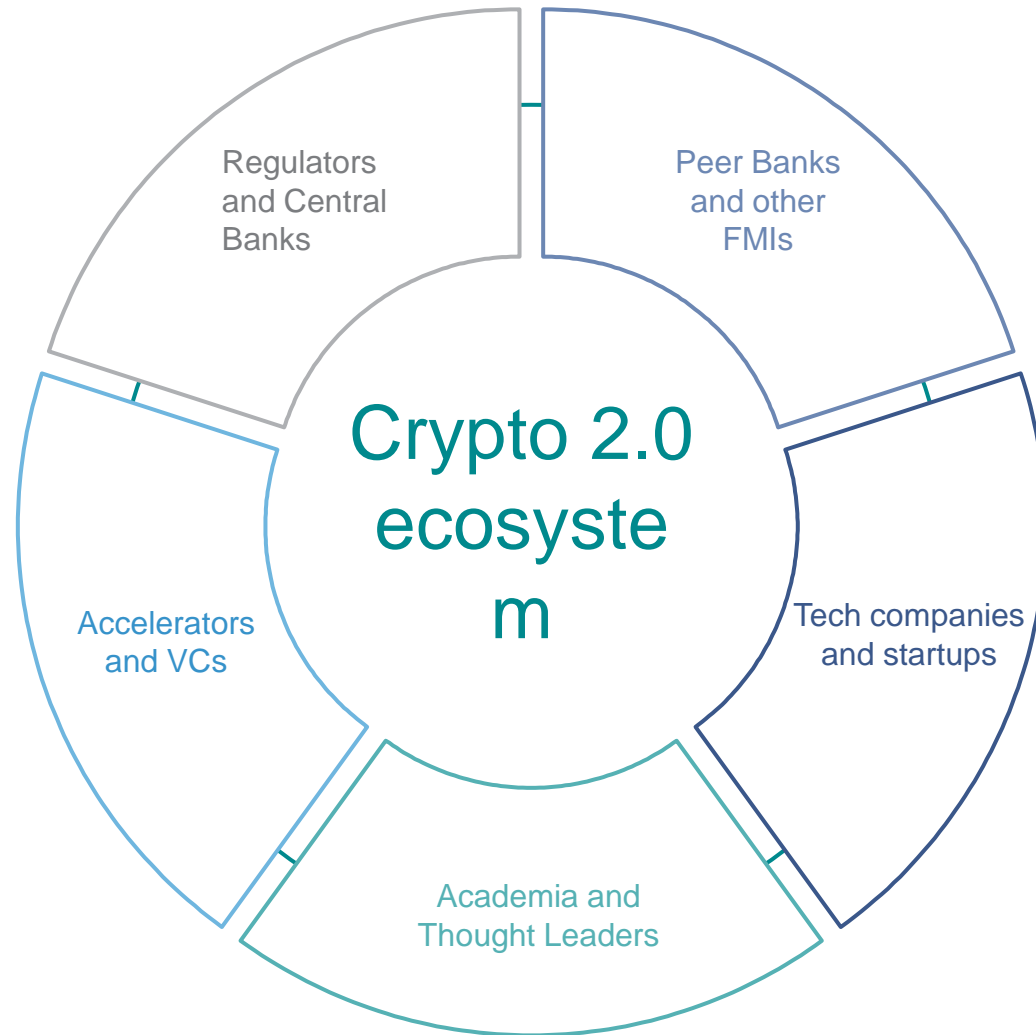


Post trade clearance, settlement & reporting ✓

High frequency trading ✗

# Building on open collaboration

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# Blockchain R3 CEV DLG Consortium

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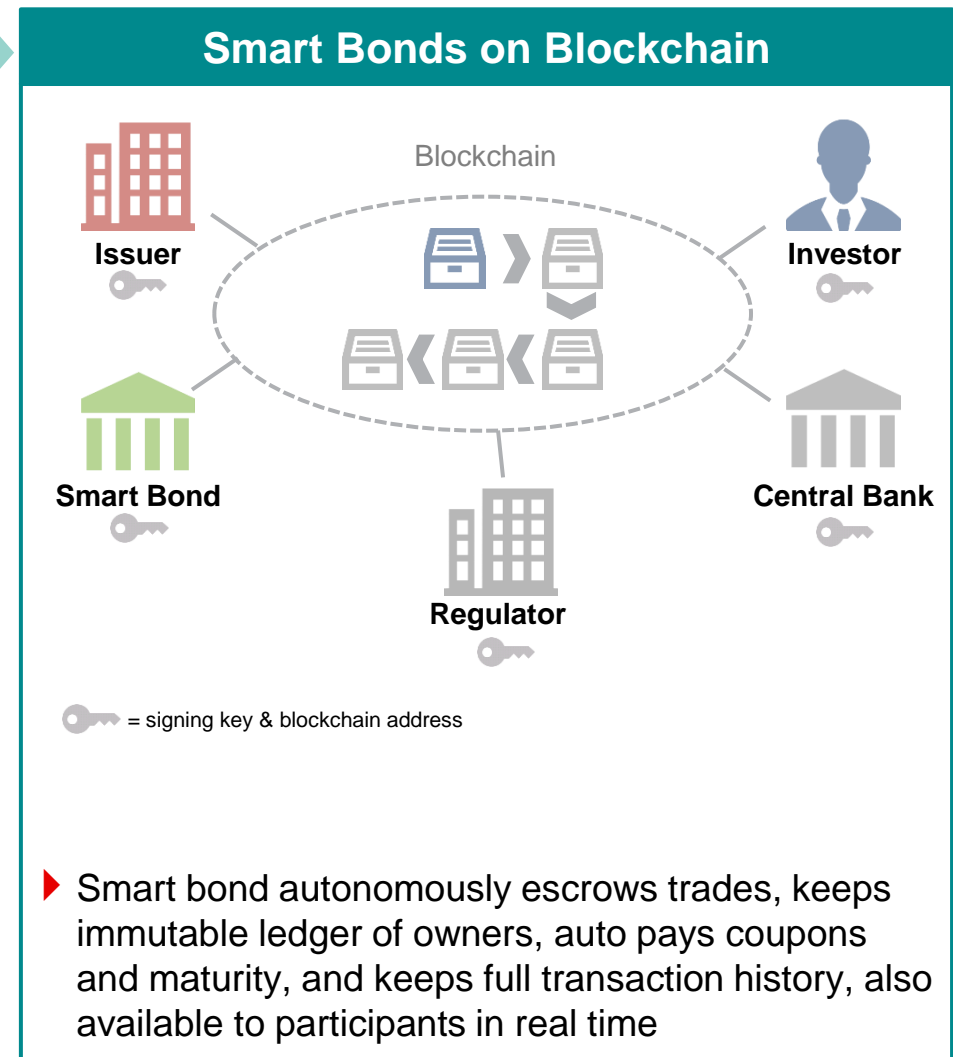
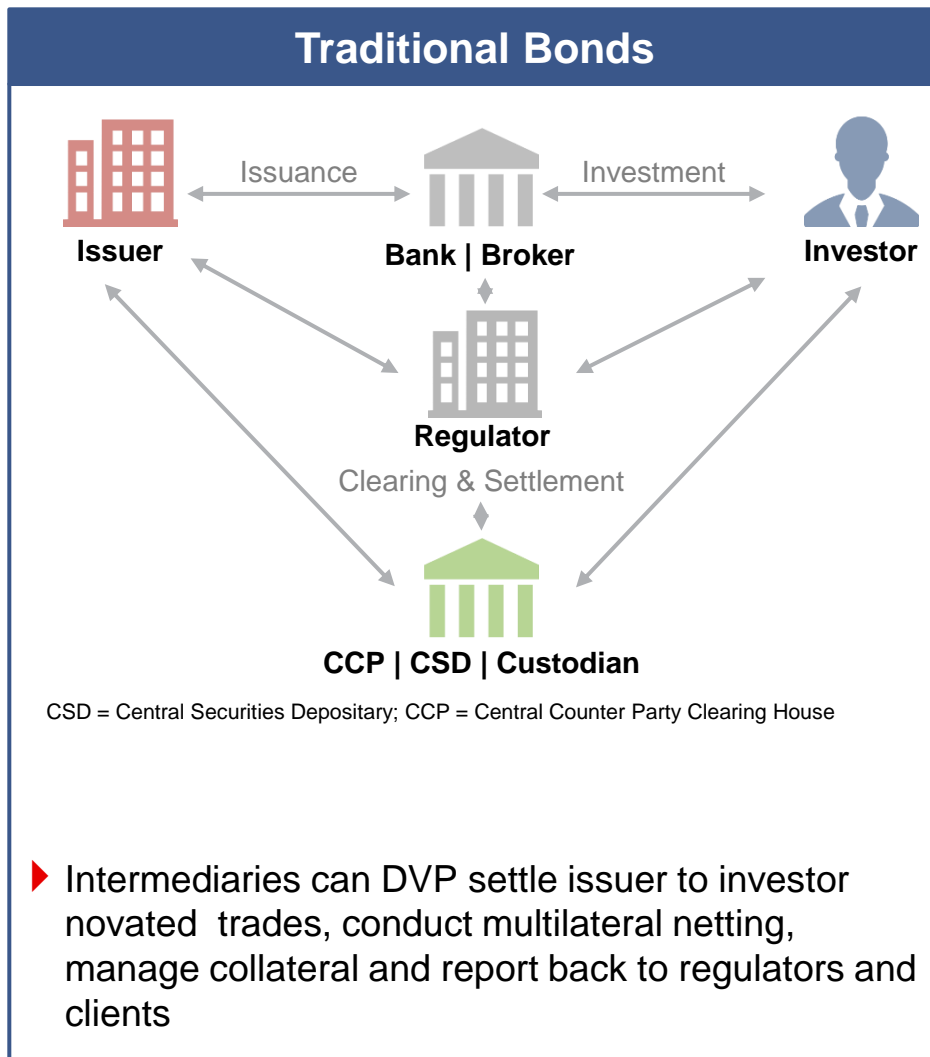
“ The addition of this new group of banks demonstrates widespread support for innovative distributed ledger solutions across the global financial services community

**David Rutter, R3 CEO – September 29, 2015**

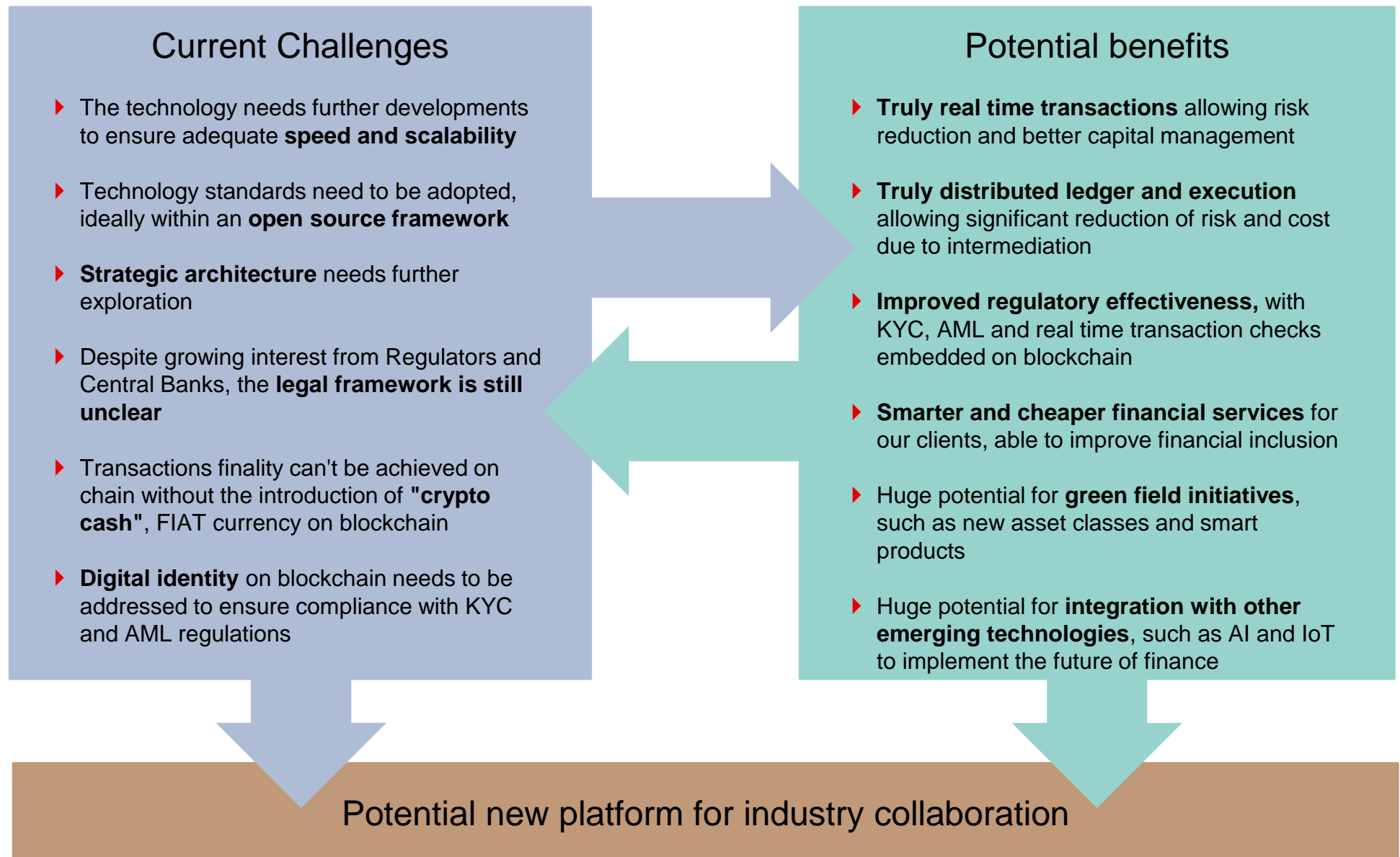
- ▶ Currently the partnership counts **42 global banks\***
- ▶ 11 member banks have established a **private distributed ledger** using Ethereum and Microsoft Azure for blockchain experimentation

\*As of December 17, 2015

# Smart Bond



# Strategic learnings from research and experiments



# Contact information

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