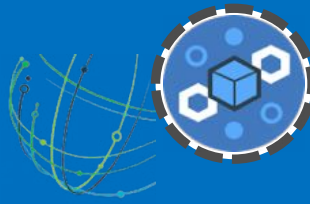




The New Industry Model

Keith Bear, Global VP Financial Markets

Agenda



- Setting the Context
- Drivers of disruption
- Live Long and Prosper

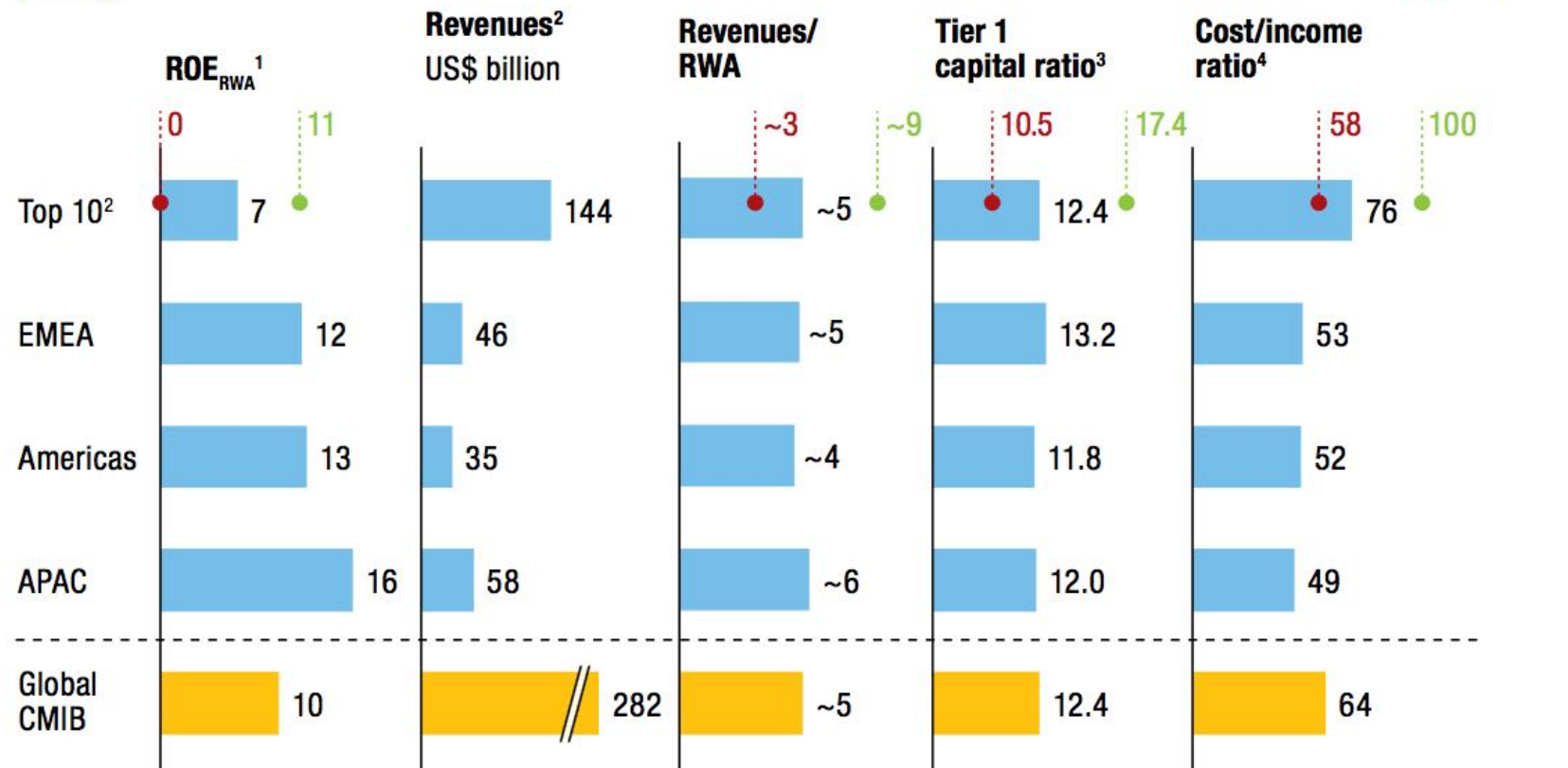


Regulation and Global Markets continue to take their toll on RoE



Global CMIB industry post-tax ROE¹ analysis, 2015E, based on nationality of banks

Percent



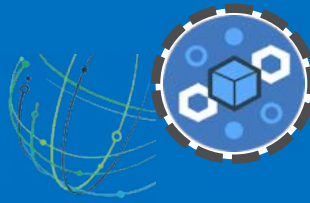
¹ Return on Tier 1 equity (ROE_{RWA}), assuming tax rate of 30%

² Includes both core and non-core divisions (i.e. bad banks) for Bank of America/Merrill Lynch, Barclays, BNP Paribas, Citicorp, Credit Suisse, Deutsche Bank, Goldman Sachs, JP Morgan, Morgan Stanley, UBS

³ Group level ratio

⁴ Includes operating expenses, litigation and restructuring expenses, one-offs, as well as costs in bad banks

New entrants are attacking banks on all sides – incurring lower costs and offering new value to customers



Digital-only, non-bank competitors and fintechs are growing rapidly

10^x

Increase in investments of fintech companies over the past 5 years¹



Banks are being disintermediated and displaced

\$11bn

Estimated annual profit at risk from non-bank disintermediation over the next 5+ years²



\$4^{tn}

Estimated size of loans disbursed by non-banks across six lending segments²



425bps

Typical difference in operating costs between a bank and a P2P lender³



Source: Cognitive bank: Decoding data to bolster growth and transform the enterprise. IBM Institute for Business Value, June 2017. ©IBM

Technology is an increasingly prominent disruptor



Revenue pool, 2015 full year, \$ billion

- Equities
- Fixed income and commodities, micro
- Fixed income and commodities, macro
- Investment banking, capital markets, research

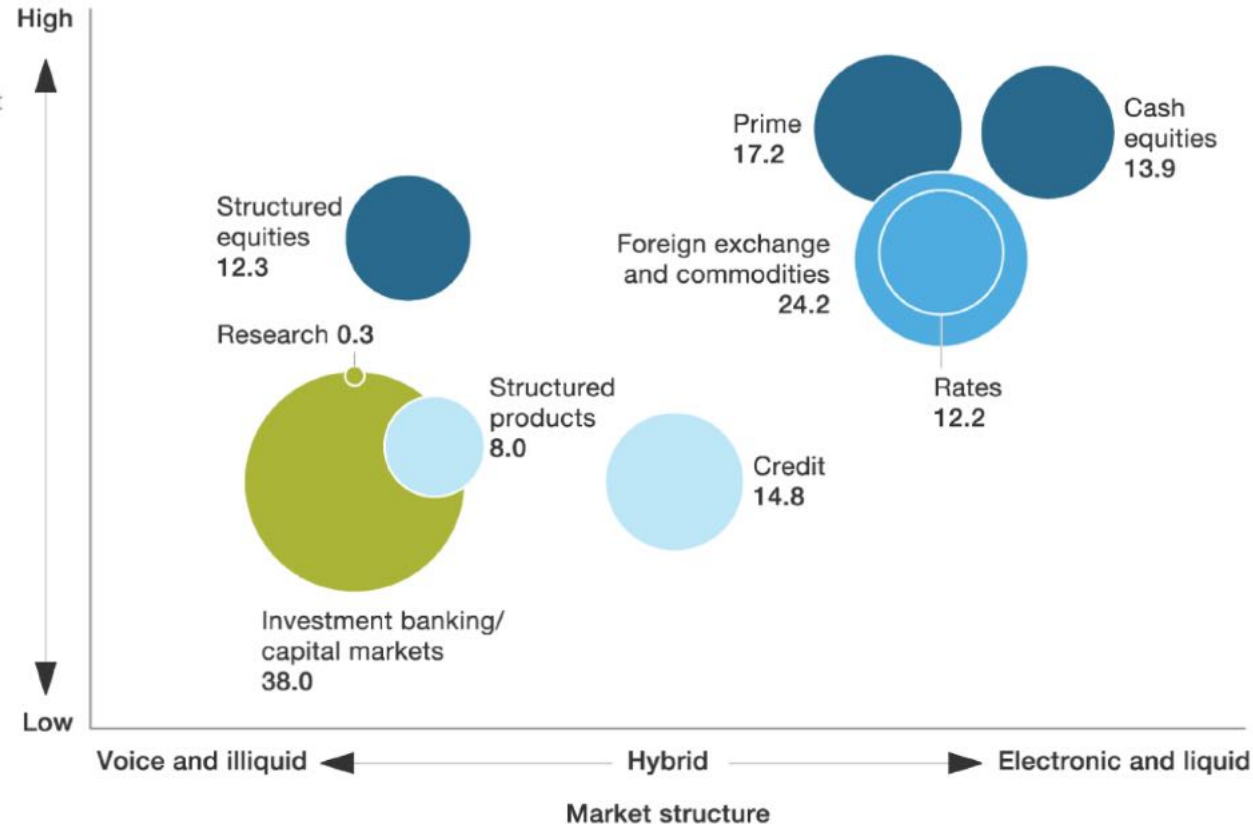
Degree of technology use, %

High

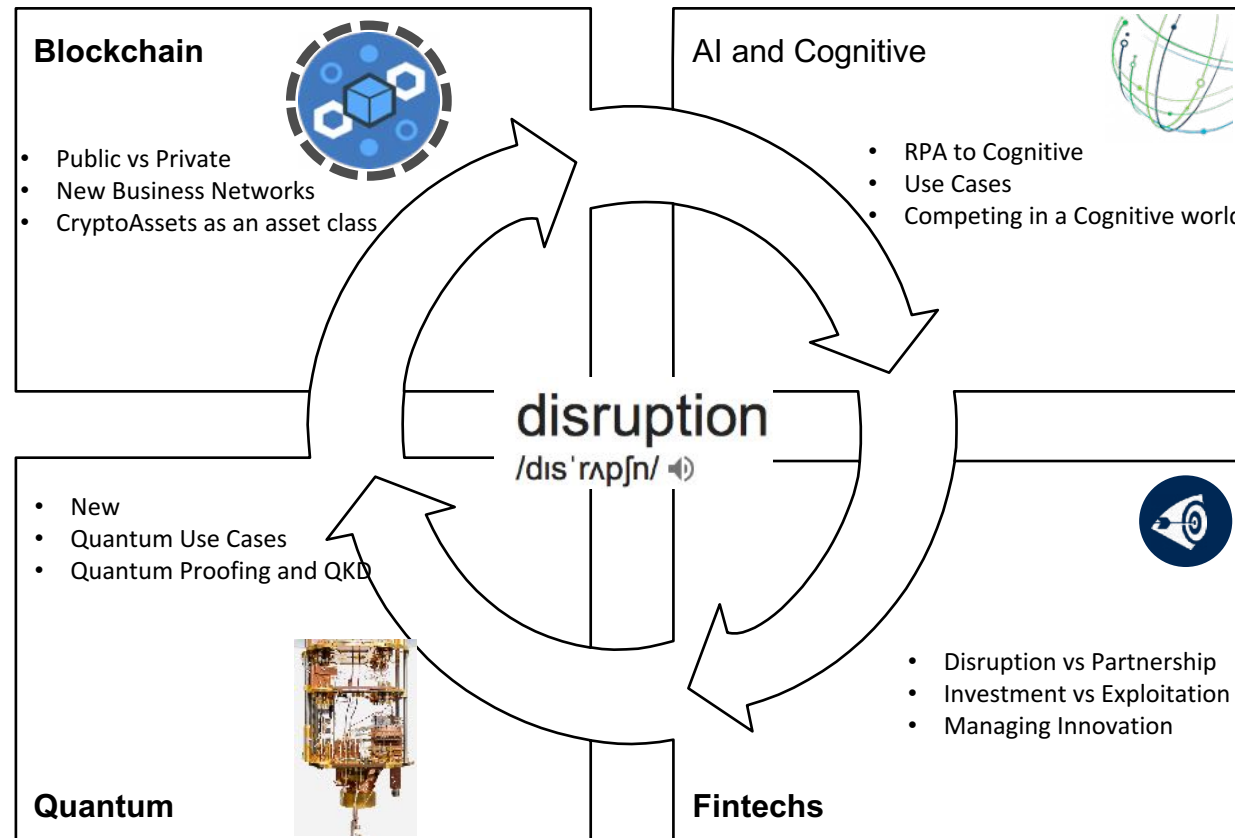
- Generation of revenue dependent on significant technology investment
- Highly sophisticated pricing and execution tools
- High technology spending as a percentage of revenue

Low

- Limited dependence on technology to generate revenue
- Limited reliance on sophisticated pricing and execution tools
- Low technology spending as a percentage of revenue



Four key technology drivers



Quantum





A close-up photograph of a scientist's face, partially obscured by a complex quantum computing apparatus. The scientist is wearing safety glasses and is focused on adjusting a component within the device. The apparatus features several vertical gold-colored pillars and a dense network of black and silver cables. The background is dark and out of focus.

Quantum computing may be a long way off from becoming widespread, but two banks are getting a glimpse of the future early.

Blockchain

Cash securities (equities, repo, leveraged loans)



\$11-12bn annual global cost savings

What blockchain can do

Cut settlement times and reconciliation costs. Using a blockchain-based system can significantly shorten trade settlement time, in some cases from days to just hours. It also helps lower capital requirements, OpEx and custody fees in the process.

Select enablers

Digital Asset Holdings, R3CEV, Chain.com, Australian Securities Exchange, itBit, Axoni, Ripple

Incumbents at risk

Custody banks and clearing houses

Additional savings could be achieved if blockchain is applied in other capital markets such as FX, OTC derivatives and commodities

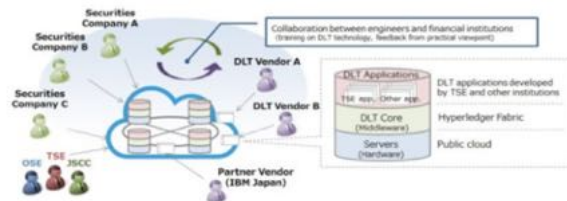
Blockchain deployment is accelerating in Markets



Consortium based approaches

Japan Exchange Group Launch Their Own Blockchain Consortium

The group will test a pilot based on the open source Hyperledger fabric, in cooperation with IBM Japan Ltd.



Banking consortium awards Digital Trade Chain contract to IBM

27 June 2017 | 12752 Views | 1



Seven of Europe's largest banks have selected IBM to build and host a new trade finance platform using Big Blue's Hyperledger Fabric.

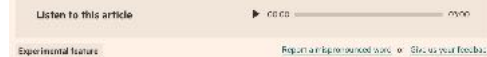
The Digital Trade Chain Consortium, which consists of Deutsche Bank, HSBC, KBC, Natixis, Rabobank, Societe Generale and Unicredit, was formed earlier this year to meet the financing gaps hampering domestic and cross-border trade for small and medium enterprises in Europe, while helping to increase overall trade transaction transparency.

Blockchain in production

ASX chooses blockchain for equities clearing

Australian bourse becomes first big exchange to commit to the technology

Jamie Smyth in Sydney
DECEMBER 7, 2017



The Australian Securities Exchange is planning to use blockchain technology to manage the clearing and settlement of equities.

The decision to replace its ageing clearing and settlement system, known as Chess, with distributed ledger technology — the engine behind the digital currency bitcoin — makes it one of the world's first global exchanges to commit to the technology.

The ASX on Thursday said Digital Asset Holdings, the company run by former JPMorgan Chase executive Blythe Masters, has built and tested the software.

Northern Trust Goes Live With IBM-Powered Private Equities Blockchain

Michael del Castillo (pDelRayMar) | Published on February 22, 2017 at 05:00 GMT



Northern Trust revealed today it has been discreetly running what may be the world's first functioning private equities blockchain.

Custom built for Switzerland-based management firm Unigestion, the platform was co-developed by Northern Trust and IBM using Hyperledger's Fabric code base. Notably, the distributed ledger features an active node that is already providing real-time data to a European regulator.

DTCC SELECTS IBM, AXONI AND R3 TO DEVELOP DTCC'S DISTRIBUTED LEDGER SOLUTION FOR DERIVATIVES PROCESSING

DTCC the premier post-trade market Infrastructure for the global financial services industry, today announced that it has selected IBM, in partnership with Axoni and R3, to provide a DLT framework to drive further improvements in derivatives post-trade lifecycle events.



The need:

The global market is limited by the lack of standardized payment netting process for trades not settled within the current CLS environment, forcing institutions to intervene manually to complete the process. This leads to inconsistent netting approaches, resulting in higher costs and increased intra-day liquidity demands.

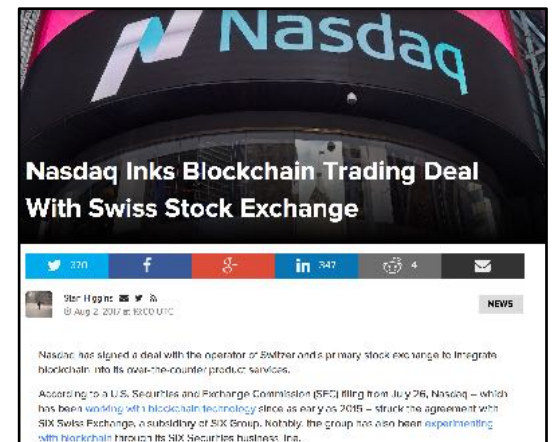
Solution:

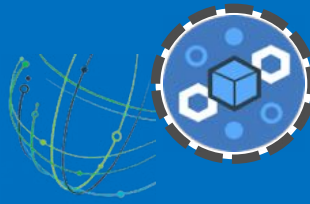
CLS Group has partnered with IBM to release a payment netting service, CLS Netting, for buy-side and sell-side institutions' FX trades that are settled outside the CLS settlement service. CLS Netting will have a Hyperledger based platform which delivers a standardized suite of post-trade and risk mitigation services for the entire FX market.

Securities Post Trade

Borsa Italiana collaborate with IBM to develop securities data blockchain solution for European SMEs

Borsa Italiana has announced they are building a blockchain solution to digitalise the issuance of securities for SMEs in Europe.





The seeds of disruption ?

THE TRADE



News

TheTRADE Asia

TheTrade Derivatives

Events

Blog

Multimedia

Thought

Blockchain startup aims to replace clearing houses

The start-up aims to use blockchain technology to replace clearing houses and remove intermediaries between trades.

By Joe Parsons joe.parsons@strategic-i.com October 11, 2016 9:54 AM GMT



A new blockchain start-up focused on cleared and uncleared derivatives is aiming to replace the role of clearing houses and win industry-wide support.



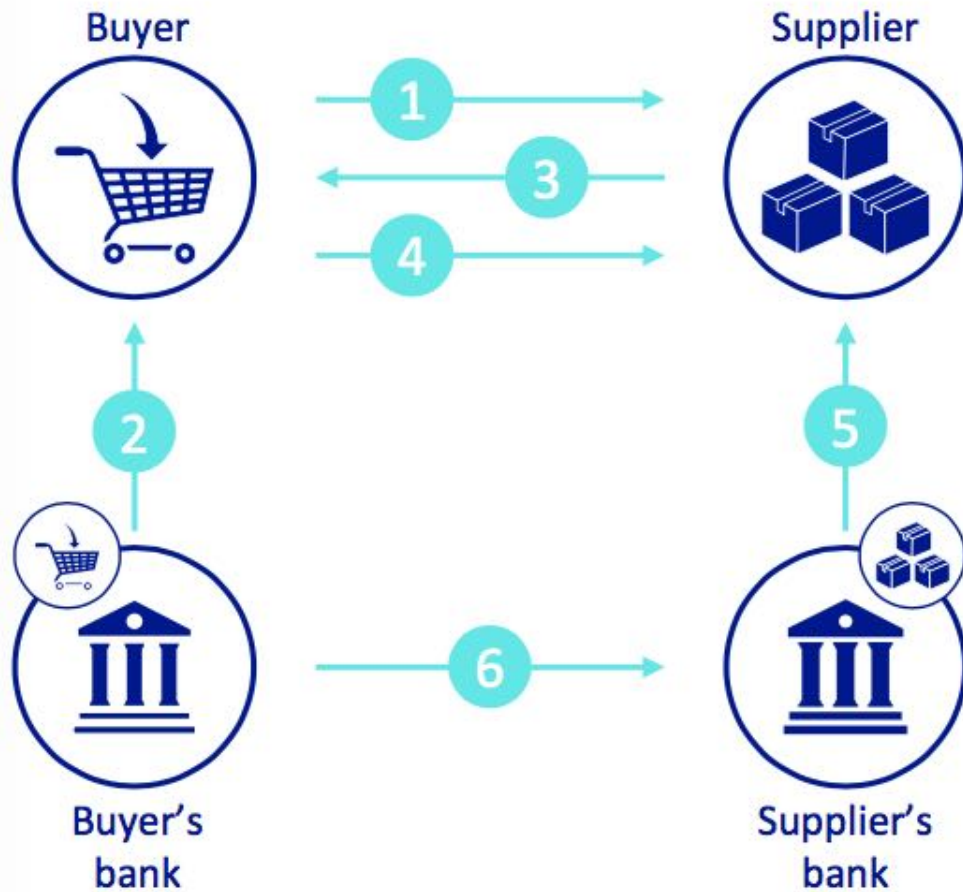
Founded by two former traders at Societe Generale, SynSwap is a post-trade start-up based on hyperledger technology designed to disintermediate central counterparties (CCPs) from the clearing process, effectively removing their role in key areas.



"For now we are focusing on interest rate swaps and credit default swaps, and will further develop the platform for other asset classes," says Sophia Grami, co-founder of SynSwap.



An example: We.Trade is transforming SME Trade Finance



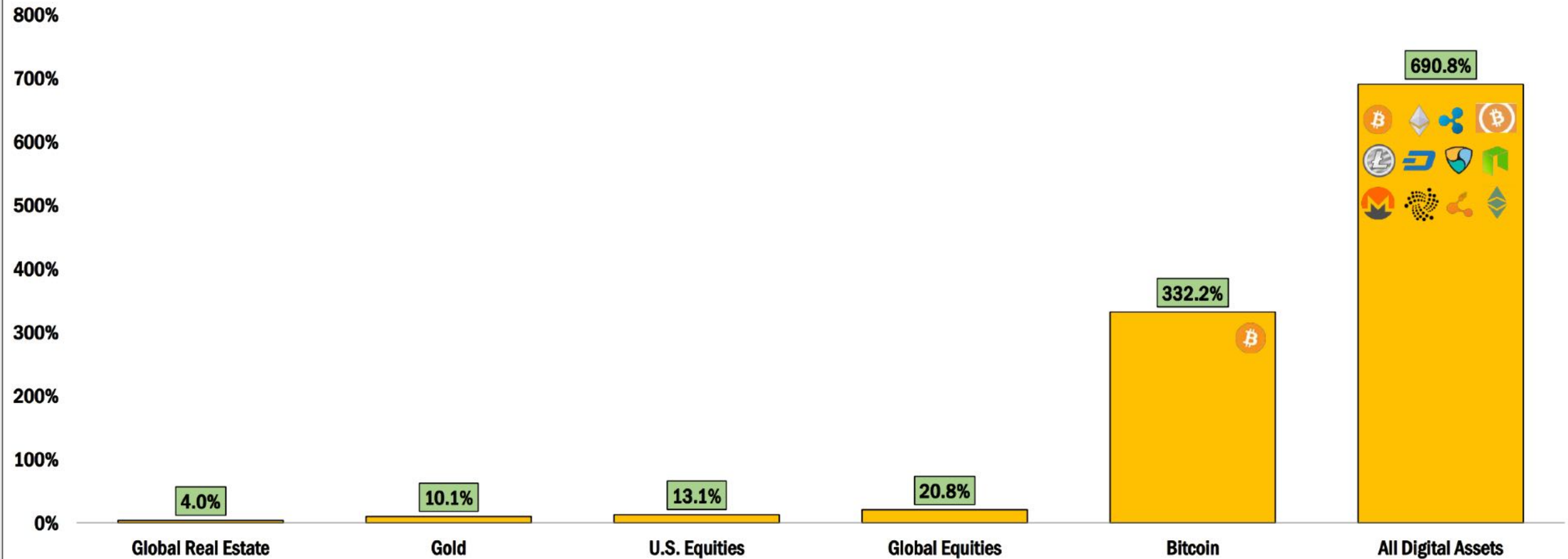
- 1 Buyer initiates purchase order with 60 days payment terms
- 2 Buyer requests bank to provide Bank Payment Undertaking (BPU)
- 3 Supplier ships order and sends invoice through the platform
- 4 Buyer confirms the receipt of goods
- 5 Supplier asks his bank to provide invoice financing arrangement for next 60 days (optional)
- 6 Buyer's bank debits buyer account and initiates payment of invoice on due date, either...
 - to supplier's bank, if invoice has been financed or
 - to supplier's account

Digital Assets as an Asset Class: Institutional Money awaited



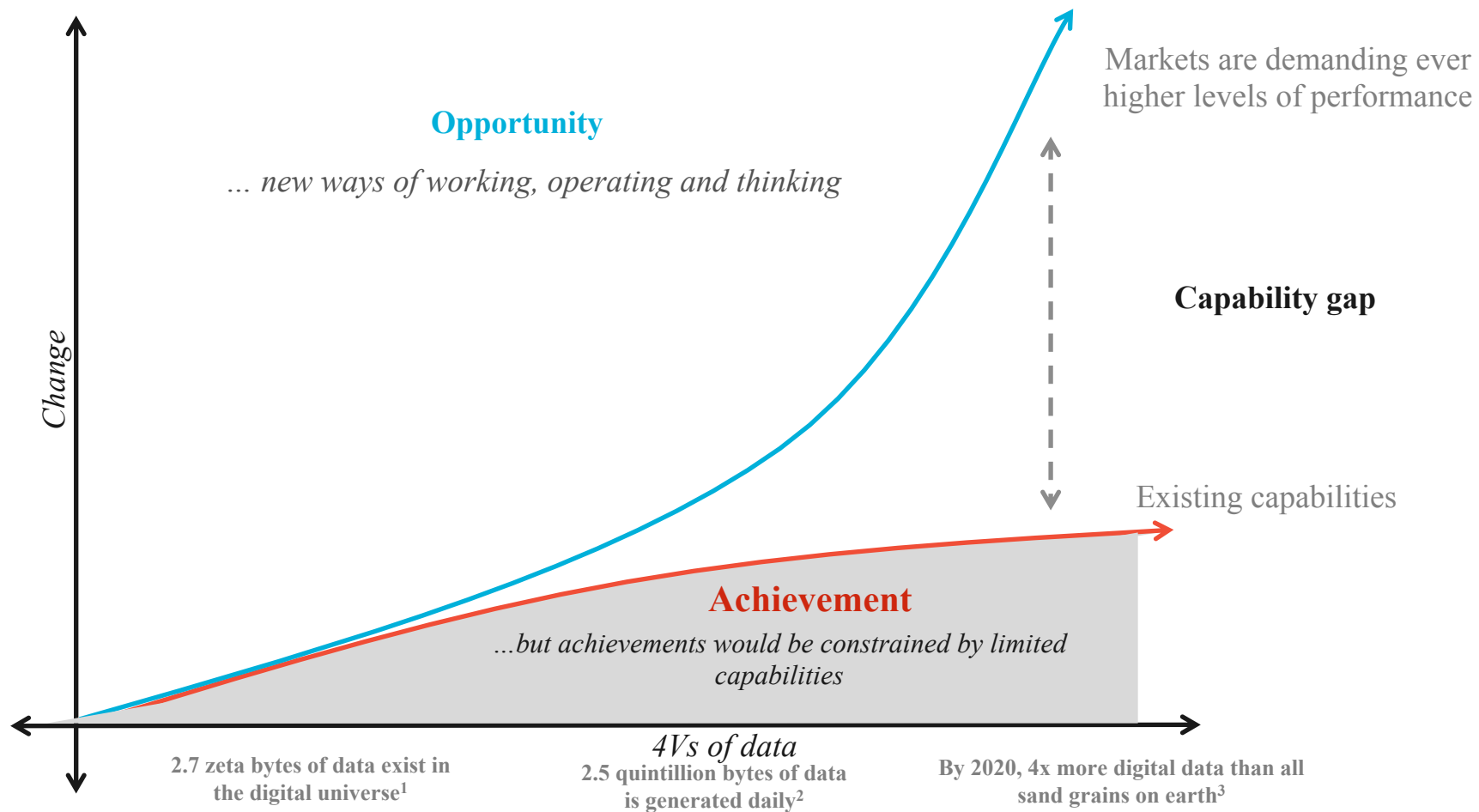
Digital Assets Outperformed Traditional Assets
Nearly 7X Return YTD

2017 YTD Returns

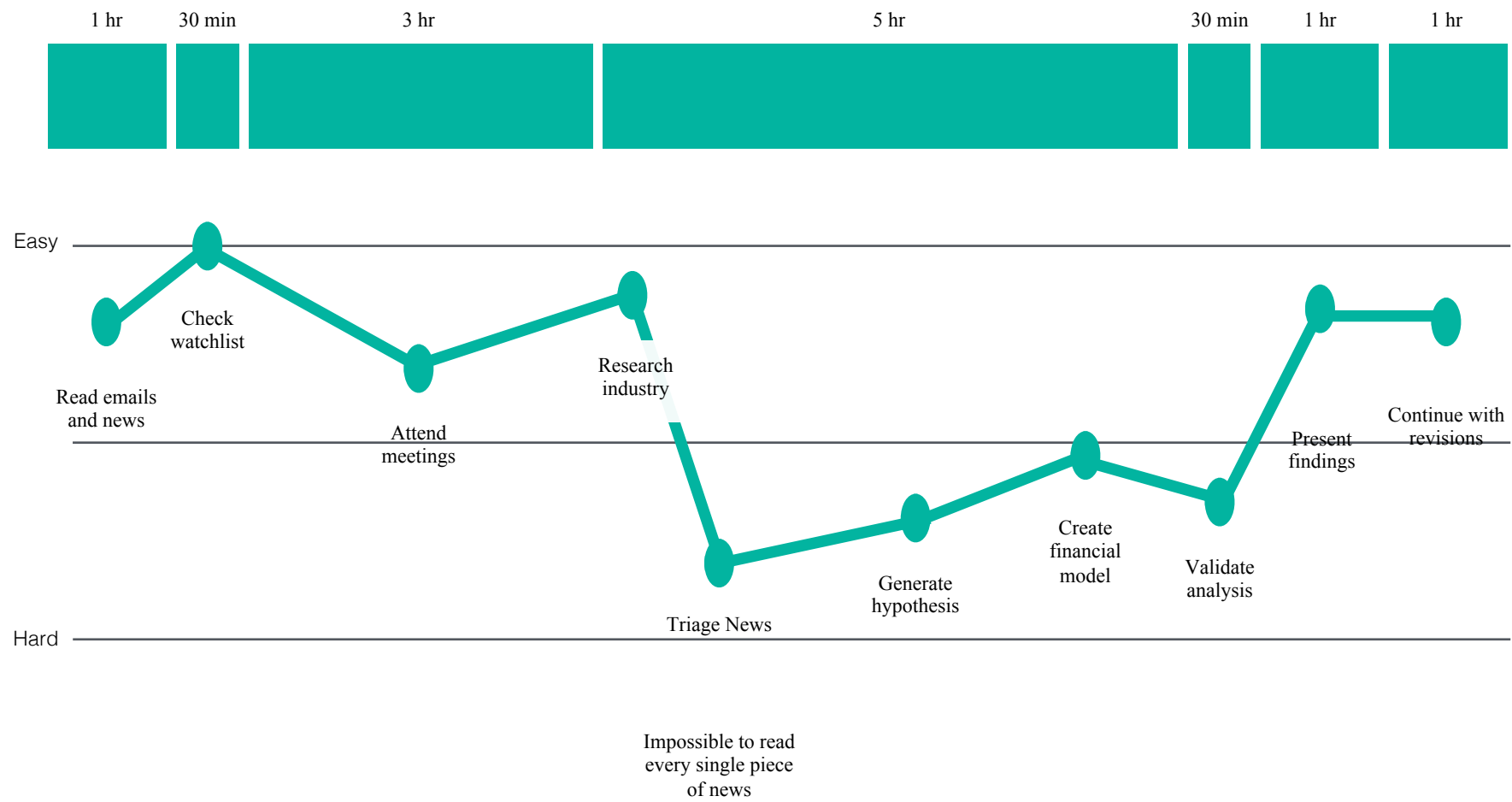


AI and Cognitive

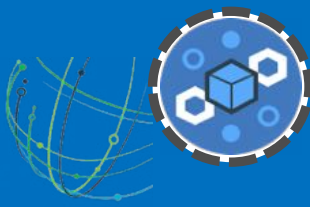
Limitations of traditional analytics create a capability gap



Applying Cognitive Debating function to Investment Analysis



In practice:



Fintechs

The battle between every startup and incumbent comes down to whether the startup gets distribution before the incumbent gets innovation.

Alex Rampell

A16Z, Partner



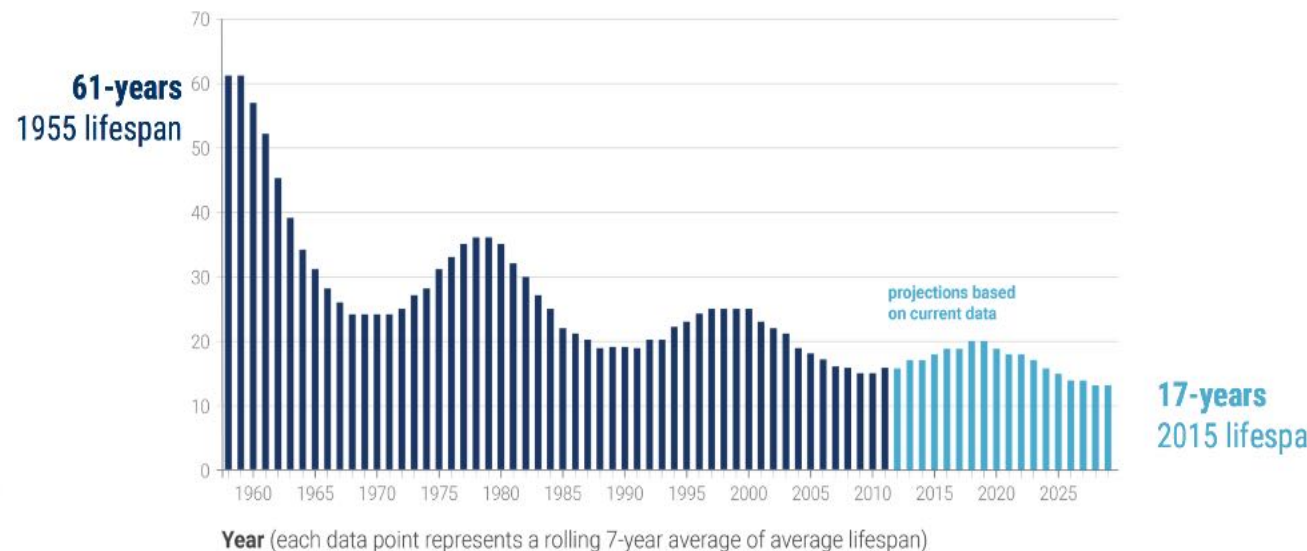
Today's Titan may be Tomorrow's Dinosaur

Technology is eating every industry



IN THE LAST 15 YEARS

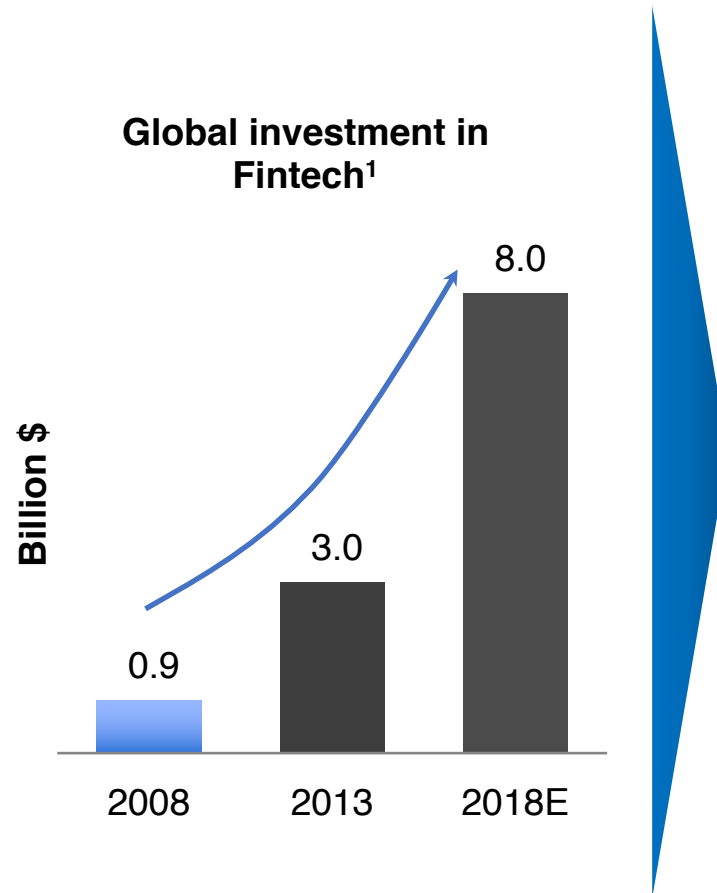
52% of S&P 500 companies have disappeared




Disruption from fintechs and their success has driven strong investment for their future growth





Fintech investors see opportunities to expand capabilities in select functions...




- Fintechs innovated within a specific segment to gain a foothold in the banking value chain
- Their value proposition and consistent performance has made them leaders in their segments

 *#1 Online Provider of Small Business Loans
Have \$2,000 - \$100,000 loan in 7 minutes²*

 *Your credit scores should be free
Maximize checkout completion process⁵*

 *Manages over \$2.5 bn in assets
Significantly lower investment advisory fees³*

 *Differentiated payment solution for ecommerce
Maximize checkout completion process⁴*



Fintechs are unbundling the traditional banking models creating new scenarios as both partners or competitors

Source : Breakthrough banking: Your cognitive future in banking and financial markets.

IBM Institute for Business Value, September 2016. ©IBM

:



The new disruptors

**World's largest
taxi company...**

**owns no
vehicles**

**World's most
popular media
owner...**

**creates no
content**

**World's most
valuable
retailer...**

**has no
inventory**

**World's largest
accommodation
provider...**

**owns no
real estate**

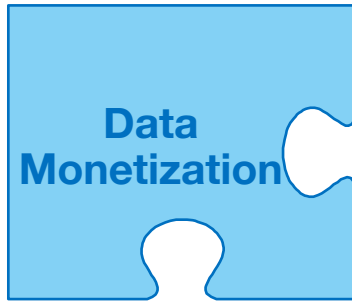
**World's largest
custodian,
asset manager,**

...

has no ??



As an example: Amazon



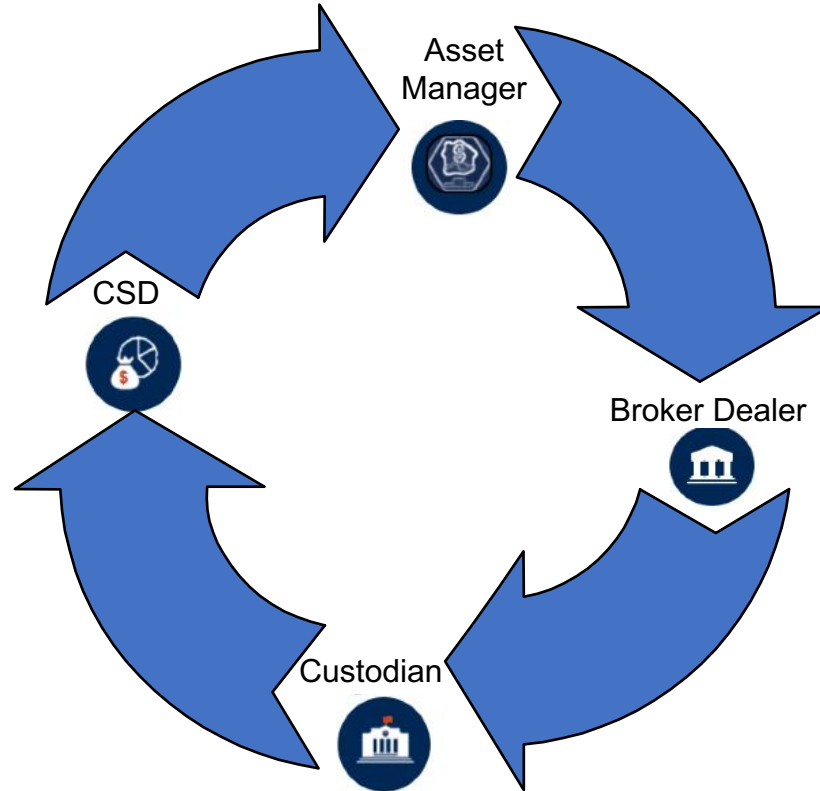
Amazon's Strength	<ul style="list-style-type: none"> Amazon mines data from hundreds of millions of orders, customer interactions and payment transactions 	<ul style="list-style-type: none"> Amazon has a comprehensive view of the customer that spans their online purchasing habits, reading preferences, lifestyle (via Alexa) and also increasing favorite movies and shows 	<ul style="list-style-type: none"> Amazon is one of the largest retailers in the world, and is now starting to build an offline retail presence through acquisition (Wholefood) as well as organically (Amazon Go & Bookstore) 	<ul style="list-style-type: none"> Amazon has a network of 2-3 million merchants, and also orchestrates a complex ecosystem of supply chain partners to deliver unique client value
How to banks compare?	<ul style="list-style-type: none"> Only payment and financial data assets, with limited data monetization capabilities (often constrained by talent) 	<ul style="list-style-type: none"> Banks have a more comprehensive view of a customer's financial profile, but lack lifestyle insights 	<ul style="list-style-type: none"> Banks have comprehensive branch networks and marketing websites for the retail segment, but the purpose in both cases is to sell financial services only 	<ul style="list-style-type: none"> Marketplace and platform banking is a significant cultural and business model shift for banks – so far banks have had limited success
Implications	<ul style="list-style-type: none"> Banks are not positioned well to compete on data compared to a tech giant like Amazon 	<ul style="list-style-type: none"> Amazon can integrate financial services more seamlessly into the a user's lifestyle 	<ul style="list-style-type: none"> Retail dominance puts Amazon is a unique position to gradually disintermediate banks through processing payments and providing financing 	<ul style="list-style-type: none"> Financial services is moving towards open ecosystems, where banks are a disadvantage compared to the Amazon

How to Live Long and Prosper in the New Model ?

Gifts to Help You Survive and Prosper After the Apocalypse



Post Trade DLT Musical Chairs Be at the forefront of disruption



“How did you **go bankrupt?**”

ERNEST HEMINGWAY, *THE SUN ALSO RISES*

“Two ways...
Gradually and **then suddenly**”



Apple launches 1st iPhone

Jan 2007

Dec 2008

Dec 2010

Nov 2012



A New Model Operating Model



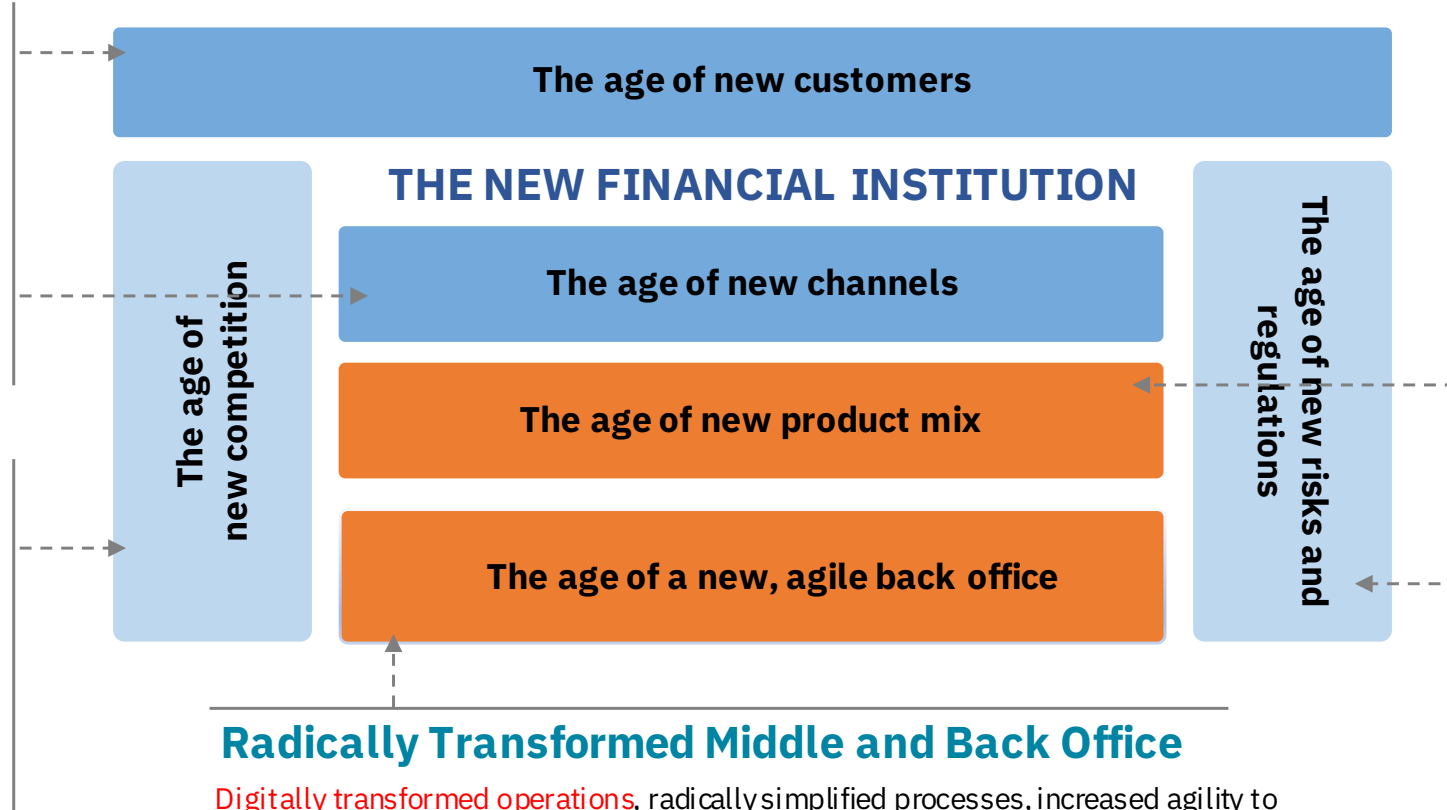
Digital Front Office

High level of customization based on advanced **analytics and cognitive** insights derived from internal and external data.

Digitalized e2e processes to drive agility, faster execution / customer onboarding and world class, omni-channel experience

Ecosystems

A new generation of service providers are interacting in modern **marketplaces and ecosystems** to deliver “banking as a service” leveraging disruptive technologies



Radically Transformed Middle and Back Office

Digitally transformed operations, radically simplified processes, increased agility to drive substantial structural cost reduction (40%+) leveraging Intelligent Automation and RPA, cognitive. Non differentiated core processes sourced externally through utilities, delivering improved experience and costs

Leverage **Blockchain** to radically transform operating models and reduced costs

Transformed infrastructure to support on-prem, public cloud, and private cloud deployments, differentiated through security

Flexible Portfolio

More **flexible, on-demand offerings** with rapidly updating value propositions and multiple price points, incorporating best of breed from **ecosystem partners**

Secure & Compliant Operations

More **secure operations**, reduced risk
dramatically **enhanced regulatory compliance** enabled through Blockchain, cognitive and cyber security

And finally



- Move from Bank+Innovation Group to Innovative Bank
- Transform from Legacy DNA to Digital DNA
- Watch out for Gamekeepers

Culture attributes	Legacy DNA	Digital DNA
Adaptability to change	Slow, but innovating <ul style="list-style-type: none">• Resistance to fail• Focus on innovation• Late adopters of technology change	Agility <ul style="list-style-type: none">• Iterative• Constant disruption• Continuously innovating• Fail early, fail fast, learn faster• Fluidity• Uneven velocity between digital and businesses• Changing nature and topology of work• Continuous ecosystem disruption
Work style	Siloed <ul style="list-style-type: none">• Fixed team structures• Siloed operations• Well-defined roles and skill requirements• Geography dependent	Collaboration <ul style="list-style-type: none">• Morphing team structure• Democratizing information• Dynamic skill requirement• Intentionally collaborative• Geography agnostic
Organizational structure	Hierarchical <ul style="list-style-type: none">• Long-standing levels of hierarchy• Decision making driven by positional authority, and not skills and proficiency	Distributed <ul style="list-style-type: none">• Flattening and changing hierarchy• Ongoing shifts in decision rights and power• Changing mix of traditional and nontraditional stakeholders
Risk appetite	Cautious <ul style="list-style-type: none">• Regulatory-determined risk appetite• Siloed operations separating more risky and less risky businesses	Exploratory <ul style="list-style-type: none">• Modulating risk and security boundaries
Customer experience	Customer focus <ul style="list-style-type: none">• Use of analytics to anticipate customer needs• Focus on the feedback loop to hear customer voices• Latency in customer feedback and firms' response	Customer centricity <ul style="list-style-type: none">• Real time and on demand• Increased customer involvement

Source: Deloitte Digital and Deloitte Center for Financial Services analysis.