



What You Need to Know About Insuretech/Blockchain

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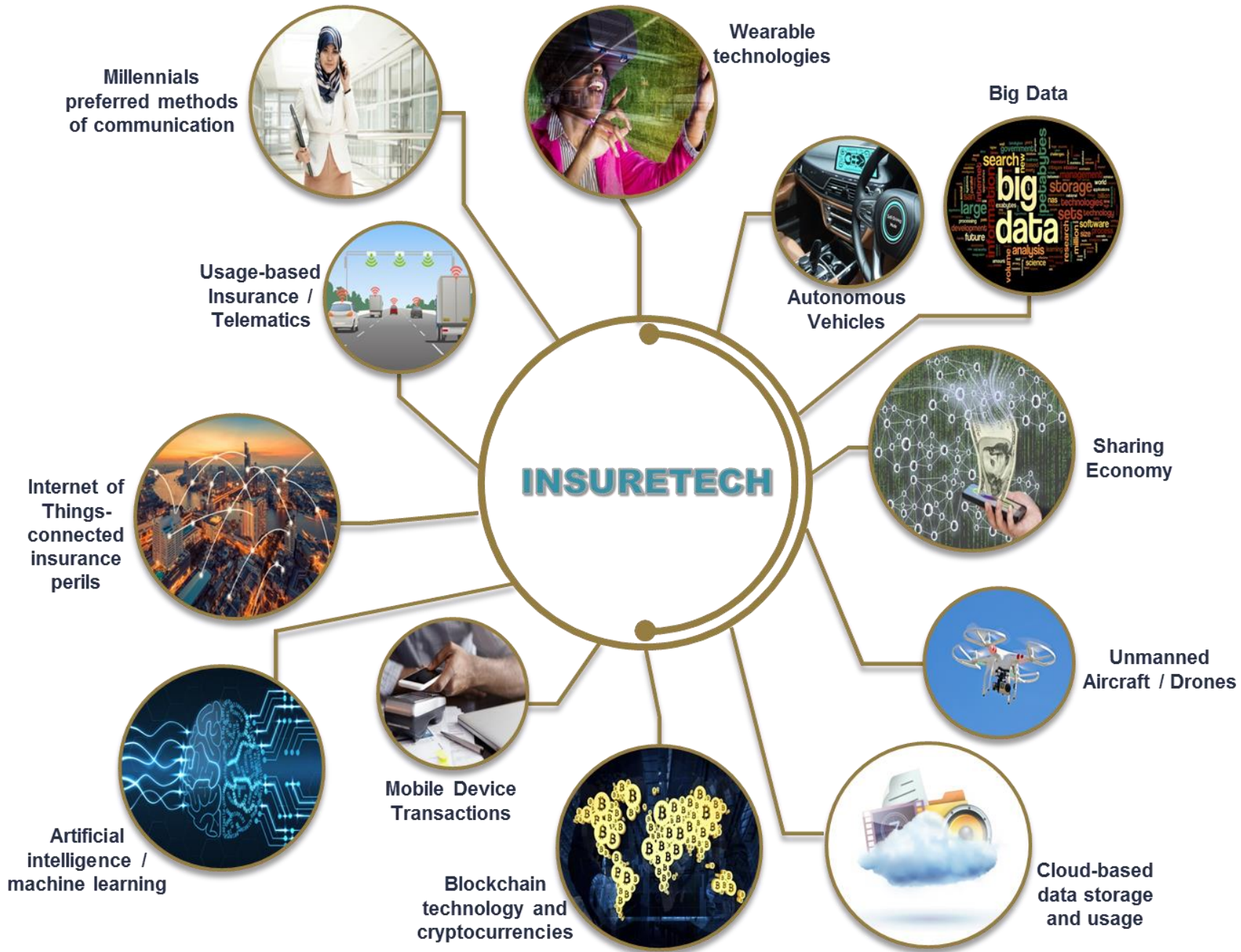
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What is Fintech and InsureTech?

- Technology enabled and driven disruptive insurance or financial services business models and products
- Lending Tech
- Crowdfunding
- Blockchain/Cryptocurrency
- Money Transfer
- Billing & Payment Tech
- Personal Finance/Wealth Management
- Capital Markets/Institutional Tech
- InsureTech

Drivers of InsureTech



Sample InsureTech Companies

Life Insurance

 Health I.Q.

life insurance for healthy lifestyles

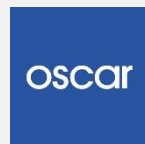
 Ladder

on demand life insurance

 sureify

direct to consumer life insurance

Healthcare



smartphone application for identifying in-network healthcare providers in coordinating health insurance coverage

 FIT SENSE

personalized products and services using app and device data

Property & Casualty

Lemonade[™]

peer-to-peer homeowner's and renter's insurance

Slice

on demand insurance for auto and home-sharing

trōv

on demand insurance for personal property

metromile

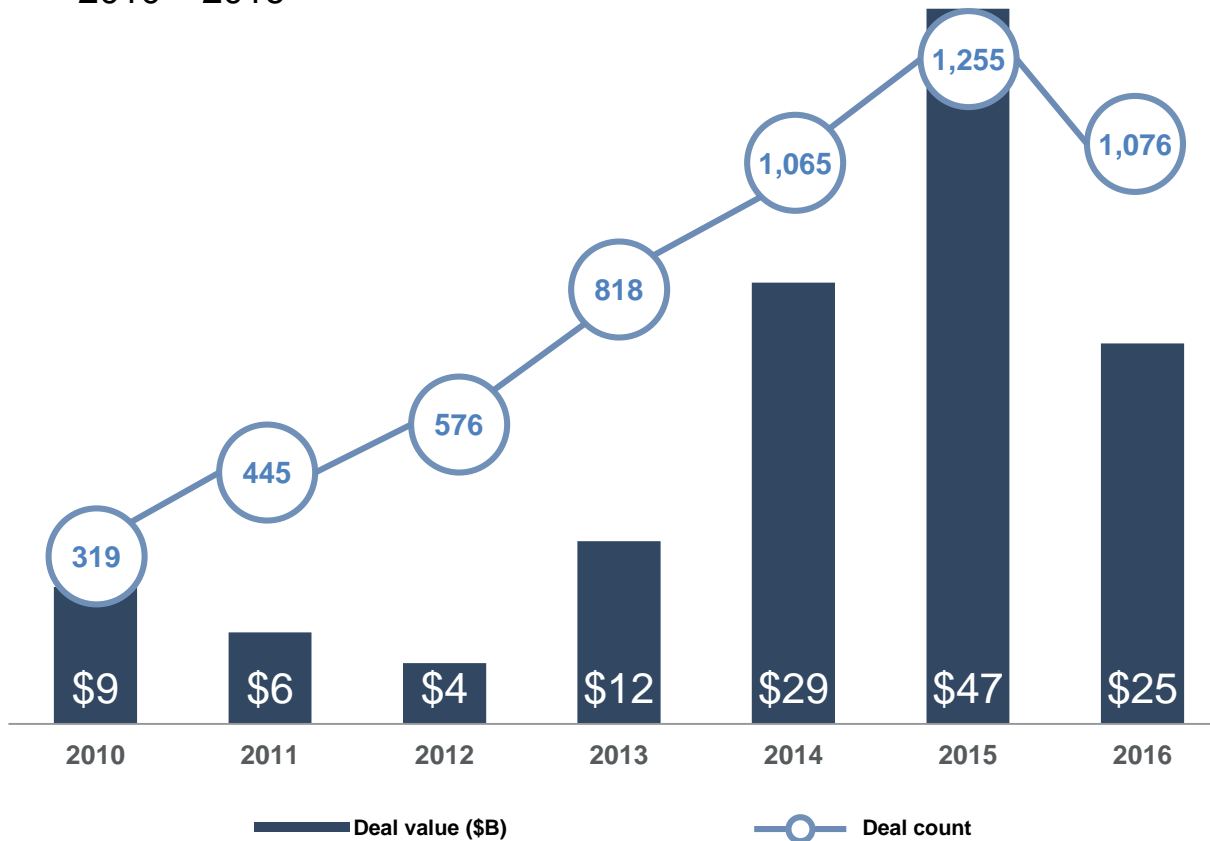
private passenger auto insurance

Insurance Company Sponsored InsureTech Investment Funds

- Allianz Ventures
 - American Family Ventures
 - AXA Strategic Ventures
 - Liberty Mutual Strategic Ventures
 - MassMutual Ventures
 - ManchesterStory Group (consortium of insurers)
 - Nationwide Ventures
 - Northwestern Mutual Future Ventures
 - RGAx
 - XL Innovate
-
- Two types of investment strategies:
 - Financial, usually as a co-investor
 - Strategic

Fintech Investment Volume Declines in 2016

Total global investment in fintech companies
2010 – 2016



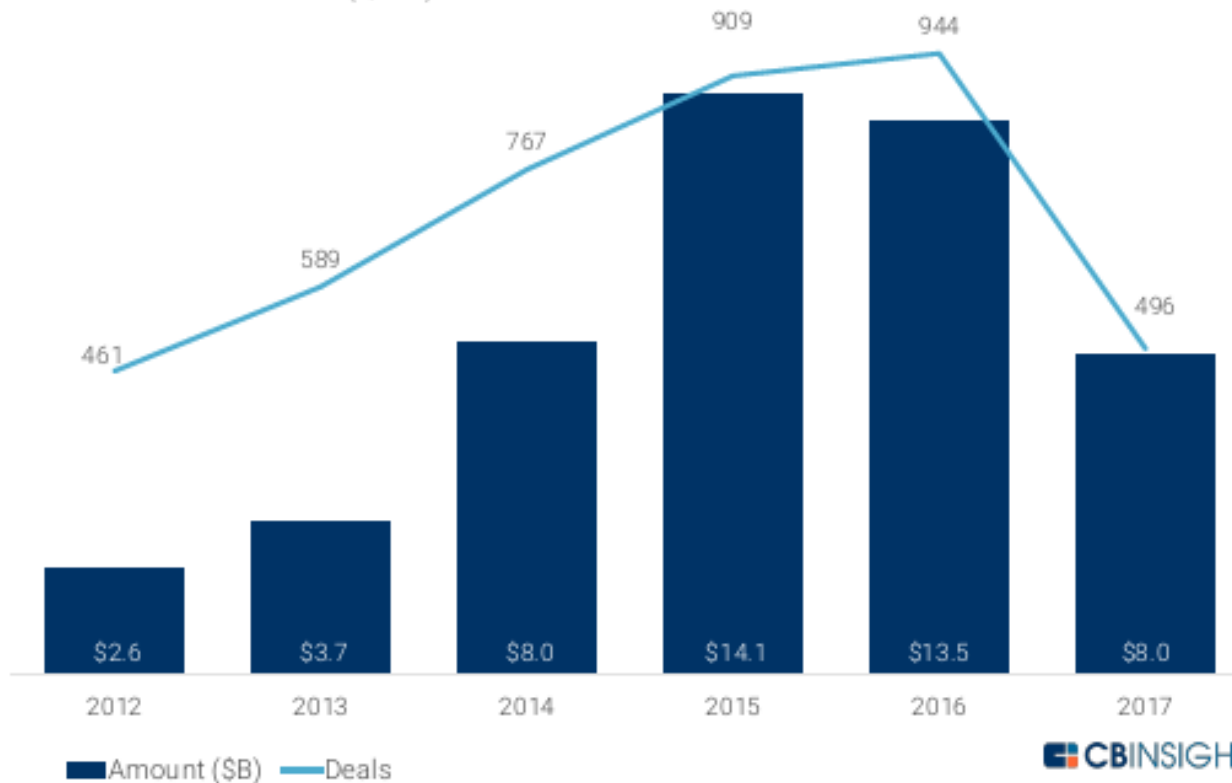
Tallying up both M&A and venture investment, it is clear that there was a distinct decline between 2015 and 2016 in overall activity, although the rapid surge in deal value in 2015 as well as still-robust aggregate value in 2016 speaks more to outliers such as Ant Financial's massive funding in 2016.

Source: Pulse of Fintech Q4'16, Global Analysis of Investment in Fintech, KPMG International (data provided by PitchBook) February 21, 2017.

Annual Global Financing Trend to VC-Backed Fintech Companies

ANNUAL GLOBAL FINANCING TREND TO VC-BACKED FINTECH COMPANIES

2012 – 2017 YTD (Q2'17)

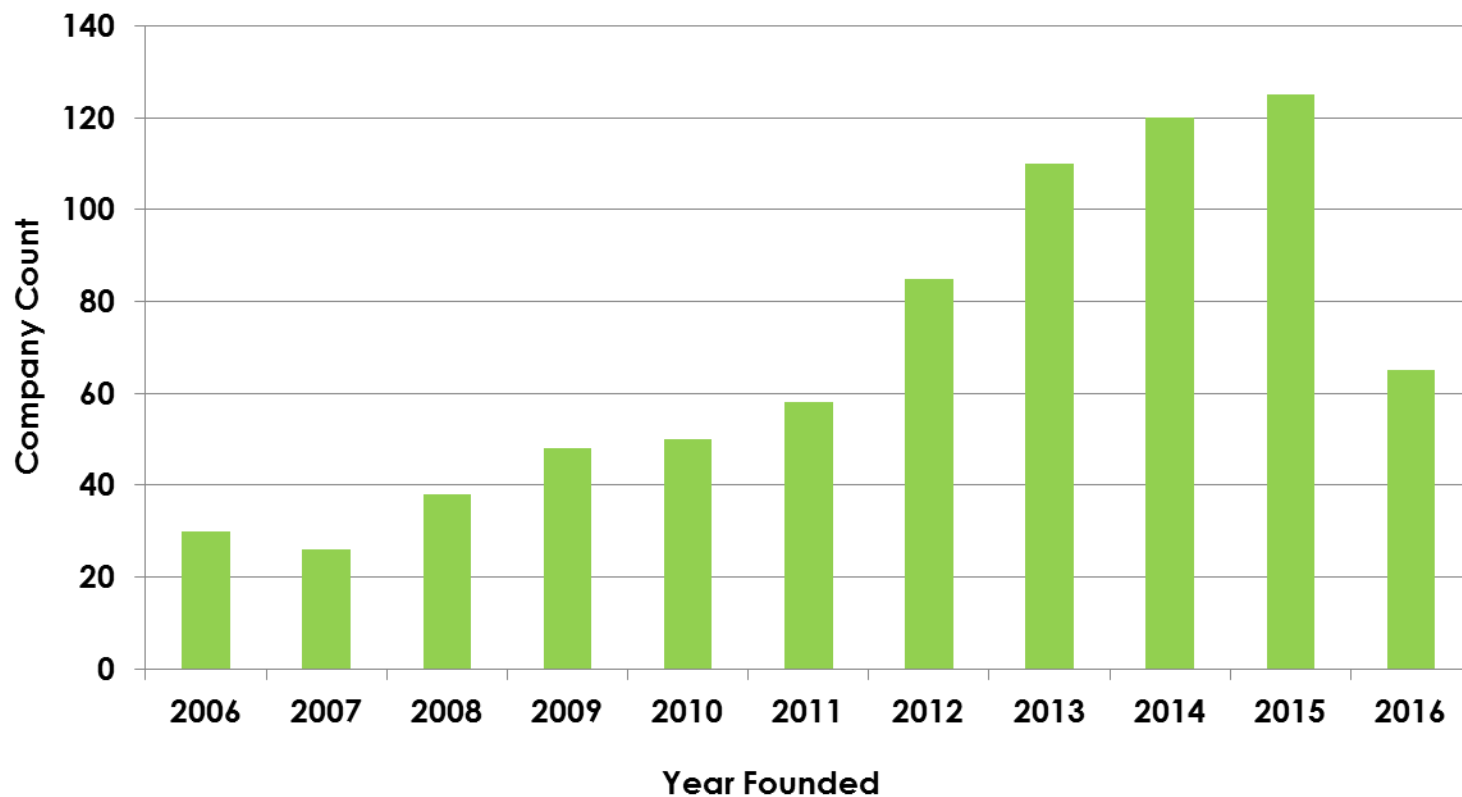


VC-BACKED FINTECH FUNDING ON PACE TO HIT NEW RECORD IN 2017 YTD

Deals and funding to VC-backed fintech companies both recovered in Q2'17 after a slower Q1'17. At the current run rate, VC-backed fintech investment deals and funding are projected to hit record highs.

Pace of InsureTech Investments 2006-2016

Insurance Technology Companies Founded by Year



Data through April 2017

Quarterly Financing Trend to VC-Backed Insurance Tech Companies

 **QUARTERLY FINANCING TREND TO VC-BACKED INSURANCE TECH COMPANIES**
Q2'16 - Q2'17

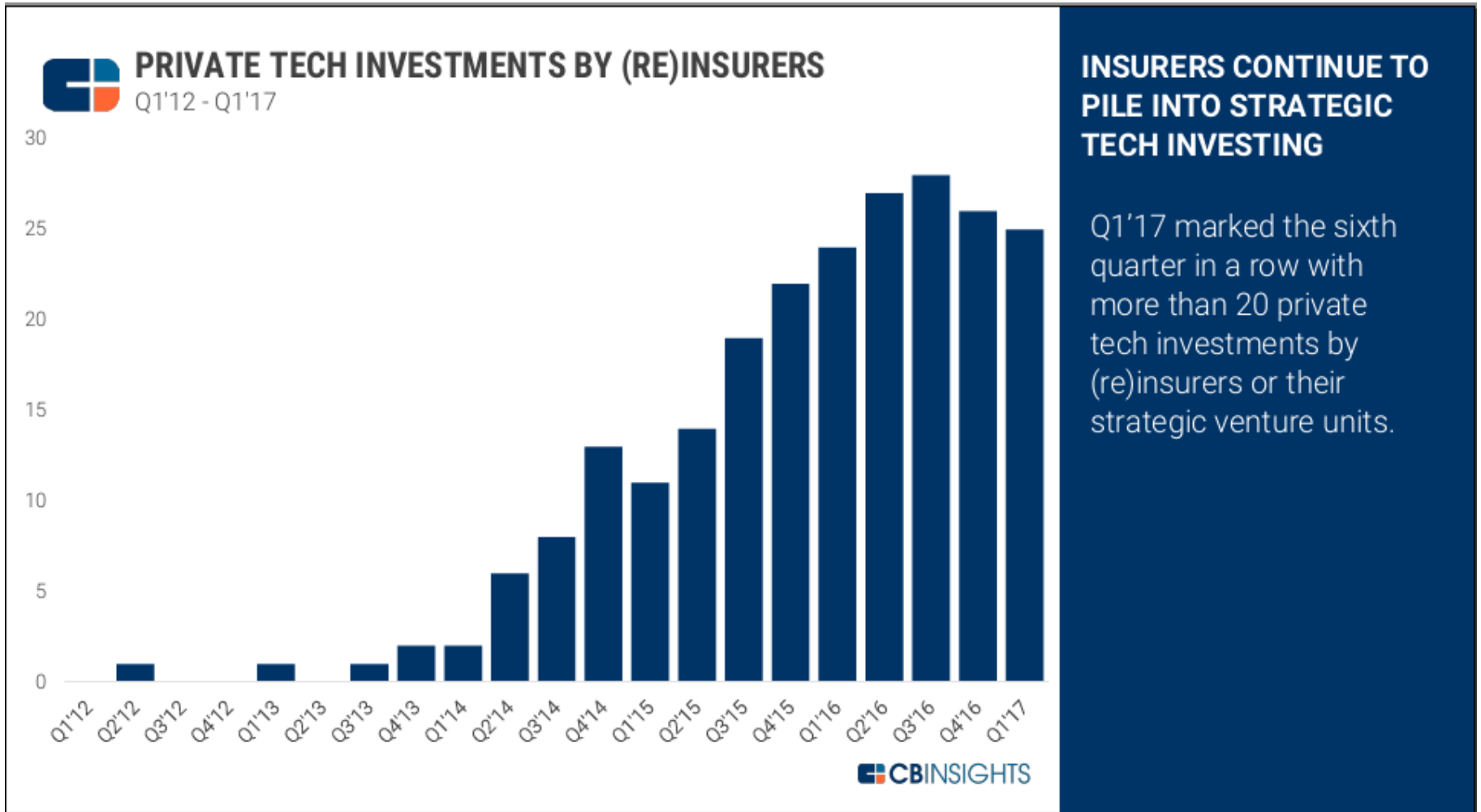


FUNDING TO VC-BACKED INSURANCE TECH STARTUPS TOPS \$600M IN Q2'17

Deals to VC-backed insurance tech companies rose 81% in Q2'17 on a quarterly basis.

Funding increased 205% on a quarterly basis on the back of large rounds to Bright Health, Clover Health, and Trov.

Private Tech Investments by (RE)Insurers



Select InsurTech U.S. Capital Raises – September

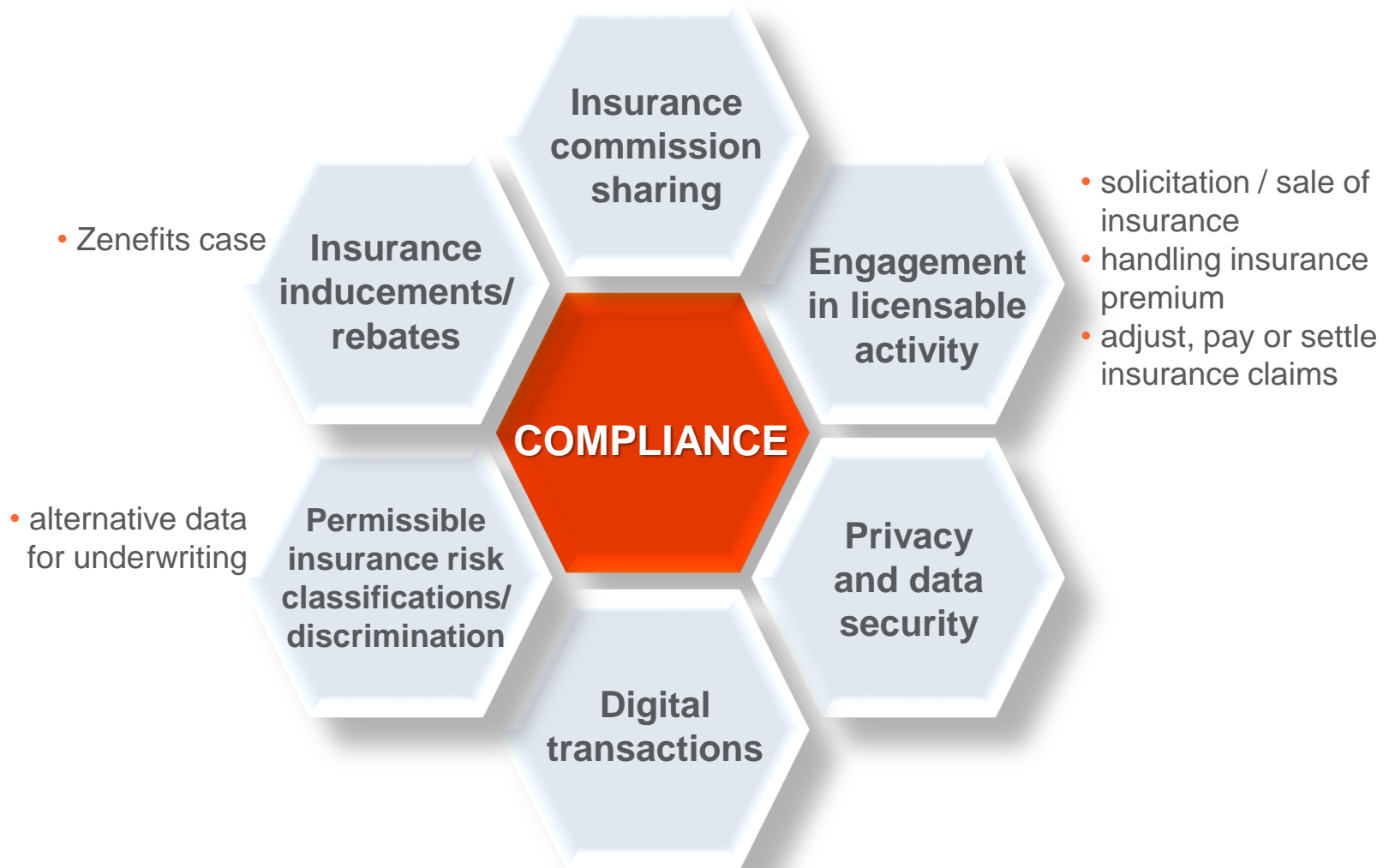
Announced	Target	Business Description	Capital Raised, Round/Total (\$m)	Current Round Investors
5-Sep-17	Betterview	Software platform and service provider for capturing and analyzing data from drones	2.05/3.65	Compound Venture Capital, Maiden Re, 645 Ventures, Arab Angel, Winklevoss Capital, Chestnut Street Ventures, Pierre Valade
6-Sep-17	Turo	Online car-rental service that enables travelers to rent any car they wish from the local community of car owners	92.0/204.1	Liberty Mutual Strategic, Ventures, Founders Circle Capital, August Capital, Canaan Partners, Kleiner Perkins, GV, Trinity Ventures, hasta Ventures
8-Sep-17	Rhino	Real estate technology company that aims to replace security deposits with a smarter alternative that the company argues is better for both renters and landlords.	1.9/1.9	Ff Venture Capital, FJ Labs, Lakehouse Ventures, Picus Capital
11-Sep-17	Terrene Labs	Developer of a data platform designed to speed up the insurance application process	0.7/0.7	Private Investors
13-Sep-17	Candor Insurance	Healthcare exchange platform designed to provide side-by-side comparisons of plans. The platform offers breakdowns of what medical appointments or procedures will cost	3.6/3.6	Private Investors
13-Sep-17	Flock	San Francisco-based startup that provides HR compliance and benefits management software	3.5/5.5	Hartford Venture, Other Undisclosed
13-Sep-17	Carfit	Develops a self-diagnostic and predictive maintenance platform designed to optimize automotive investments.	2.2/2.2	Jaguar Land Rover
18-Sep-07	The Zebra	Car insurance comparison platform designed to make it easier for drivers to shop for car insurance	40.0/61.5	Accel, Silverton Partners, Floodgate Fund, Ballast Point Ventures, Daher Capital, Birchmere Ventures
19-Sep-07	Clearcover	Data-driven platform to offer reduced premiums on car insurance to its customers	11.5/14.0	Lightbank Capital, 500 Startups, Greycroft Partners, Silicon Valley Bank
19-Sep-07	Matic	Online insurance platform that directly integrates lenders and insurance carriers to offer a seamless mortgage process, enabling homeowners to analyze property data	7.0/9.3	Plug and Play Incubator
27-Sep-17	Cardinal Analytx	Analytics based healthcare service intended to predict healthcare spending in Stanford	6.1/6.1	Cardinal Partners, Premera Blue Cross, Stanford-StartX Fund, Other Undisclosed
28-Sep-17	Drive.ai	AI based self-driving technology designed to make autonomous vehicles safer, potentially lowering insurance premiums	15.0/77.1	Grab

Sources: PwC CF Research, Pitchbook, CapitalIQ, Crunchbase

Legislative and Regulatory InsureTech/Fintech Initiatives

- Office of Comptroller of Currency's special purpose national bank charters for fintech companies (December 2016)
- Conference of State Bank Supervisors v. OCC (April 2017)
- NY DFS v. OCC (May 2017)
- NAIC Innovation and Technology (EX) Task Force (March 2017)
 - Provide forum for regulator education and discussion of innovation and technology in insurance sector, to monitor technology developments impacting state insurance regulatory framework and develop regulatory guidance as appropriate
 - New task force will also oversee Big Data Working Group, Cybersecurity Working Group and Speed-to-Market Working Group

InsureTech Regulatory Issues



Learning More About InsureTech

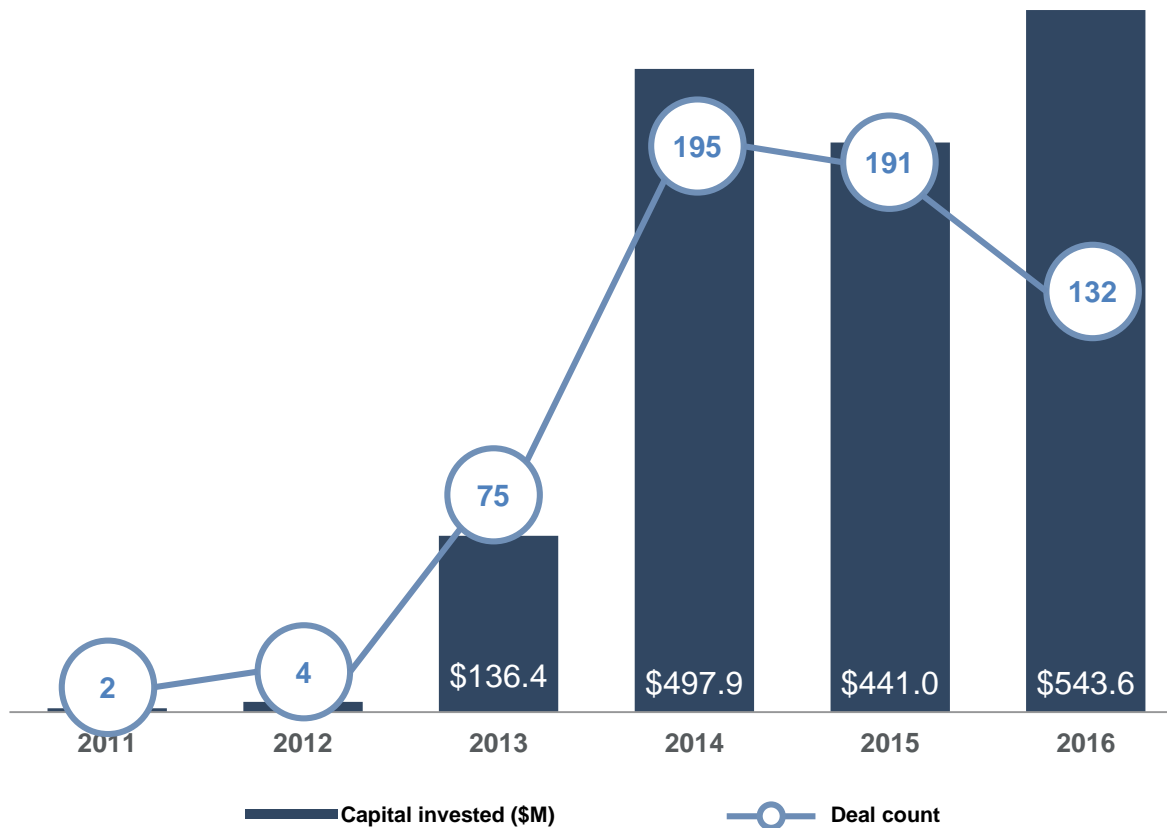


Blockchain Technology

- Bitcoin and other virtual currencies were innovators of Blockchain technology
- Distributed Ledger Technology (DLT) for recording and effecting transactions in a secure, encrypted and decentralized manner
- No central databases (trusted 3rd party), each node becomes a part of the blockchain
- Blockchains can be public or private in permissioned-based environment
- Transactions as they are incurred are shared and verified among all participants on a consensus basis using “proof of work” miners
- Common standards will need to emerge for scalability and market acceptance
- Blockchain may be the next big technological leap since the Internet

Blockchain Investments Trends

Venture investment in bitcoin & blockchain-related companies 2011 – 2016



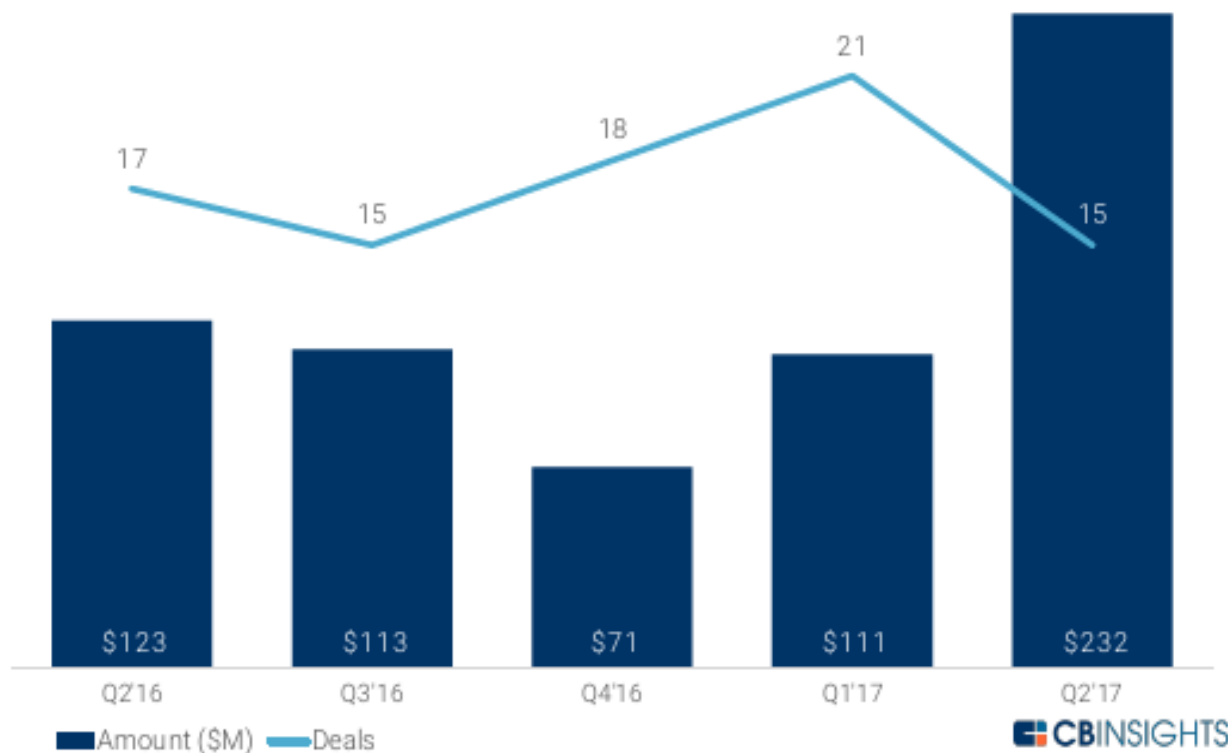
Funding of bitcoin and/or blockchain-related startups has boomed in recent years as products have matured and potentially clearer use cases have emerged. That said, the deceleration in financings by count signifies that initial hype is fading and more proof of robust applications will be required by venture investors.

Source: Pulse of Fintech Q4'16, Global Analysis of Investment in Fintech, KPMG International (data provided by PitchBook) February 21, 2017.

Quarterly Financing Trend to VC-Backed Blockchain/Bitcoin Companies

QUARTERLY FINANCING TREND TO VC-BACKED BLOCKCHAIN/BITCOIN COMPANIES

Q2'16 - Q2'17

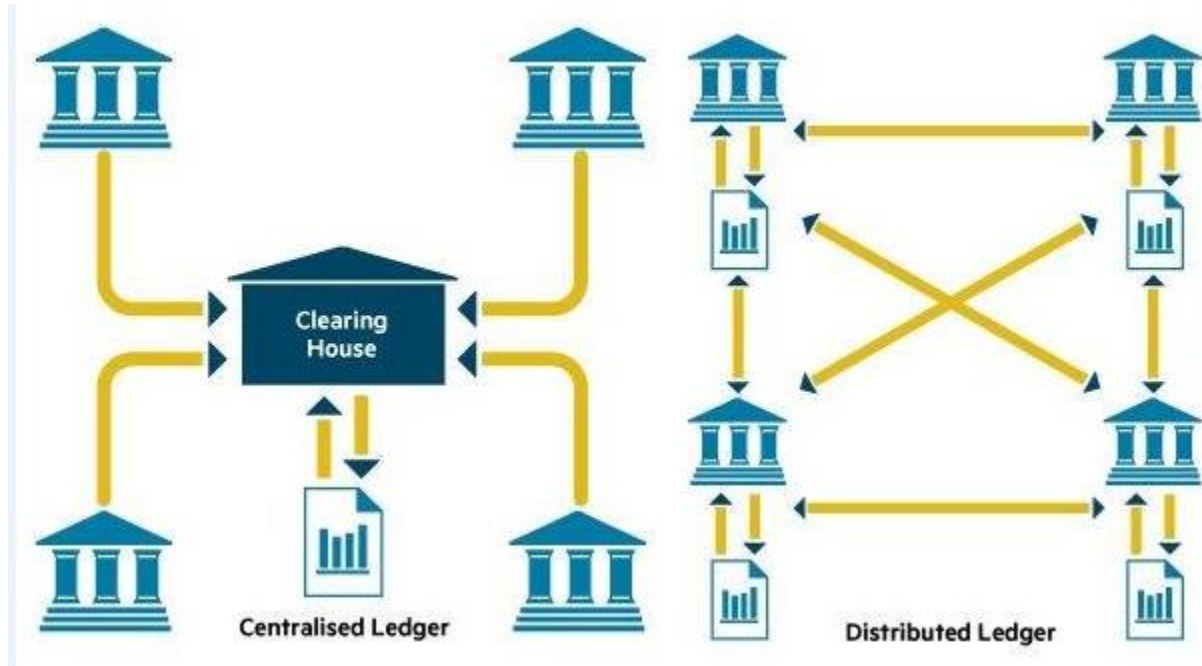


R3 INVESTMENT DRIVES FUNDING TO BLOCKCHAIN COMPANIES IN Q2'17

Funding to VC-backed blockchain and bitcoin startups climbed for the second consecutive quarter growing 100% on a quarterly basis. 46% of Q2'17 funding was driven by a \$107M Series A mega-round to R3.

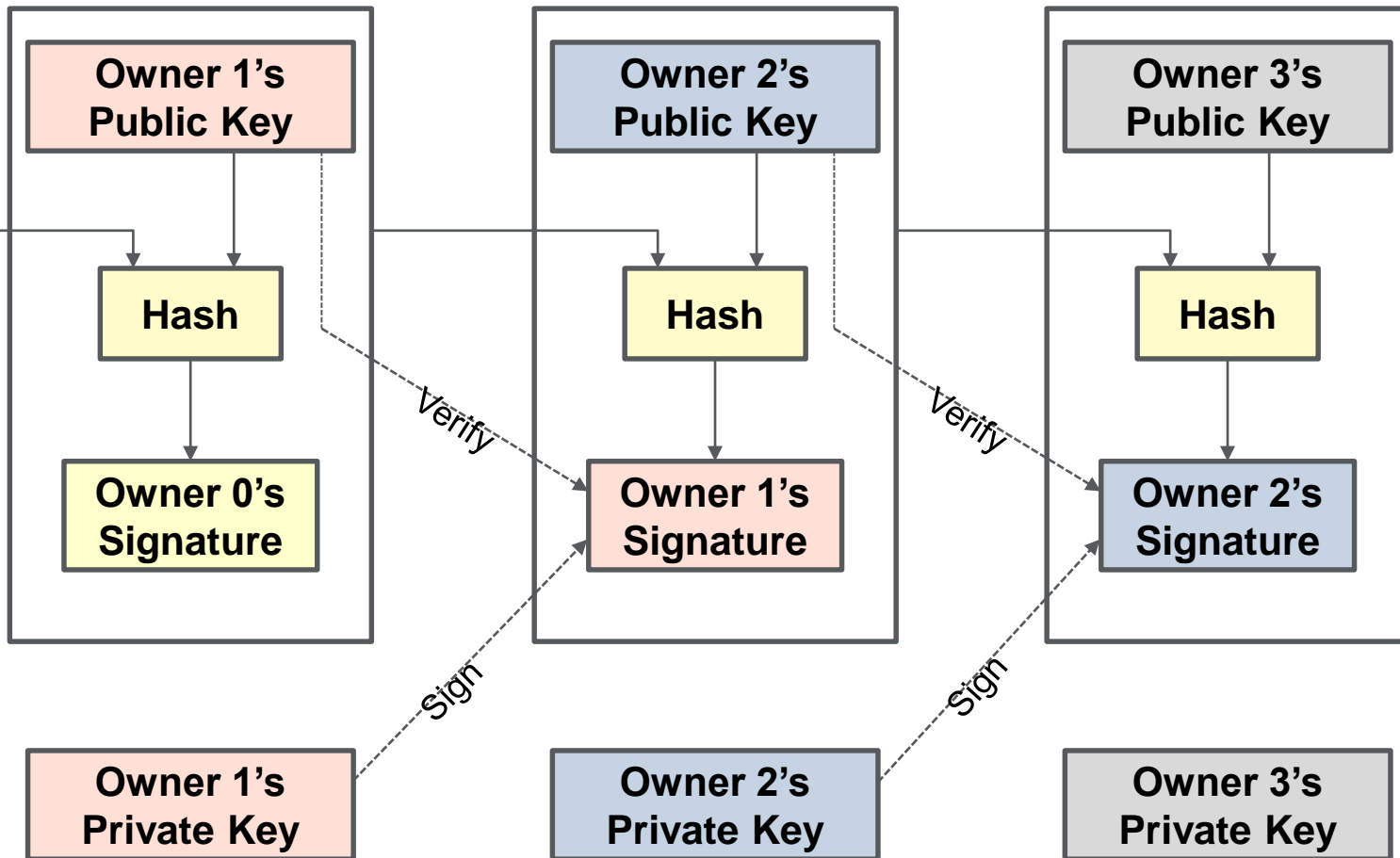
Embedding Distributed Ledger Technology

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



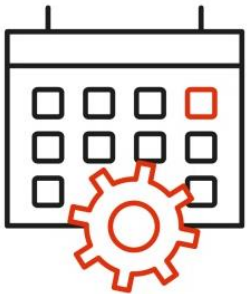
In contrast to today's networks, distributed ledgers eliminate the need for central authorities to certify ownership and clear transactions. They can be open, verifying anonymous actors in the network, or they can be closed and require actors in the network to be already identified. The best known existing use for the distributed ledger is the cryptocurrency Bitcoin

FT graphic. Source: Santander InnoVentures, Oliver Wyman & Anthemis partners

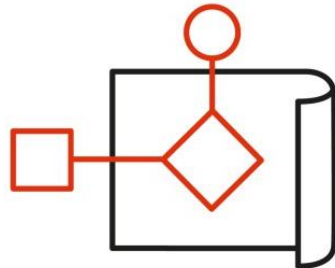


Smart Contracts

Smart contracts are computer code making them self-executing



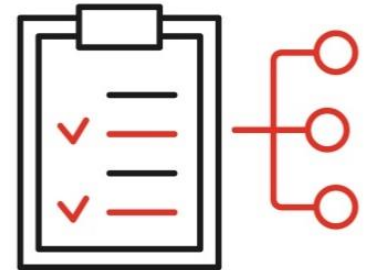
Agreed upon “oracle” events can trigger contract execution automatically



Eliminates interpretation and discretion for some, but not all, facets of the contract



Will drive standardization of contracts that can be *smart-ized*



Current Key Insurance Blockchain Technology Players



CONSENSYS

symbiont



EEA: Enterprise Ethereum Alliance

accenture

Deloitte.

DTCC
Securing Today. Shaping Tomorrow.®

BNY MELLON

CME Group

J.P.Morgan

ACCESS
Singapore Cryptocurrency and
Blockchain Industry Association

Santander

TOYOTA
RESEARCH INSTITUTE

JBI
JIANGSU HUAXIN
BLOCKCHAIN
RESEARCH INSTITUTE
江苏华信区块链研究院

Broadridge®

intel®



Microsoft

The Institutes®
RISK & INSURANCE
KNOWLEDGE GROUP

NATIONAL BANK
OF CANADA



CONSENSYS

STATE STREET

富邦金控 Fubon
Financial

BBVA

Rabobank

THOMSON REUTERS

STATE STREET

CREDIT SUISSE

SAMSUNG SAMSUNG SDS

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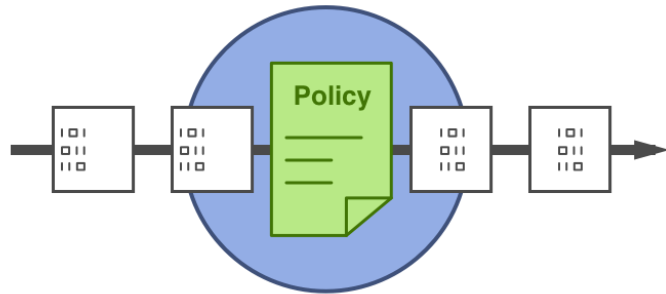
Legal Issues for Blockchain

- Regulatory acceptance for regulated industries, especially financial services
- Need for new laws?
 - How do e-signature and e-delivery laws apply to blockchain transactions?
 - AZ's and NV's Uniform Electronic Transactions Act's blockchain amendments
 - "Blockchain technology" means distributed ledger technology that uses a distributed, decentralized, shared and replicated ledger, which may be public or private, permissioned or permissionless, or driven by tokenized crypto economics or tokenless. The data on the ledger is protected with cryptography, is immutable and auditable and provides an uncensored truth.
 - "Smart contract" means an event-driven program, with state, that runs on a distributed, decentralized, shared and replicated ledger and that can take custody over and instruct transfer of assets on that ledger.

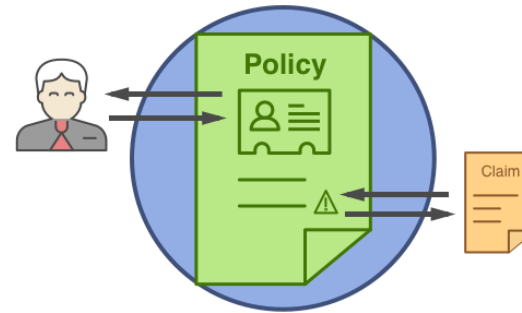
Legal Issues for Blockchain

- DE has amended its corporate code to facilitate blockchain stock transfers and recordkeeping for DE corporations
- SEC's Decentralized Autonomous Organization's Initial Coin Offering Investigation Report (July 2017)
- Will legislatures and regulators feel the need to impose consumer protections for consumer blockchain transactions?

Insurance Industry Opportunity



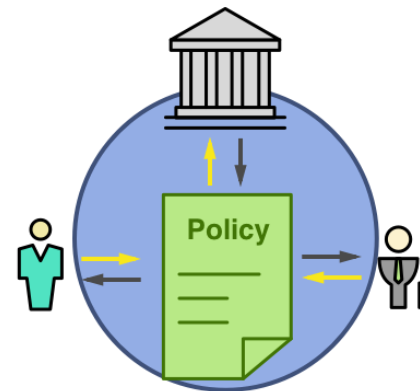
Policy Origination on Blockchain



Internal Efficiencies



Tokenization of Risk



Increased Transparency

Questions & Answers



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