BLOCKCHAIN TRANSFORMING NOT FOR PROFIT AND NGO SECTOR

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PRESENTATION MADE ICPAK NFP AND NGO SECTOR 7TH NOVEMBER 2018

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- http://trackcorruption.org
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Just being digital isn't the ultimate destination

You have to be willing to be disruptive…

Digital businesses are disrupting industries and professions.

72% are vulnerable to disruption within ***three*** years

Source: FROM DATA TO DISRUPTION: INNOVATION THROUGH DIGITAL INTELLIGENCE IBM-sponsored report by Harvard Business Review Analytic Services, 2016

Harvard Business Review

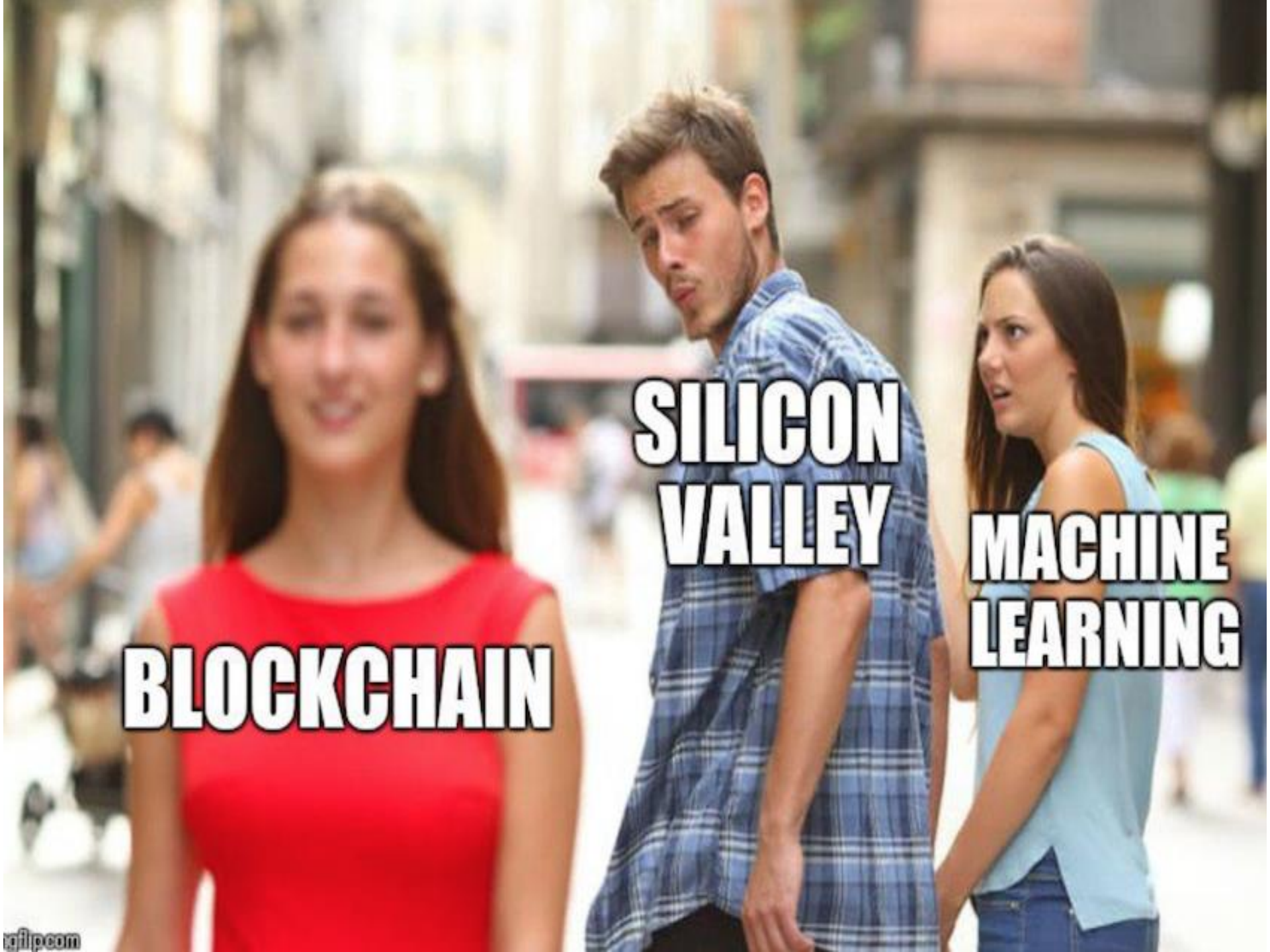
- WHAT IT IS
- WHAT’S DRIVING
- OPPORTUNITIES
- GETTING STARTED
- TOOLS

BBC
using your normal bankcard, this is
what happens:

Digitalization

Digital Transformation

Digital Re-Invention


SILICON VALLEY
MACHINE LEARNING
BLOCKCHAIN

Blockchain Definition

A blockchain is a **secure distributed immutable database shared by all parties in a distributed network** where transaction data can be recorded (either *on-chain* for basic information or *off-chain* in case of extra attachments) and easily audited.

It is undeniable that blockchain and Artificial Intelligence (AI) are two of the major technologies that are catalyzing the pace of innovation and introducing radical shifts in every industry. Each technology has its own degree of technical complexity as well as business implications but the joint use of the two may be able to redesign the entire technological (and human) paradigm from scratch.

What is it?

- The first four decades brought about email, Word Wide Wide, dot coms, social media, mobile web, big data, cloud computing and early days of IoT.
- It reduced the cost of searching, collaborating and exchanging
- In 1981 there was an attempt to solve internet problems of privacy, security, and inclusion with cryptography.
- 1n 1993, David Chaum came up with e-Cash that made it possible to safely and anonymously pay over the Internet, but online shoppers didn't care about their privacy and security.
- In 2008, Satoshi Nakamoto came up with peer-to-peer electronic cash system using cryptocurrency known as Bitcoin.
- Cryptocurrency is not created or controlled by countries, but it is a set of rules that ensure the integrity of the data exchanged among billions of devices without going through a trusted third party.
- This Trust protocol allows trusted transactions directly between two/more parties authenticated by mass collaboration and powered by collective self-interests rather than large corporations motivated by profit.
- This technology has led to globally distributed ledgers called blockchain
- Blockchain technology allows us to send money directly and safely without going through a bank, money transfer, credit card or PayPal

Foundational principles that underlie Blockchain Technologies

- Distributed Database: All access all the time! Everyone partaking in the database can see everything in the database. This architecture provides true decentralization where there is no single point of control or failure. This transparency allows independent verification of transactions to occur without a middleman verification step.

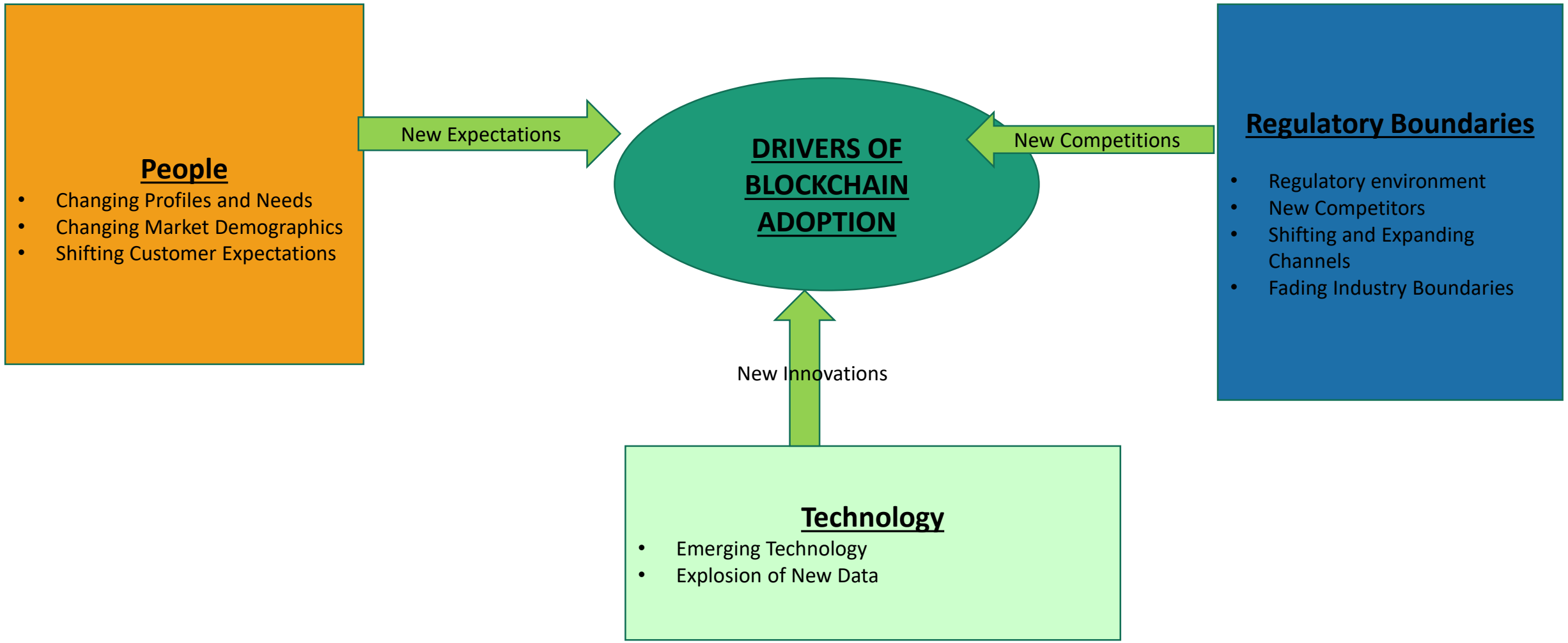
- Peer-to-Peer Transaction: Blockchain takes the idea of “serverless computing” to a whole new level as there is no central hub for processing transaction data. All transactions are processed and stored in the nodes plugged into the network and those nodes share that data with all of the other nodes.

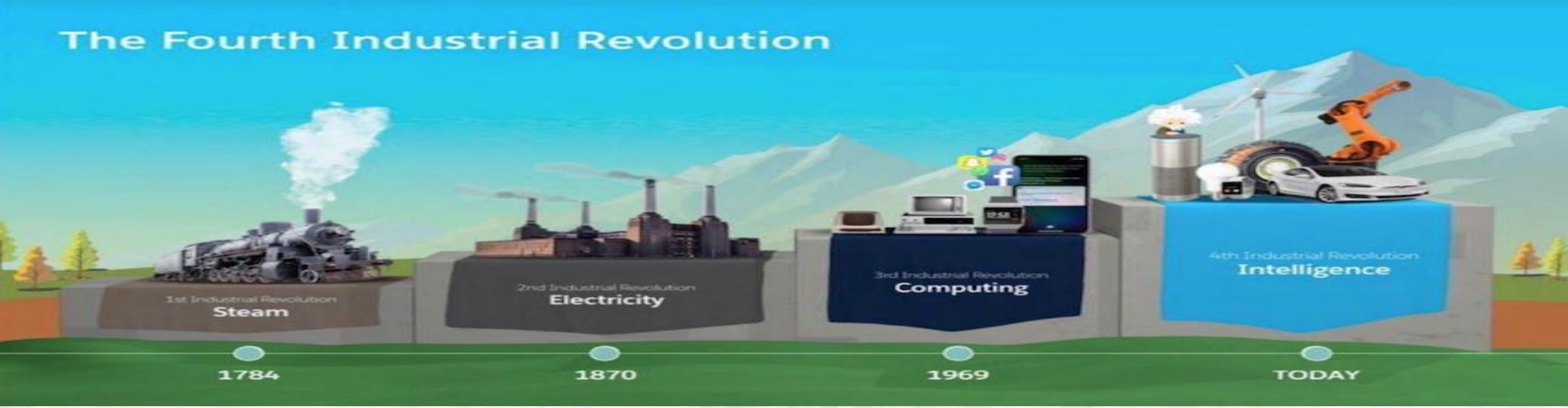
- Transparency with Pseudonymity: Blockchain users have the choice to remain anonymous or share their identities. However, the record itself is present and visible to all. Transactions are encrypted and assigned a unique address as the means of identification.

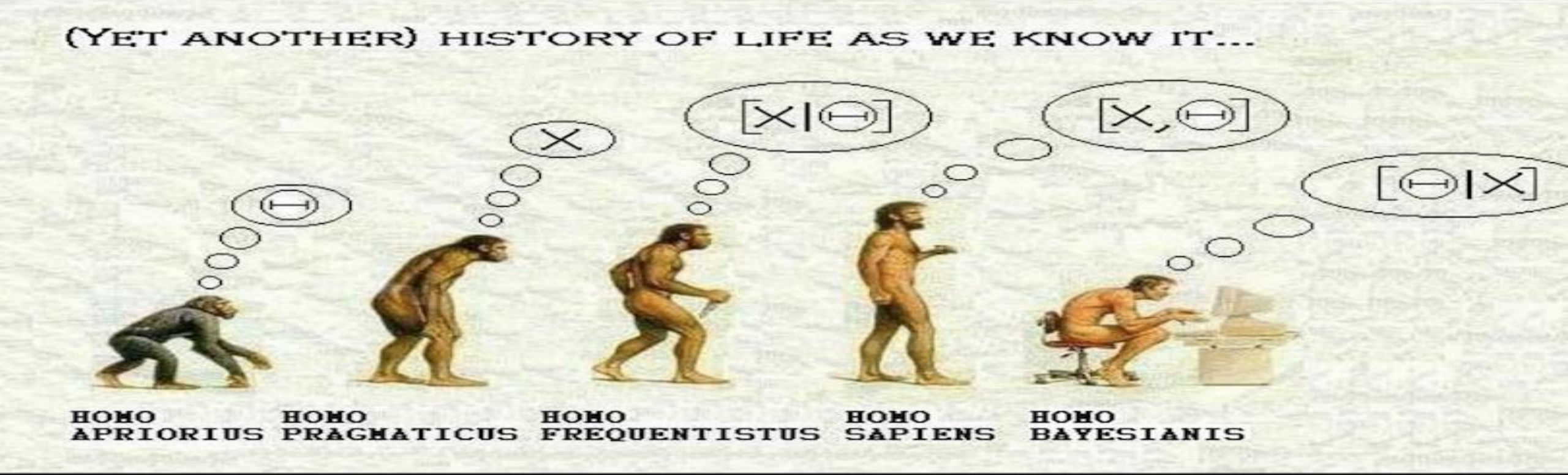
- Irreversibility of Records: Once a record has been transacted in the distributed ledger, it cannot be modified due to the linkage between all records (blocks) that comprise the blockchain. These records are encrypted, ordered chronologically, and visible to all.

- Computational Logic: Due to the programmatic nature of the blockchain, logic and algorithms can be applied to automate transactions between nodes upon pre-defined conditions

Trends Framework




The Fourth Industrial Revolution
1st Industrial Revolution
Steam
2nd Industrial Revolution
Electricity
3rd Industrial Revolution
Computing
4th Industrial Revolution
Intelligence
1784
1870
1969
TODAY


(YET ANOTHER) HISTORY OF LIFE AS WE KNOW IT...
[X|Θ]
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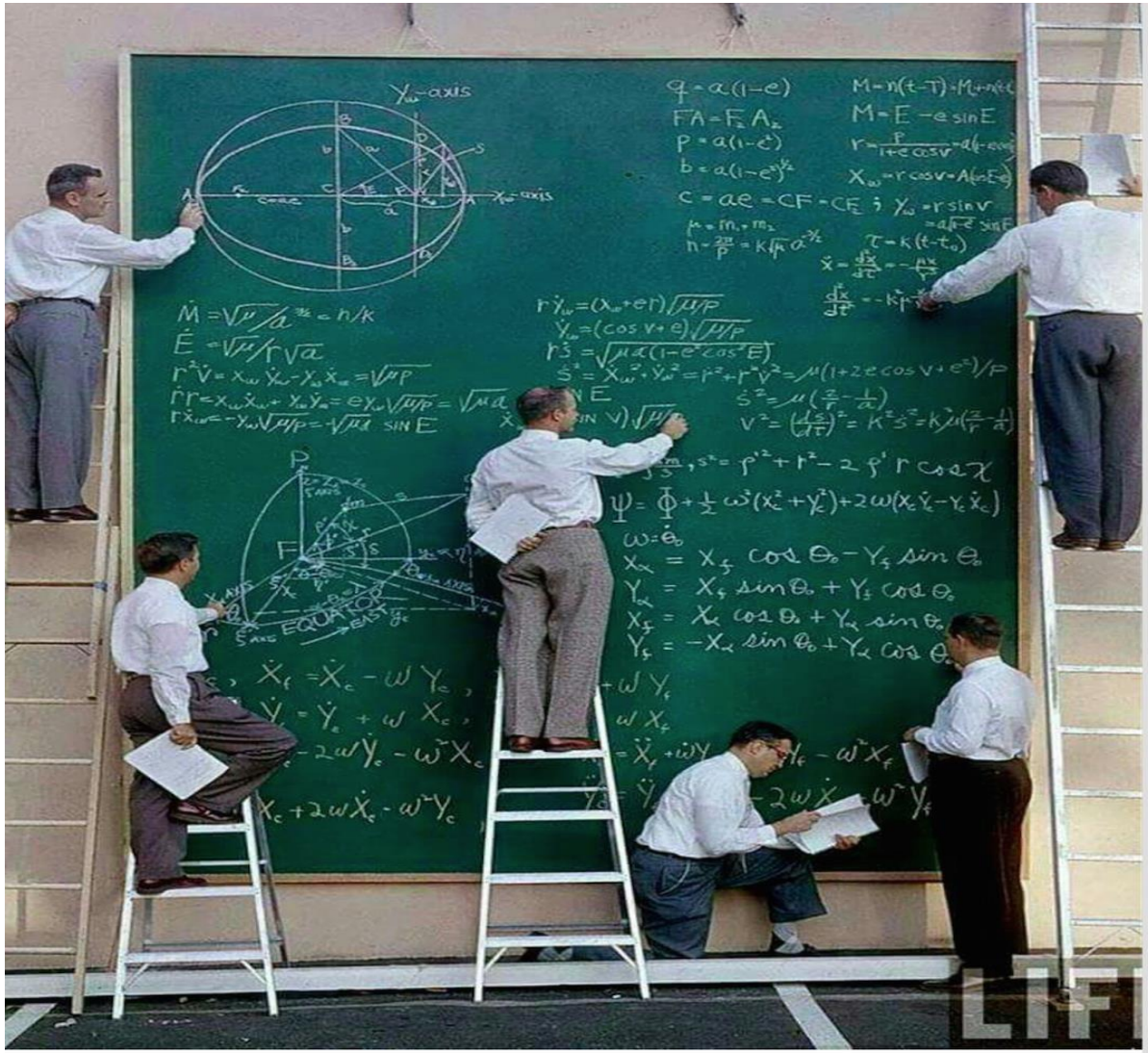
X
Θ
HOMO APRIORIUS
HOMO PRAGMATICUS
HOMO FREQUENTISTUS
HOMO SAPIENS
HOMO BAYESIANIS

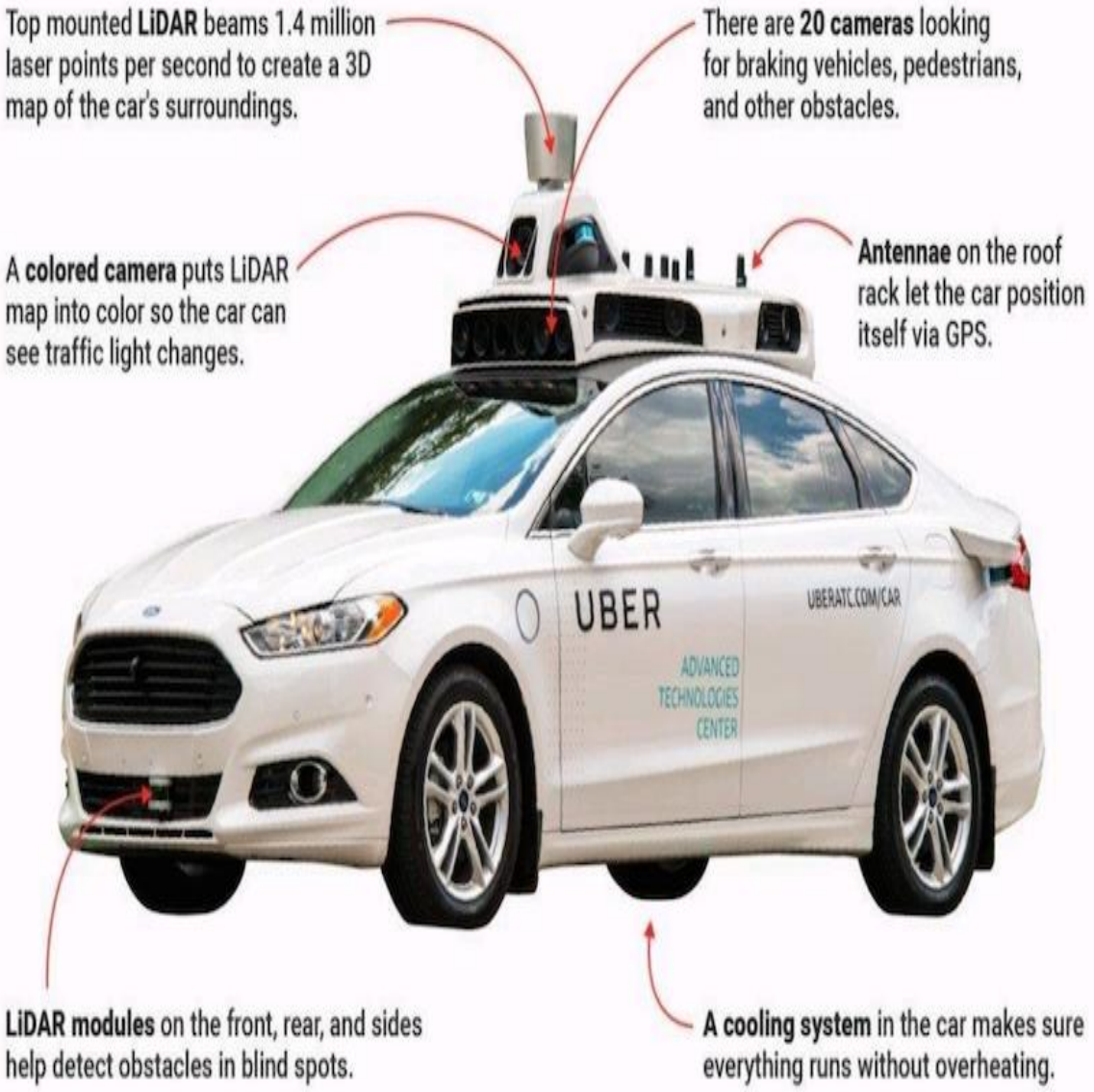
AUTOMATION



NASA scientists with their board of calculations, 1961

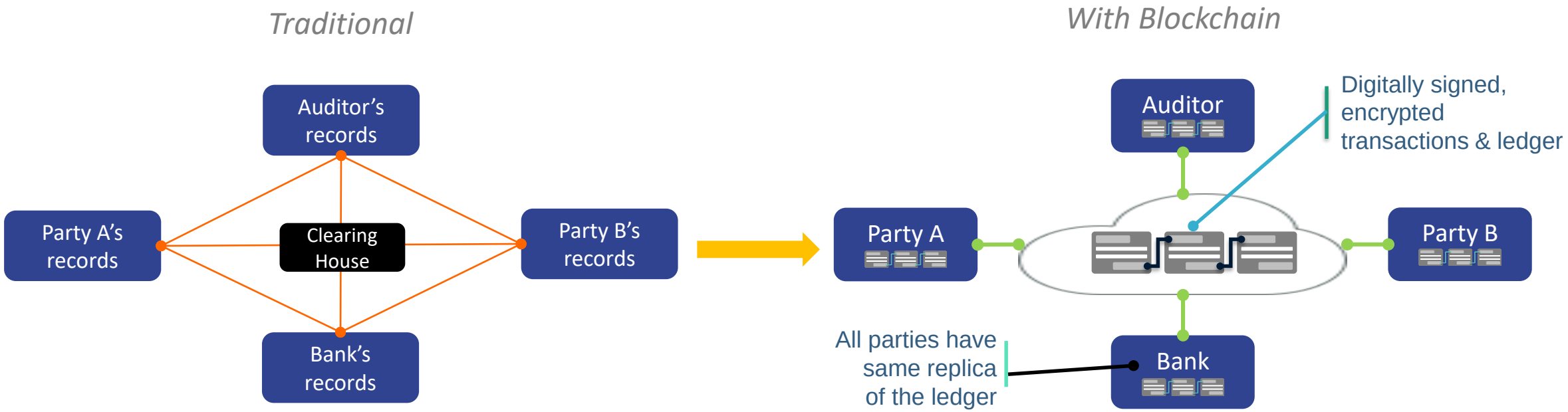
Trust

HOW UBER'S FIRST SELF-DRIVING CAR WORKS



One of the biggest mysteries in the technology world
is the identity of Satoshi Nakamoto,
CNBC

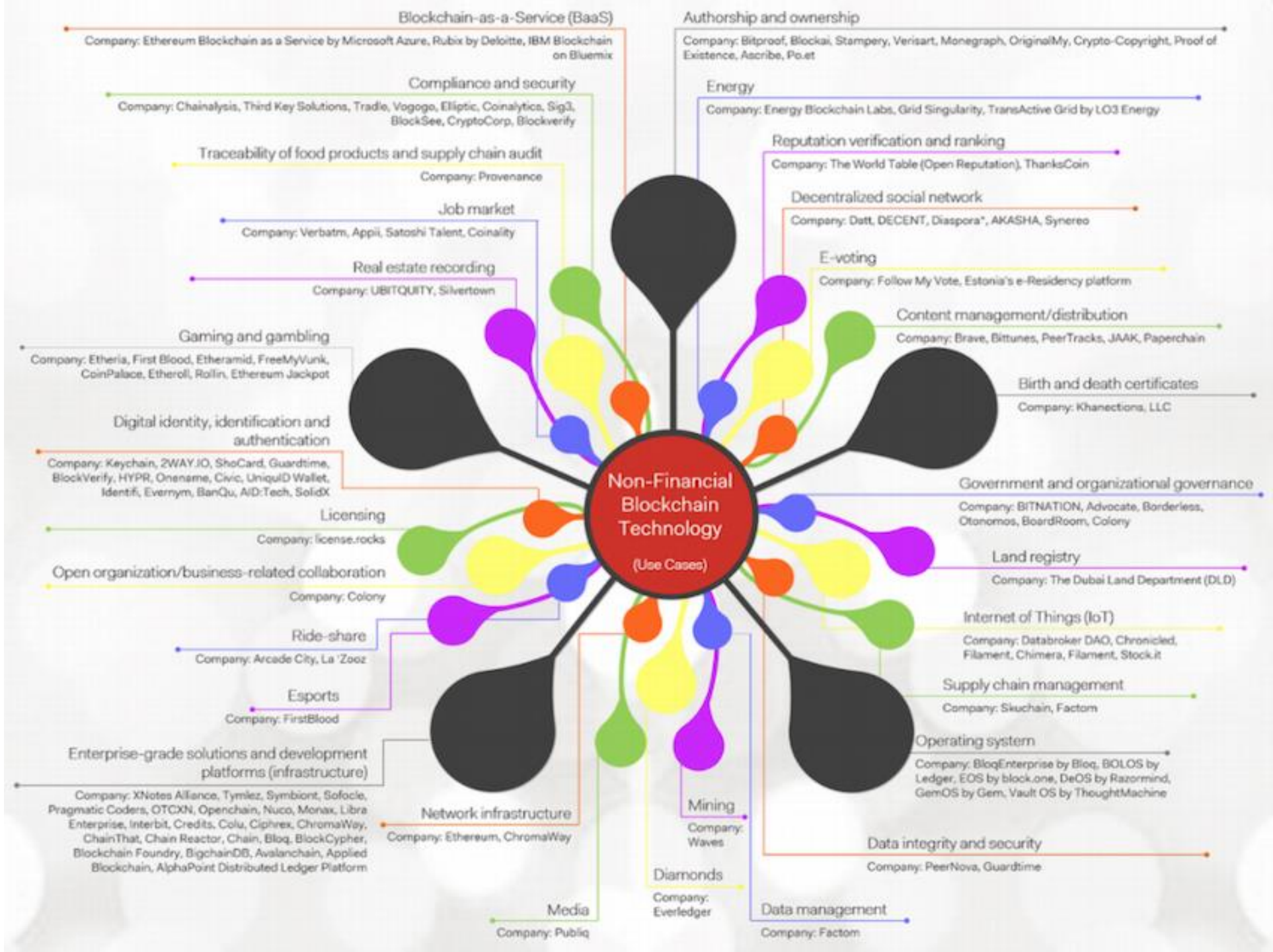
Blockchain is fundamentally changing business processes and enabling new ones

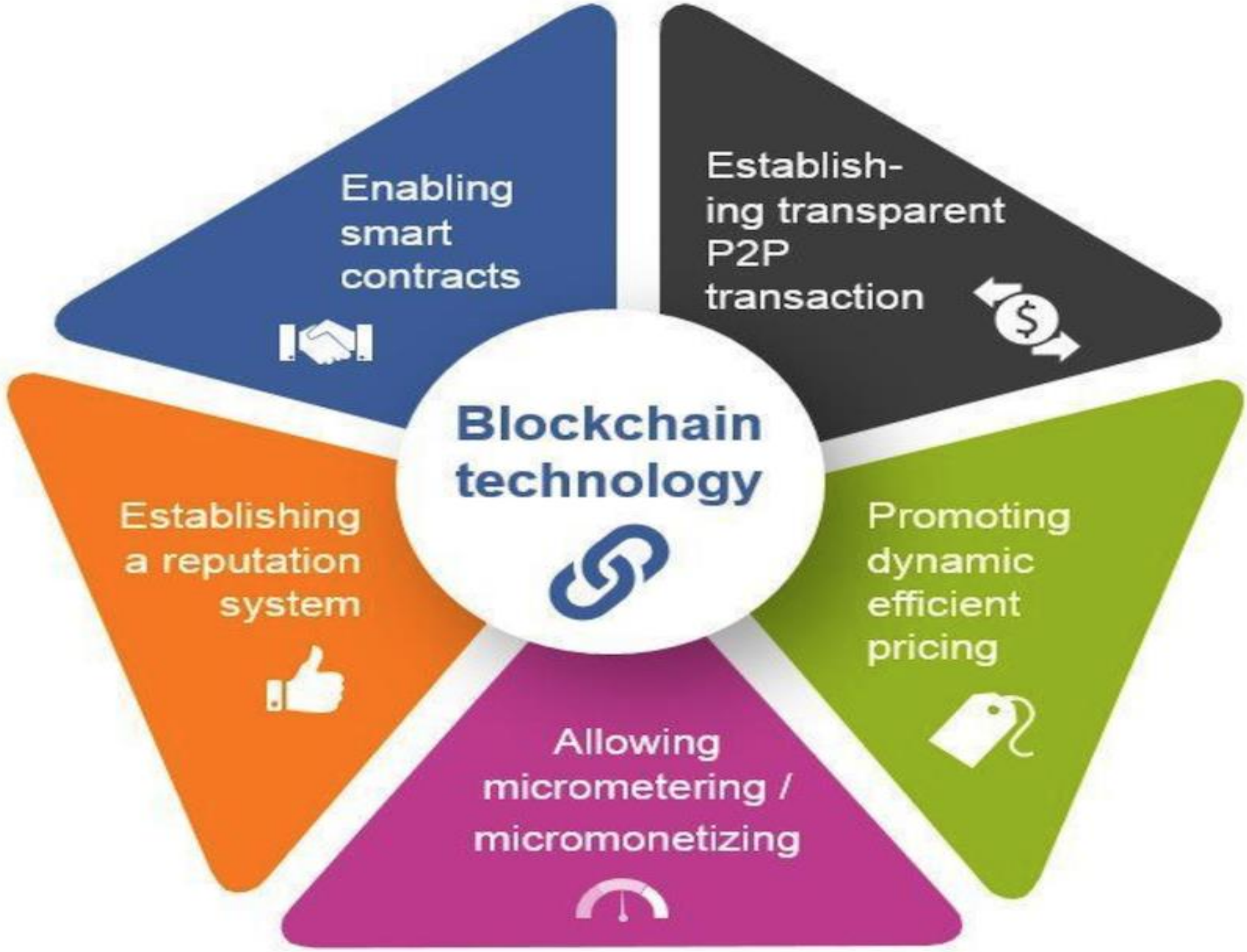


… Inefficient, expensive, vulnerable

… provenance, immutability, finality

Shared Ledger | Smart Contracts | Consensus | Permissions


Non-Financial Blockchain Technology
(Use Cases)
Blockchain-as-a-Service (BaaS)
Company: Ethereum Blockchain as a Service by Microsoft Azure, Rubix by Deloitte, IBM Blockchain on Bluemix
Compliance and security
Company: Chainalysis, Third Key Solutions, Tradle, Vogogo, Elliptic, Coinalytics, Sig3, BlockSee, CryptoCorp, Blockverify
Traceability of food products and supply chain audit
Company: Provenance
Job market
Company: Verbatm, Appii, Satoshi Talent, Coinality
Real estate recording
Company: UBITQUITY, Silvertown
Gaming and gambling
Company: Etheria, First Blood, Etheramid, FreeMyVunk, CoinPalace, Etheroll, Rollin, Ethereum Jackpot
Digital identity, identification and authentication
Company: Keychain, 2WAY.IO, ShoCard, Guardtime, BlockVerify, HYPR, Onename, Civic, UniquID Wallet, Identifi, Evernym, BanQu, AID:Tech, SolidX
Licensing
Company: license.rocks
Open organization/business-related collaboration
Company: Colony
Ride-share
Company: Arcade City, La 'Zooz
Esports
Company: FirstBlood
Enterprise-grade solutions and development platforms (infrastructure)
Company: XNotes Alliance, Tymlez, Symbiont, Sofocle, Pragmatic Coders, OTCXN, Openchain, Nuco, Monax, Libra Enterprise, Interbit, Credits, Colu, Ciphrex, ChromaWay, ChainThat, Chain Reactor, Chain, Bloq, BlockCypher, Blockchain Foundry, BigchainDB, Avalanchain, Applied Blockchain, AlphaPoint Distributed Ledger Platform
Network infrastructure
Company: Ethereum, ChromaWay
Media
Company: Publiq
Authorship and ownership
Company: Bitproof, Blockai, Stampery, Verisart, Monegraph, OriginalMy, Crypto-Copyright, Proof of Existence, Ascribe, Po.et
Energy
Company: Energy Blockchain Labs, Grid Singularity, TransActive Grid by LO3 Energy
Reputation verification and ranking
Company: The World Table (Open Reputation), ThanksCoin
Decentralized social network
Company: Datt, DECENT, Diaspora*, AKASHA, Synereo
E-voting
Company: Follow My Vote, Estonia's e-Residency platform
Content management/distribution
Company: Brave, Bittunes, PeerTracks, JAAK, Paperchain
Birth and death certificates
Company: Khanections, LLC
Government and organizational governance
Company: BITNATION, Advocate, Borderless, Otonomos, BoardRoom, Colony
Land registry
Company: The Dubai Land Department (DLD)
Internet of Things (IoT)
Company: Databroker DAO, Chronicled, Filament, Chimera, Filament, Stock.it
Supply chain management
Company: Skuchain, Factom
Operating system
Company: BloqEnterprise by Bloq, BOLOS by Ledger, EOS by block.one, DeOS by Razormind, GemOS by Gem, Vault OS by ThoughtMachine
Mining
Company: Waves
Diamonds
Company: Everledger
Data management
Company: Factom
Data integrity and security
Company: PeerNova, Guardtime


Enabling smart contracts
Establish-ing transparent P2P transaction
Blockchain technology
Establishing a reputation system
Promoting dynamic efficient pricing
Allowing micrometering / micromonetizing

Tech angel and seed equity funding vs. ICO funding

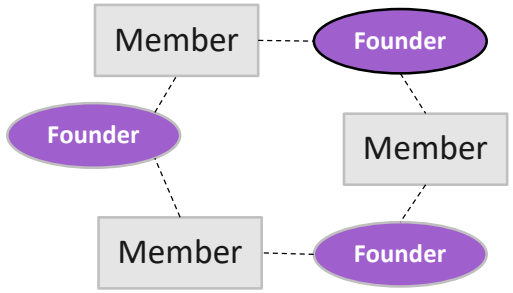
Q1'16 - Q3'17

Sources: CB Insights, TokenData, CoinSchedule.

CBINSIGHTS

Blockchain Network Types

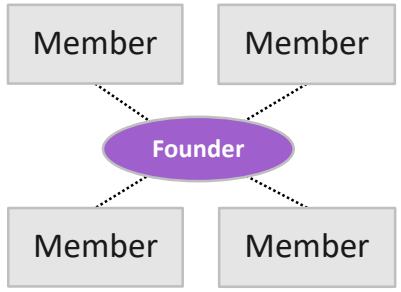
Consortium Based Network



Founders are equal among other participants, may include a joint legal entity among the founders (e.g. – JV)

Examples: JPX, we.trade, IBM Food Safety

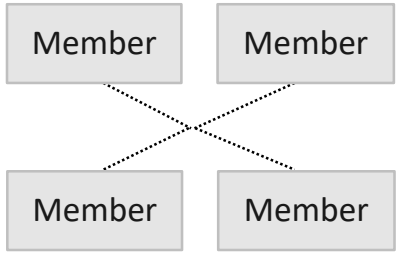
Founder Directed Network



Individual founder in a position to provide strong direction

Examples: Northern Trust, CLS Fundamental to FX

Community Based Network



Driven by industry standards bodies or existing non-blockchain network owners

Examples: IBM Watson Supply Chain, SWIFT

Blockchain Classification by Objective

1. Tracking an asset on its journey

- Speed/predictability of delivery
- Digital Processes reducing cost of paper
- IoT for object state

- ***Exports/Imports logistics*** *(Maersk)*
- ***Agriculture / Manufacturing supply chain***

2. Proof & Transfer of an asset

- Immutability / Single source of truth
- Consensus / Smart contracts

- ***Medical Records***
- ***Know Your Customer (KYC)***
- ***Digital Wallet/Payments***
- ***Exchanges / Marketplaces*** *(Commodities, Risk…)*
- ***Ownership Registries*** *(Lands, Auto…)*

3. Collaboration to establish matters

- Consensus/ Smart contracts
- Network
- Immutability / Single source of tru

- ***Parametric Insurance***
- ***Insurance Subrogation networks***
- ***Complex Risk/Multinational insurance***

4. Collaborative development of an asset through its lifecycle

- Network
- Single source of truth

- ***Building design, development, maintenance***
- ***Medical Clinical trial development***

5. Traceability & Provenance of an asset from its source

- Immutability
- Manufacturing components
- Maintenance of machinery, equipment

- ***Food & Drug traceability***
- ***Manufacturing components***
- ***Maintenance of machinery, equipment***

6. Increasing understanding of a value chain

- Single source of truth
- Collection of new information
- Risk assessment

- ***Credit Financing*** *(Twiga Foods)*
- ***Trade and Supply Chain Finance***

Common Building Blocks

APIs | AI / Analytics | Identity | Onboarding | Security / Privacy

Blockchain Use Cases (1 of 2)

Industry	Use Cases and Clients				
Banking	**Trade and Supply Chain Finance** [DTC, UBS]	**KYC/Identity** [Canadian banks, Deutsche Bank]	**Payment/Digital Currency** [MAS]	**Mortgage** [Fannie, BNYM]	**Risk Management**
Financial Markets	**Post Trade** [LSEG, CLS]	**Unlisted Securities incl. PE Funds** [Northern Trust, BNPP]	**Reference Data** [Canadian banks, Euroclear]		
Insurance	**Complex Risk Coverage** [B3i, AIG]	**Risk Exchange** [State Farm, Geico]	**Group Benefits** [Metlife, Securian Financial]	**Parametric Insurance**	
Healthcare	**Person/Owner Mediated Health Data Exchange** [FDA, CVS]	**Clinical Trial Management** [LabCorp/Covance, Pfizer]	**Outcome-based Contracts** [Amgen, ABC]		
Government	**Supply Chain Visibility** [UK Ministry of Defence, The Global Fund]	**Registry** (Distributed Records) [HM Revenue & Customs, Australian Tax Office]	**Fraud & Compliance** [UN Immigration and Border Management]		
Supply Chain (Cross Industry)	**Workflow** [Maersk]	**Visibility** [Colgate]	**Provenance/ Traceability** [Walmart, Boeing]	**Trade and Supply Chain Finance** [DTC, UBS]	

Blockchain Use Cases (2 of 2)

Industry	Use Cases and Clients				
Consumer	Food Safety & Traceability (Walmart)	Supply Chain Visibility (Tyson)	Trade Promotions (tbd)	Provenance (Anti Counterfeiting)	
Media & Entertainment	Rights & Royalty Management [LSEG, CLS]	Loyalty Program [Northern Trust, BNPP]	Digital Advertising Supply Chain	Audience Insights & Msmts	
Telecom	Global Logistics	Roaming Fraud & Overage	Mobile Number Portability	Mobile Payments (eSim)	
Travel & Transportation	Loyalty Program	Digital Trade Lanes	Billing & Settlement	Asset Management	Crew Training & Settlement
Electronics	Anti-counterfeiting	Buy / Sell (OEM)	Product Tracking	Conflict Materials Management	Supplier Certification
Cross Industry	Provenance (Fraud / Anti-Counterfeiting) Loyalty Programs Management	Secure Data Store	Identity Services (Securekey – Canada)	Billing and Reconciliation	Dispute Resolution (IGF)

USE CASES

- Identity theft
- Bio data verification
- Crowd sourcing fundrasing
- Tokenisation : TV, Employees,

Thank you