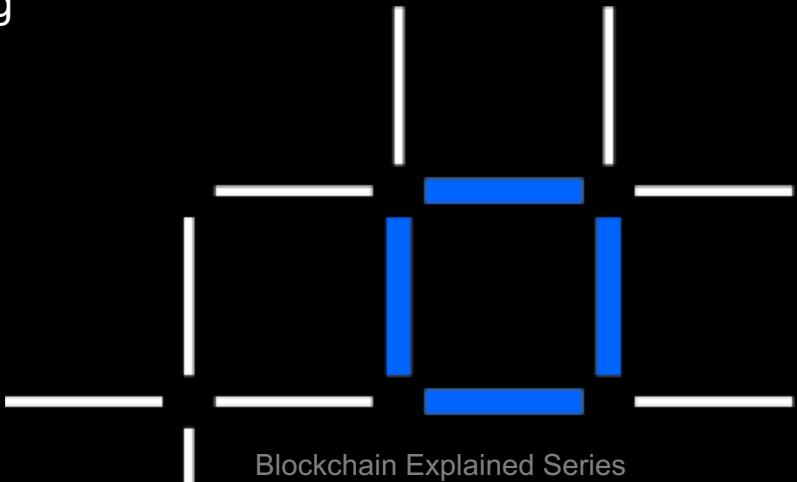


What's New

Recent developments in blockchain and what's coming

Lennart Frantzell



Blockchain Explained Series

💬 Blockchain Explained

🔗 IBM Blockchain Platform Explained

✅ Solutions Explained

🏡 Garage Explained

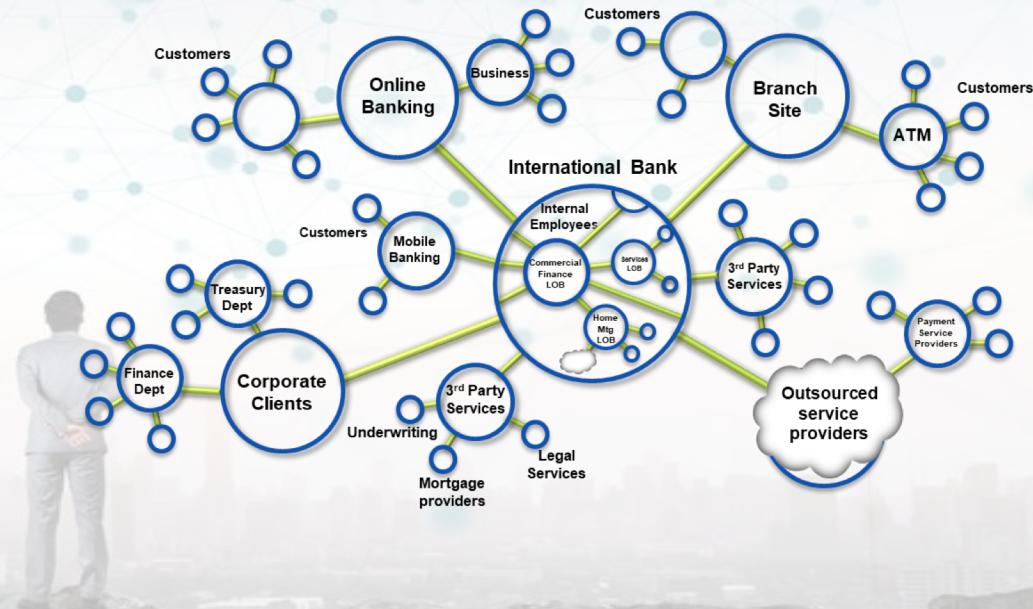
🔍 **What's New**

➡️ Next Steps

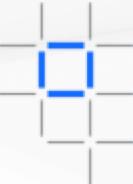


Blockchain builds on basic business concepts

- **Business Networks** connect businesses
- **Participants** with Identity
- **Assets** flow over business networks
- **Transactions** describe asset exchange
- **Contracts** underpin transactions
- **The ledger** is a log of transactions



Blockchain provides an
immutable, shared, replicated ledger



Blockchain global impact



10% of Global GDP
will be stored on
blockchains or
blockchain related
technology by 2025.¹



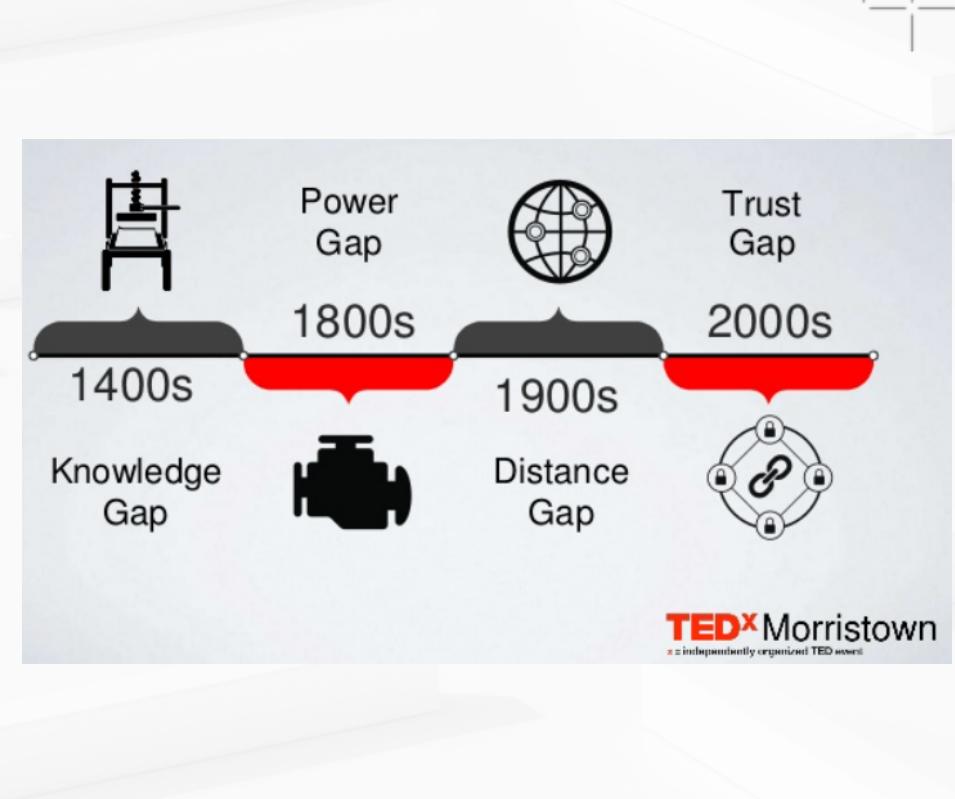
\$176 Billion
The business value
added by blockchain by
2025, then surge to
exceed \$3.1 trillion by
2030.²



17% of Banks
Released a Blockchain
application in 2017.³



\$2.3 Billion
Estimated size of the
Blockchain technology
market by 2021.⁴



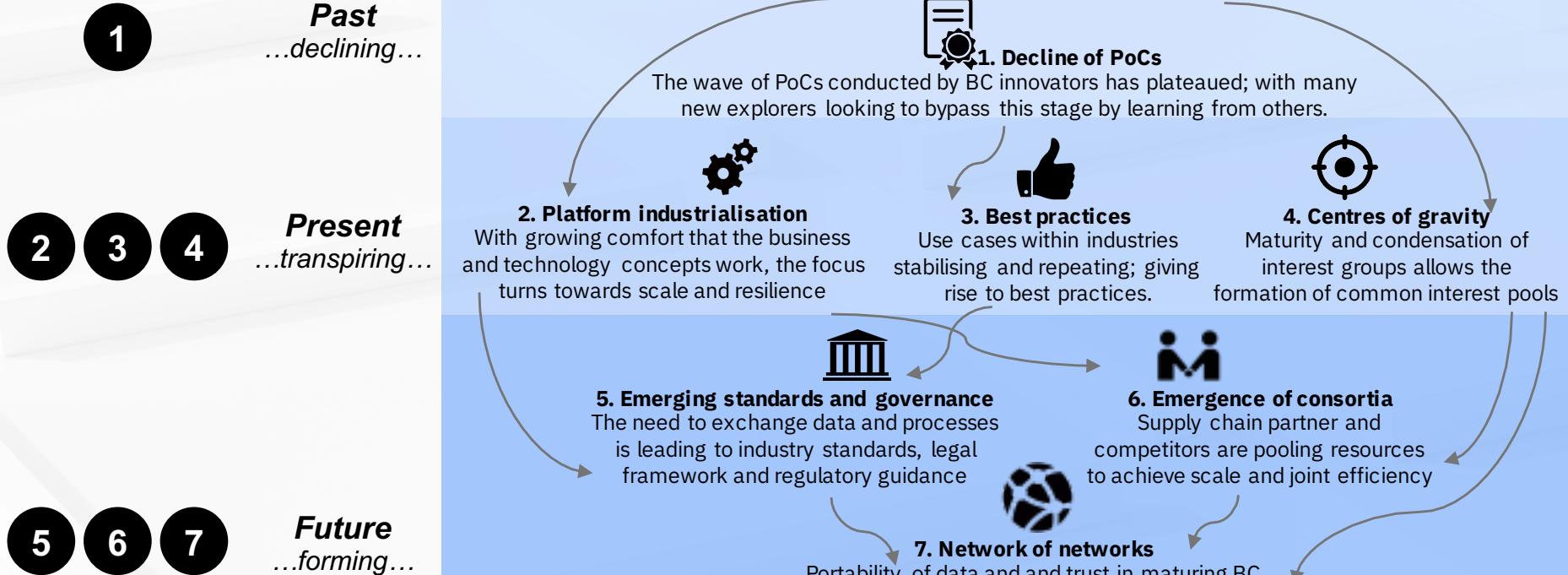
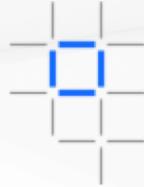
TEDx Morristown
an independently organized TED event

¹ Source: World Economic Forum
³ Source: IBM

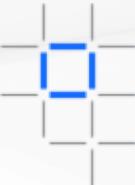
² Source: Gartner
⁴ Source: MarketandMarkets



Blockchain adoption: seven emerging patterns



Blockchain in 2018



Technologies



- Bitcoin
- Ethereum
- Hyperledger
- CORDA
- Ripple
- BigChainDB
- Quorum
- Stellar
- +++

Topics



- Shared Ledger & smart contracts
- Public, private
- Permissioned, permission-less
- Tokens and incentive mechanisms
- Identity and Zero Knowledge
- Consensus mechanisms
- On-chain, off-chain
- Systems integration
- Inter-ledgering
- Physical-digital with IOT

Communities



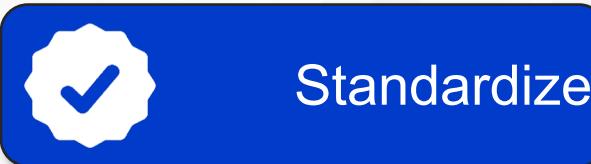
- Bitcoin
- Ethereum
- Linux Foundation / Hyperledger
- EEA
- ISO/TC 307 – Blockchain & DLT
- IEEE Blockchain
- W3C Blockchain Community
- Accord Project
- Sovrin
- DIF



Technology progression: where are we?



?

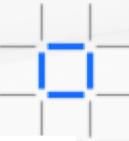


2016



2008

Re-imagining digital business processes



TRADELENS



- **Connects the ecosystem:** brings together ports, terminals, ocean carriers, government authorities, etc
- **Drives true information sharing:** real-time and seamless actionable insight
- **Fosters collaboration and trust:** automate cross-org business processes
- **Shared visibility** and shared state for shipments



IBM Food Trust™



- **Manage quality risk:** enable rapid, low cost, food recalls
- **End to End transparency:** data sharing extends beyond 'one up, one down'!
- **Trust and Audit:** ensure provenance with easily trusted, auditable records.
- **Consumer confidence:** comprehensively communicate with end consumer



World Wire



- **24x7 payments:** payment support regardless of size, origination, destination or asset type
- **Higher visibility:** for streamlined transactions with reduced disputes and reconciliation needs
- **Regulatory compliance:** enhanced through improved transparency
- **Secure network:** with interaction and eligibility criteria & robust access control



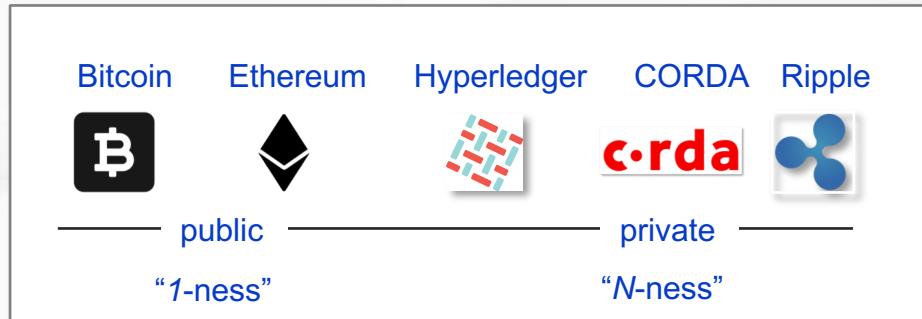
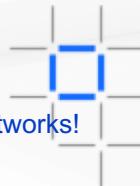
we.trade

more trust. more trade.



- **Trade finance platform:** backed by a consortium of major international banks
- **Full function:** enables accurate trading posture information, order to settlement control, risk coverage, track and trace options
- **Near-real time:** exchange of information
- **Discovery:** Allows buyers to discover trusted sellers and vice-versa

Registries for public & private blockchains



Blockchain registry: yellow pages for blockchain networks!



APIs and Smart contracts
For block box and white box reuse

Network founders can:

- Publish network and joining details

Network joiners can:

- Find networks
- Connect & Join
- Discover APIs & smart contracts
- Publish APIs & smart contracts

The landing page for IBM Food Trust. At the top right, there is a logo for 'ibmfoodtrust' and 'Hyperledger Fabric'. Below the logo, two large buttons are circled in red: 'MESSAGE OWNERS' (blue) and 'JOIN' (green). The page also features a 'Supply Chain Management' button and tabs for 'DESCRIPTION' and 'NEWS'.

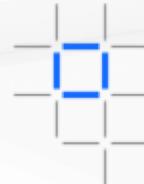
Supply Chain Management

DESCRIPTION NEWS

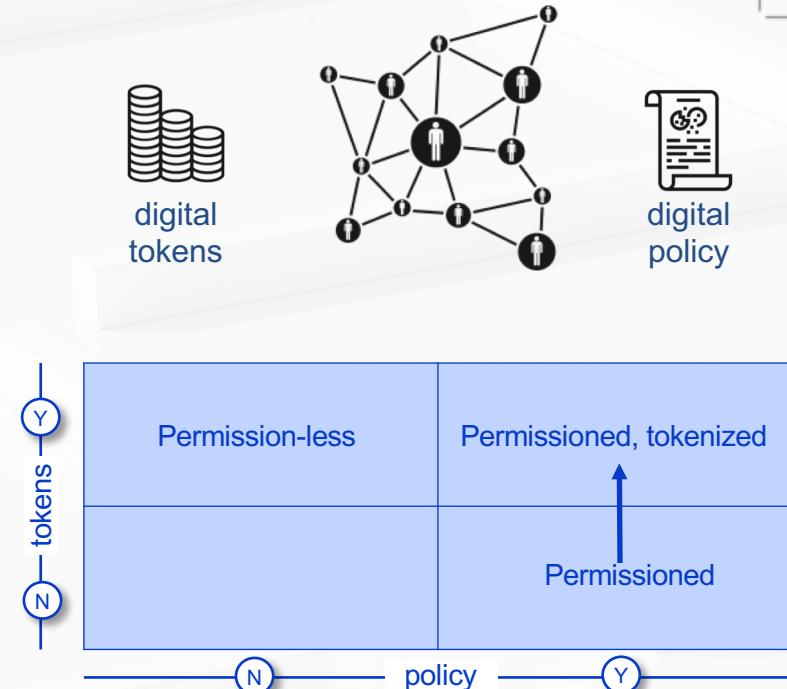
IBM Food Trust™ is a collaborative network of growers, processors, wholesalers, distributors, manufacturers, retailers and others enhancing visibility and accountability in each step of the food supply. Powered by the IBM Blockchain Platform, IBM Food Trust directly connects participants through a permissioned, permanent and shared record of food origin details, processing data, shipping details and more.

IBM

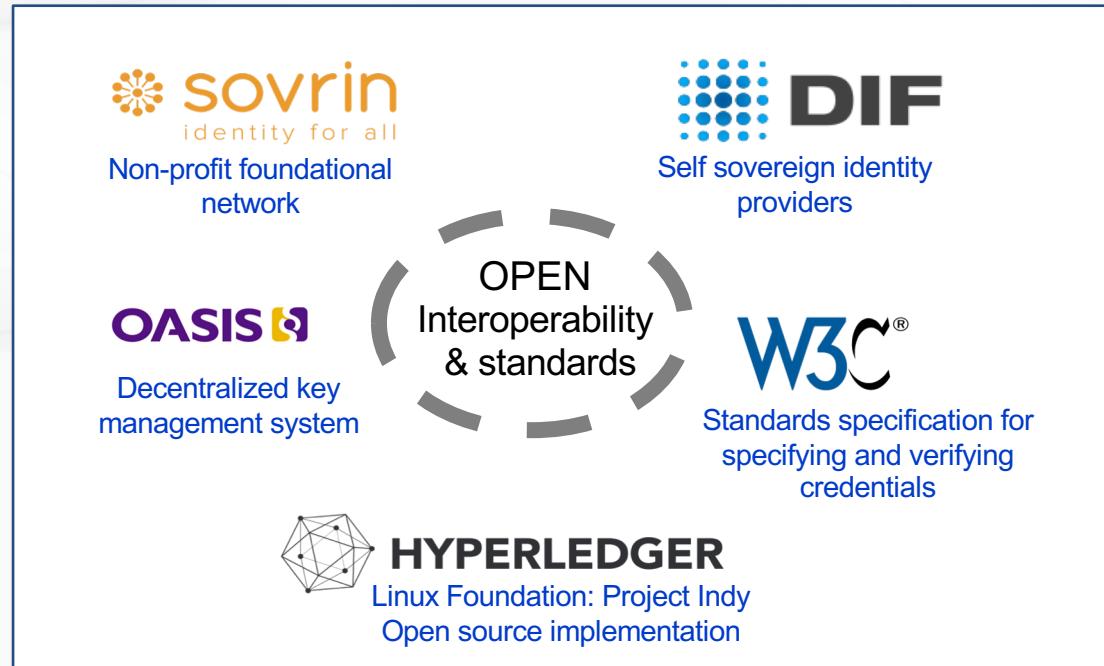
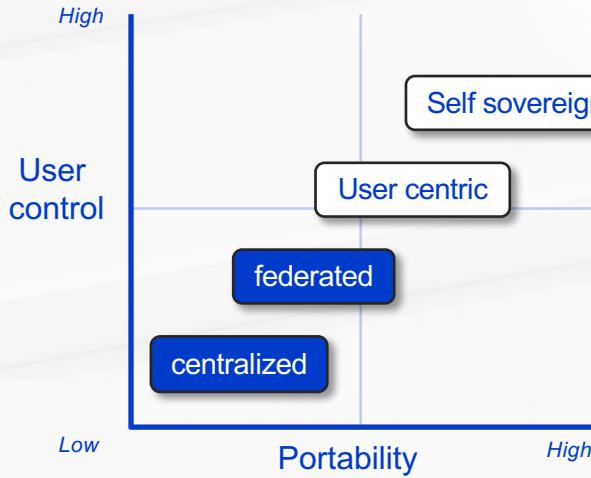
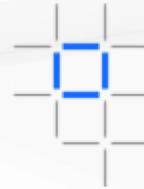
Coordinating blockchain activity: tokens and policy



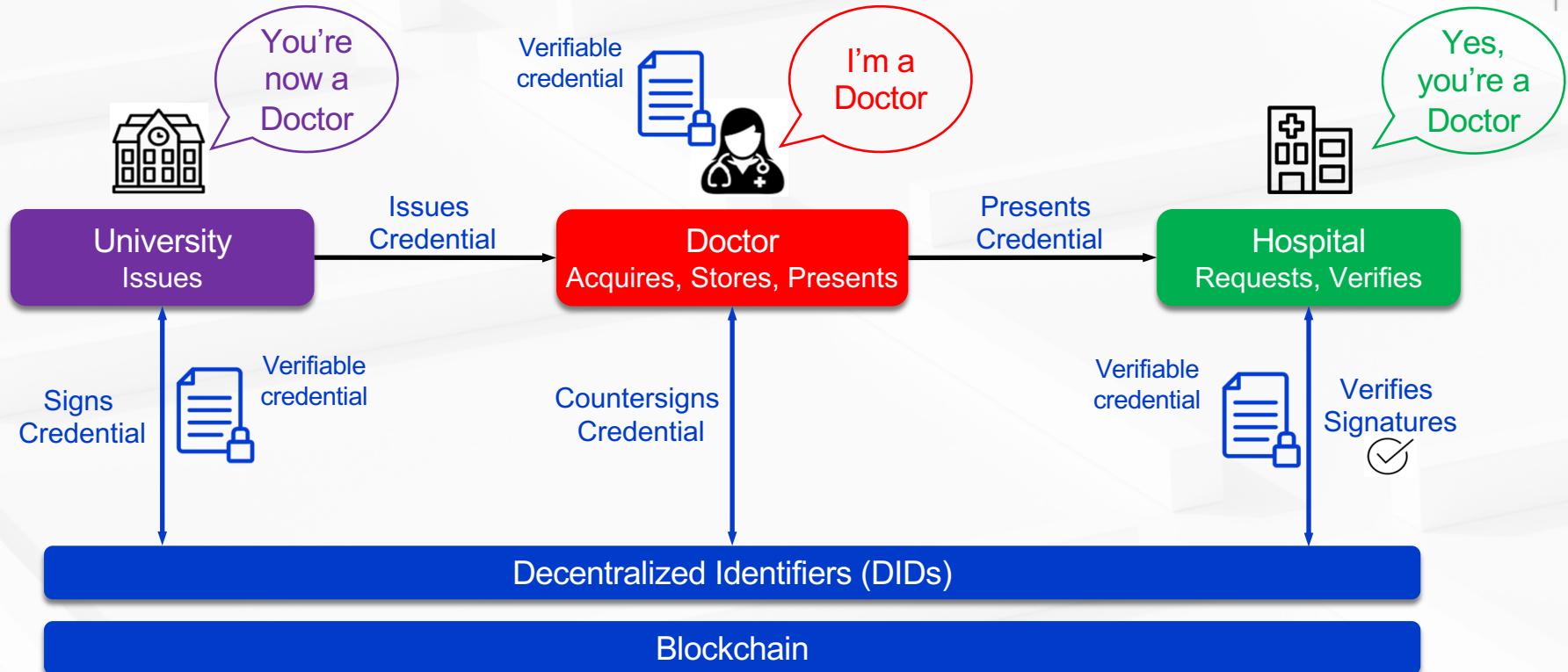
Tokens	Policy
More tokens, more activity possible. Mirrors real world	Activity permissioned according to identity. Mirrors real world
Relatively anonymous, anyone can have tokens	Identity is important: organization and role
Low granularity of control; you either have enough tokens or you don't!	High degree of granularity according to specific policies which govern access
Incentive mechanism built into platform. Popular services rewarded in token economy	Existing incentive mechanisms are sufficient. Settlement via existing channels
Relatively hard to evolve ; as a store of value, tokens persist and have momentum (e.g. hard forks)	Straightforward: Built-in governance policy describes consensus requirement for policy evolution e.g. majority vote to add new member, or unanimous vote for policy change
Entire ledger open to all participants, regardless of identity. Private data and communications are application specific	Identities and policies provide basis for private communications and private data, as and when required



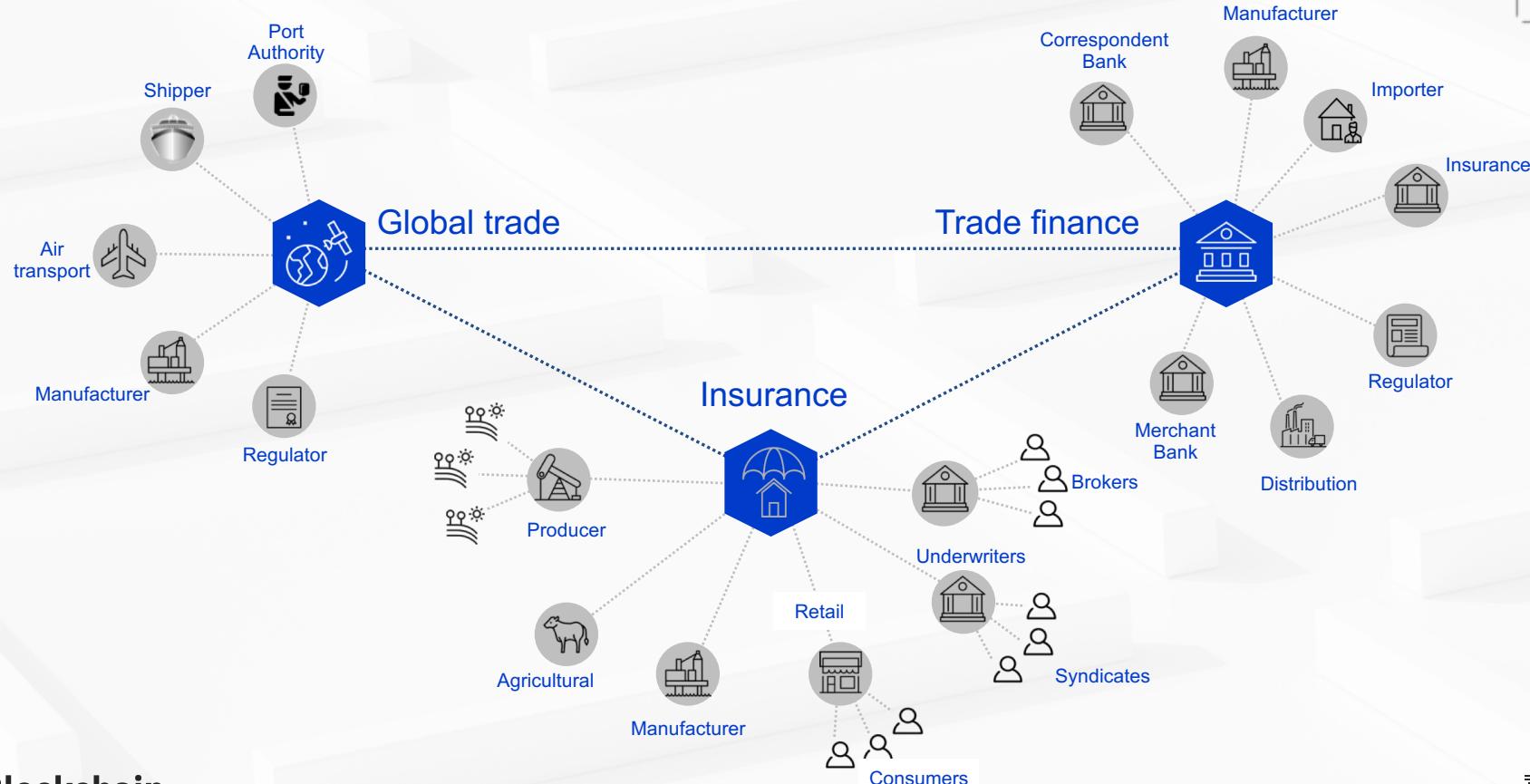
Self-Sovereign: Status and Standards



Self-sovereign Identity example



Towards a Network of Networks



IBM Cloud Garage with Blockchain



Dubai



London



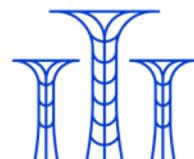
Munich



New York



San Francisco



Singapore



Tokyo



Toronto

... Or we can bring a pop-up location to you!

- Discovery Workshop

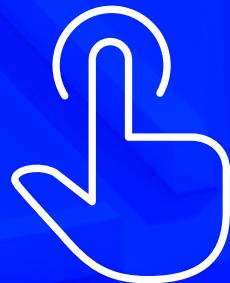
- Design Thinking Workshop

- Minimum Viable Product Buildup (MVP)

- Architectural Consultation

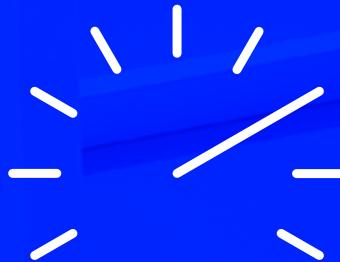
Get started on your blockchain journey today!

Start



Create or Join a network
Prioritize the best use cases and networks for your business, and rapid development of a minimum viable network in 12 weeks or less.

Accelerate



Commercialize your network
Apply proven frameworks & expertise to address complex legal/ governance & operational challenges, & deliver a production network.

Innovate

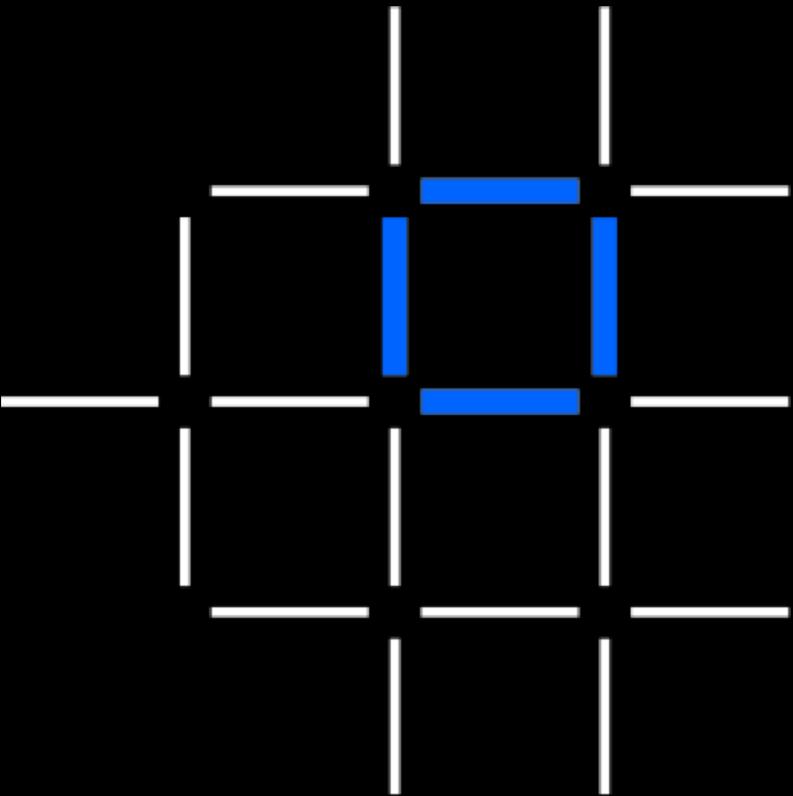


Extend a network
Build business models & new applications through the integration with established networks & advanced technologies.

Key Takeaways

- The **IBM Blockchain Platform** puts the experience of over 500+ Client engagements and multiple active networks at your ecosystem's fingertips.
- It is **the only** integrated business-ready platform that empowers a group of institutions to activate a decentralized blockchain network in record-time
- The **IBM Blockchain Platform** keeps getting better and better

Thank you



Questions? Tweet us or
go to ibm.com/blockchain

 @IBMBlockchain

 IBM Blockchain

 IBM Blockchain



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