









# Blockchain Explained

An Introduction to Blockchain for Business

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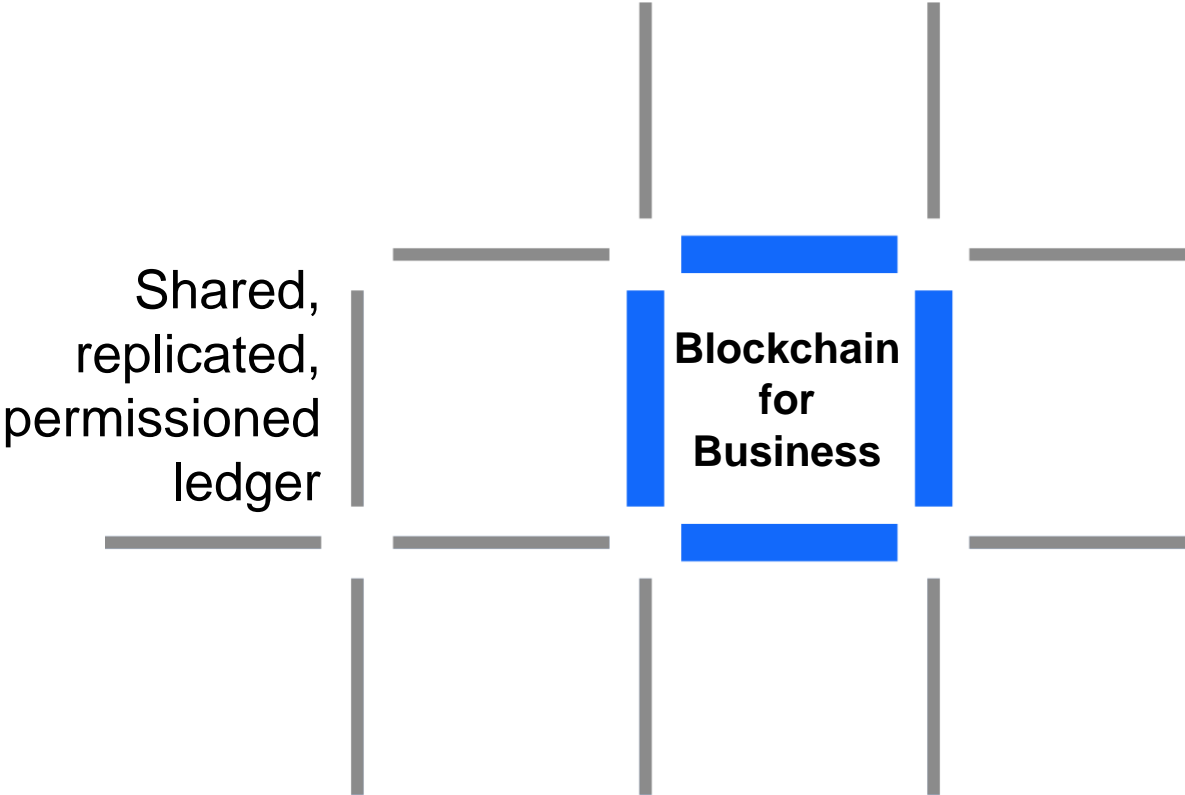
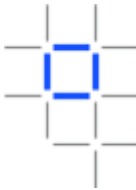
	<b>Blockchain Explained</b>
	IBM Blockchain Platform
	Blockchain Solutions
	Blockchain Composed
	Blockchain Architected
	Blockchain Explored
	Next Steps

V5.06, 8 March 2018

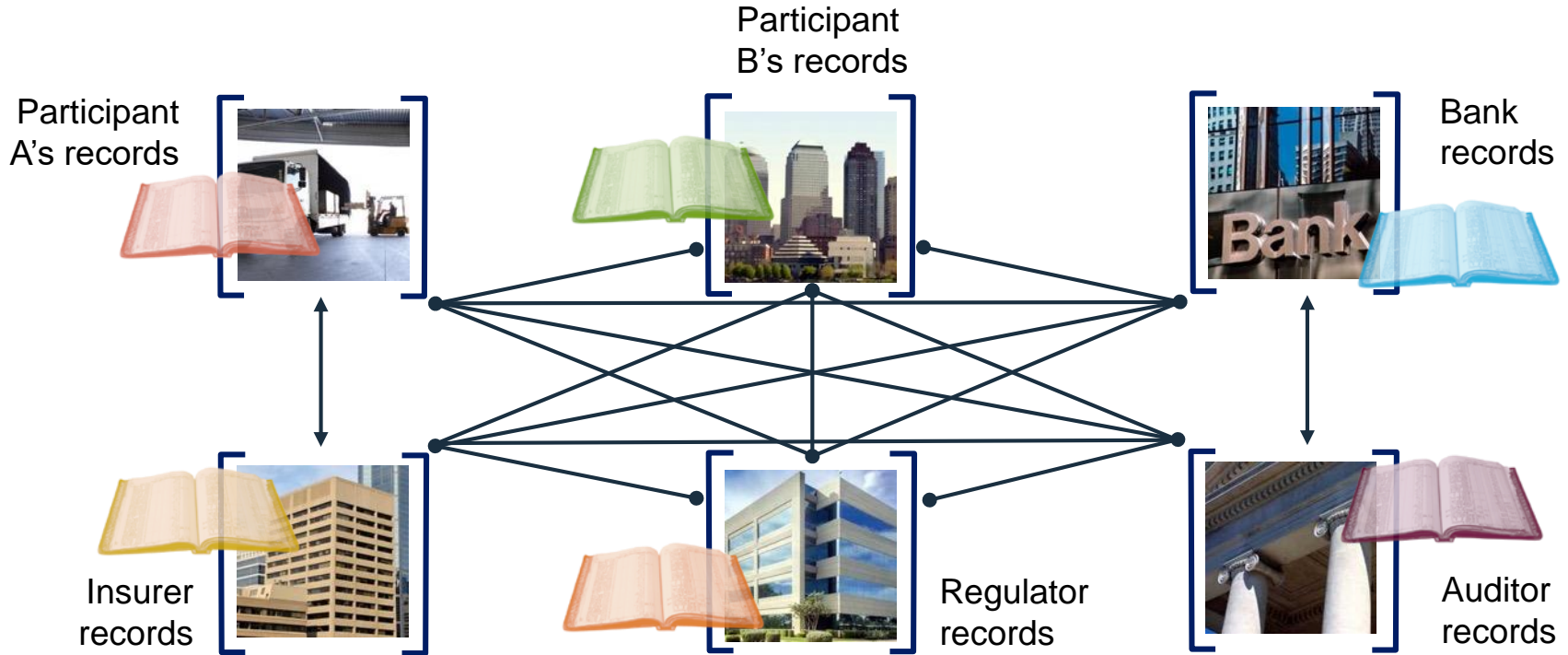
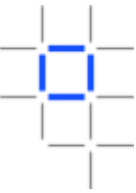
**IBM Blockchain**



# Introducing Blockchain for Business...

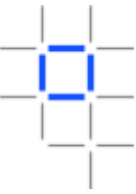


# Problem...



... inefficient, expensive, vulnerable

# A shared, replicated, permissioned ledger ...



Participant  
A's records



Participant  
B's records



Bank  
records



Blockchain

Insurer  
records



Regulator  
records

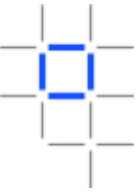



Auditor  
records



... with consensus, provenance, immutability and finality

# Other types of blockchain exist

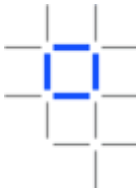


 **bitcoin** is an example of an unpermissioned, public ledger:

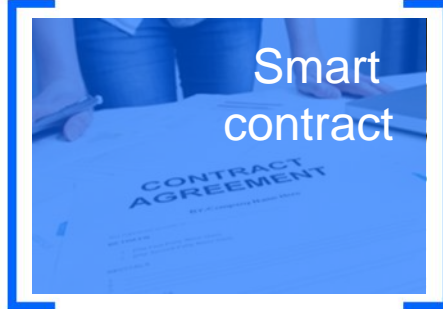
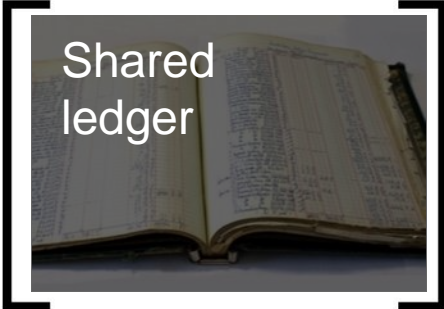
- The first blockchain application
  - Defines an unregulated shadow-currency
  - Resource intensive
- **Blockchains for business** are generally permissioned and private, and prioritize:
    - Identity over anonymity
    - Selective endorsement over proof of work
    - Assets over cryptocurrency



# Blockchain for business requires trust

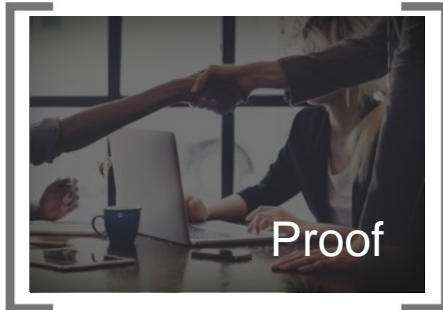


Append-only distributed system of record shared across business network



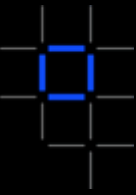
Business terms executed with transactions

Transactions are secure with appropriate visibility



Transactions are provably endorsed by relevant participants

# Blockchain is creating extraordinary opportunities for businesses to come together in new ways



## Create New Value

Exploit new business models and eliminate inefficiencies

## Optimize Ecosystems

Streamline business processes and the exchange of value along your ecosystem

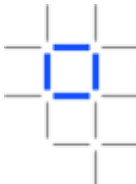
## Reduce Risk

Replace uncertainty with transparency and a trusted decentralized ledger





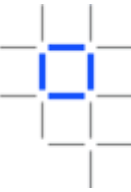
# Making blockchain real for business with over 400 engagements and multiple active networks



<p>Trade Finance</p>	<p>Pre and Post Trade</p>	<p>Complex Risk Coverage</p>
<p>Identity/ Know your customer (KYC)</p>	<p>Unlisted Securities/ Private Equity Funds</p>	<p>Loyalty Program</p>
<p>Medicated Health Data Exchange</p>	<p>Fraud/ Compliance Registry</p>	<p>Distributed Energy/ Carbon Credit</p>
<p>Supply Chain</p>	<p>Food Trust</p>	<p>Provenance/ Traceability</p>



# Patterns for customer adoption



## HIGH VALUE MARKET

- Transfer of high value assets
- Between many participants in a market
- Regulatory timeframes

## ASSET EXCHANGE

- Sharing of assets (voting, dividend notification)
- Assets are intangible
- Provenance & finality are key

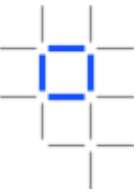
## CONSORTIUM SHARED LEDGER

- Created by a small set of participants
- Share key reference data
- Consolidated, consistent real-time view

## COMPLIANCE LEDGER

- Real-time view of compliance, audit & risk data
- Provenance, immutability & finality are key
- Transparent access to auditor & regulator

# Key players for blockchain adoption



## Regulator

- An organization who enforces the rules of play
- Regulators are keen to support Blockchain based innovations
- Concern is systemic risk – new technology, distributed data, security



## Industry Group

- Often funded by members of a business network
- Provide technical advice on industry trends
- Encourages best practice by making recommendations to members



## Market Maker

- In financial markets, takes buy-side and sell-side to provide liquidity
- More generally, the organization who innovates
  - Creates a new good or service, and business process (likely)
  - Creates a new business process for an existing good or service

# Thank you

*Questions? Tweet us or  
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