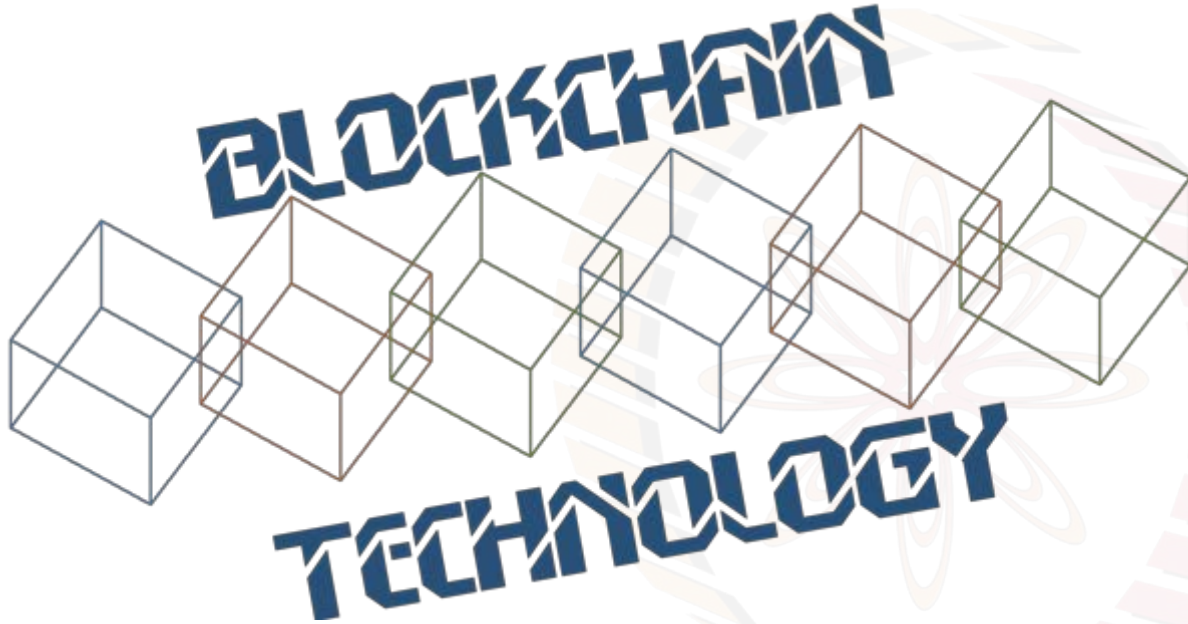


*\*Image courtesy: <http://beetfusion.com/>*



# BLOCKCHAIN FOR ENTERPRISE - OVERVIEW

# Blockchain Defined

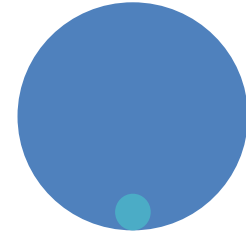


Blockchain is a design pattern made famous by its use in **Bitcoin**. But its uses go *far beyond*.



Blockchain can **reimagine** the world's most fundamental business interactions and open the door to invent new styles of digital interactions.

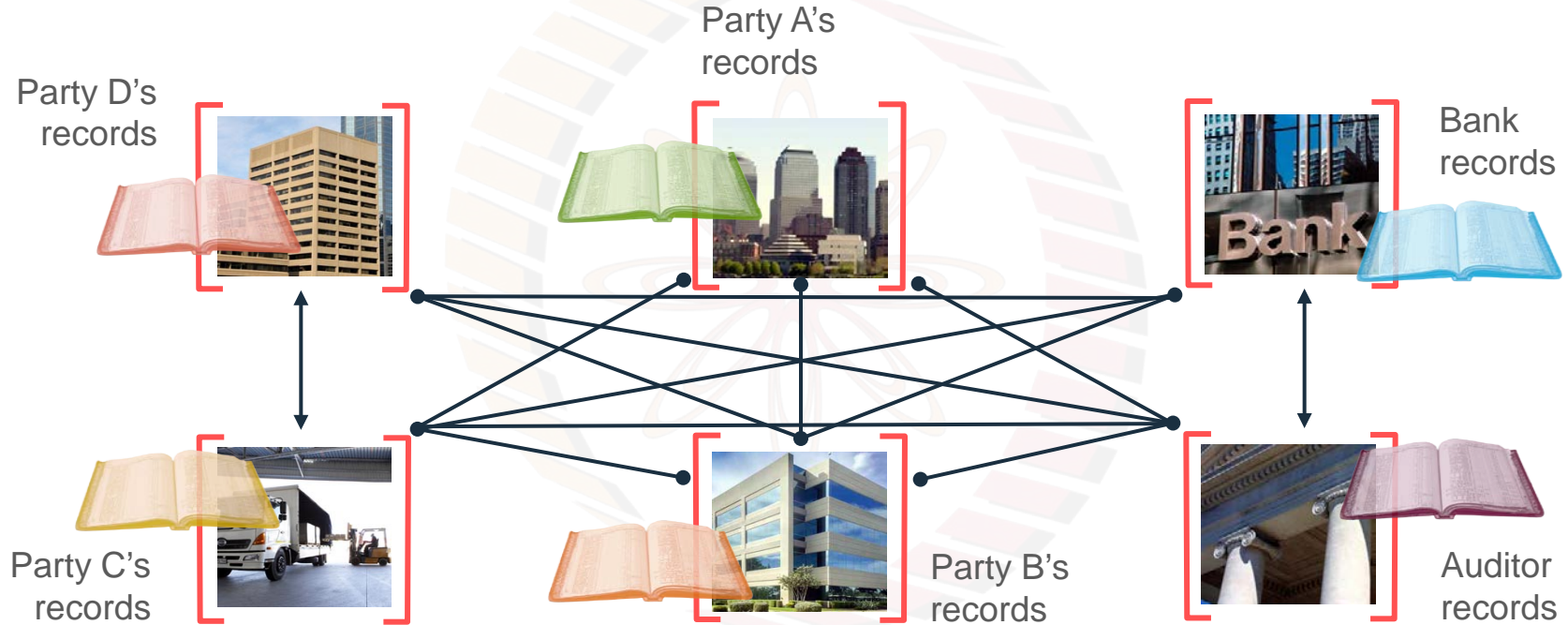
Total Blockchain Opportunity



Total Bitcoin Opportunity

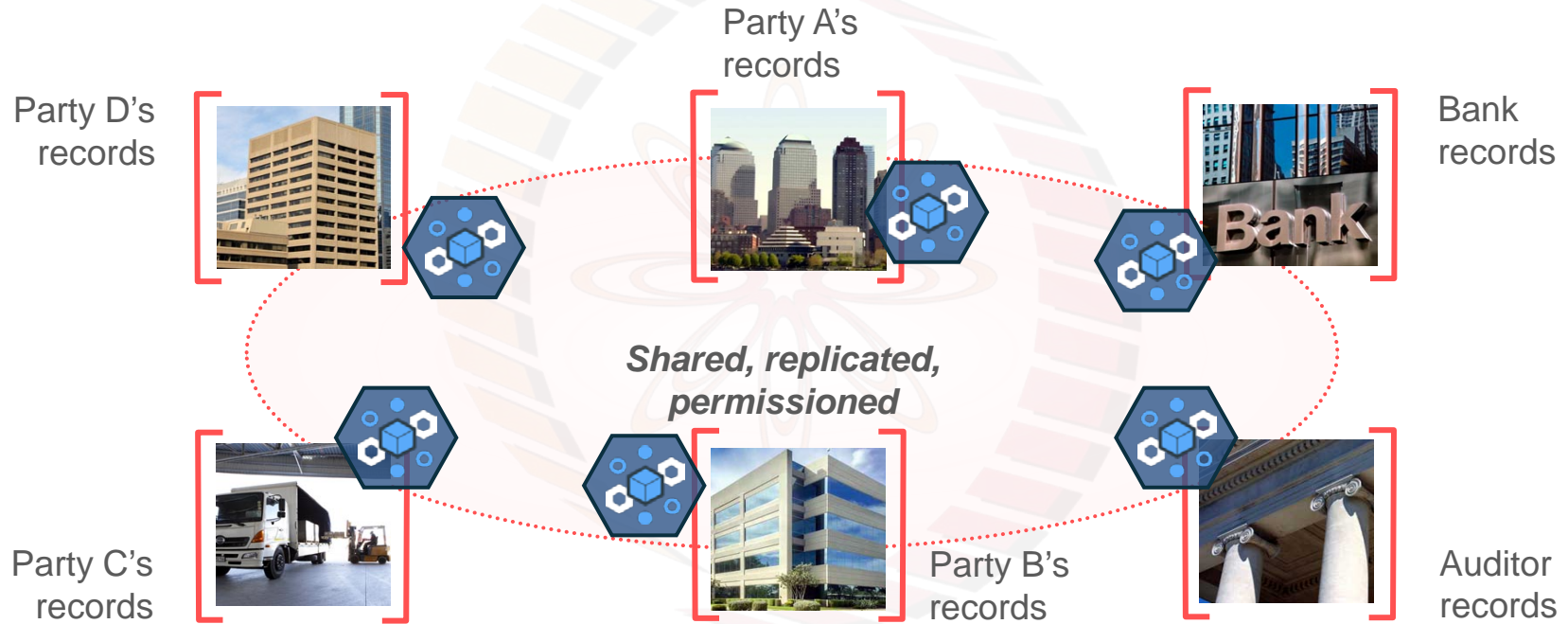
Enterprises are adopting Blockchain to a very **broad range** of business applications

# Problem: Difficult to Track Asset Transfers in a Business Network



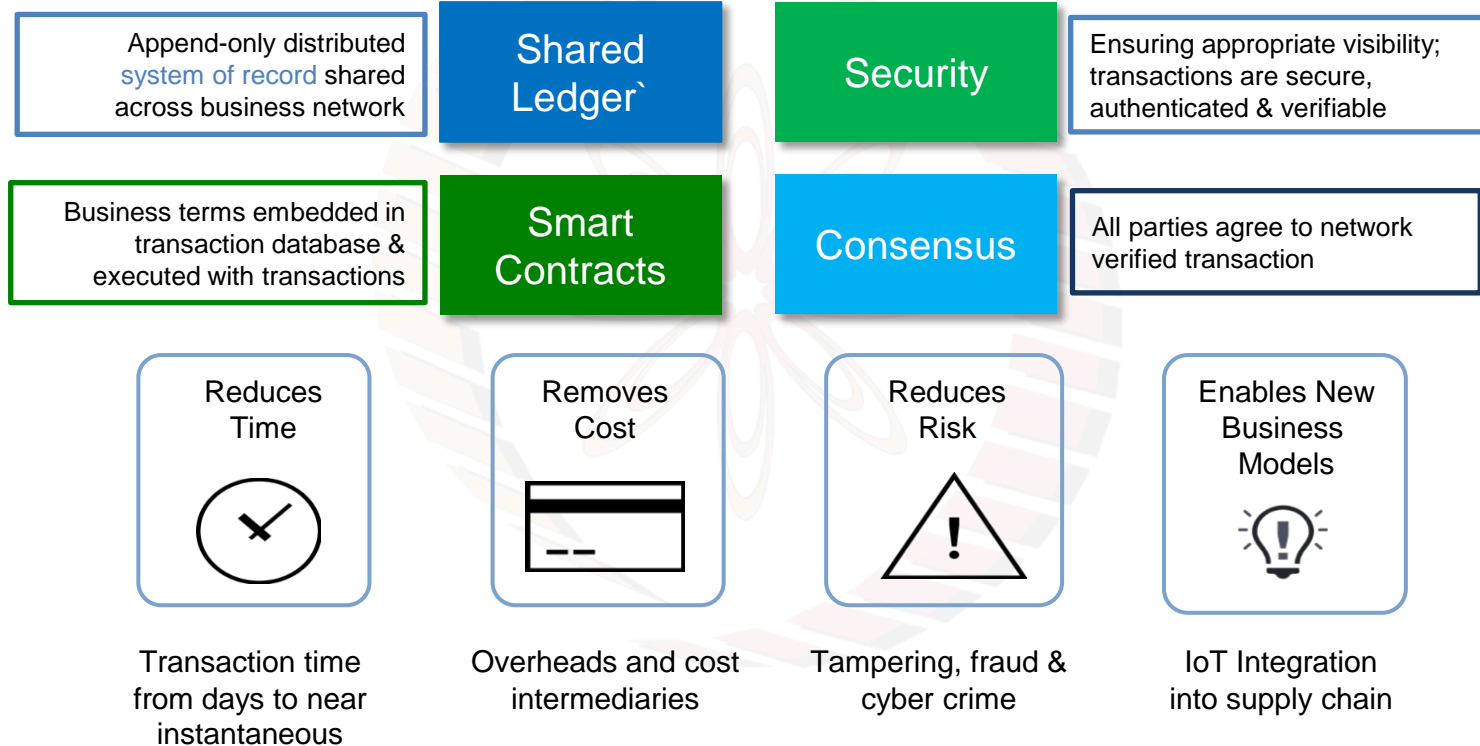
... Inefficient, expensive, vulnerable

# Solution... Shared, Replicated, Permissioned Ledger



... Consensus, provenance, immutability, finality

# Key Concepts and Benefits of Blockchain for Business



# Degree of Centralization

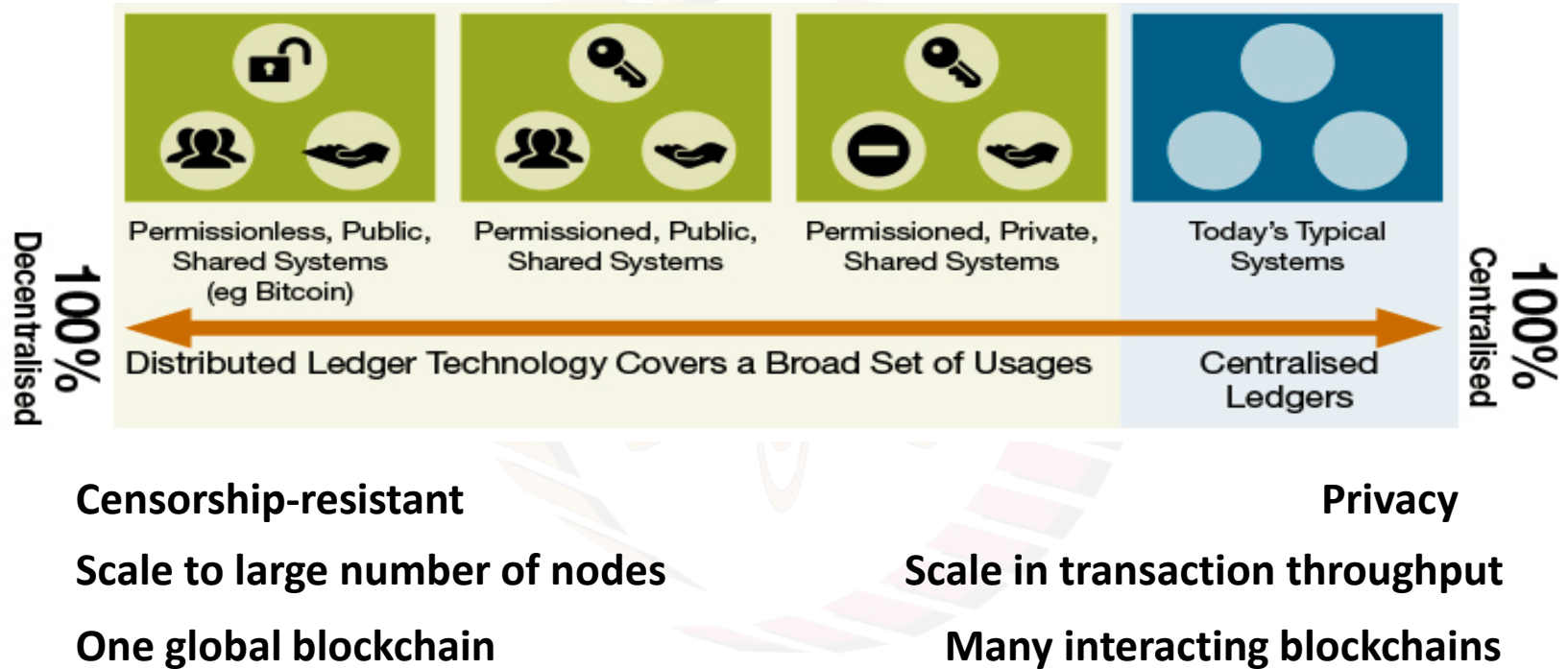


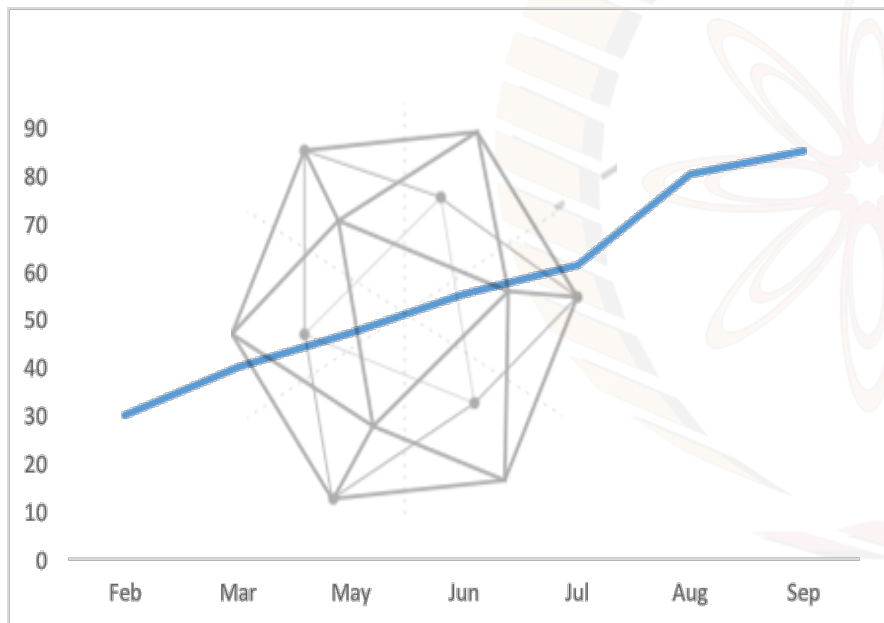
Figure source: "Distributed Ledger Technology: Beyond Blockchain", A report by UK Govt Chief Scientific Adviser

# Permission-less vs Permissioned Blockchains

|                  | Permission-less   | Permissioned  |
|------------------|---|---|
| <b>Access</b>    | Open read/write access to database                                  | Permissioned read/write access to database  |
| <b>Scale</b>     | Scale to a large number of nodes, but not in transaction throughput | Scale in terms of transaction throughput, but not to a large number of nodes                    |
| <b>Consensus</b> | Proof of work/ proof of stake                                       | Closed membership consensus algorithms  |
| <b>Identity</b>  | Anonymous/pseudonymous  | Identities of nodes are known, but transaction identities can be private/anonymous/pseudonymous |
| <b>Asset</b>     | Native assets   | Any asset/data/state  |

# The Linux Foundation Hyperledger Project

A collaborative effort created to advance blockchain technology by identifying and addressing important features for a cross-industry open standard for distributed ledgers that can transform the way business transactions are conducted globally.



[www.hyperledger.org](http://www.hyperledger.org)

220+ Members, 260%  
Growth in 11 months;  
10 projects



# Hyperledger Members

Source: <https://www.hyperledger.org/members>  
Updated: 1 March 2018

## Premier



## Associate



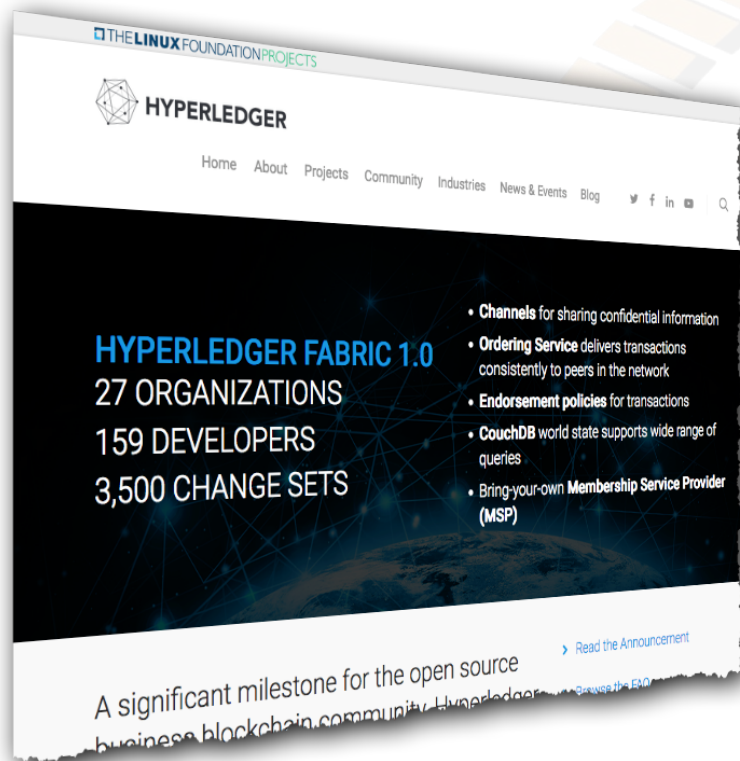
## General



## Associate (Academia)



# Hyperledger Fabric: Distributed ledger platform



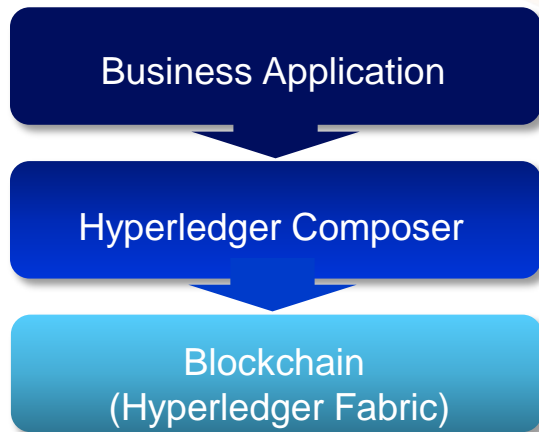
- An implementation of blockchain technology that is a foundation for developing blockchain applications
- Emphasis on ledger, smart contracts, consensus, confidentiality, resiliency and scalability.
- V1.0 released July 2017
  - 159 developers from 27 organizations
  - IBM is one contributor of code, IP and development effort to Hyperledger Fabric

<http://hyperledger-fabric.readthedocs.io/>

# Hyperledger Composer: Accelerating Time to Value

<https://hyperledger.github.io/composer>

- A suite of high level application abstractions for business networks
- Emphasis on **business-centric vocabulary** for quick solution creation
- Reduce risk, and increase understanding and flexibility



- Features
  - Model your business networks, test and expose via APIs
  - Applications invoke transactions to interact with business network
  - Integrate existing systems of record
- Fully open and part of Linux Foundation Hyperledger
- Try it in your web browser now:  
<http://composer-playground.mybluemix.net/>