Blockchain 101

Baohua Yang

2016-06-24

About
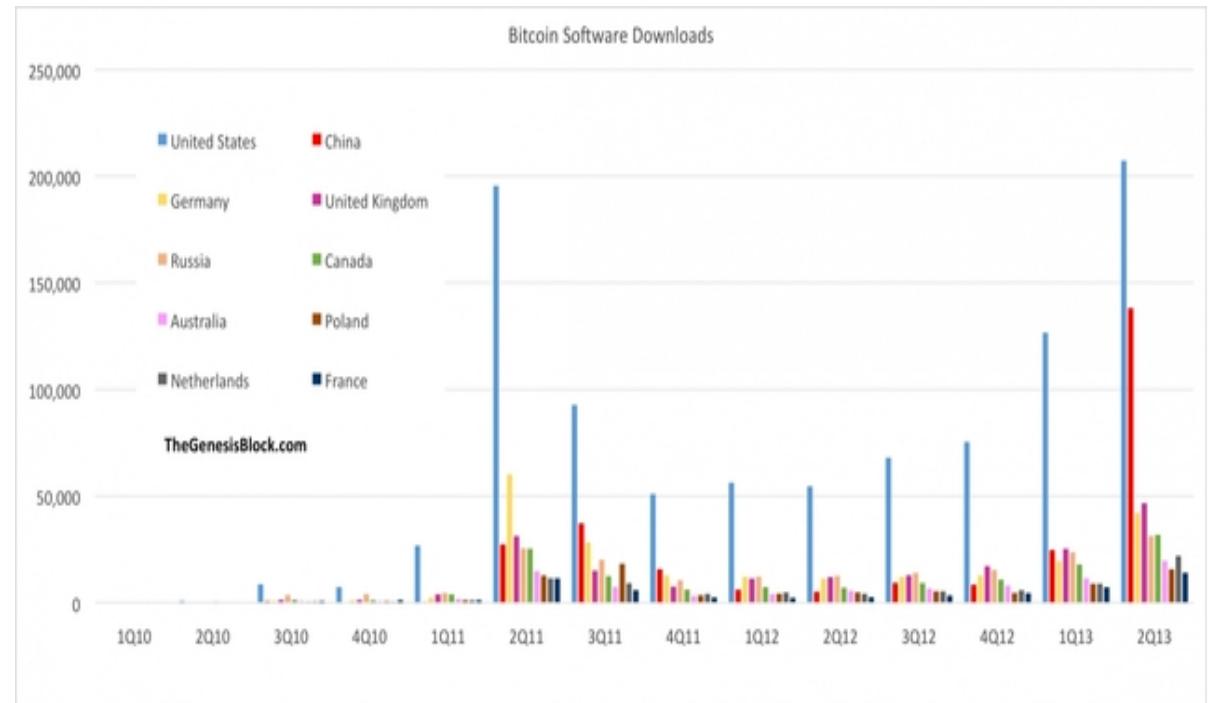

- Me
- http://yeasy.github.io/
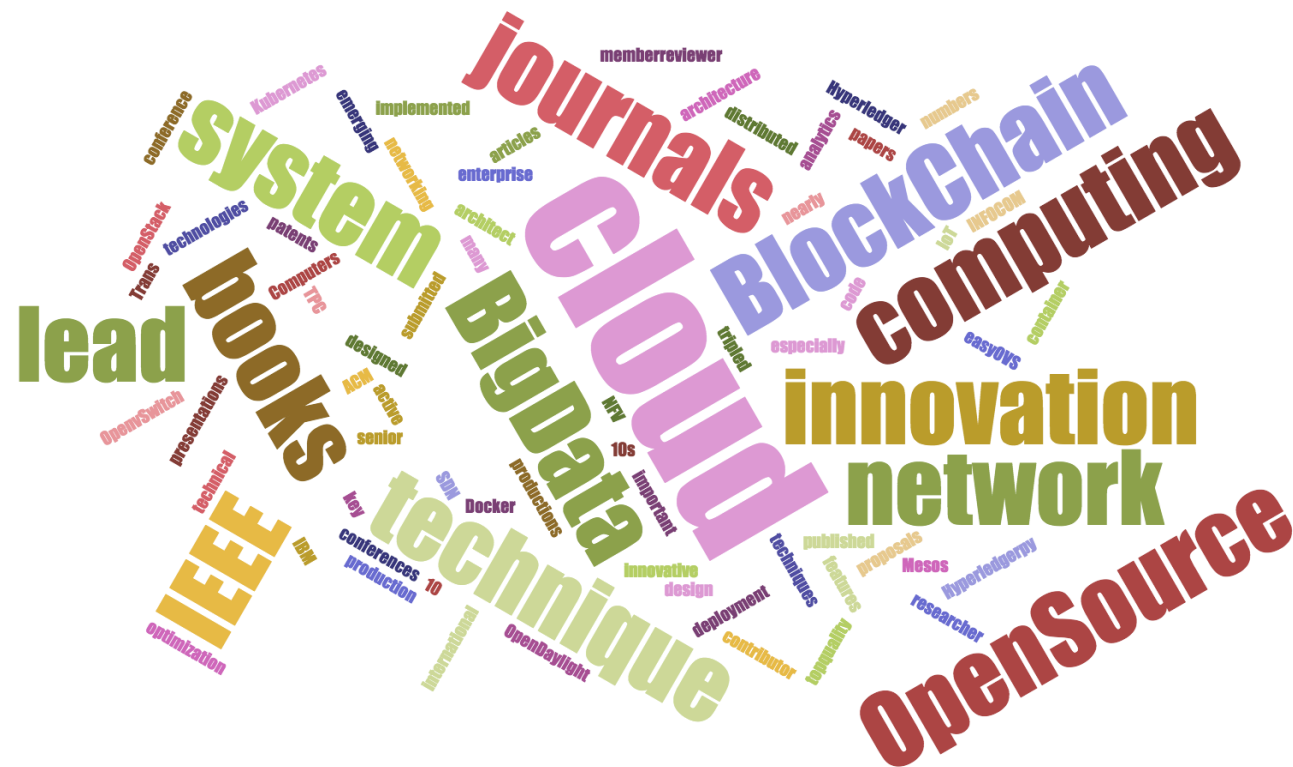
- 区块链技术指南
- https://github.com/yeasy/blockchain_guide
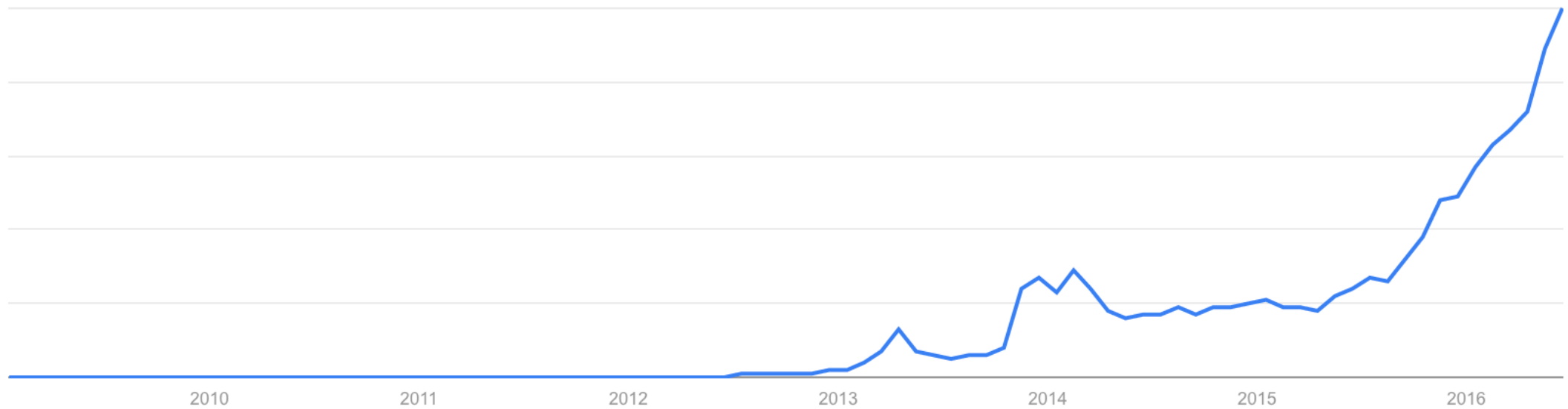
Background

- 1494: Double Entry Bookkeeping
- 1998 ~: Crypto-currency
  - Double-spend
- 2008: bitcoin
  - 2009 online
  - 2013 explode
  - mining
- 2014: blockchain
  - Transaction
  - Block
  - Chain
- 2015: smart contract/chaincode
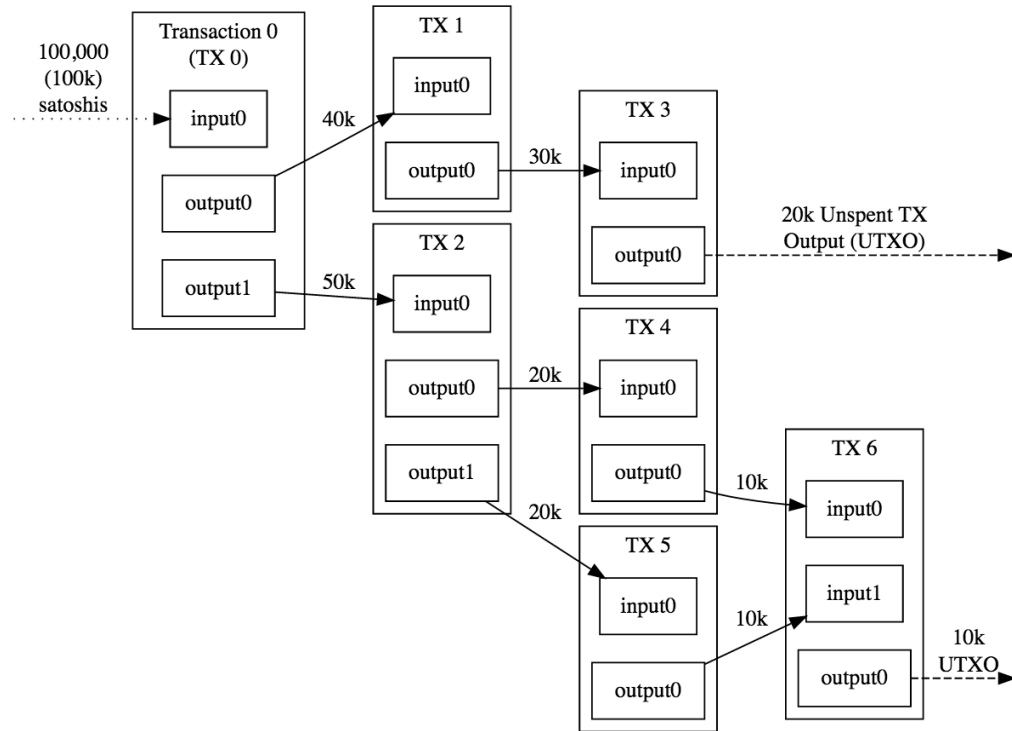
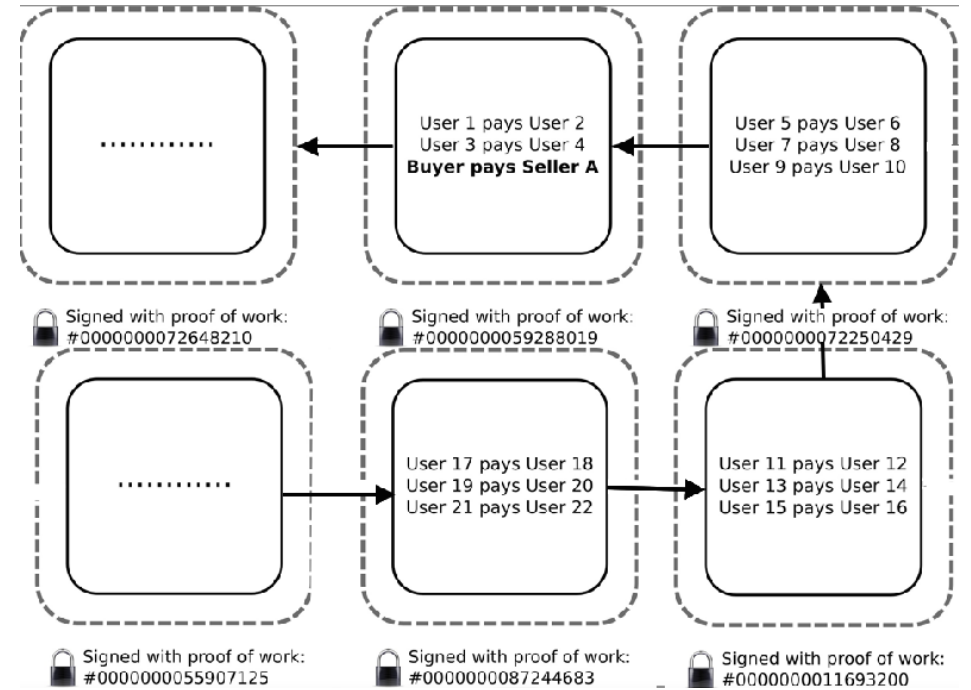

Bitcoin Software Downloads

Bitcoin Price

Blockchain interests

How it works

Triple-Entry Bookkeeping (Transaction-To-Transaction Payments) As Used By Bitcoin

Features

- 7+ years Bitcoin blockchain

- Decentralized
- Unchangeable
- Autonomous
- *Open
- *Privacy

Key techniques

- Consensus
  - PoW
  - PoS
  - etc
- Crypto
  - ECDSA
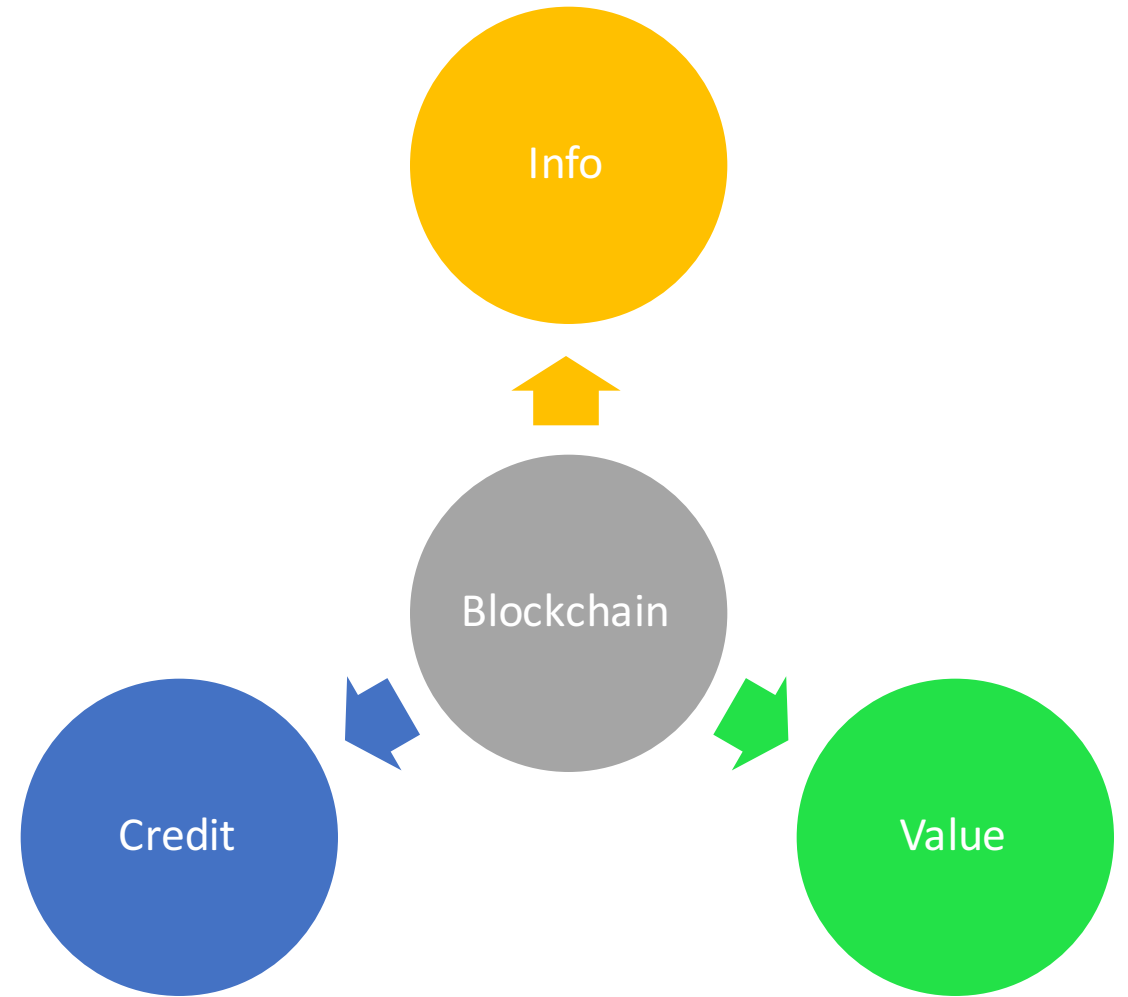 - Hashcash: SHA256
- Performance
- Security

Business Value

- Trust
- Cost
- Privacy/audit

- Visa
- 美国纳斯达克证券交易所（Nasdaq）
- 高盛投资银行（Goldman Sachs）
- 花旗银行（citibank）
- 美国富国银行（Wells Fargo）
- 中国央行
- 中国浦发银行
- 日本三菱日联金融集团
- 瑞士联合银行
- 德意志银行
- DTCC
- SWIFT

- IBM
- 微软
- Intel
- 思科
- 埃森哲

Application Scenarios

- Credit

- Resource sharing

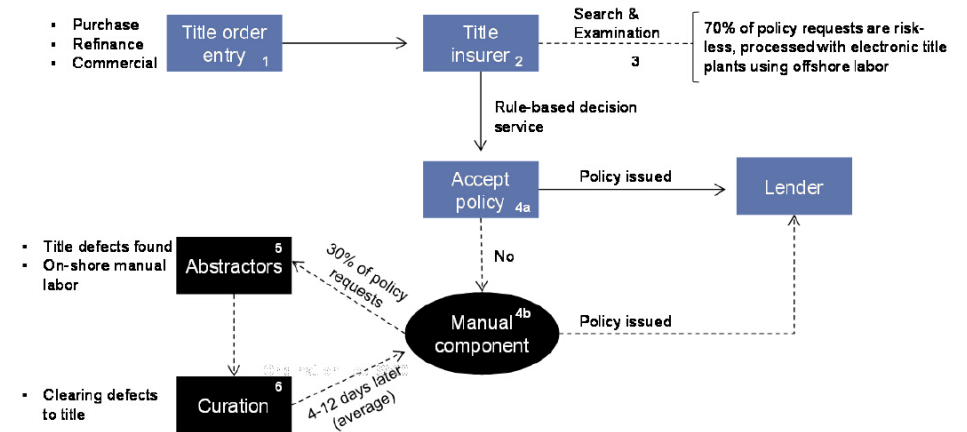- Finance

- Investment&Trading

- IoT

Credit

- Lower cost
- Global credit
- Decentralized

- Renting
- Logistics

Exhibit 31: Title search is a manually intensive process, as abstractors and curators must process and clear paper-based property records – 30% of which are found defective at the time of the proposed transaction (sale/refinancing)
Title search process

Source: Goldman Sachs Global Investment Research.

Exhibit 34: Blockchain could fundamentally disrupt the way title search is currently conducted
Blockchain title search process
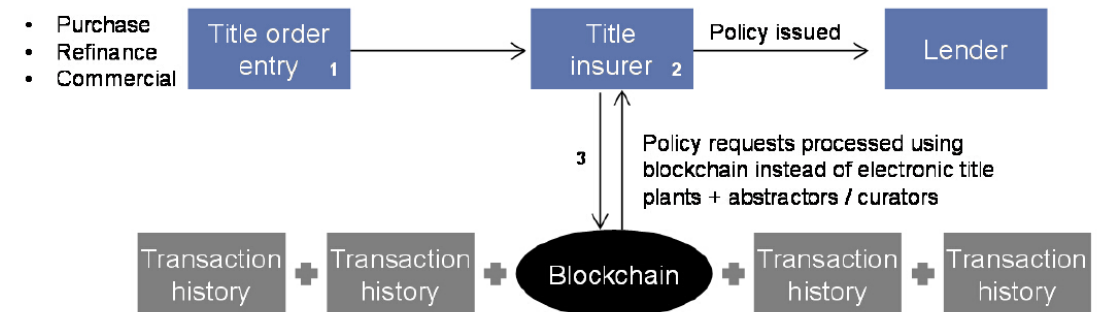
Source: Goldman Sachs Global Investment Research.

Resource Sharing

- House
  - Airbnb
  - HomeAway
  - OneFineStay

- Car
  - Uber

- Energy sharing
  - TransActive Grid
  - Grid Singularity

Finance

- Bank
  - China Central bank
  - Canada bank
  - Citibank

- R3

- Stock Exchange
  - NASDAQ

Investment&Trading

- 一带一路

- Transaction
  - Circle

- Deloitte

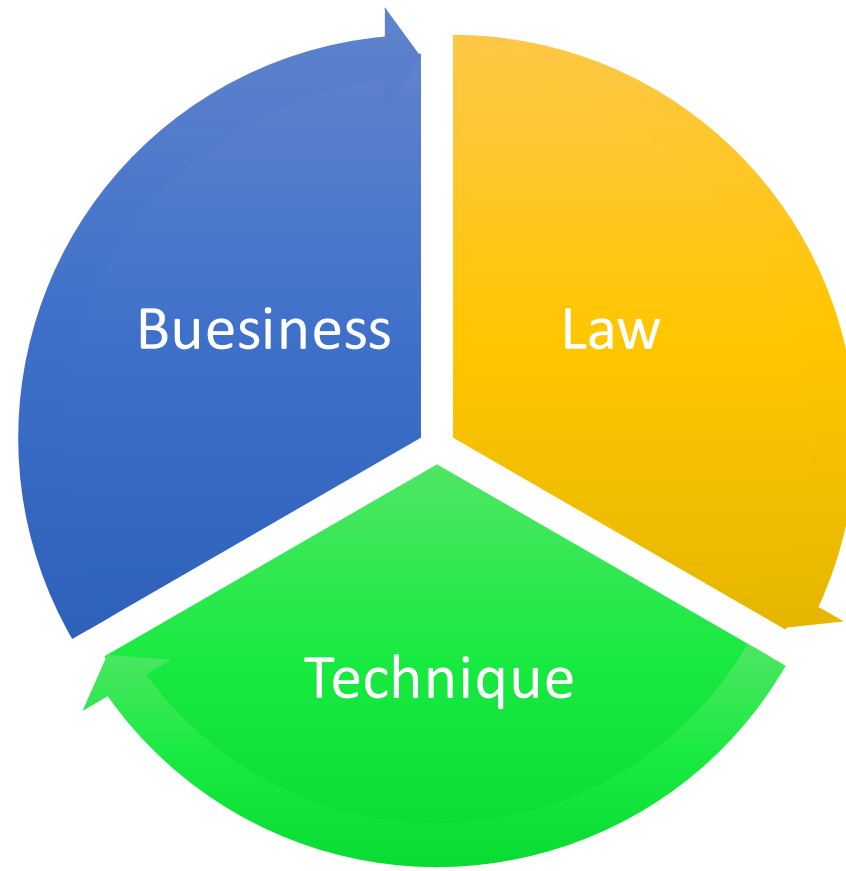- Distributed Autonomous Organization (DAO)

IoT

- IBM

Events

- IBM
  - 2015: Contribute openblockchain to hyperledger project
  - 2016: Watson Centre compose AI with blockchain
  - 2016: bluemix support Blockchain service
- MS
  - 2015: Azure cloud
  - 2016: *Bletchley*

Vision

Q&A