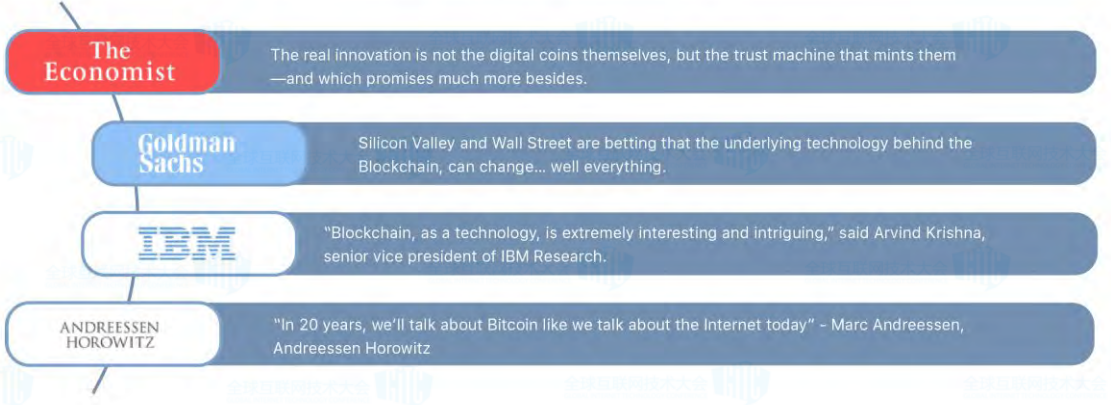
Blockchain

Technical Principlesand Practical Use Cases

The blockchain changes the entire equation of trust for everything



Governments afraid to fall behind on blockchain technology

China

周小川：区块链技术是一项可选的技术，人民银行部署了重要力量研究探讨区块链应用技术

UK

UK Chief Scientist Report to UK Government - Government should establish trials of distributed ledgers to assess the technology's usability within the public sector."

US

The US Securities and Exchange Commission (SEC) has approved Overstock's plans to issue stock via the blockchain.

Japan

Japan's Financial Services Agency (FSA) considering legislation to classify digital currencies as currency.

Hong Kong

John Tsang (HK Financial Secretary) Government will encourage exploring applications of Blockchain technology in financial services. US$2.5Bn Fin-Tech investment in 2016-2017 budget.

Korea

The Korea Exchange (KRX) to create an over-the-counter (OTC) trading platform using blockchain tech.

Singapore

The Monetary Authority of Singapore, the city-state's central bank, has funded a blockchain system as part of a five-year US$225m Fin-Tech investment plan.

The blockchain will reshape entire industries' operating models

What is the blockchain

A block is created when multiple nodes agree and validate the transactions. "Distributed ledger" comes from the fact that there is no need for a centralized party to validate a transaction.

Centralized

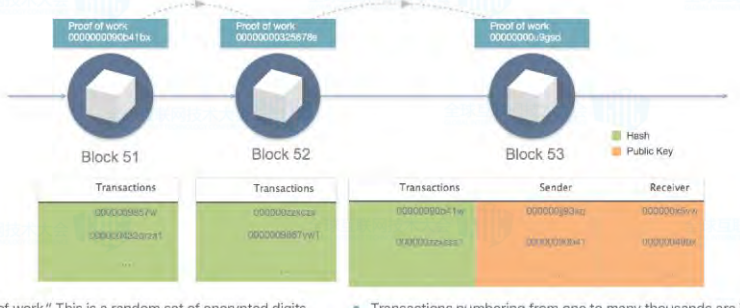
Distributed

Decentralized

Most secure distributed ledger consensus mechanism:
PROOF OF WORK (PoW) – An economic measure to deter ledger hacking by requiring work from the service requester, usually in the form of computer power over a period of time.

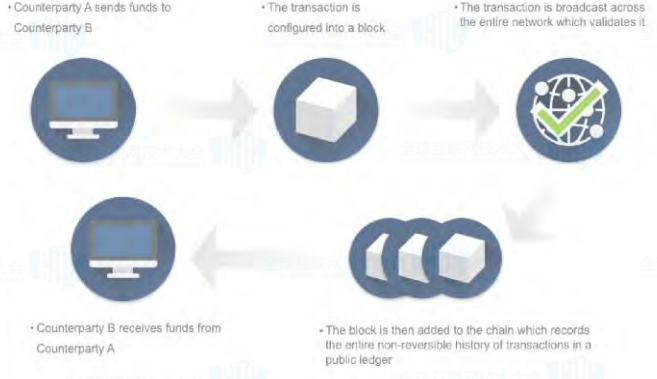
How blockchain transactions work

Blockchains solve two major challenges for digital transactions, controlling the information and avoiding duplication.



- ID referred to as a "hash" called "proof of work." This is a random set of encrypted digits.
- Public key identifies the sender and receiver
- Transactions numbering from one to many thousands are included in each block.

Flow of a transaction on the blockchain



Myths and Truths about the Bitcoin Blockchain

Myths about the Bitcoin Blockchain

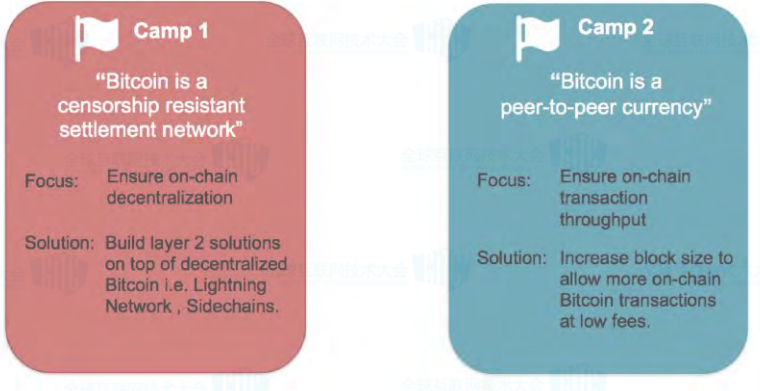
Many hold the incorrect view that Bitcoin is outdated, slow, first gen. prototype technology

Myth 1	***Bitcoin can only handle ~ 7tps***	?
Myth 2	***Bitcoin is slow, transaction confirmations take 10-60 minutes***	?
Myth 3	***Bitcoin is expensive, micro-transactions cannot use Bitcoin***	?
Myth 4	***Bitcoin code is not turing complete, cannot do smart contracts***	?

Where does this number come from?
One 1MB size block every 10 minutes. Basic transaction size is 250 bytes.
1,000,000 bytes / 10 min / 60 sec / 250 bytes = 6.6 tps

Two camps have solutions to these problems.
Who and what are they?

What is the Bitcoin Blockchain?



Different outlooks on the future of Bitcoin Blockchain

Bitcoin Lightning Network - Solves speed, block size

- Payment channels between multiple parties in a multi-hop hub and spoke model (similar to internet routing)
- Minimally trusted intermediaries (cannot take your coins)
- With a malleability soft fork, Bitcoin can scale to billions of transactions per day

The Bitcoin Lightning Network:
Scalable Off-Chain Instant Payments

Joseph Poon
joseph@lightning.network

Thaddeus Dryja
rx@awsomnet.org

January 14, 2016
DRAFT Version 0.5.9.2

Abstract

The bitcoin protocol can encompass the global financial transac-

Bitcoin Sidechains - Solves innovation with multiple blockchains

"Conceptually, we would like to transfer an asset from the (original) parent chain to a sidechain, possibly onward to another sidechain, and eventually back to the parent chain, preserving the original asset. Generally we can think of the parent chain as being bitcoin and the sidechain as one of many other block chains."

Enabling Blockchain Innovations with Pegged Sidechains

Adam Back, Matt Corallo, Luke Dashjr,
Mark Friedenbach, Gregory Maxwell,
Andrew Miller, Andrew Poelstra,
Jorge Timón, and Pieter Wuille*

2014-10-22 (commit 5523e43)

Abstract

Example Sidechain:
Rootstock to bring Ethereum smart contracting language to BTC

Blockchain Use Case Studies

Global exchanges CEOs recognize blockchain opportunity

Timeline of major projects taken by institutions and exchanges

J.P.Morgan	JPMorgan Partners With Digital Asset for Blockchain Trial
ASX	ASX now actively working to employ blockchain (distributed ledger) technology to potentially replace its equities settlement systems.
UBS	Opening a technology lab in London to explore using blockchain technology in financial services.
NASDAQ	Implementing the bitcoin blockchain technology in its Nasdaq Private Market, a marketplace for pre-IPO trading, to expand and enhance the equity management capabilities it offer.
KRX KOREA EXCHANGE	The Korea Exchange (KRX) South Korea's lone securities exchange, is reportedly moving to create an over-the-counter (OTC) trading platform using blockchain tech. Aims to help its OTC traders reduce the cost of transactions. Help off-board dealers to trade more easily by saving their costs and efforts in seeking trade partners."

Case Study: Nasdaq Linq solving Private Share trading

NASDAQ

• Individual shareholder certificate on the blockchain

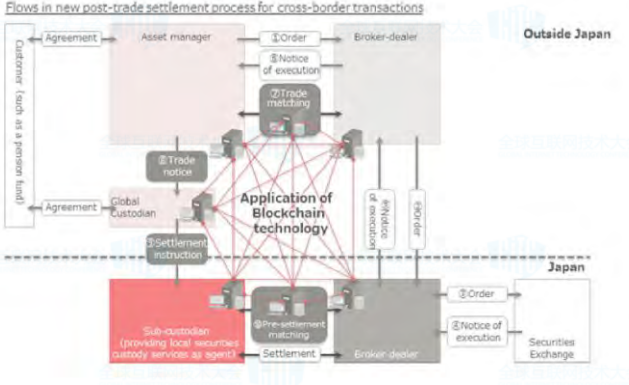
What Nasdaq Linq does?

Digitize, integrate, control all equity-related functions
- Cap table management
- Shareholder liquidity
- Investor relations
- Capital raising

• Company ownership view on a blockchain

Case Study 2: Mizuho Bank - Cross-border trade settlement

"The trade is the settlement."
Blockchain for international trade settlement



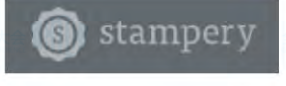
Case Study 3: Onename - Identity on Blockchain

onename

Choose a unique name	Create and verify your profile	Start using your blockchain ID
This is the name you share so others can find your blockchain ID. If you keep your password safe, no one can take this name from you.	Link your blockchain ID and social media profiles together to prove ownership of your blockchain ID and verify it's really you.	Share your blockchain ID on your website, social media profiles, and business cards so people can easily find you online.

Case Study 4: 21 Inc - Micropayment on Blockchain

Case Study 5: Stampery - Notary on Blockchain



Case Study 6: IBM - IoT on Blockchain

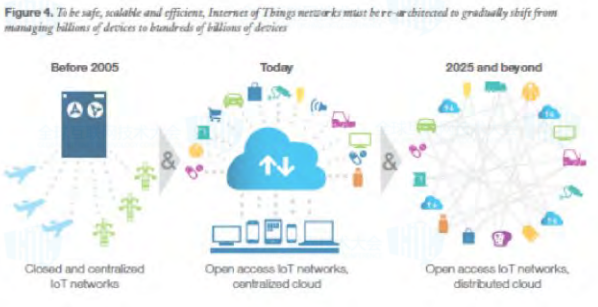


Figure 4. *To be safe, scalable and efficient, Internet of Things networks must be re-architected to gradually shift from managing billions of devices to hundreds of billions of devices*

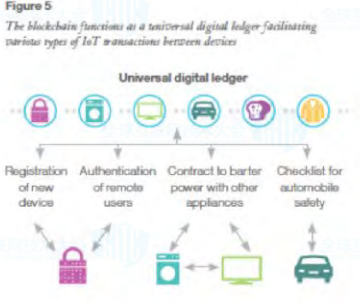
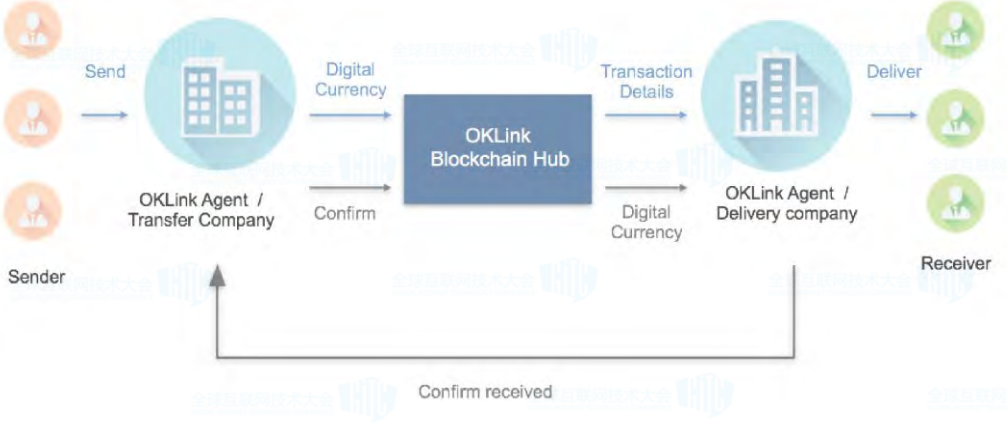


Figure 5

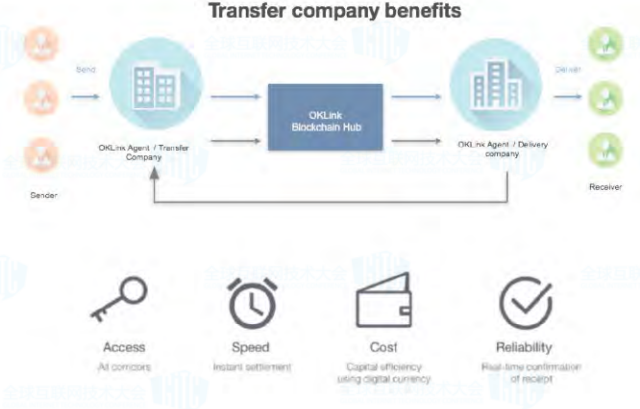
The blockchain functions as a universal digital ledger facilitating various types of IoT transactions between devices

About OKLink

Product -OKLink chain Network Flow

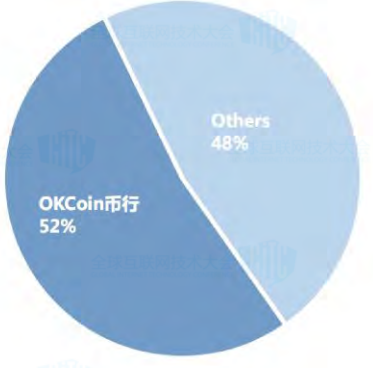


Offer improved experience for transfer companies



About　OKCoin币行

Company performance -Market Share



Product -- OKCoin digital asset exchange

扫描二维码 获取更多区块链资讯