

CRYPTOCURRENCIES

**When life is light years
ahead of the law**

Advocate Vicky Milner
Rob Dudley
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Introductions

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- Advocate Vicky Milner, Callington Chambers
- Rob Dudley, CTO, Global Advisors

Topics

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- Introductions; disclaimer
- Basics and background
- Hashing, mining, transfer and trading
- Regulation and legislation
- Questions

Disclaimer

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Nothing in this presentation represents investment advice, regulatory advice and/or legal advice

Basics and background

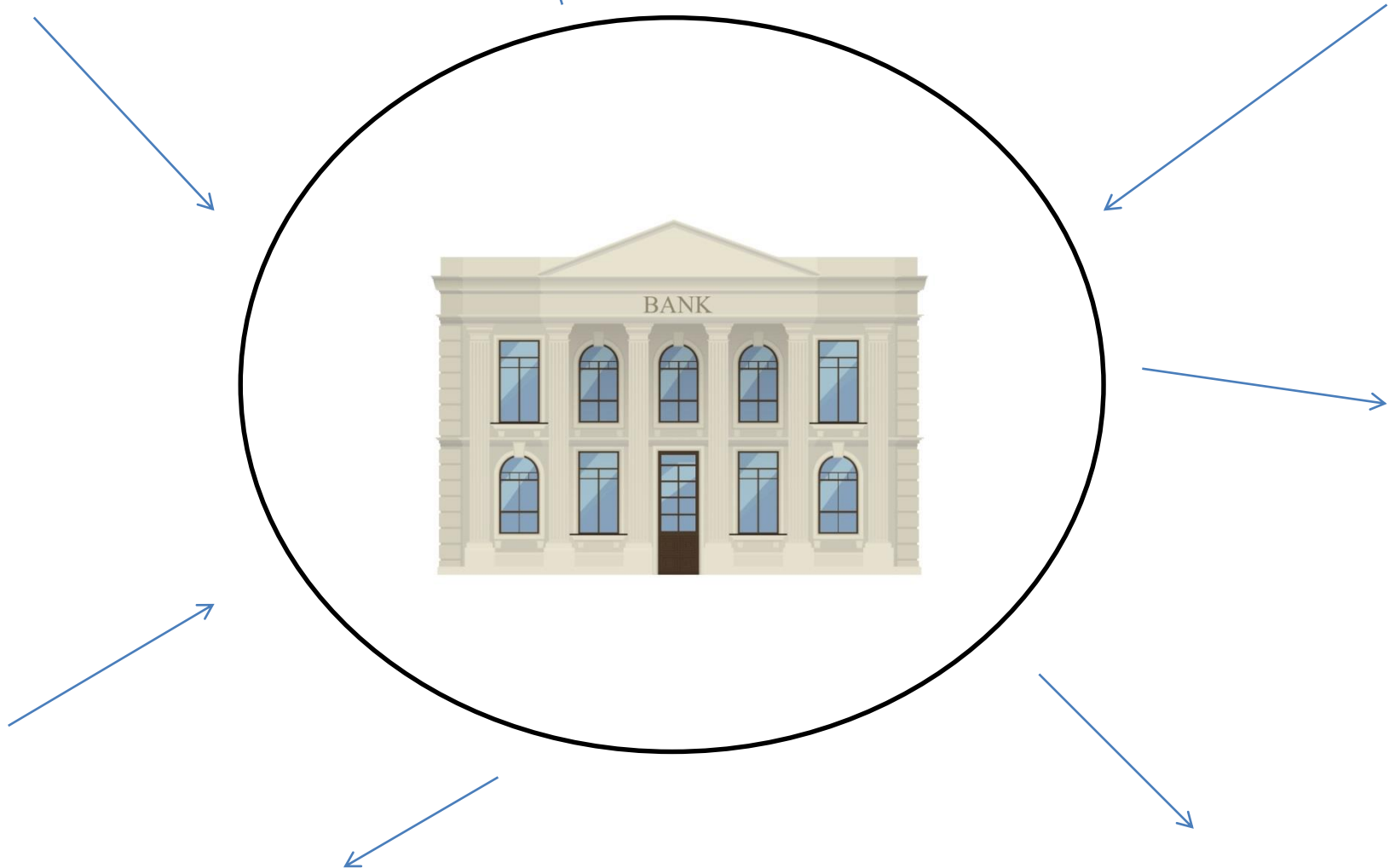
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Money; currency

- What is money?
 - A medium of exchange;
 - A unit of account; and
 - A store of value
- What is currency?
 - A recognised *system of money* in common use
 - especially in a nation
- What are cryptocurrencies?
 - It depends...

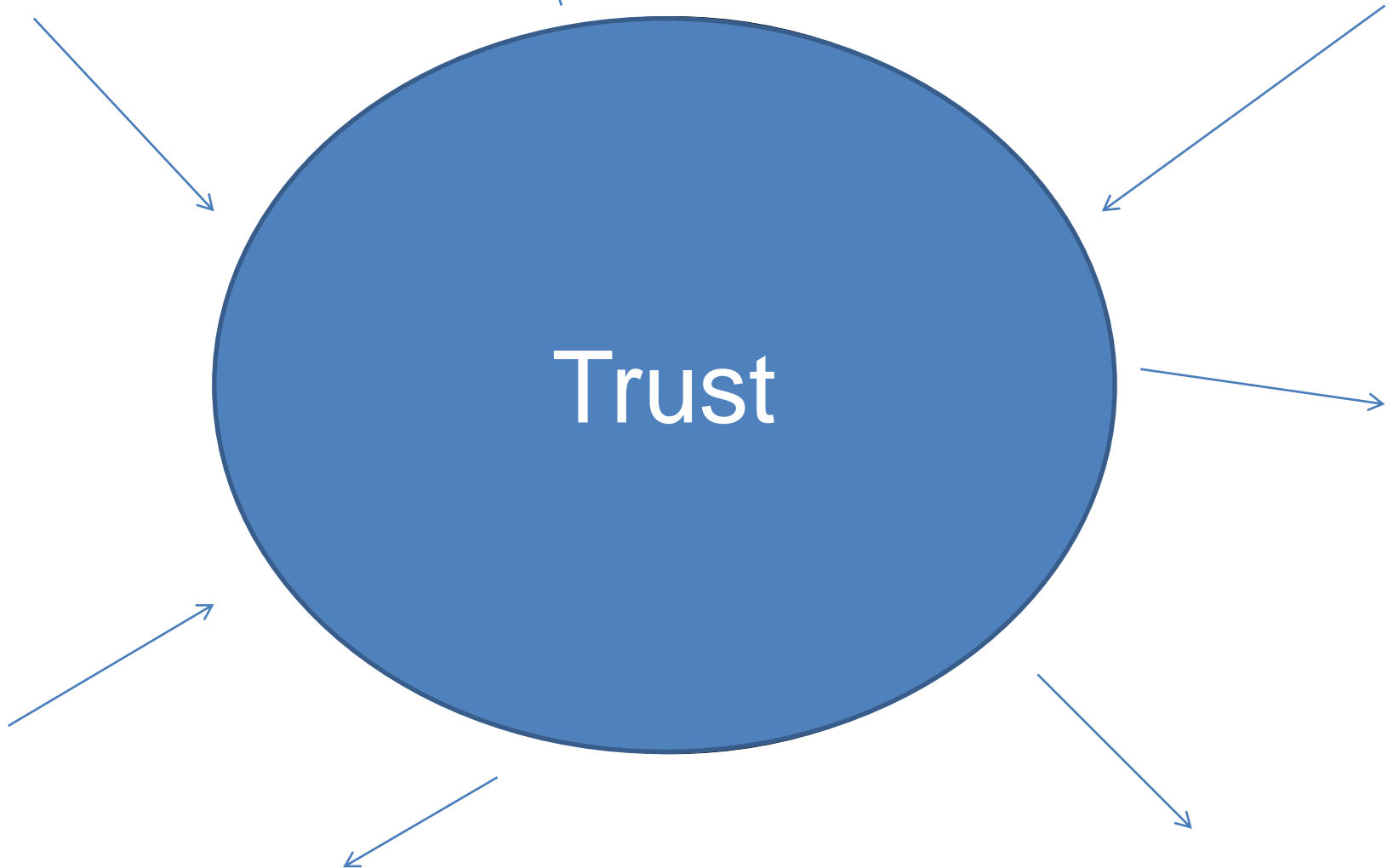
Traditional (centralised) model

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Traditional (centralised) model

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Trust?

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- Do you trust that a bank that holds your money will pay you your money on request?
- Do you trust that the system is properly governed and regulated?
- What about the general public?

Decentralisation

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What are cryptocurrencies?

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Investopedia definition:

“A cryptocurrency is a digital or virtual currency that uses cryptography for security...”

[A cryptocurrency] is not issued by any central authority, rendering it theoretically immune to government interference or manipulation.”

Bitcoin

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According to bitcoin.org:

*“Bitcoin is an innovative payment network and a new kind of money. Bitcoin uses peer-to-peer technology to operate with no central authority or banks; managing transactions and the issuing of bitcoins is carried out collectively by the network. **Bitcoin is open-source; its design is public, nobody owns or controls Bitcoin and everyone can take part.”***

Bitcoin

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2009 Creation of Bitcoin

05.12.13 Bank of America Merrill Lynch's report:
subject to factors inc BTC's volatility and
uncertain legal status:

"...the currency has the potential to become a "major means of payment for ecommerce" as well as a "serious competitor to traditional money transfer providers.""

27.01.14 *“Bitcoin Operators Charged In NYC
‘Silk Road’ Drug Bust”*

28.02.14 *“MtGox files for bankruptcy in Japan after
collapse of bitcoin exchange”*

21.03.14 www.jerseylaw.je *AG v Redon & Dowinton*

29.05.15 Ross Ulbricht sentenced to life imprisonment for operation and ownership of Silk Road, hidden website used for buying and selling illegal drugs and other unlawful goods and services

Dec 2015/Jan 2016 Walport report

26.09.16 Jersey’s virtual currency regulation in force

The Guardian 11.04.18

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“Bitcoin is the first, and the biggest, “cryptocurrency” – a decentralised tradeable digital asset. Whether it is a bad investment is the big question. Bitcoin can only be used as a medium of exchange and in practice has been far more important for the dark economy than it has for most legitimate uses. The lack of any central authority makes bitcoin remarkably resilient to censorship, corruption – or regulation. That means it has attracted a range of backers, from libertarian monetarists who enjoy the idea of a currency with no inflation and no central bank, to drug dealers who like the fact that it is hard (but not impossible) to trace a bitcoin transaction back to a physical person.”

The Tech

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How do cryptocurrencies work?

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- Hashing & Merkle Trees – aka a Chain of Blocks
- Hashing for profit – aka Mining
- Transfer & Trading

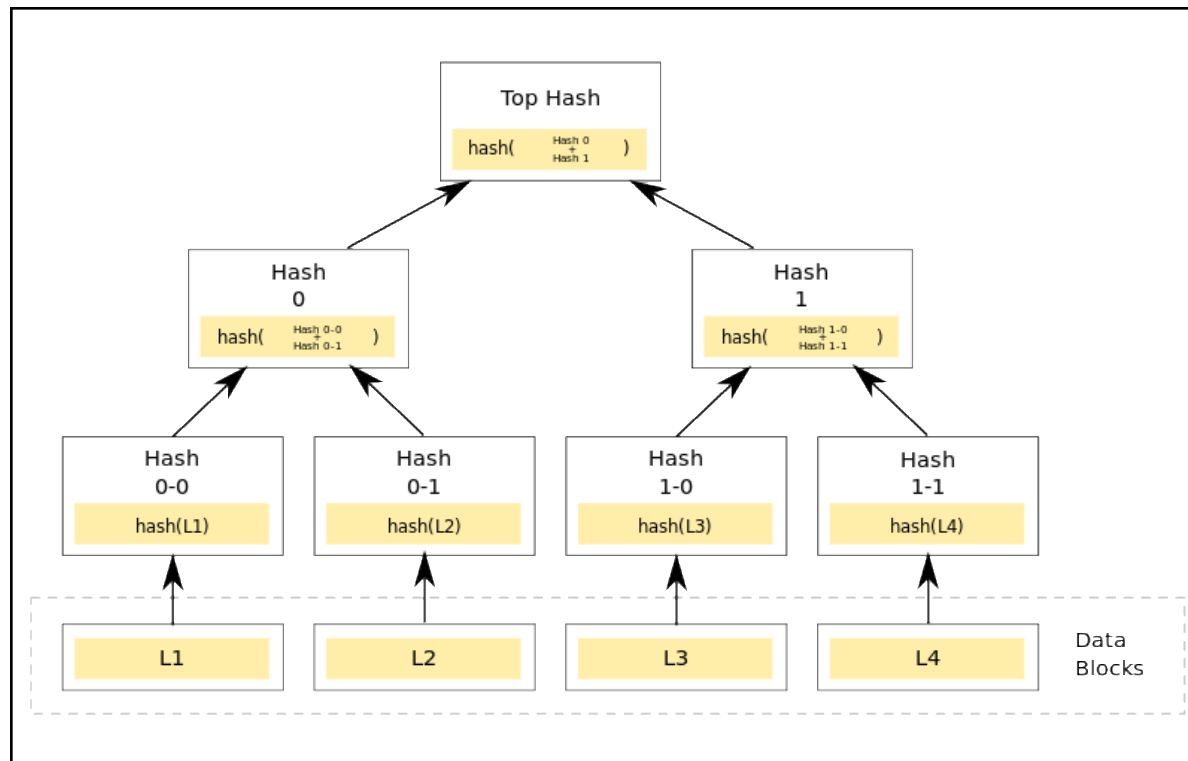
Hashing

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- Taking an input string of any length and giving out an output of a fixed length
- The same input will *ALWAYS* generate the same output
- The odds of two different inputs producing the same output are very, *very* low
- Hashing is one way

Merkle Tree

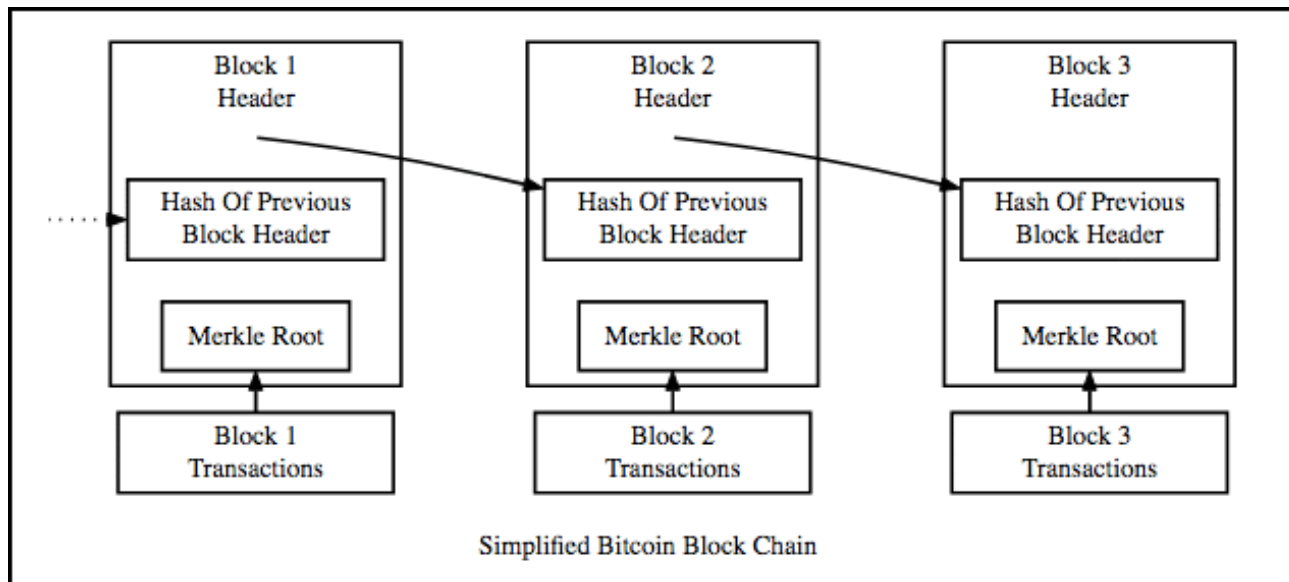
A tree of hashed data where each non-leaf node is the hash of the values of their child nodes



Chain of Blocks

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The blockchain is a linked list which contains data and a hash pointer which points to its previous block, hence creating the chain



Blockchain

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- Cryptographically secure
- Irreversible / Immutable*
- Decentralised / Distributed

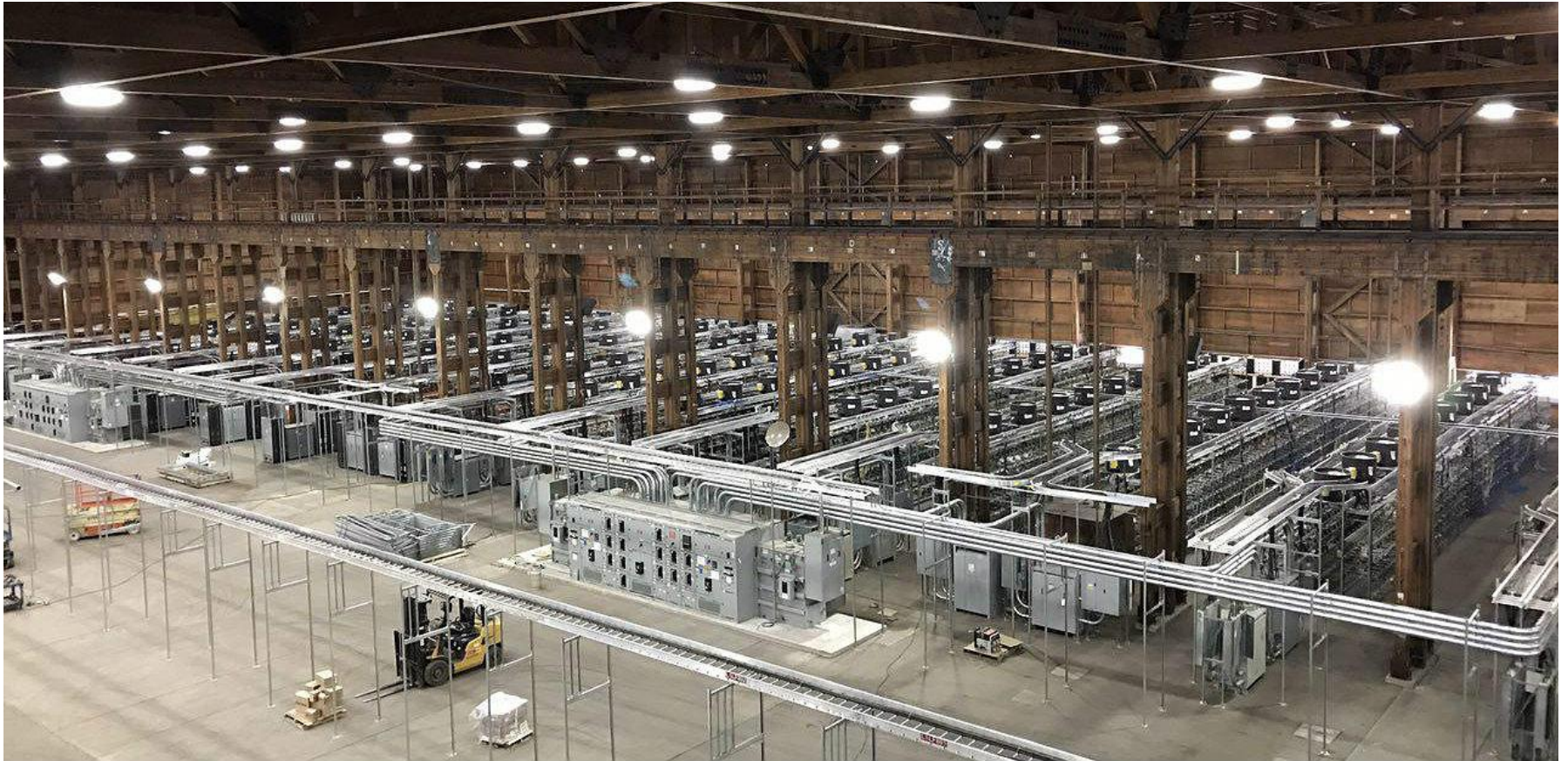
*Except for hard forks

Mining

- The network specifies difficulty – a target number
- Miners try to guess a hash that is less than that target by brute force
- If successful the miner is rewarded with coins & a new block is created
- The whole network will verify the block - consensus

Mining

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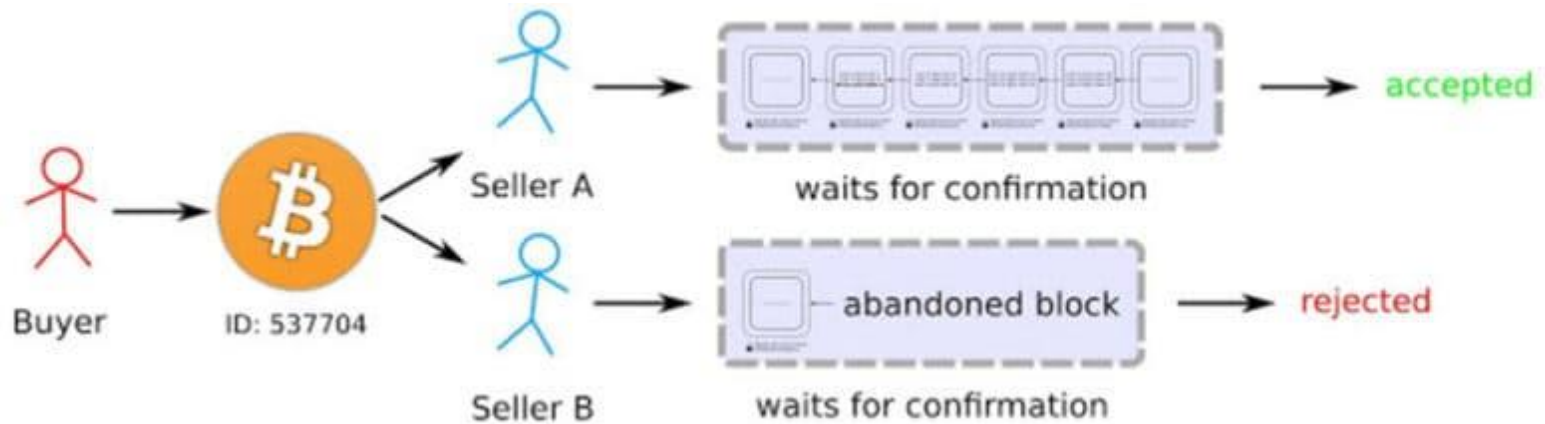
Transfer

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- Transactions sent from address to address
- Signed with a wallet's private key
- Signature can be verified by the network and so TX can be verified
- Balance checked against existing ledger to prevent over / double spending

Transfer

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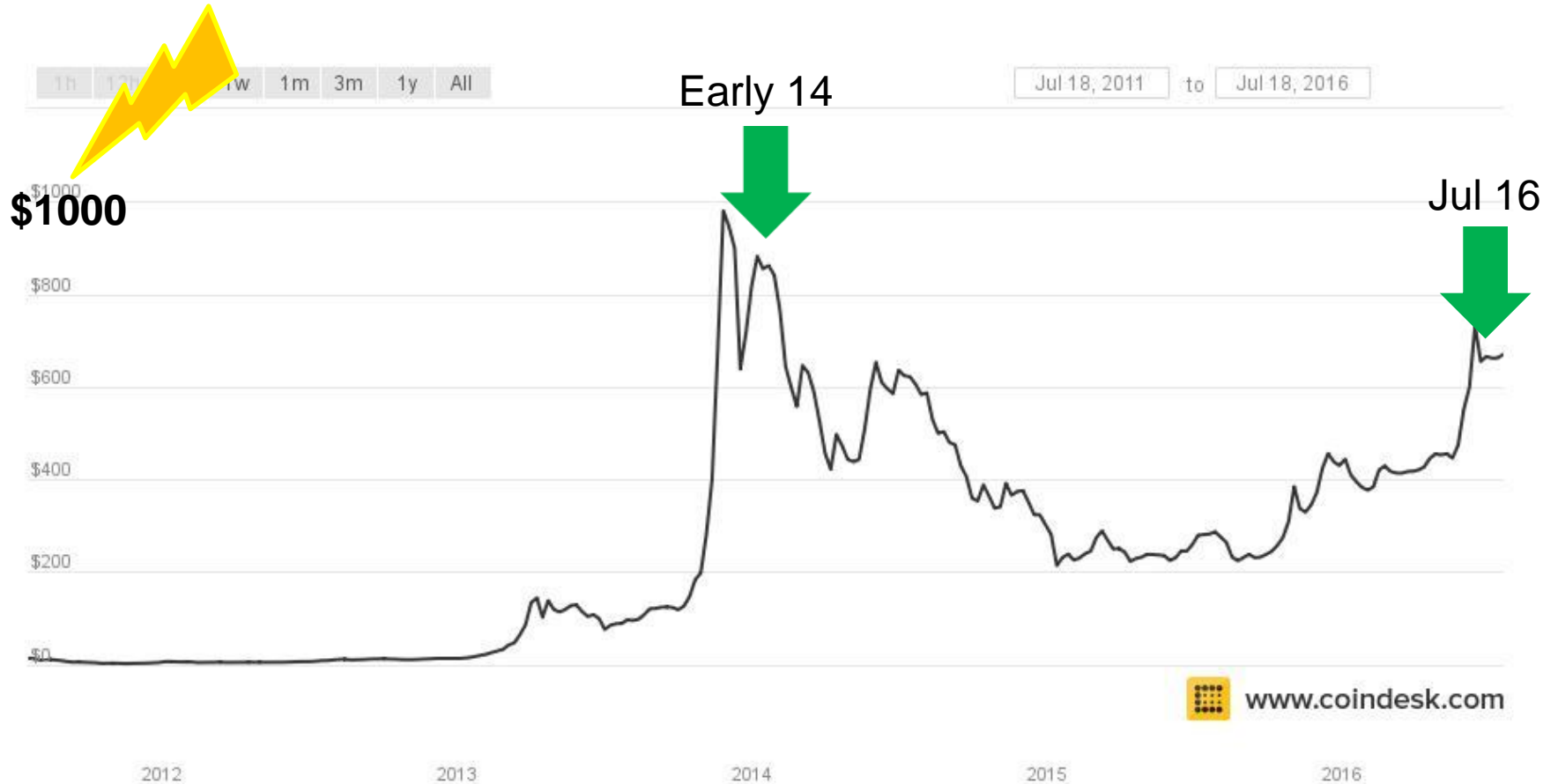
Trading

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- 198 crypto exchanges for a total 24h volume of ~\$4B over 6,847 trading pairs
- Centralised & decentralised exchanges exist
- The usual rules of an exchange apply

CoinDesk BTC values Jul 2011-Jul 2016

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CoinDesk BTC values Jun 2015-Jun 2018

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Legislation & regulation

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Legislation & regulation

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- What is a government trying to achieve?
 - Protect the public (consumers) through laws + regulation (enforcement systems & processes)
 - Taxation of business profits
 - Transparency and certainty
- What are you dealing with?

Legislation & regulation

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“Is it a bird? Is it a plane?”

Legislation & regulation

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- What are you dealing with?
 - Is it money, currency or a commodity?
 - Depends on the jurisdiction/political will
- How do you regulate?
 - Identify where risk, profit, action or opportunity arises
 - Regulate at relevant interface

Jersey's regime

- 2014 Income Tax policy published
- 2014 Trading Standards policy published
- 2016 changes to Proceeds of Crime Law to apply Money Laundering Order
 - NB Exemptions for low value exchanges (turnover under €150,000) and transactions (under €15,000)
- 2017-2018 JFSC warnings on Initial Coin Offerings (ICOs)

Other jurisdictions:

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Countries welcoming crypto/blockchain opportunities inc:

- Japan, Malta, Spain, Switzerland (FINMA)

Countries against or unclear inc:

- China, Russia

Challenges

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- Pace of change/future proofing
- Scalability
- Environmental concerns
- Insolvency, insurance, death

Blockchain

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Questions

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