

Blockchain in the real world: A demonstration

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Introduction

- Who we are
- An introduction to Bitcoin and Blockchain
- A Bitcoin transaction in practice
- From Bitcoin to permissioned blockchain systems
- Where to from here?

Background

- Founder of Aeguana – a boutique technology consultancy
- Co-founder of Bitstocks – FinTech digital currency start-up



What is Bitcoin?

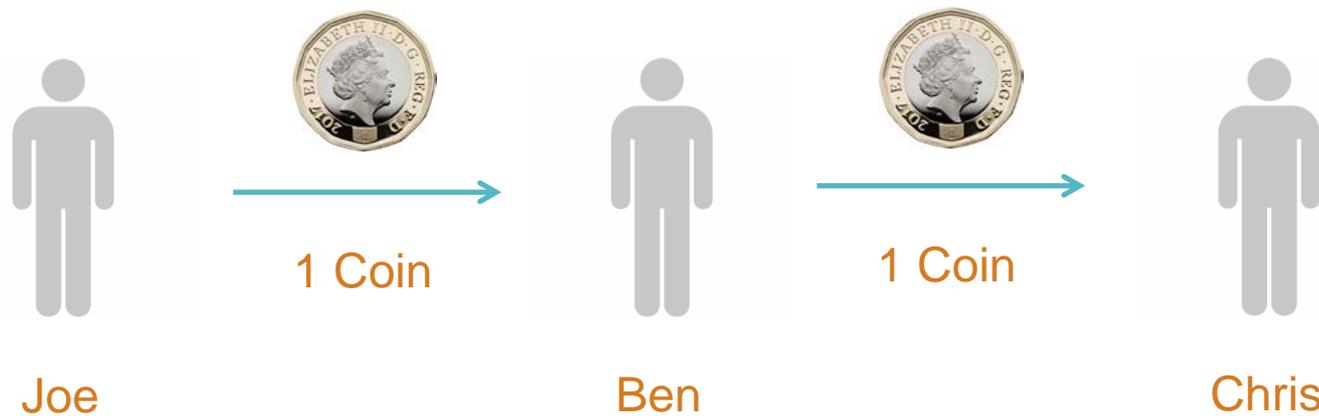
Bitcoin was the first and remains the most prominent blockchain implementation



- **A digital currency that can be used to transact like any other currency**
- **A global currency with no borders**
- **Independent of all governments**
- **Independent of all banks and financial institutions**

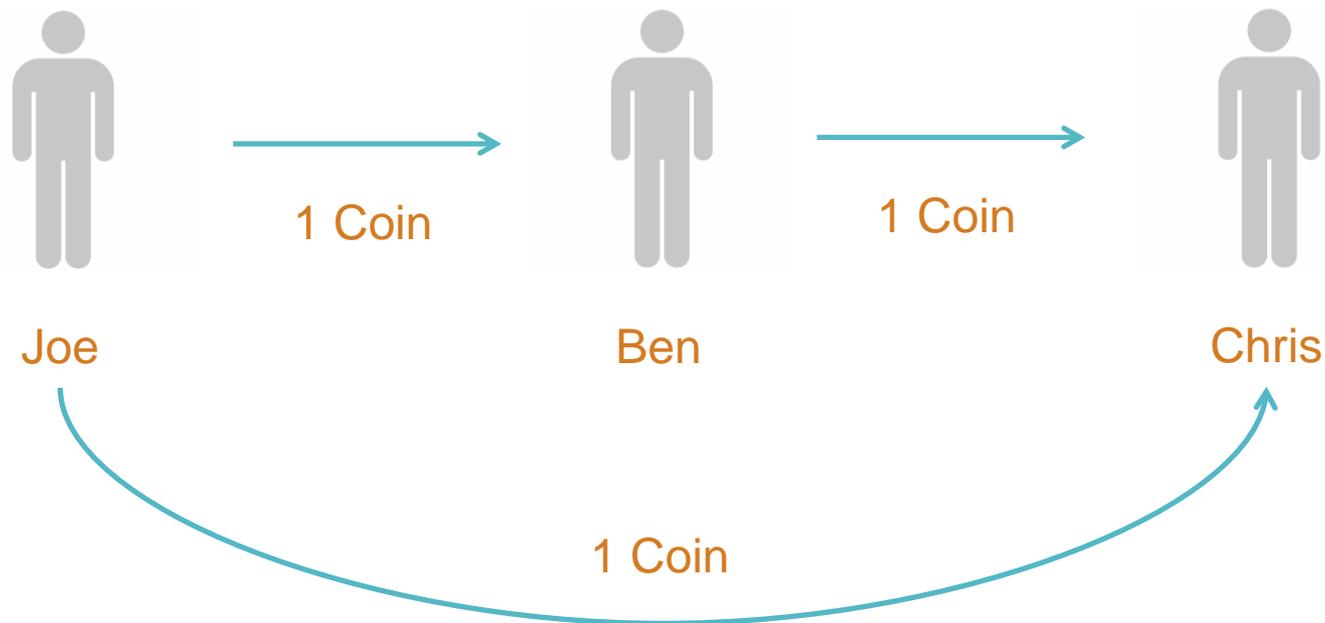
Why is creating a digital currency hard?

Bitcoin was the first technology to solve 'double spending'



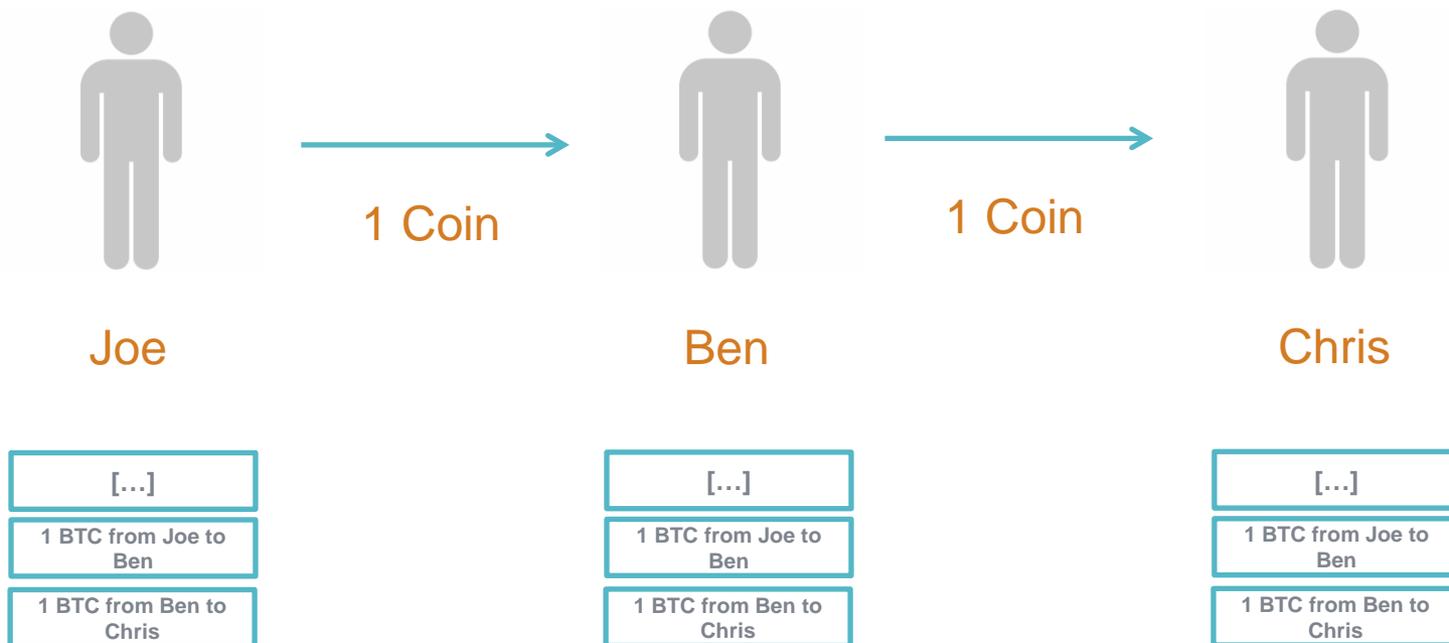
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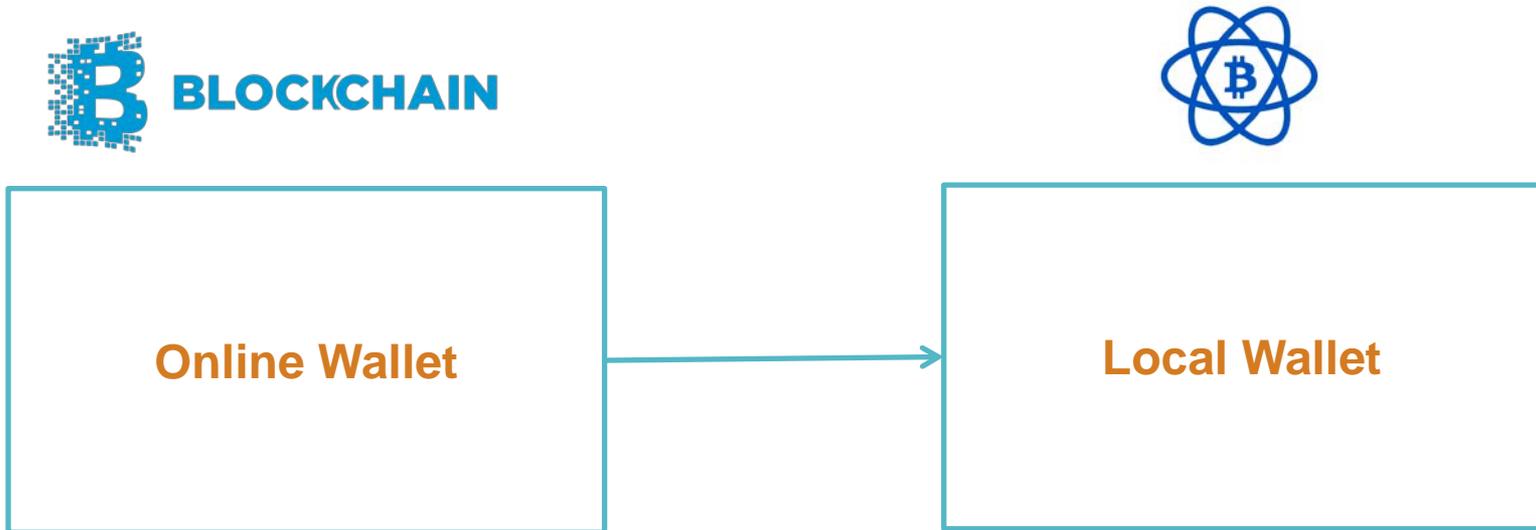
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Let's send some coins.

Demo



Bitcoin

Solves some very fundamental challenges

- Enables anyone to participate in the financial system. You can create a wallet and start accepting payments in seconds.
- Enables value to be transferred across borders for negligible fees, and almost instantaneously.
- Protects your wealth from local economic conditions such as downturns, hyperinflation and political turmoil (though at the cost of exposure to Bitcoin's own volatility)



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Venezuela

Growing number of Venezuelans trade bolivars for bitcoins to buy necessities

Bitcoin users still represent a tiny minority, but some believe that the currency will become more popular in Venezuela as economic uncertainty escalates



This article is 5 months old

932 230

Kamilia Lahrichi in Caracas

Friday 16 December 2016 11.15 GMT



People make a line outside a bank in Caracas, Venezuela on Thursday. Photograph: Miguel Gutierrez/EPA

Amid growing economic chaos, and the highest inflation rate in the world, some Venezuelans are swapping bolivars for [bitcoins](#) in order to buy basic necessities or pay their employees

The digital currency is free from central bank or government controls, and users in [Venezuela](#) see it as a safe alternative in an economy where the government has enforced strict foreign exchange controls, and inflation is running at an estimated 500%.

Most popular



Irish beach washed away 33 years ago reappears overnight after freak tide



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Hartlepool: angry voters make fertile ground for Ukip



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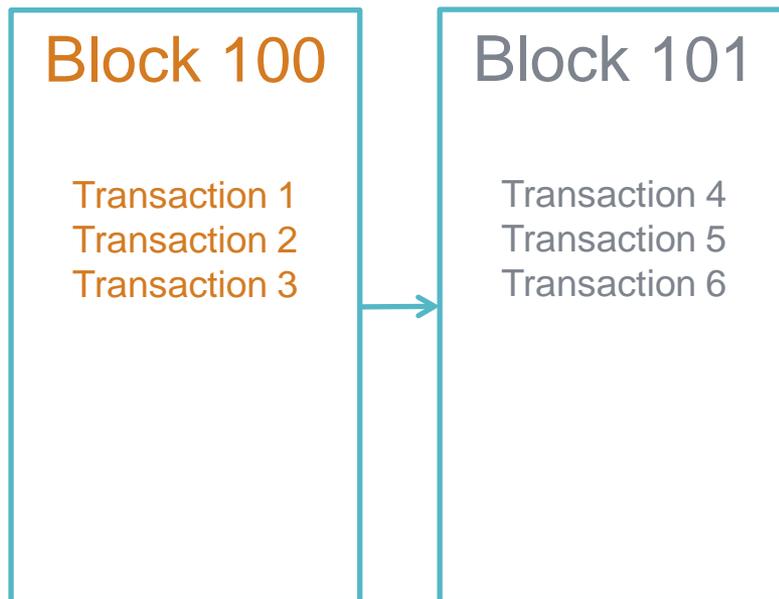


Boy, 17, stabbed to death in London

Bitcoin vs blockchain

What are the differences?

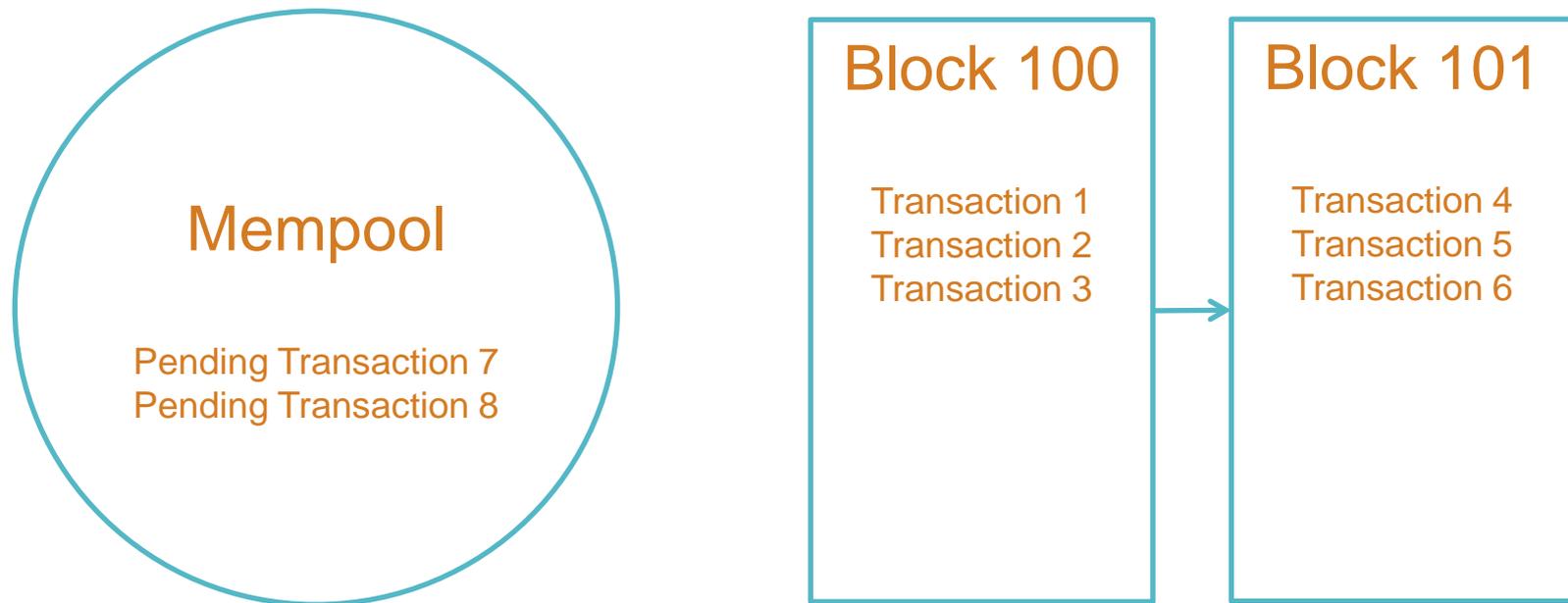
- Blockchain is the underlying technology that enables Bitcoin to exist



Bitcoin vs blockchain

What are the differences?

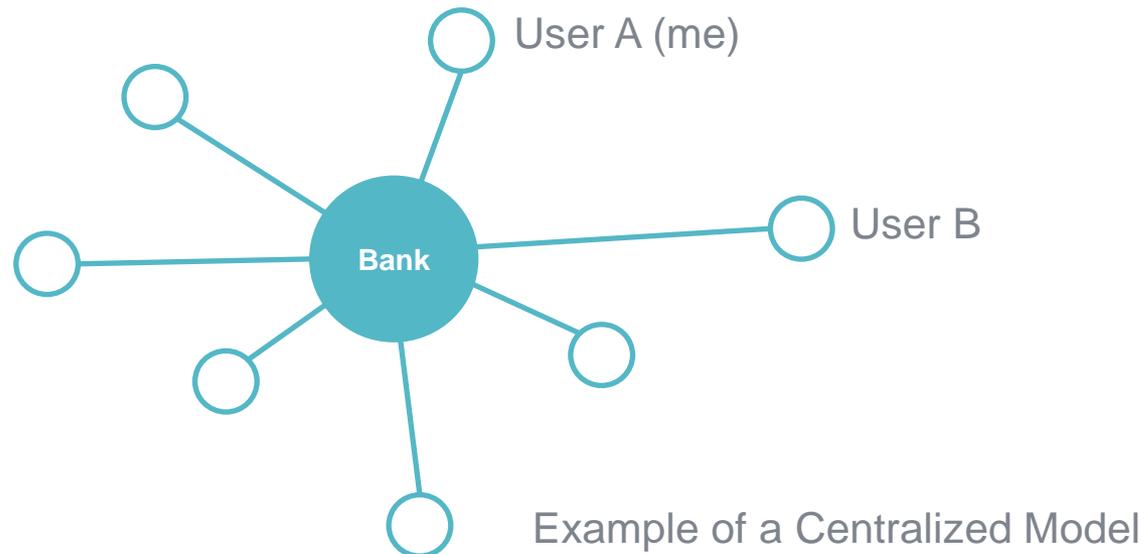
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Blockchain

Why is it special?

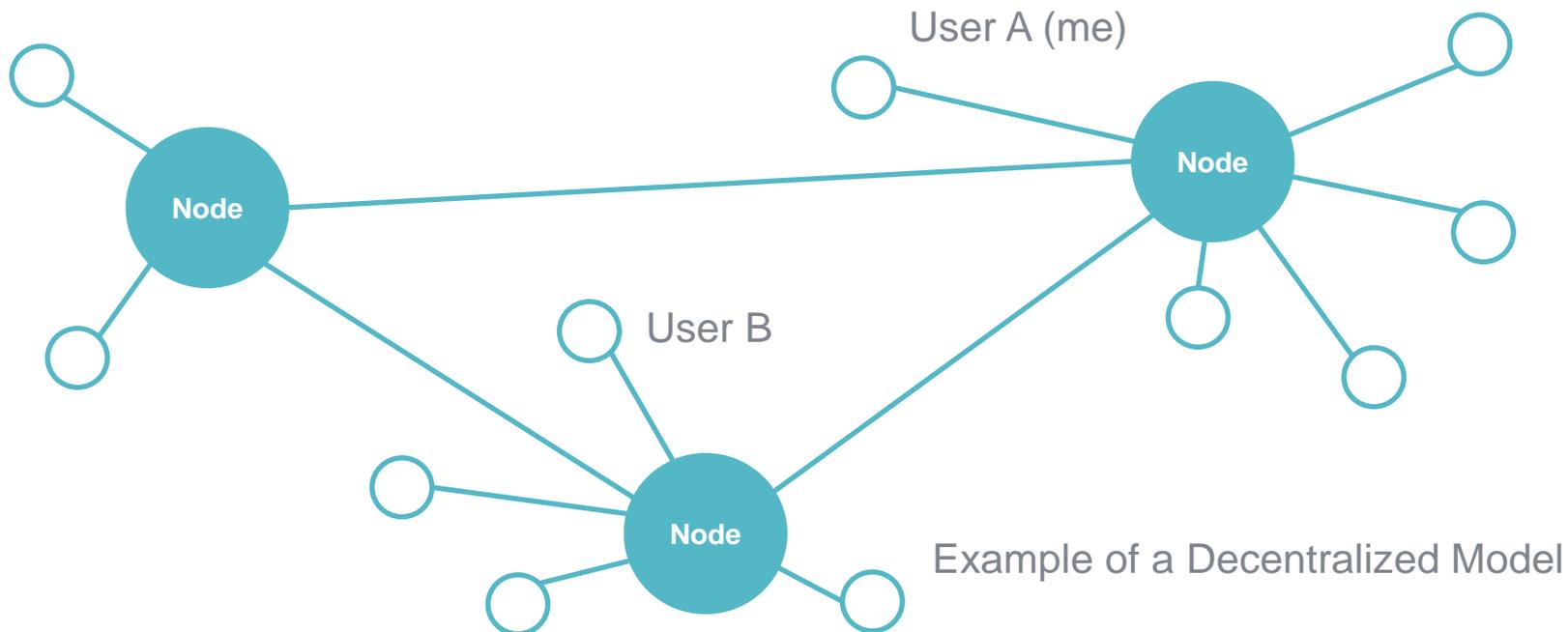
- The blockchain is unique because it enables decentralized systems and governance models to be created



Blockchain

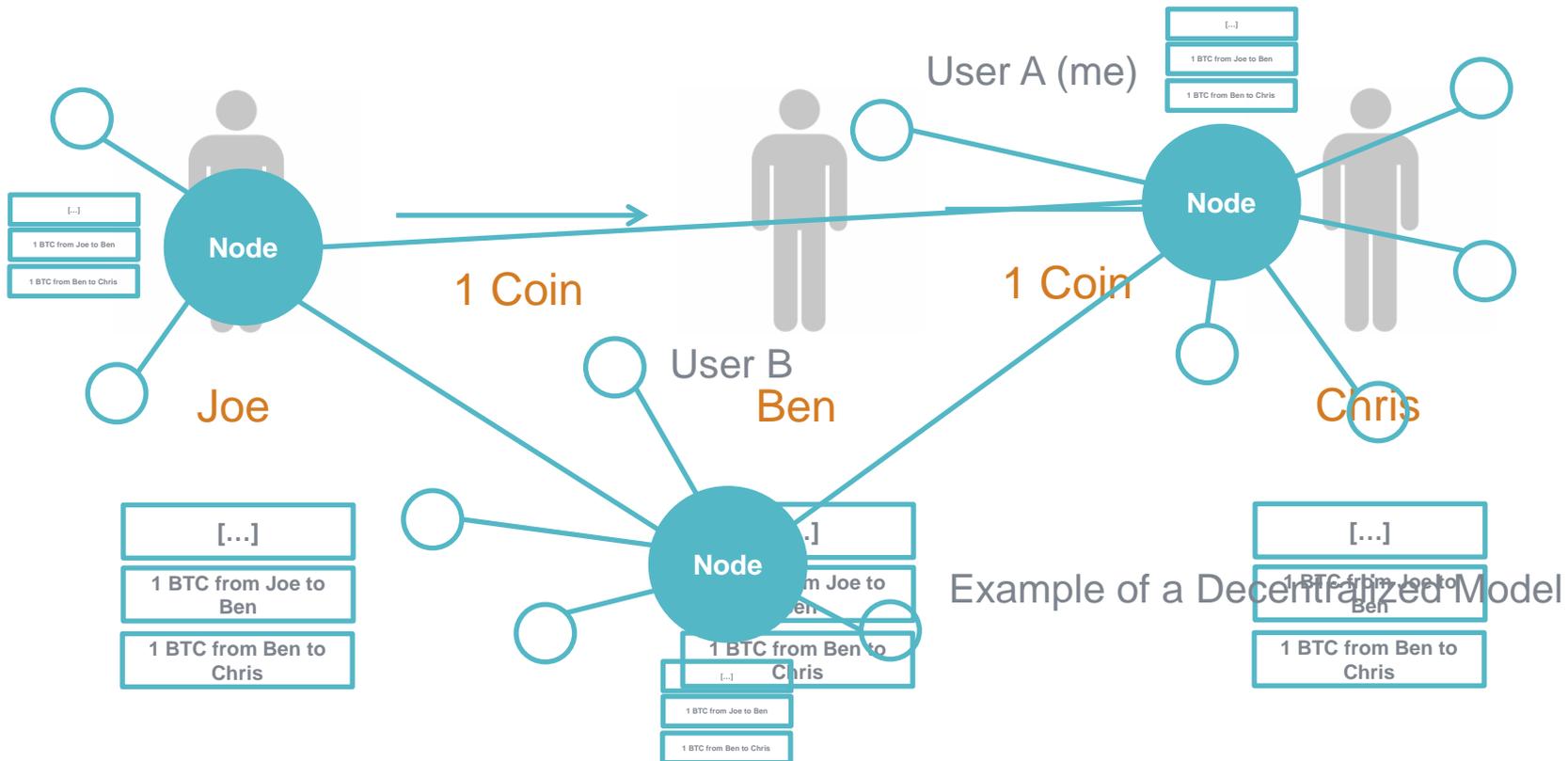
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How does Bitcoin prevent double spending?

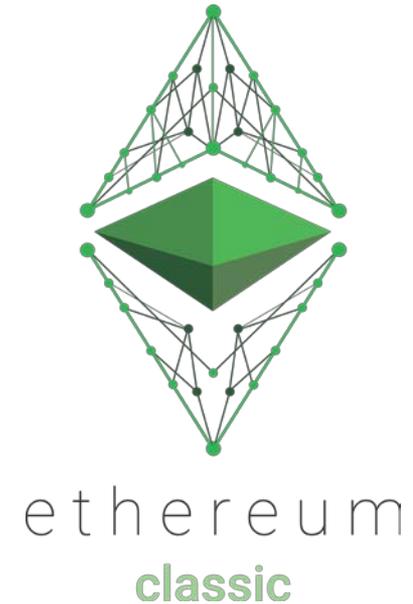
Each and every 'node' acts as a full, automated ledger



Smart Contracts

What exactly are they?

- The most common platform is known as Ethereum, which is another blockchain (similar to bitcoin)
- The underlying blockchain stores the 'logic' of the contract and is immutable



Smart Contracts

A real world example for a Decentralised Autonomous Organisation



Online Chocolate Retailer

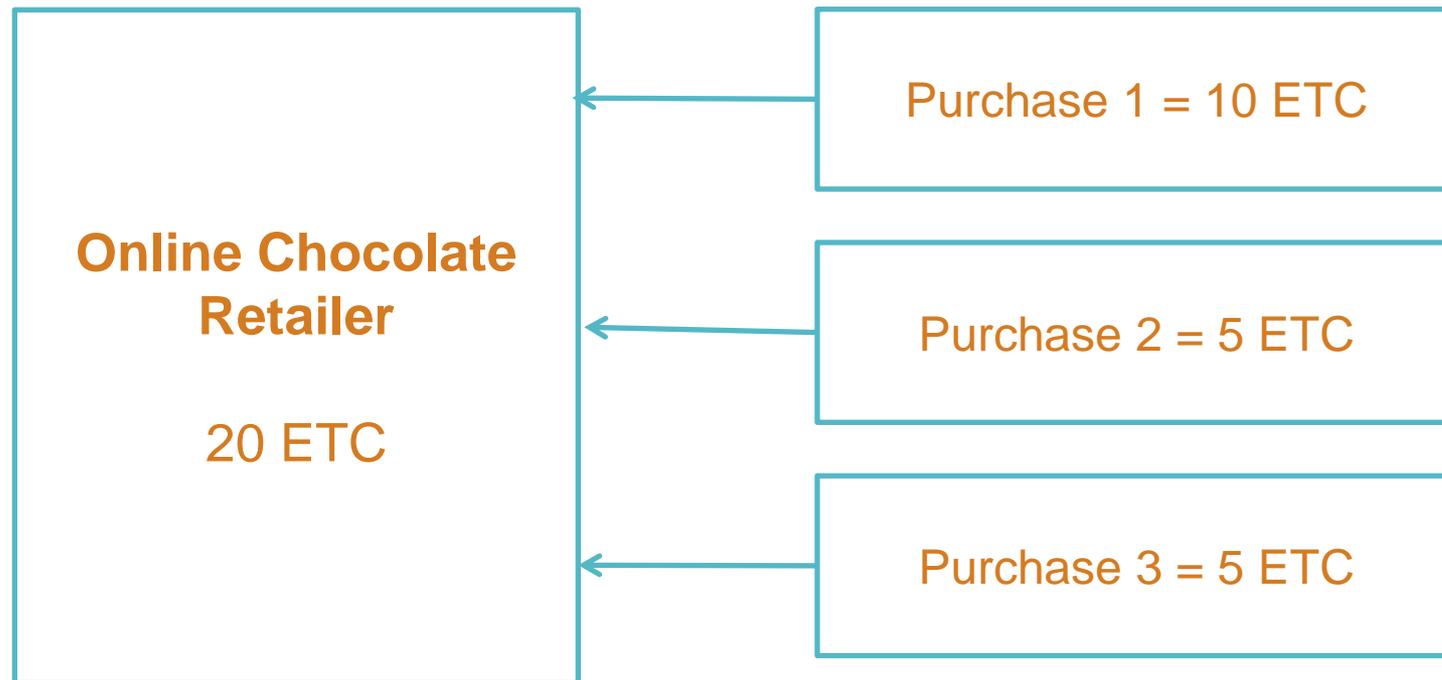
Smart Contracts

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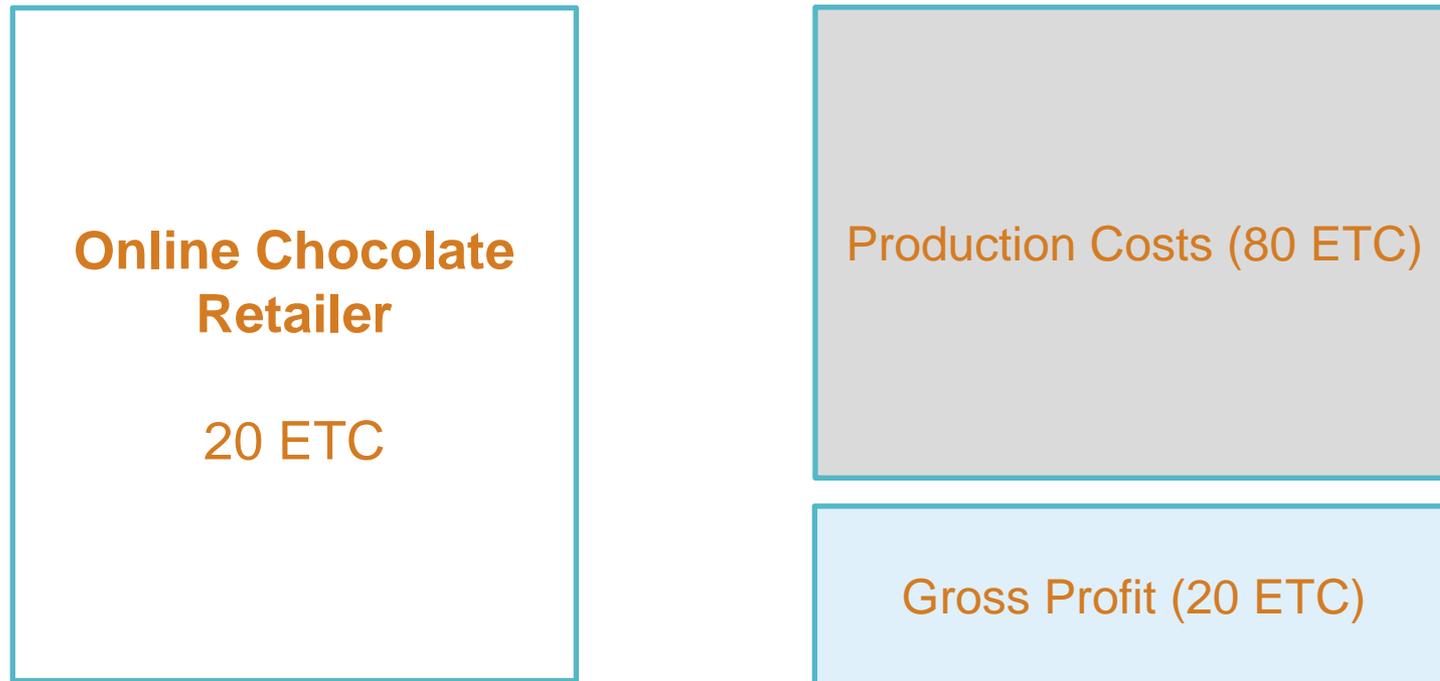
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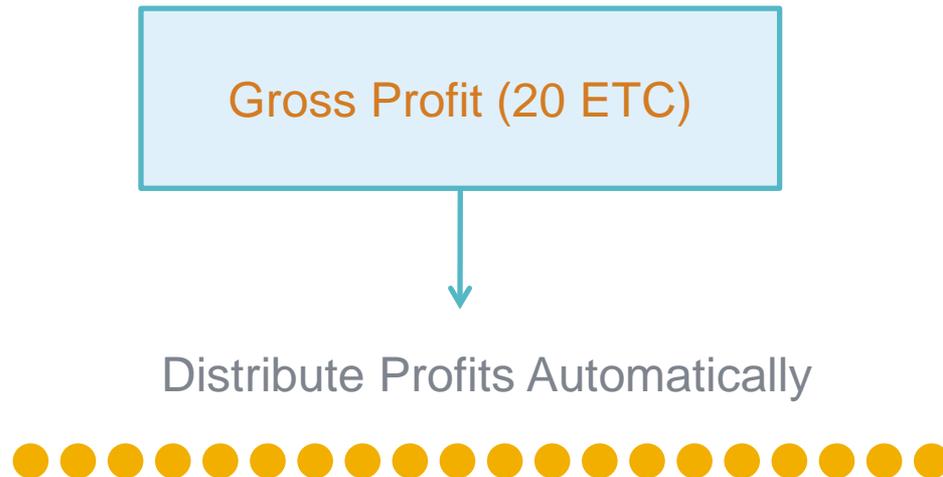
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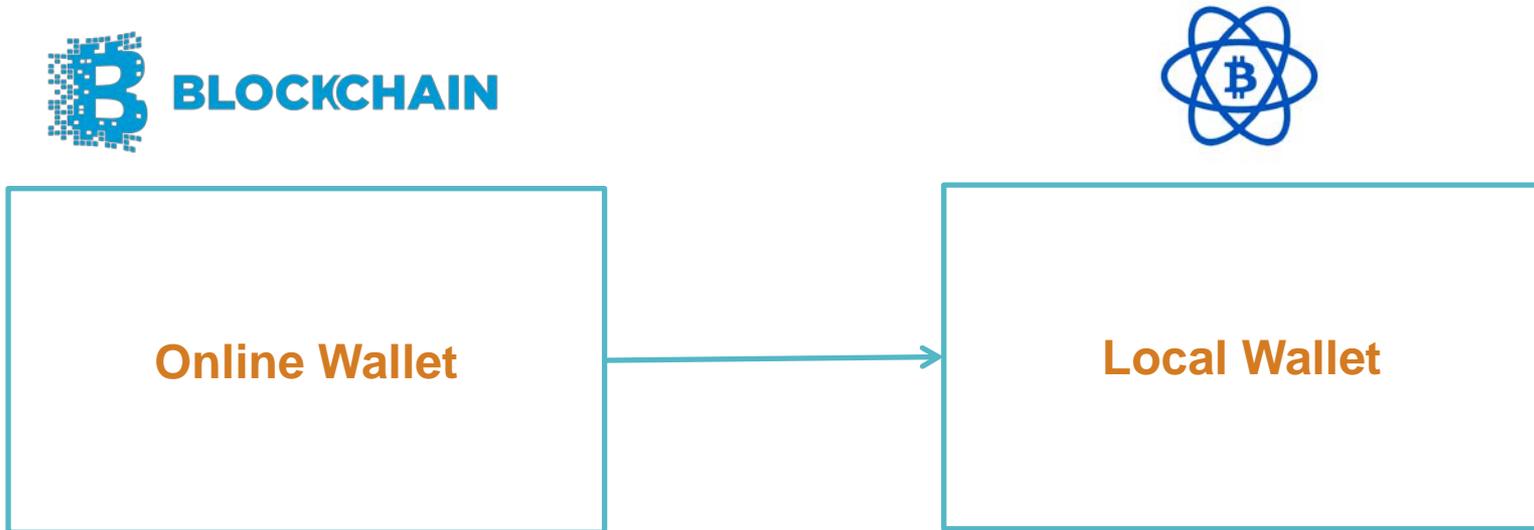
Smart Contracts

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Let's check up on our coins

Demo



From Bitcoin to permissioned “blockchain” systems

- Big business is embracing blockchain-style solutions, but worries about adopting an open, “permissionless” system
- Development of “enterprise grade” solutions has therefore been the preferred route
- Expense and stunning complexity has slowed development
- Despite the difficulty, permissioned systems offer significant benefits:
 - Privacy and security
 - Malleability
 - Contractual certainty
 - Scalability
- Systems such as R3CEV’s Corda solution offer scale, but no hard and fast deployment as yet

From Bitcoin to permissioned “blockchain” systems

- Legal issues relating to permissioned systems offer challenges, but not on the scale of enterprise use of a permissionless system
- Contractual web of complexity
- AML/KYC
- Reliance on actors within the system – is contractual comfort enough?
- IP ownership amongst participants
- Data protection concerns
- Regulatory considerations – is regulatory oversight really a benefit?

Where to from here?

- The permissioned system is the only realistic way forward
- Financial services offer the most obvious use cases and will likely be the leaders in the field (with some significant caveats)
- Expect to see (or not!) high profile failures / “pivots”
- Consolidation of the many blockchain consortia must be on the cards
- Obtaining regulatory approval and participation (as necessary) will be the holy grail – the FCA is actively seeking responses to its blockchain consultation before 17 July

Key Contacts



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