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What is Ethereum and how does it work?

The birth of Ethereum

2009

Bitcoin was launched

2012

Ethereum idea was formed by **Vitalik Buterin**

2013

Ethereum **Whitepaper**

Announcement of **Ethereum Project**

2014

Ethereum Foundation was created.

Pre-sale of **60 million** digital tokens **(Ethers)**

2015

Ethereum Project launch

2016

DAO attack

Ethereum splits

Ethereum

Ethereum Classic

Gavin Wood (Director)

Vitalik Buterin (Inventor, Founder)

Jeffrey Wilcke (Director)

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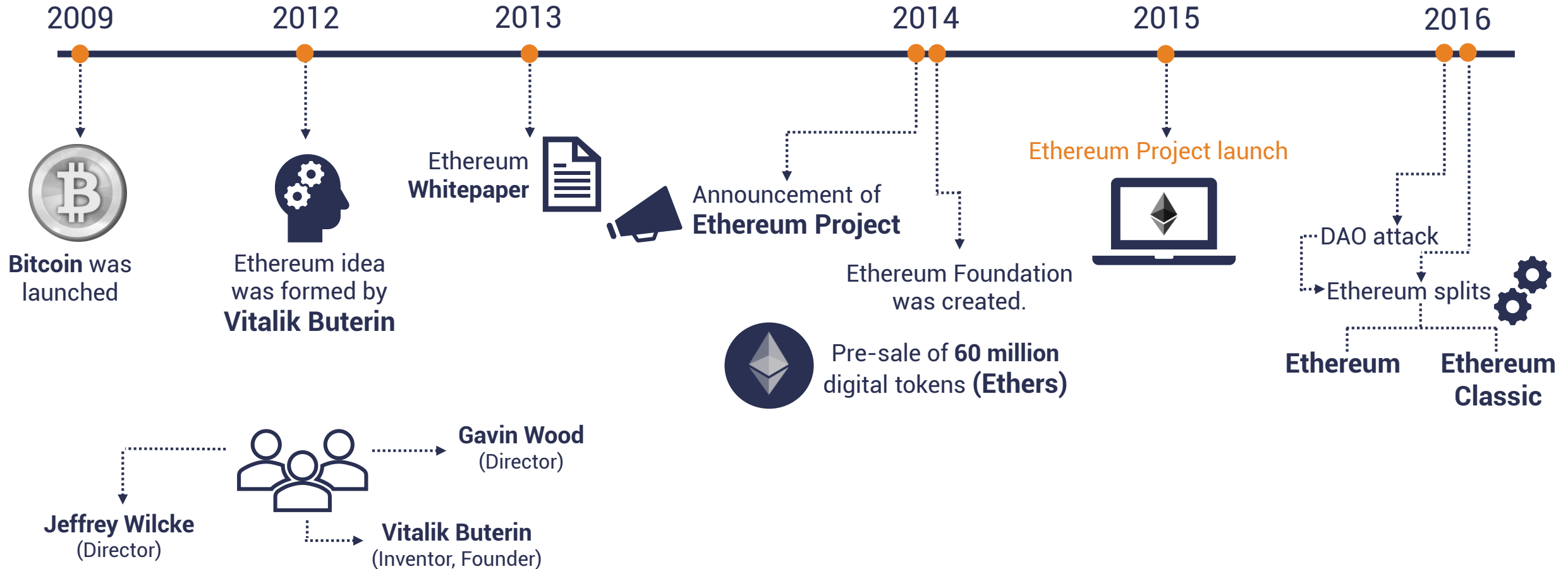
What is Ethereum?

Ethereum is an open software platform based on blockchain technology that enables anyone to build and deploy decentralised applications (dapps).
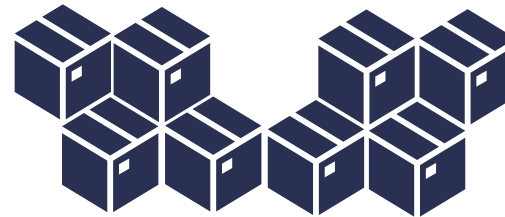
What is Dapp?

Example

Decentralised application (Dapp)

is a new type of software program designed to exist on the internet in a way that is not controlled by any single entity.

Bitcoin's Blockchain

→ Public ledger showing all Bitcoin transactions

✓ Online based
✓ Decentralised
✓ Not controlled by any single entity

Blockchain is a distributed database that is used to maintain a continuously growing list of records called blocks.
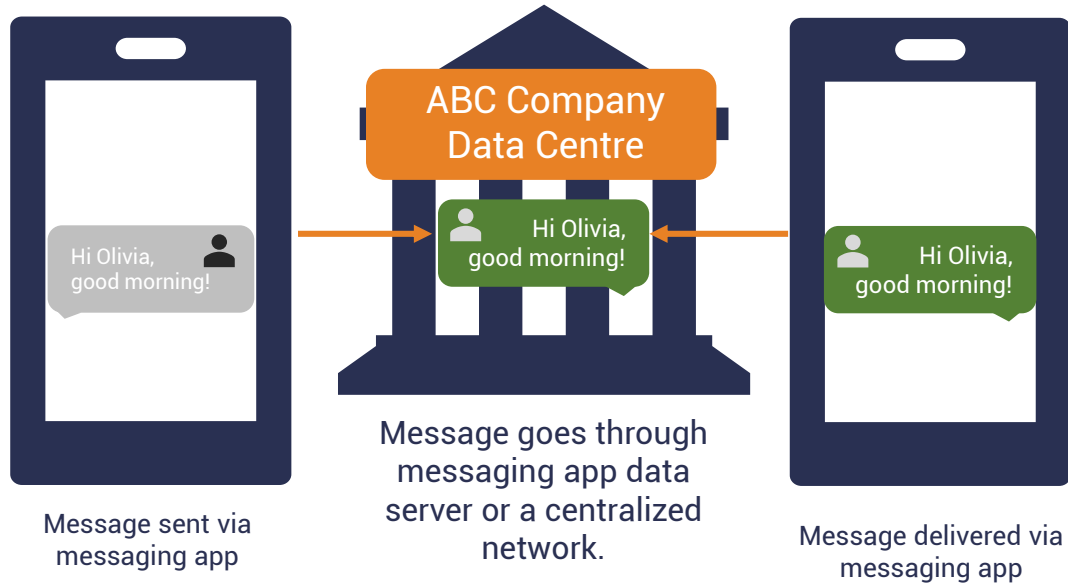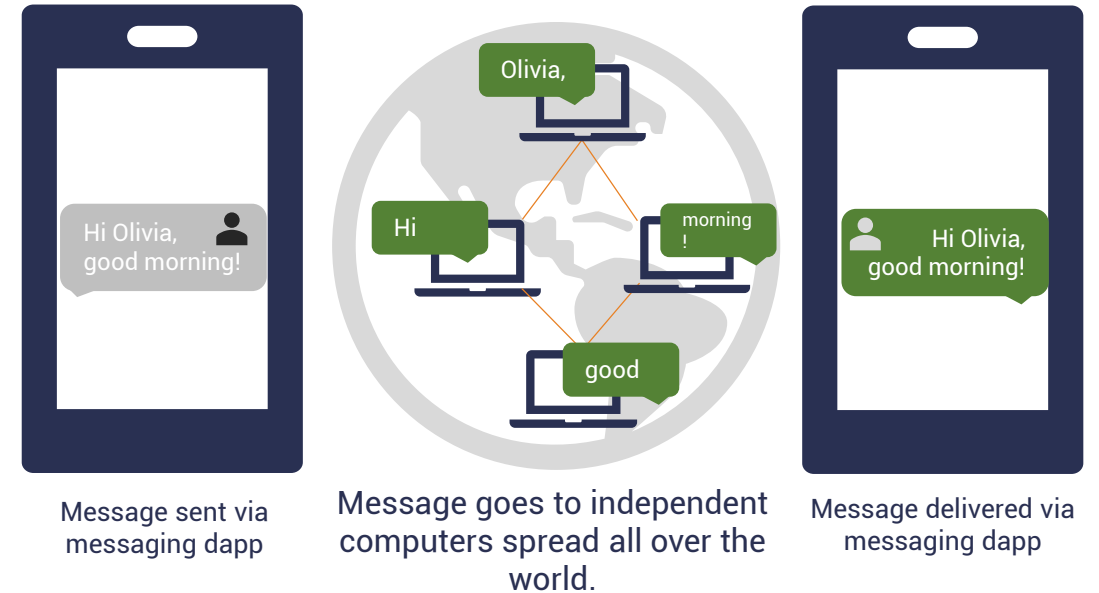
= Shared record of the entire transaction history

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Centralised vs. Decentralised Applications

ABC Company Data Centre

Hi Olivia, good morning!

Hi Olivia, good morning!

Hi Olivia, good morning!

Message goes through messaging app data server or a centralized network.

Message sent via messaging app

Message delivered via messaging app

Hi Olivia, good morning!

Olivia,

Hi

morning!

good

Hi Olivia, good morning!

Message sent via messaging dapp

Message goes to independent computers spread all over the world.
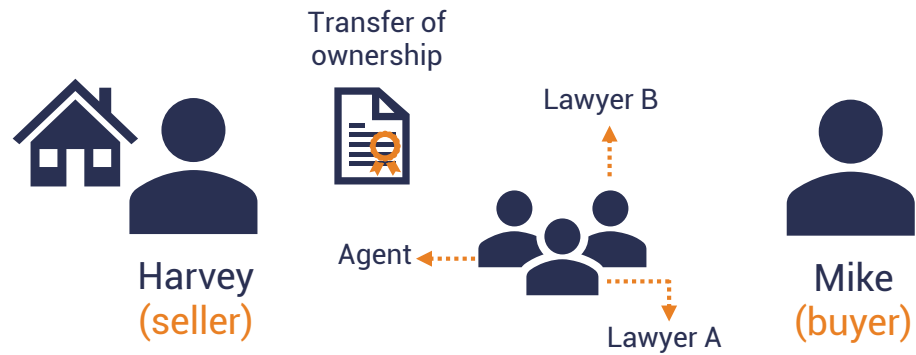
Message delivered via messaging dapp

The message that has been sent via dapp goes to independent computers (miners) spread all over the world. To connect to the network, they need to download a program called Mist. No one can access the full message. This is an example of a decentralised network.

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What is Ethereum?

Ethereum is powered by the Ethereum Virtual Machine which allows smart contracts to run on a decentralised blockchain. These contracts self-execute only when certain conditions are met.
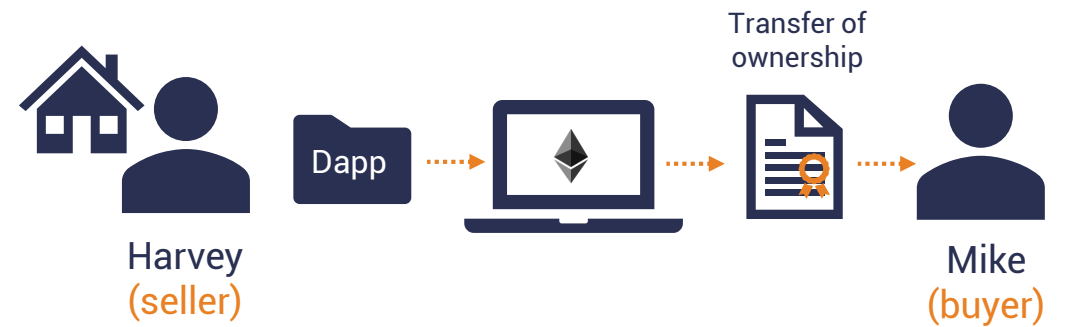
Normal contract	Smart contract

Mike wants to buy a house

Transfer of ownership

Lawyer B

Agent

Lawyer A

Harvey (seller)

Mike (buyer)

Mike wants to buy a house

Transfer of ownership

Dapp

Harvey (seller)

Mike (buyer)

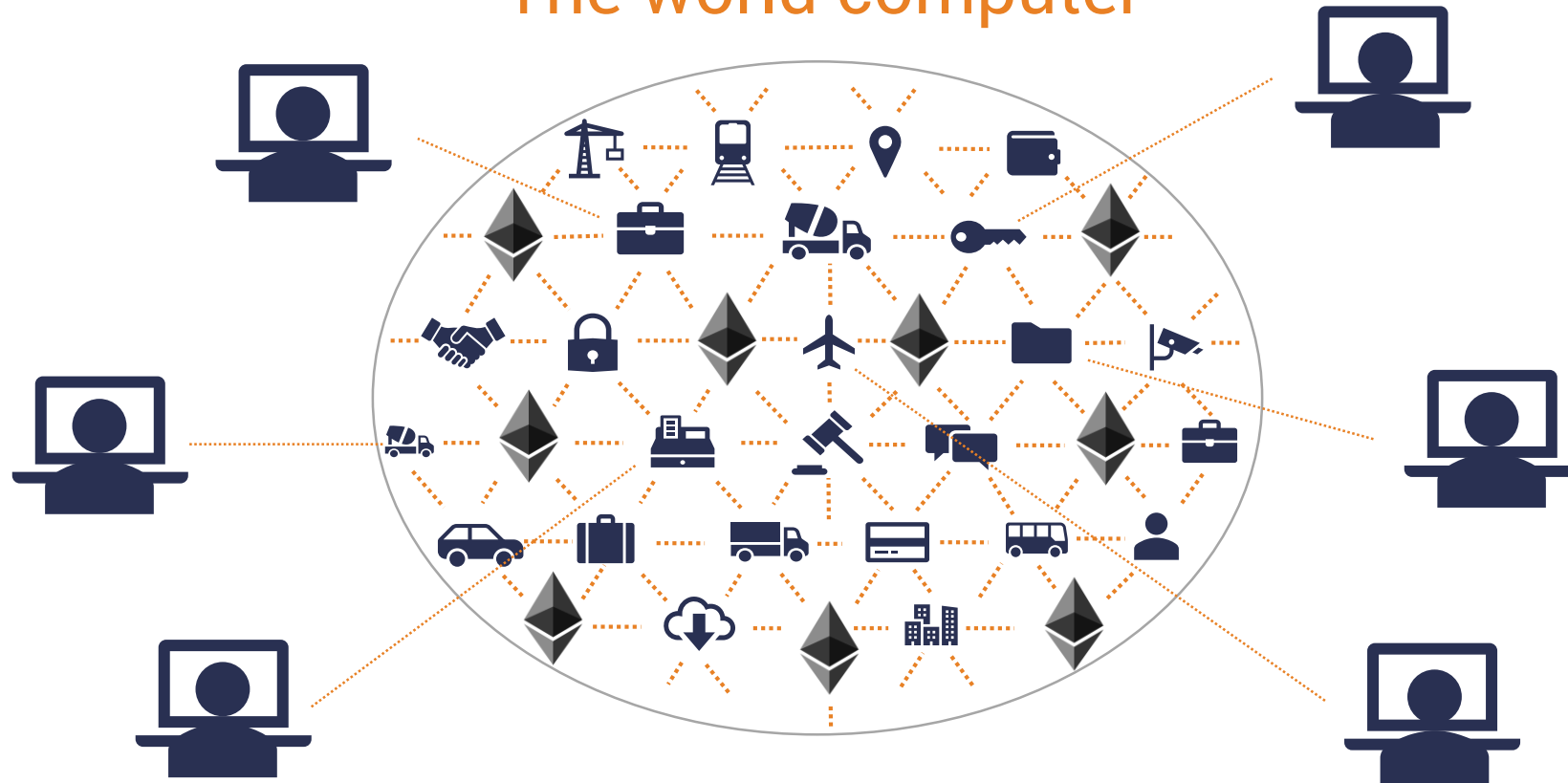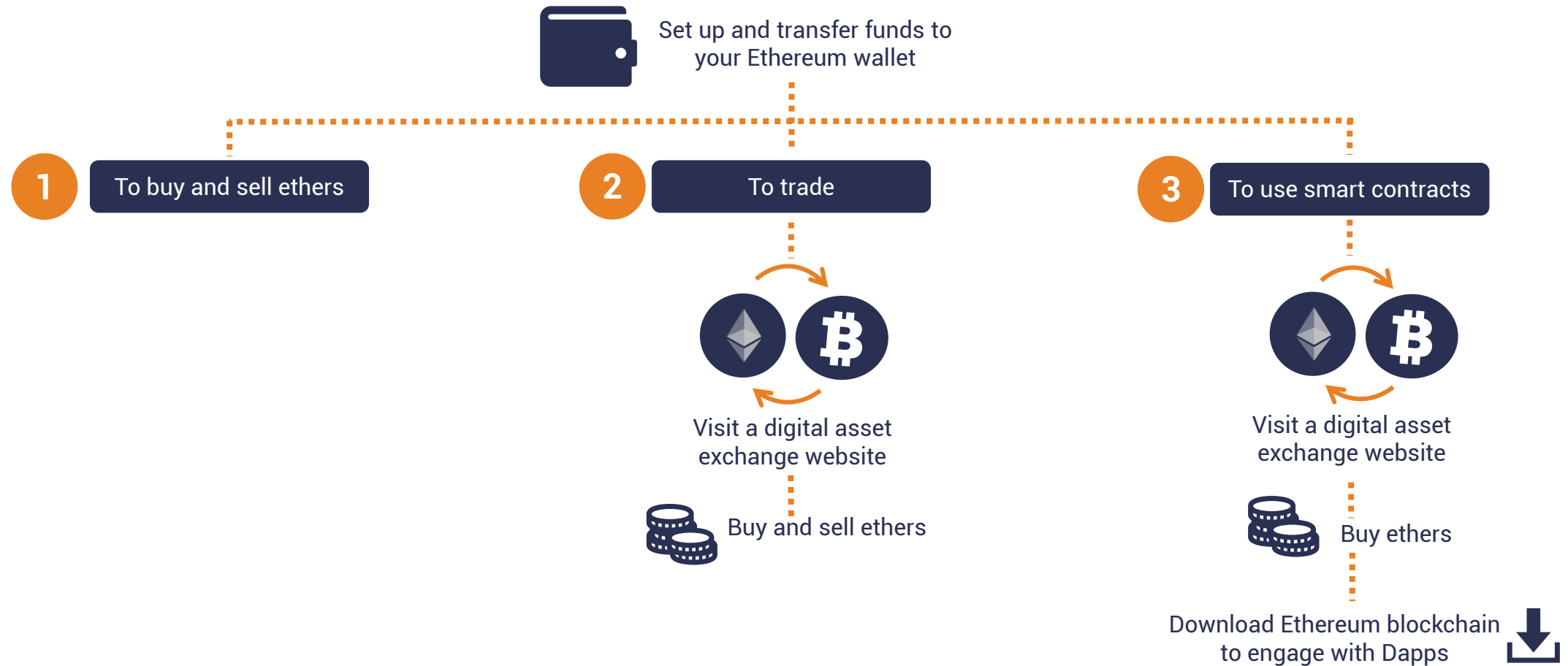Binary.com

What is Ethereum?

"The world computer"

Ethereum provides a universal, programmable blockchain which anyone can use.

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How to get started with Ethereum

Set up and transfer funds to your Ethereum wallet

1 To buy and sell ethers

2 To trade

3 To use smart contracts

Visit a digital asset exchange website

Buy and sell ethers

Visit a digital asset exchange website

Buy ethers

Download Ethereum blockchain to engage with Dapps

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How does it work?

Pays "**ether**"

Ethereum blockchain

Pays "**ether**"

Miners verify the transaction

Dapp

Developer creates a
decentralised application
on Ethereum blockchain

Client uses application

Miners compete for their block to
be added to the blockchain by
solving a **mathematical problem**.

New block is added to the
blockchain. Winning miner is
rewarded with miner fee.

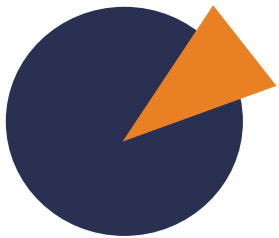Miners group the
transactions together to
form a **block**.

Ether is Ethereum's digital currency which fuels
the Ethereum platform

Miners are people who help secure the Ethereum network and
verify all transactions that take place in the blockchain.

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How are ethers created?

2014 pre-sale of 60 million ethers

20%
Development fund

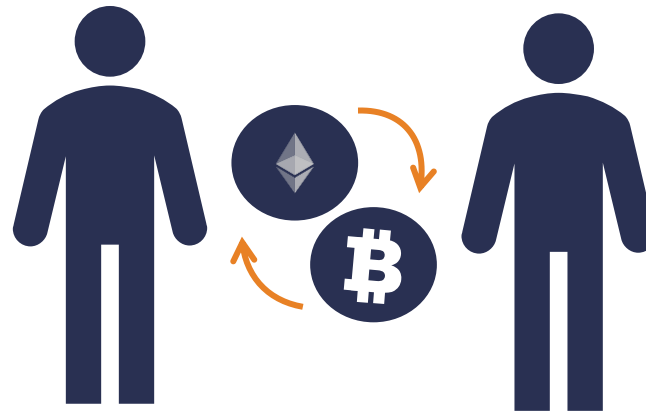**80%**
Ethereum Foundation contributors

5 ethers
As mining fee
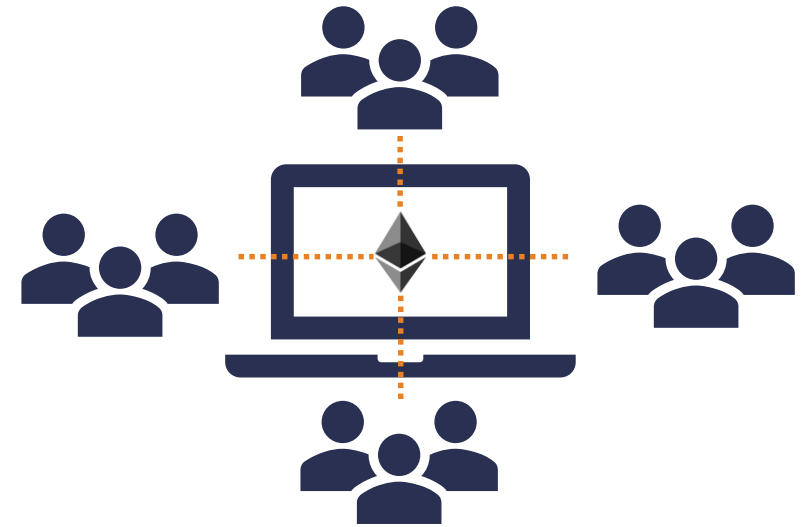every 15-17 seconds

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Who uses ether?

Developers who intend to build decentralised applications to run on the Ethereum blockchain

Traders and investors

Users who would like to access and interact with smart contracts on the Ethereum blockchain

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Why use Ethereum?

Autonomy
Eliminates third party

Transparency
Documents are encrypted on a public ledger
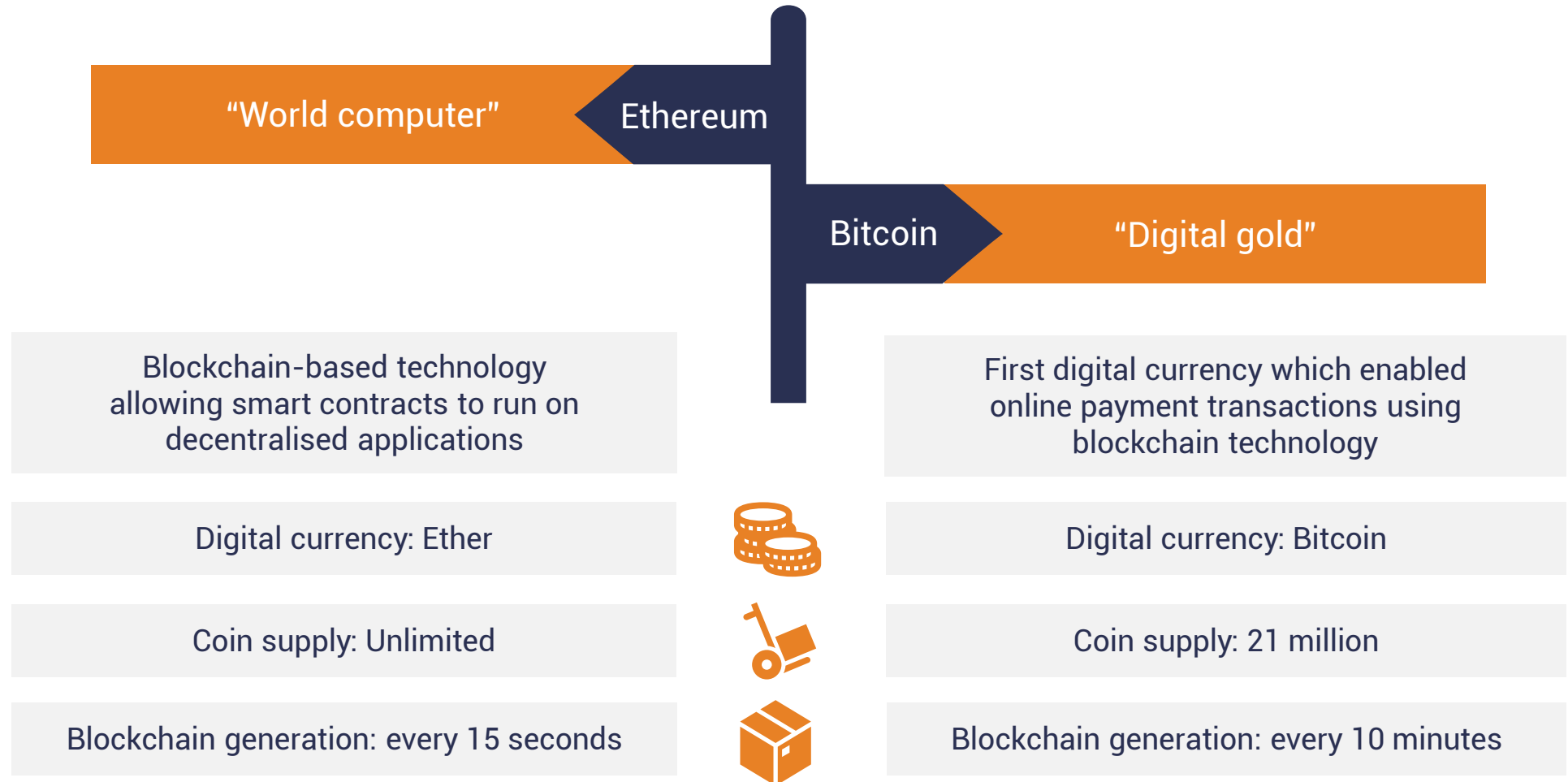
Backup
Documents are duplicated many times over

Savings
No intermediary costs

Accuracy
Avoid errors caused by manual work

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Ethereum vs. Bitcoin

"World computer" ← Ethereum

Bitcoin → "Digital gold"

Ethereum	Bitcoin
Blockchain-based technology allowing smart contracts to run on decentralised applications	First digital currency which enabled online payment transactions using blockchain technology
Digital currency: Ether	Digital currency: Bitcoin
Coin supply: Unlimited	Coin supply: 21 million
Blockchain generation: every 15 seconds	Blockchain generation: every 10 minutes

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Applications built on Ethereum platform

augur

With Augur, anyone in the world can easily create a prediction market by asking a question.

Golem allows users to rent out their computing power or develop and sell their softwares.

4G CAPITAL

4G Captial provides access to credit for small business growth in Africa.

Ethlance

Ethlance is the first job market platform built on Ethereum blockchain.

AA

Ampliative Art allows artists to create their own galleries and exhibit their work for free.

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Companies are starting to accept ethers

SHAPE SHIFT

Purse

Shopawl

Binary.com

GOCOIN
Payment Gateway

WOO COMMERCE

CoinPayments

Binary.com

To learn more
about Ethereum,
visit
academy.binary.com

Binary.com
Academy

Binary.com

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