

Blockchain Transport

All aboard the blocktrain.

Transport Networks

Go-Ahead

STAGECOACH GROUP
greener smarter travel

renfe



abellio

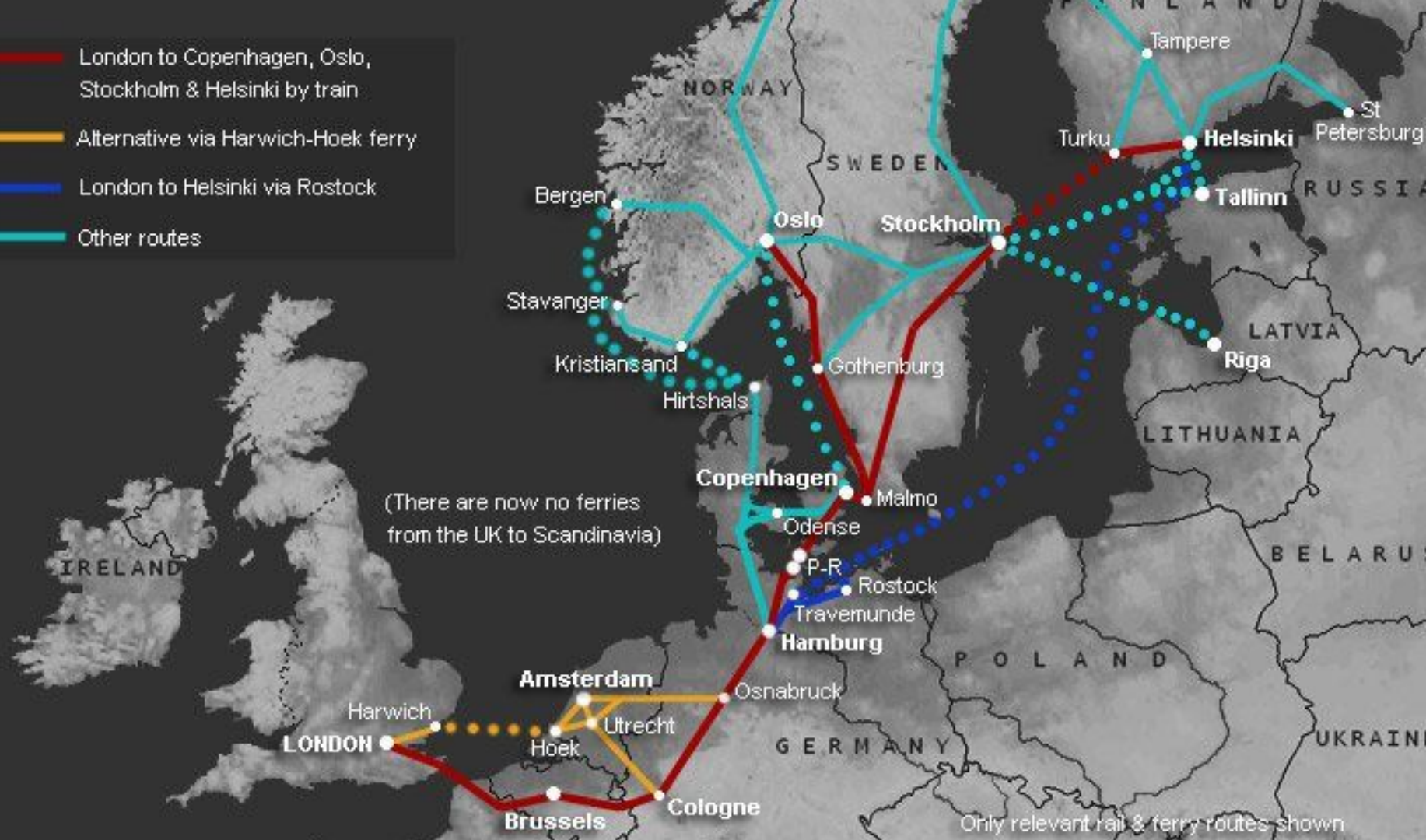
national express



connexxion



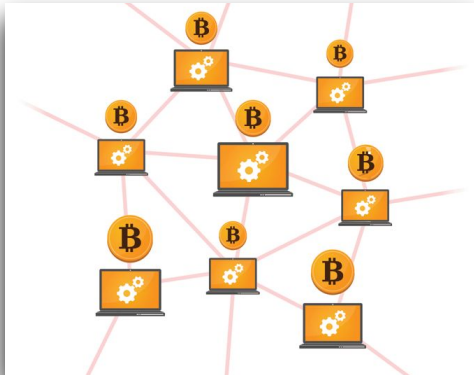
- London to Copenhagen, Oslo, Stockholm & Helsinki by train
- Alternative via Harwich-Hoek ferry
- London to Helsinki via Rostock
- Other routes





Tickets please...

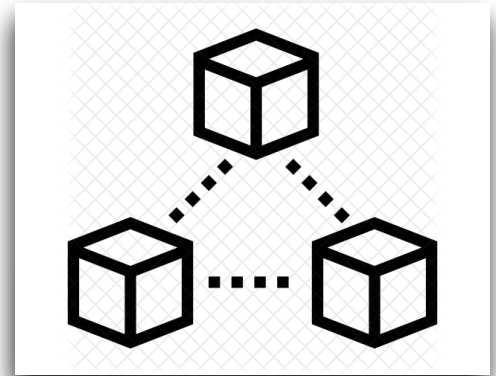
Blockchain Technology



Bitcoin introduced as
peer-to-peer currency

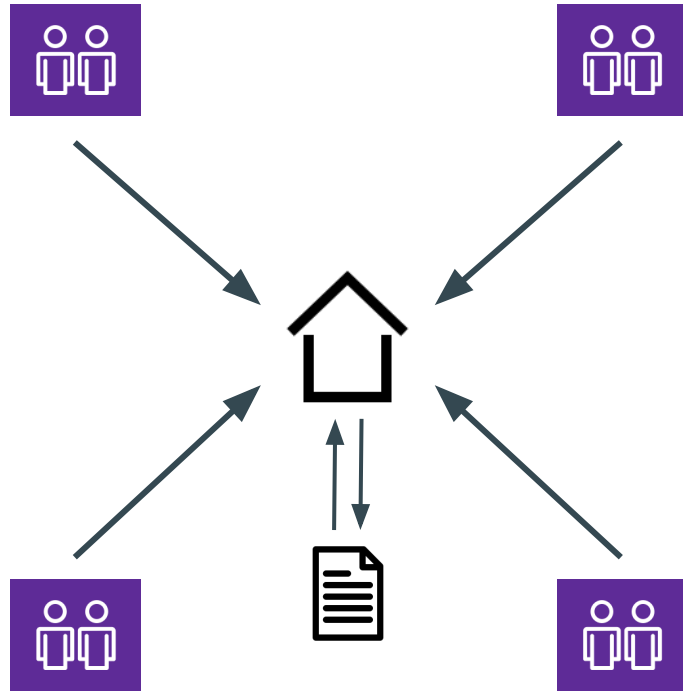


Transfer money without a
central authority

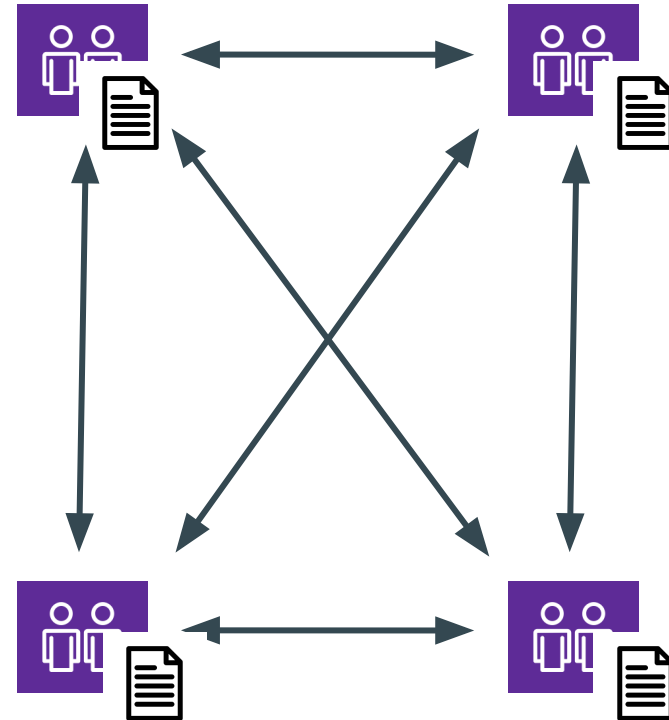


Backed by a distributed
ledger (blockchain)

Bitcoin Transactions



Centralised Ledger



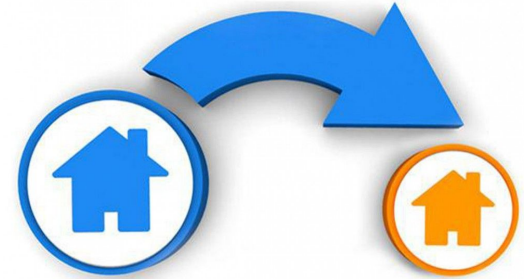
Distributed Ledger

Blockchain Technology

- Smart contracts with programmable logic
- Model any type of transaction
- In-built currency is not a requirement

Blockchain Use Cases

- Autonomous participants with direct interaction
- Build trust into the network



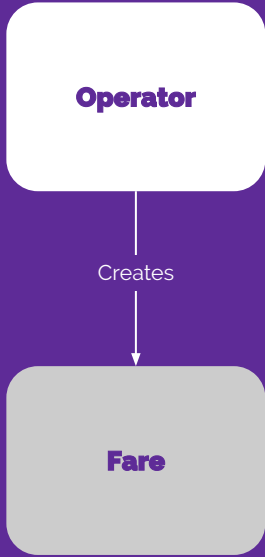
Blockchain Transport

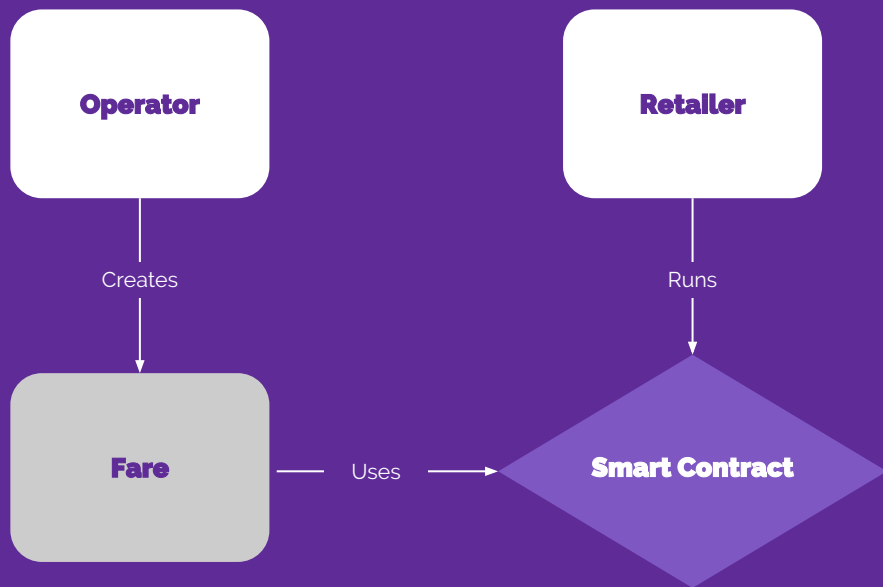
- Marketplace for ticket creation and retailing
- The blockchain is a decentralised database of tickets
- Operators, retailers and distributors work together collaboratively and autonomously

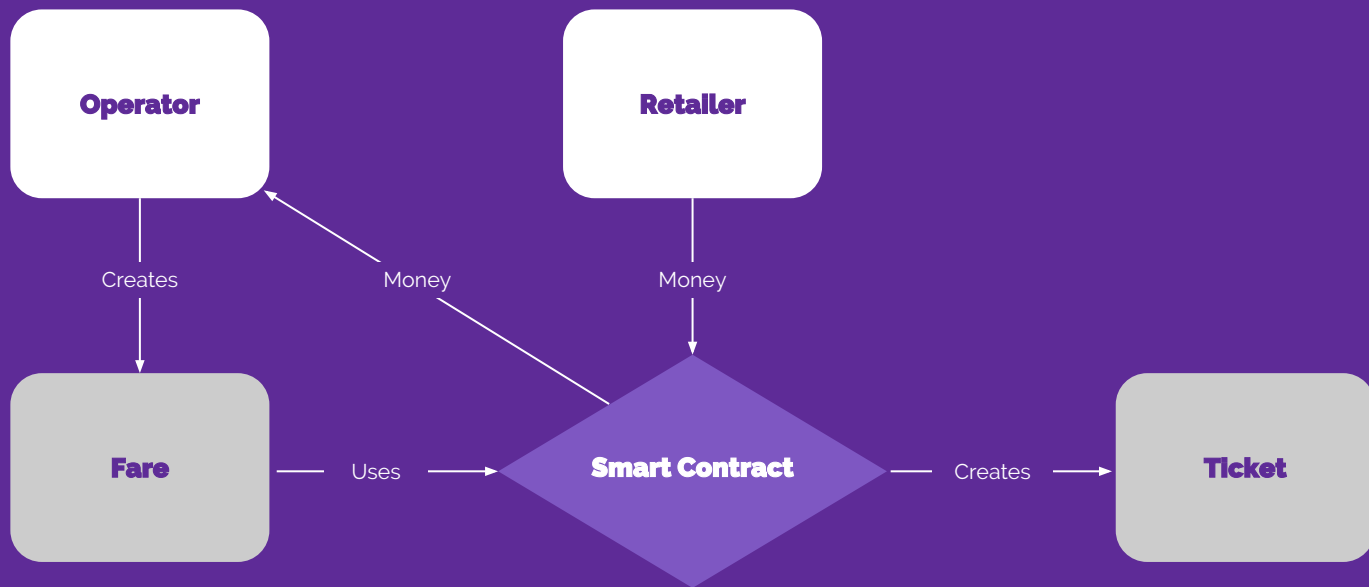
Operator

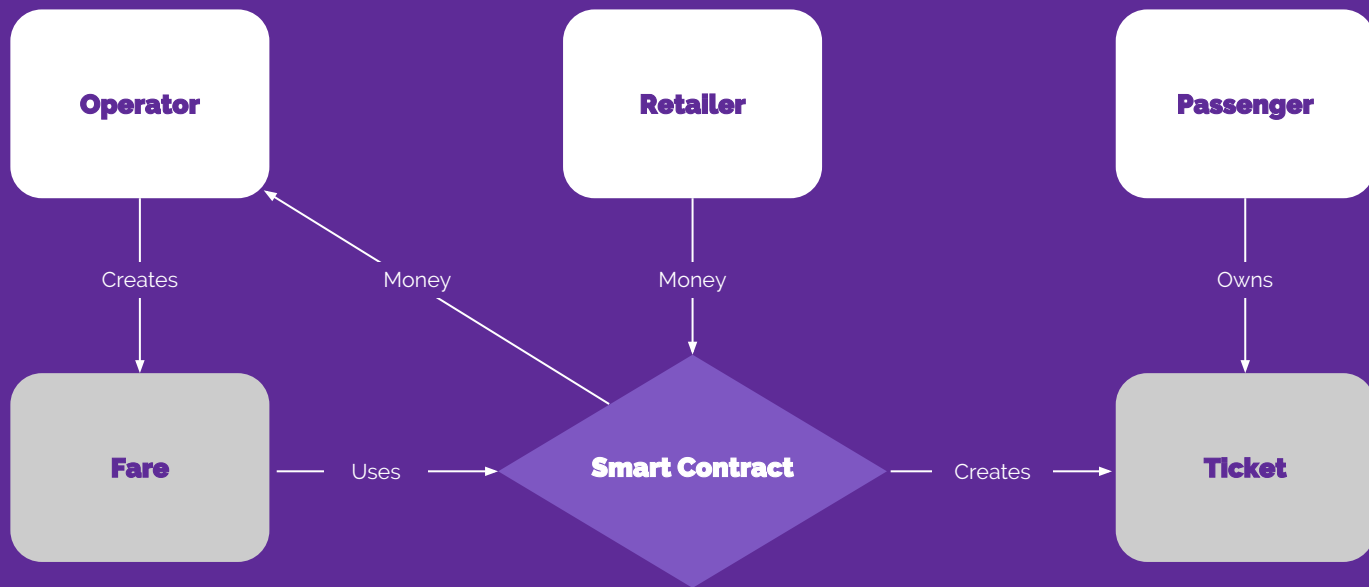
Creates

Fare









Interoperable Tickets

- Execute contract with many fares
- Money is apportioned to each operator
- Integrate operators from different regions and modes of transport

Trust

- Retailing tickets requires the trust of the operators
- Retailers earn trust through accreditation and a bond

1

Retailer exchanges local currency with digital currency to support ticket sales



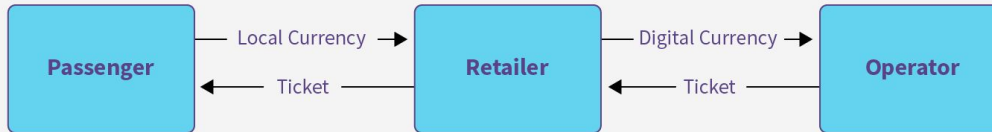
1

Retailer exchanges local currency with digital currency to support ticket sales



2

The passenger exchanges local currency with the Retailer and the Retailer uses the equivalent amount of digital currency to create the Ticket



1

Retailer exchanges local currency with digital currency to support ticket sales



2

The passenger exchanges local currency with the Retailer and the Retailer uses the equivalent amount of digital currency to create the Ticket



3

Operator exchanges digital currency into local currency with the Exchange



Passenger Travel

- Tickets stored on the blockchain need to be converted to native formats
- Distributors add a “collection” contract that might generate a barcode, return a TVM collection reference or arrange postal delivery
- Decoupled from the retail process
- Decoupled from the retailer

Benefits

- Collapsed ticket sale, creation, reporting and settlement into a single transaction
- Moved from trust that's bought to trust that's built into the network
- Moved from an infrastructure heavily reliant on centralised IT systems to a network of autonomous participants
- Given a much more even distribution of responsibilities between participants

Benefits

- Retailers don't have to have in-depth knowledge of ticket formats
- Retailers have access to more markets
- Operators have instant access to money
- Passengers can migrate between retailers and take their wallet with them
- Passengers can buy a ticket across multiple operators in a single transaction

Blockchain Transport

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