Blockchain for telcos – where is the money?

Use cases in digital identity and IoT

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There are two business approaches to blockchain...

Blockchain to make money

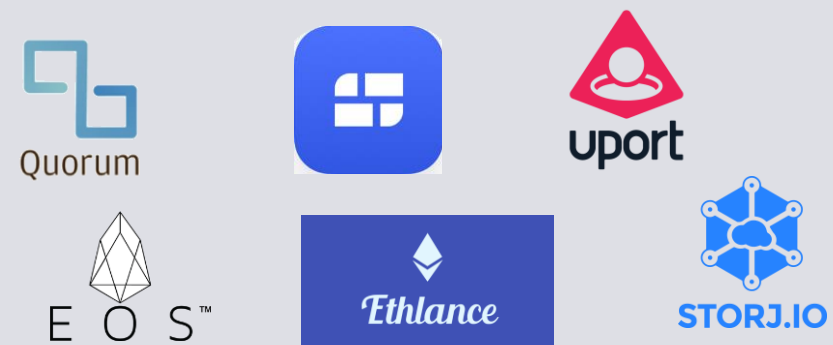## Mining compute power for public blockchain platforms like Bitcoin and Ethereum

SLUSH POOL

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SPARK POOL
Focus on offering better service

Offering services based on proprietary blockchain (or blockchain-related) technology

guardtime

Contributing to open source blockchain protocols and **providing professional services** to help others depoy blockchains/services on those platforms

HYPERLEDGER

IBM

intel

sovrin
identity for all

ALASTRIA

CARDANO

ripple

Interledger

AION

Developing Dapps (decentralised apps) powering paid-for services on open source blockchain platforms – often banking on rising token value, too

Quorum

uport

EOS

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Blockchain to make money – options for telcos

Mining compute power for public blockchain platforms like Bitcoin and Ethereum

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Contributing to open source blockchain protocols and **providing professional services** to help others create use cases

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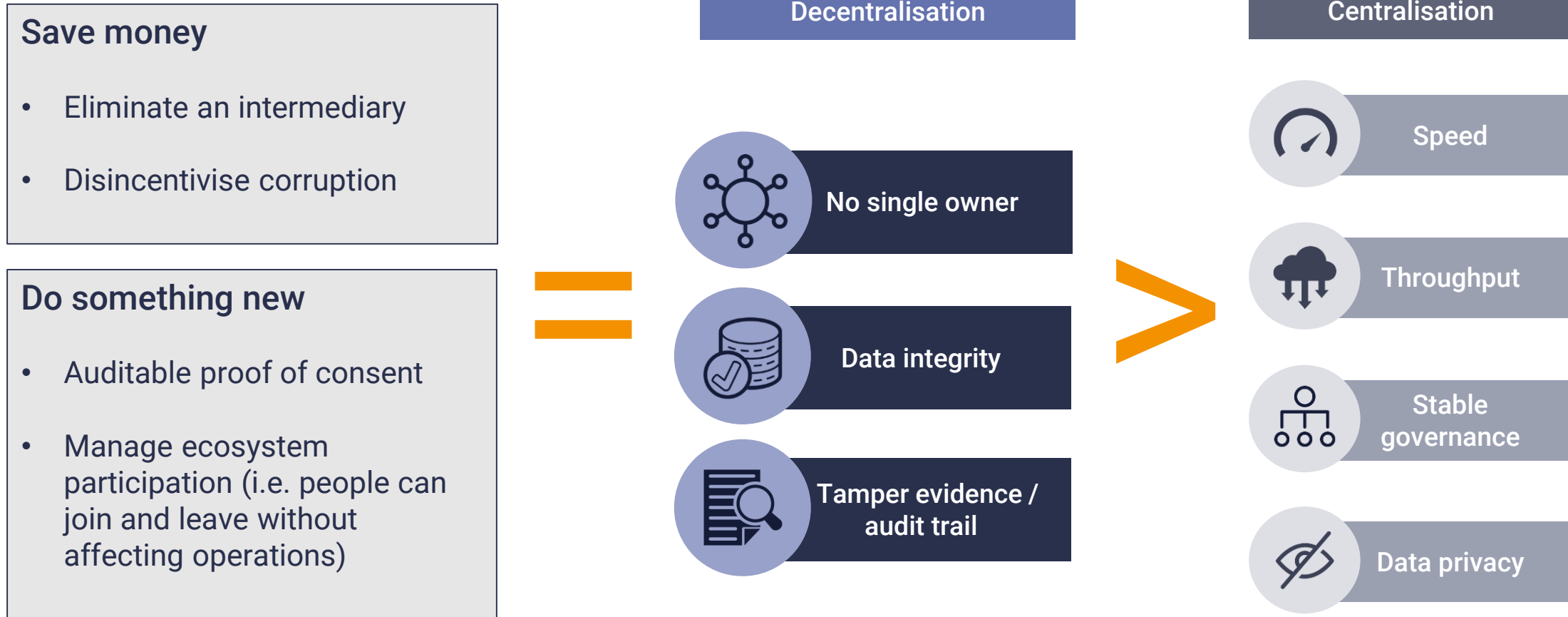ripple
Interledger

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Telcos are best positioned to pursue these two options.
But the value is not in "owning" the ecosystem, it is in:
- Enabling others to engage with it
- Offering services that cannot exist without decentralisation

Blockchain to save money or do something new

Save money

- Eliminate an intermediary

- Disincentivise corruption

Do something new

- Auditable proof of consent

- Manage ecosystem participation (i.e. people can join and leave without affecting operations)

Decentralisation

No single owner

Data integrity

Tamper evidence / audit trail

Centralisation

Speed

Throughput

Stable governance

Data privacy

Blockchains are worthwhile when decentralisation is crucial to making something work.

Blockchain to save money or do something new

The value for telcos could be in:

- Easing collaboration in multi-telco alliances
- Potentially reducing costs of managing relationships across opcos for a multinational telco*

* If within a single organisation, then this is arguably just a distributed ledger rather than a full blockchain

Telco use case: Digital identity

Digital identity – Where is the problem/opportunity?

Authentication / Single sign on

- Already solved by Google / Facebook
- Disrupts two-factor authentication SMS revenues for telcos

ID attributes

- Date of birth
- Government issued IDs
- Address
- Employment

The problem

1. No clear mechanism for consent
2. Fragmented market
3. Lack of digitisation

How blockchain helps:

Public register of Decentralised Identifiers*

Timestamped proof of **consent**

* Note: A decentralised identifier (DID) is a pair of cryptographic keys representing an individual or a company, an open standard developed by W3C

A real world example of blockchain-enabled digital ID: Sovrin

☀ sovrin

Sovrin Observer Nodes

Sovrin Validator Nodes

Distributed agent layer for private off-ledger P2P communications

Secure exchange of verifiable claims between any two agents

Cloud Agents & Wallets

Edge Agents & Wallets
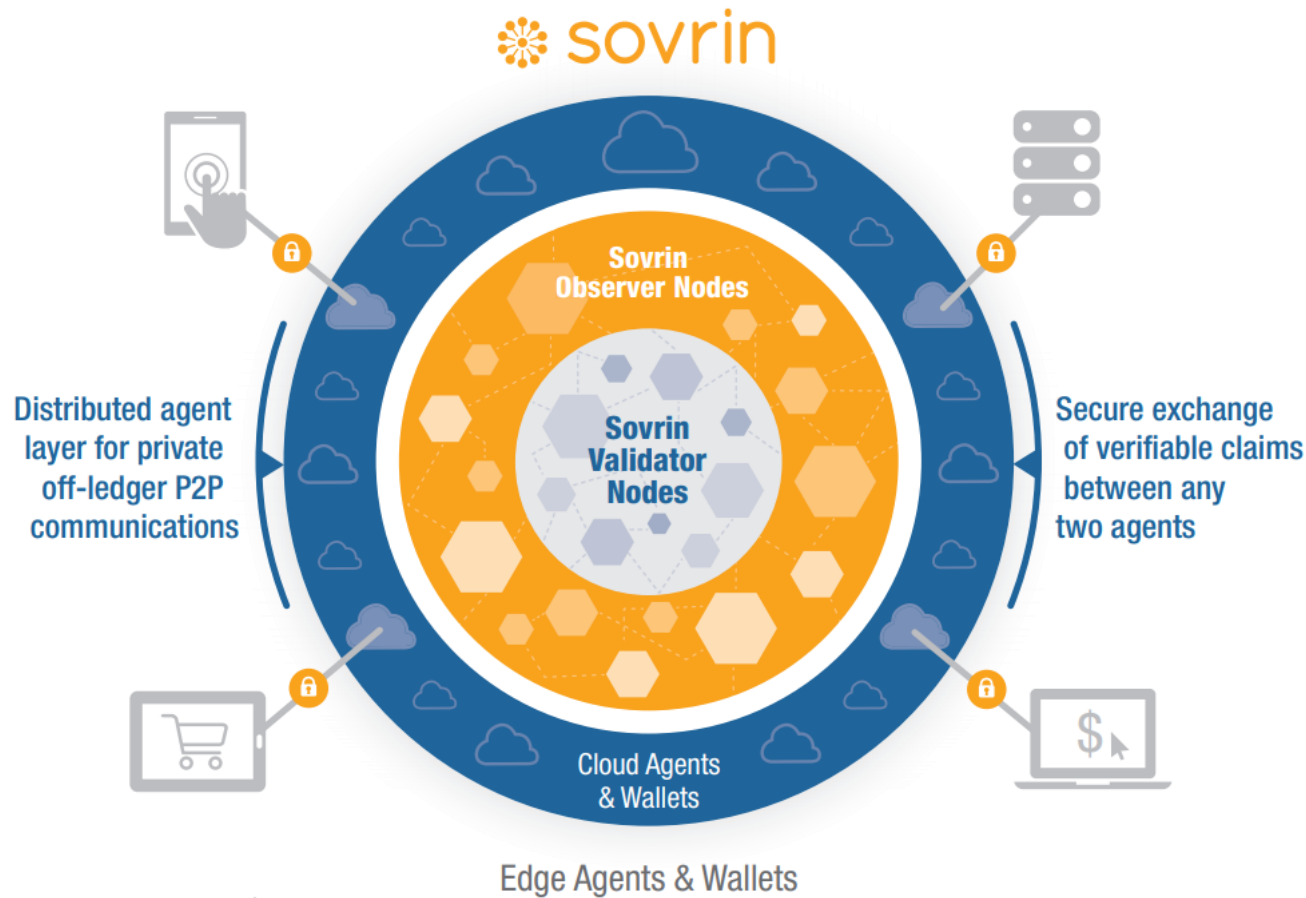
Telcos could play at multiple layers

Sovrin Validator Nodes
Trusted global organisations providing compute power to run the Sovrin blockchain

KYC-CHAIN   evernym   IBM   Telekom Innovation Laboratories   Digital Bazaar
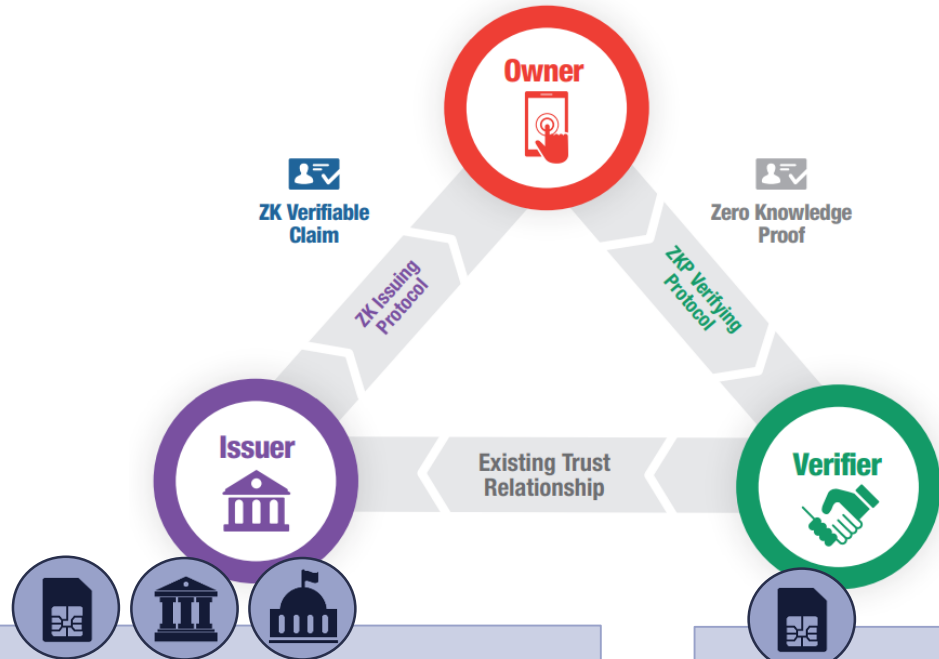
Sovrin Observer Nodes
Read access to the Sovrin blockchain, useful as proof of consent for access to ID attributes

Cloud Agents & Wallets
This is not on the blockchain. It is the layer where secure data sharing occurs.

Source: Sovrin Whitepaper
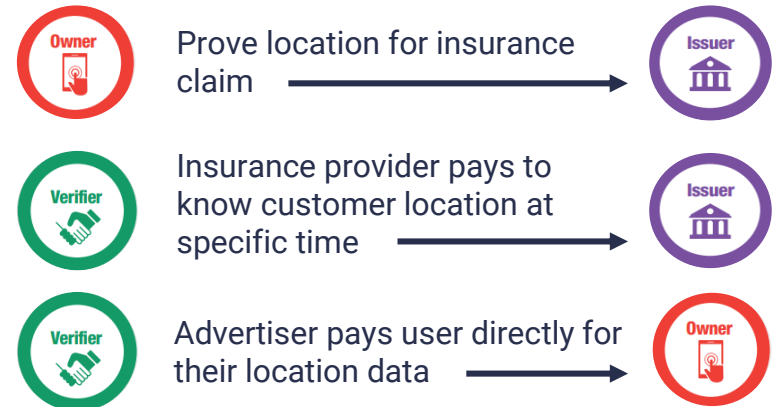
Sovrin: how does it work?

The players

Telcos are one of many trusted organisations that can issue ID claims, e.g.:
- **Telcos:** address, location
- **Banks:** financial status
- **Government:** National insurance number, dat of birth

Telcos could also ask to verify claims, e.g. KYC for new customers

The business model

Prove location for insurance claim

Insurance provider pays to know customer location at specific time

Advertiser pays user directly for their location data

Source: Sovrin Whitepaper 11
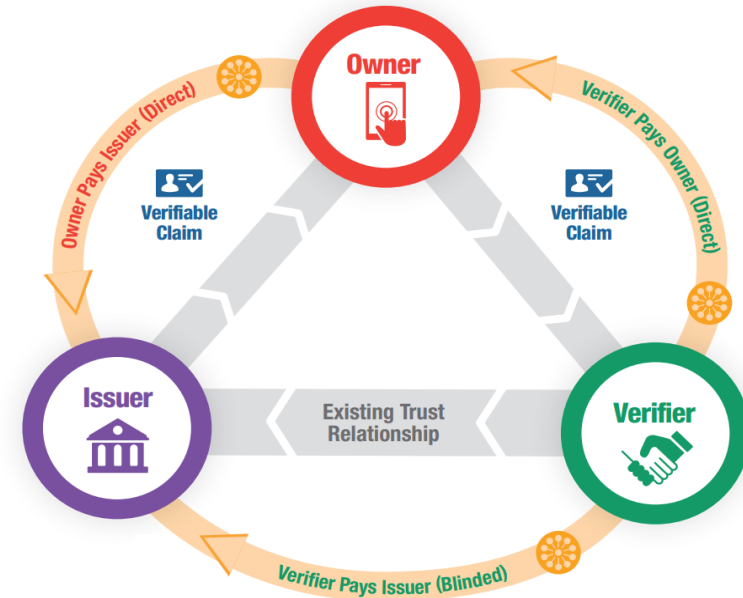
Where is the money for telcos in the Sovrin ecosystem?

Use blockchain solution to lower costs and improve efficiency

1. **Manage consent for GDPR**

   - Timestamped record of consent

2. **More efficient KYC**

   - Digital KYC process
   - Do not have to store sensitive customer information (ZKPs)

Provide blockchain-related services for new revenues

3. **Operate a Sovrin node**

   - Greater control
   - Build credibility in ID management
   - Offer additional services

4. **Data marketplace**

   - Relying parties pay issuers for ID verification
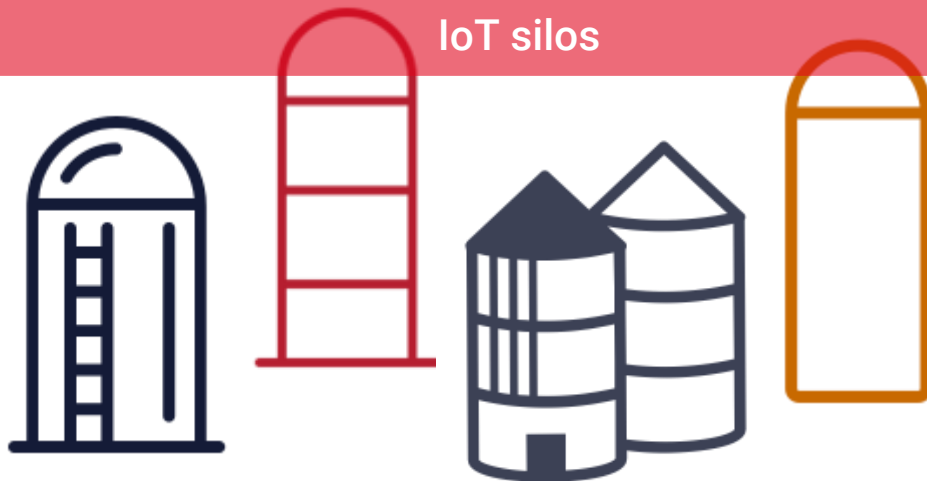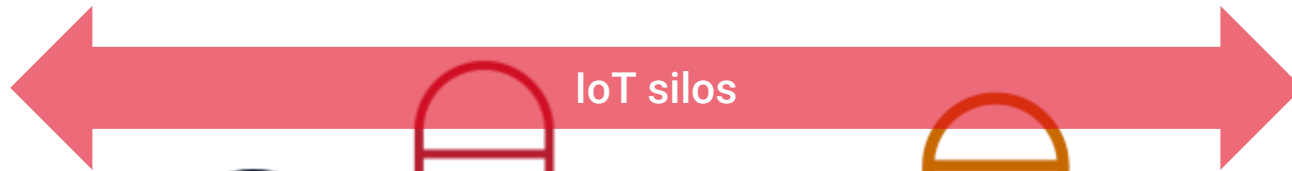   - Incentive for consumers to share data

Telco use case: IoT

IoT – What is the problem/opportunity?

- IoT landscape is highly fragmented
- The focus is on connecting devices for specific applications

The full potential & value of IoT is not being realised

IoT silos

Impossible to have a central authority, so IoT needs another mechanism to achieve:

Trust

Permissions

What the IoT needs to fulfil its potential

DNS layer to make things discoverable

Establish a relationship

Thing consents to share data

P2P transactions

Share data securely

Provenance blockchain

Track permissions

Smart contracts & embedded token

Need for send and receive capability

Slow

Pricey

Heavy cryptography

The problem: Different blockchain protocols

Must be light in all senses: compute power

Cheap

Fast

E.g. Tangle has no memory so can't track provenance

Blockchain for IoT

DNS layer to make things discoverable	Establish a relationship	Thing consents to share data	P2P transactions	Share data securely

Use blockchain to improve efficiency / do something new:
Participate in ecosystems enabling easier data sharing across IoT networks → commercial incentive for IoT

Connectivity revenue

Develop blockchain-enabled services for new revenue

Telcos may have a role in creating searchable directories of accredited IoT devices

And reducing friction in device-to-device transactions

Move up the IoT value chain

Conclusion & recommendations

Conclusion: STL key views on blockchain

- The applications of blockchain are similar for digital identity and IoT:
    - Authenticity
    - Consent
    - Data marketplace

- IoT will take off before digital identity
    - **Enterprises have a headache now:** they can get IoT data into their silos, but can't get it out again to deliver the promised value
    - There are fewer regulatory barriers for enterprise data
    - Enterprises also care more about data security than individuals

- Telcos don't specialise in software development and cryptography, so don't build your own blockchain protocol if a suitable one already exists

- Blockchain's distinguishing feature is **distributed ownership and control** → so don't try to own it, but rather figure out how you can benefit from participating in an ecosystem

Sign up for our webinar

Tuesday, June 19th: [Blockchain for telcos – Where is the money?](#)

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