

Decentralized marketplace for IoT data

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1. Background

Blockchain

Blockchain is a decentralized mechanism which shares an immutable ledger on a peer-to-peer network.

Benefits of blockchain include:

- Transparency
- Auditability
- Trust

Internet of Things

IoT is a network of devices capable of communicating without the need for human interaction. Domains of IoT include smart home, meteorology and supply chain tracking.

4. Conclusion

Comparing different features provided by these frameworks, and considering their drawbacks and benefits, the following guidelines were proposed:

1. The marketplace must operate a register contract to disincentivize malicious behaviour from data producers.
2. A mechanism to verify data transfer must be in place.
3. Requirements for gateway nodes must be kept to a minimum.
4. Registry contracts should allow for flexibility in data trading contracts.

2. Methodology

This research set out to answer the question:

What are the drawbacks and benefits of currently existing blockchain technologies for IoT data marketplaces?

In the process the following sub-questions were also answered:

1. What challenges are there when implementing blockchain on IoT devices?
2. How to sell IoT data, and how can blockchain play a role in this?
3. What methods exist to monetize IoT data using blockchain?
4. How can these methods be improved?

To answer these questions a several frameworks proposed in research have been analysed and compared.

3. Results

Framework	Data Storage	Registry	Verification
IDMoB [1]	Swarm	yes	Swarm
[2]	At gateway	yes	None
[3]	At gateway	no	None
[4]	At gateway	no	Trace-Submission
[5]	IPFS	yes	IPFS

References

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