BLOCKBENCH: A Framework for Analyzing Private Blockchains

Anh Dinh, Ji Wang, Gang Chen, Rui Liu, Beng Chin Ooi,

Outline

- Introduction
  - Backgrounds
  - Problem Statement
  - Related Works
- BlockBench Framework
  - System Design
  - Implementation
- Performance Benchmark
  - Macro Benchmarks
  - Micro Benchmarks
- Discussion
- Conclusion

Acknowledgement: many diagrams are owned by internet users which we use only for illustration purposes

Outline

- **Introduction**
  - **Backgrounds**
  - **Problem Statement**
  - **Related Works**
- BlockBench Framework
  - System Design
  - Implementation
- Performance Benchmark
  - Macro Benchmarks
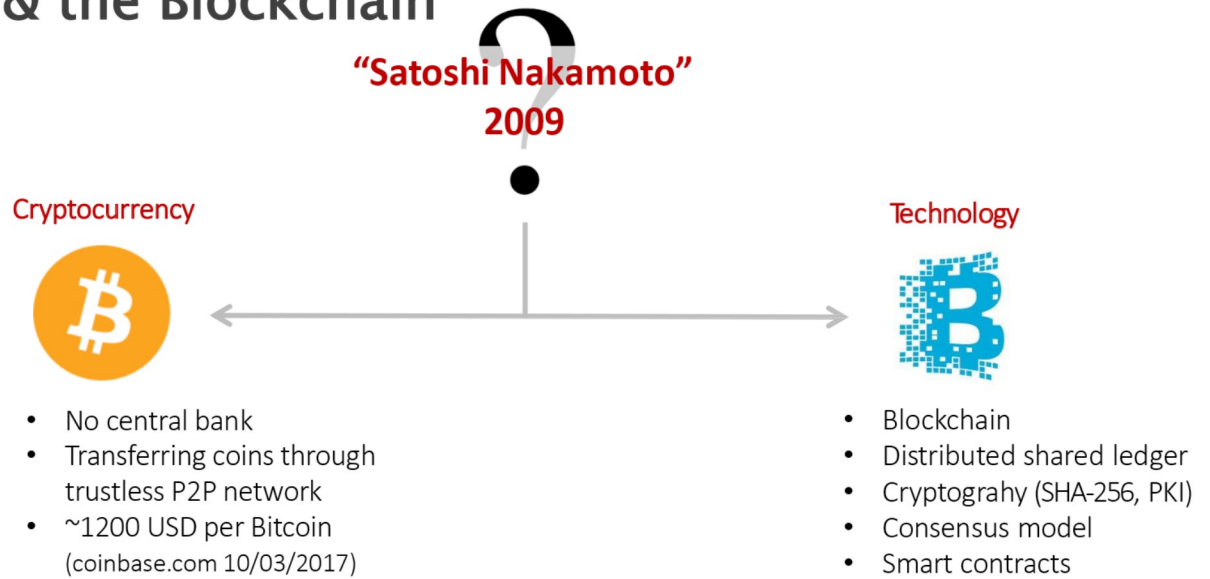 - Micro Benchmarks
- Discussion
- Conclusion

Backgrounds

Bitcoin & the Blockchain

"Satoshi Nakamoto"
2009

Cryptocurrency

- No central bank
- Transferring coins through trustless P2P network
- ~1200 USD per Bitcoin
  (coinbase.com 10/03/2017)

Technology

- Blockchain
- Distributed shared ledger
- Cryptograhy (SHA-256, PKI)
- Consensus model
- Smart contracts

Blockchains

Blockchains are distributed ledgers – or decentralized databases – that enable parities who do not fully trust each other to form and maintain consensus about the existence, status and evolution of a set of shared facts.