PRINCETON UNIVERSITY

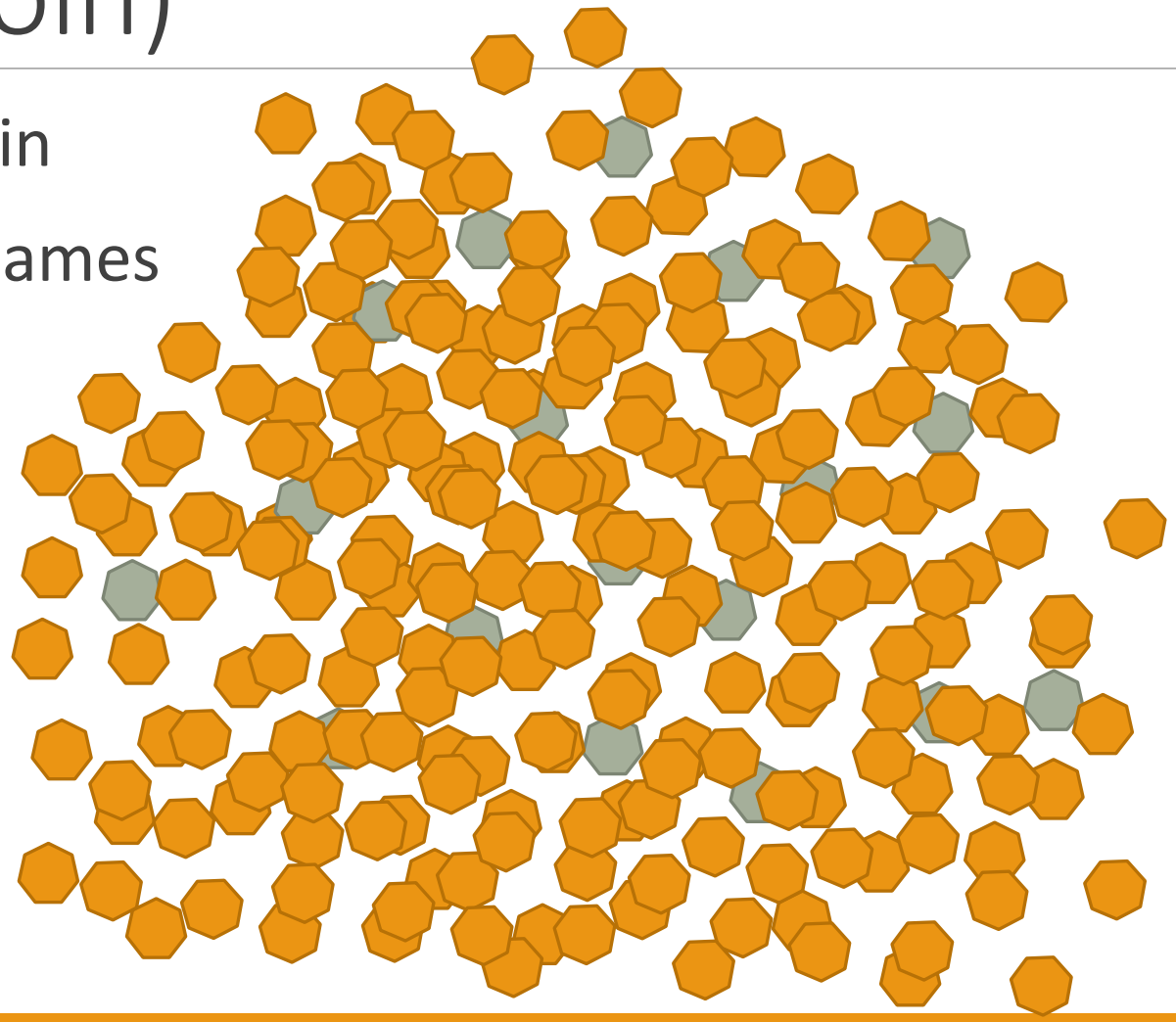
Scalability of Non-Currency Applications

HARRY KALODNER ARVIND NARAYANAN

Domains (Namecoin)

120,000 Domains in Namecoin

294 Million ICANN Domain Names



Stock Trading

Each trade could be a transaction on the block chain

NASDAQ has 10 million trades per day

NYSE has 3.5 million trades per day

Car Ownership

You can own physical assets

245 Million Cars in US

Control ownership through transactions

How do they work?

Extra information is associated with transaction outputs

Special semantics required to interpret transactions

Colored Coins

Specific outputs get extra information

Everything is on the chain

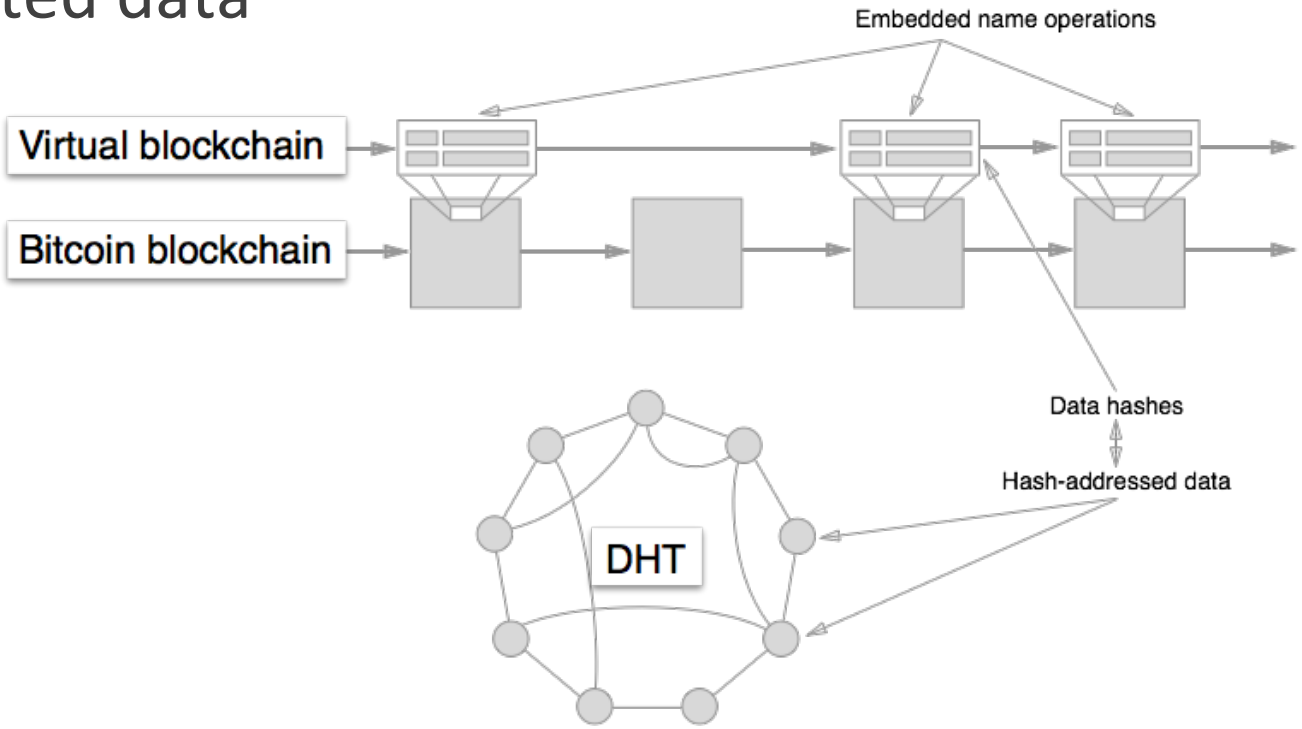
Counterparty has similar issues

Blockstore

Name registrations on the block chain

Only store a hash of associated data

Store full data in a DHT



Altcoins

Store all data in another block chain

Responsible for their own security

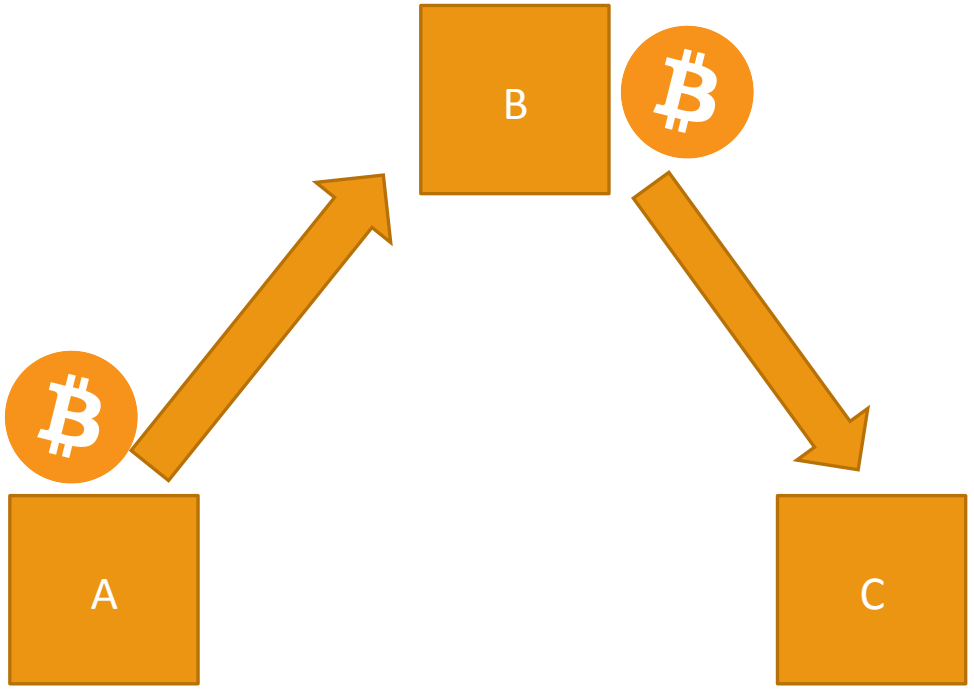
Fragment the ecosystem

Scaling Solutions

Require high fees

Off-chain transactions through exchanges

The Lightning Network



Takeaways

Non-currency applications are primed for an explosion

Many scalability solutions do not fit all cases

Thank You