4 Dimensional Blockchain Scaling with Cosmos and Tendermint

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INTRODUCTION TO SCALING / INTEROPERABILITY

SCALING / INTEROPERABILITY

SECURITY MODELS

RECAP

1 UNDERSTAND THE **DIFFERENT** SCALING APPROACHES

- Consensus Scaling:
Using Tendermint
Consensus

- State Machine Scaling:
Cosmos-Sdk || Ethermint

- Interchain Scaling:
IBC || Peggy

- Social Scaling:
Governance || Developers

2 KNOW THE **AVAILABLE SECURITY** MODELS

- Sovereign

- Hosted

- Plasma

3 SCALING IS **EVERYONE'S RESPONSIBLITY**

- You have to be an Optimistic Planer

- Don't wait for someone else

- Actively look for design patterns that allow you to build scalable dApps

SCALING

- Throughput

- Competition for the
same compute resources

INTEROPERABILITY

- Many heterogeneous
chains

- Central synchronization
points

- Access to liquidity

CONSENSUS SCALING

STATE MACHINE SCALING
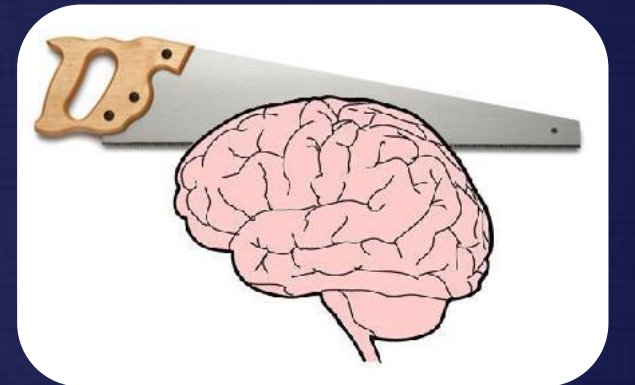
INTERCHAIN SCALING

SOCIAL SCALING

CONSENSUS SCALING

Nakamoto Consensus

Validation	Propagation + Mining

Validation	Propagation + Mining

BFT Consensus

Validation	Propagation

Validation	Propagation

Current

- Instant Finality

- Efficient light-client proofs

- Safety in asynchronous networks

- Liveness in partially synchronous networks

- 4,000 tps on 64 validators

- High network overhead - O(N^2)

Future Improvements

- BLS signatures

- Optimistic pipelining

- DKG construction

ETHERMINT

COSMOS-SDK
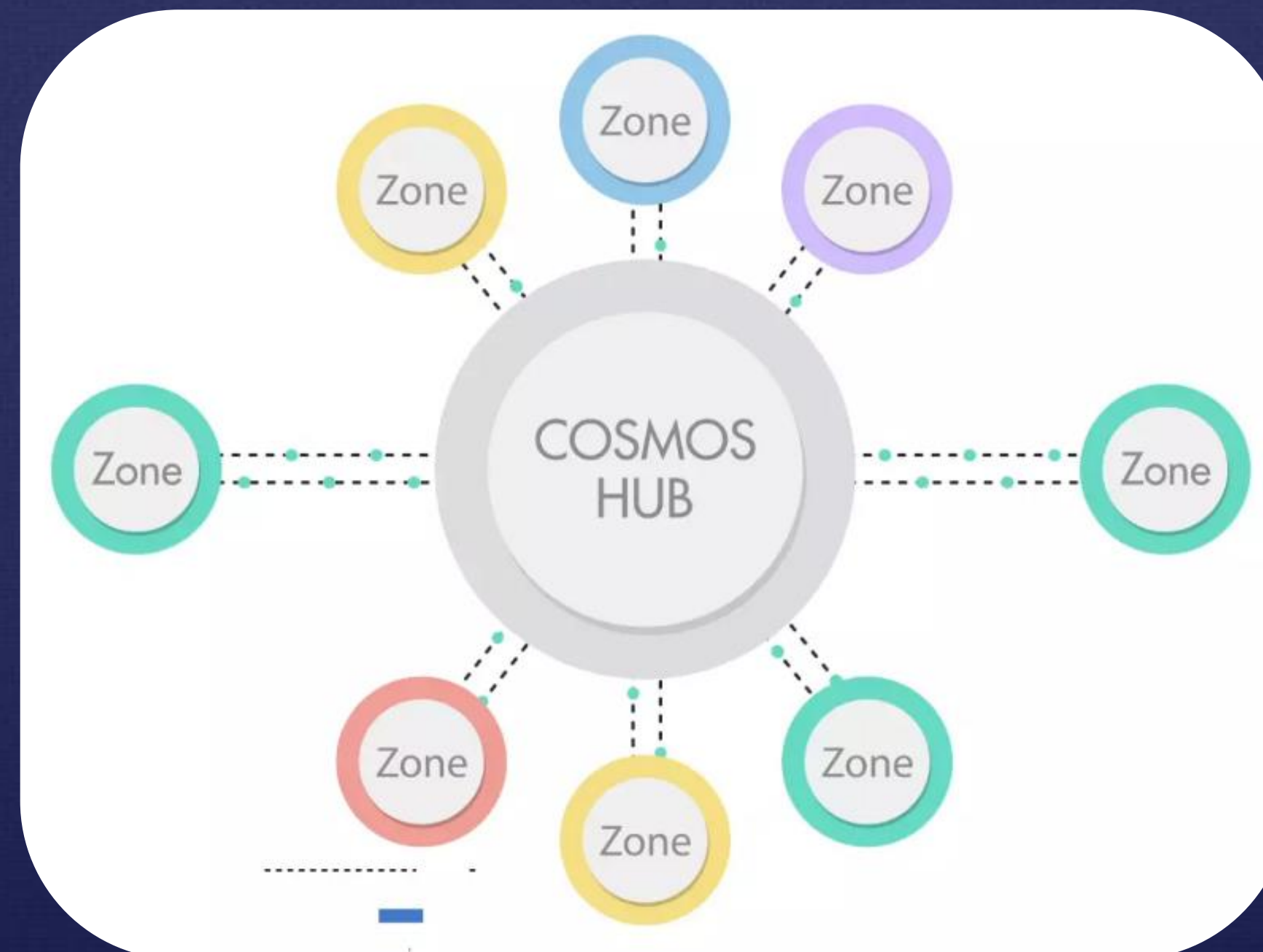
INTERCHAIN SCALING

IBC

- Secure transfers between heterogeneous blockchains
- Tokens -> NFTs -> Complex Objects

IBC + Adaptors

- Adapter to enforce finality
- Allows IBC connections to non-finality chains

Cosmos Hub

- Liquidity provider for all connected blockchains
- Maintains double-spend protection between blockchains

Development

- Increasing adoption

- Security of your codebase

- Working with a large group of people

Governance

- Evolving the protocol

- Ability to govern the network

SOVEREIGN

HOSTED

PLASMA

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Scaling is **Everyone's** Responsibility!

Don't just wait for someone else to solve it for you!

Any Questions?

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