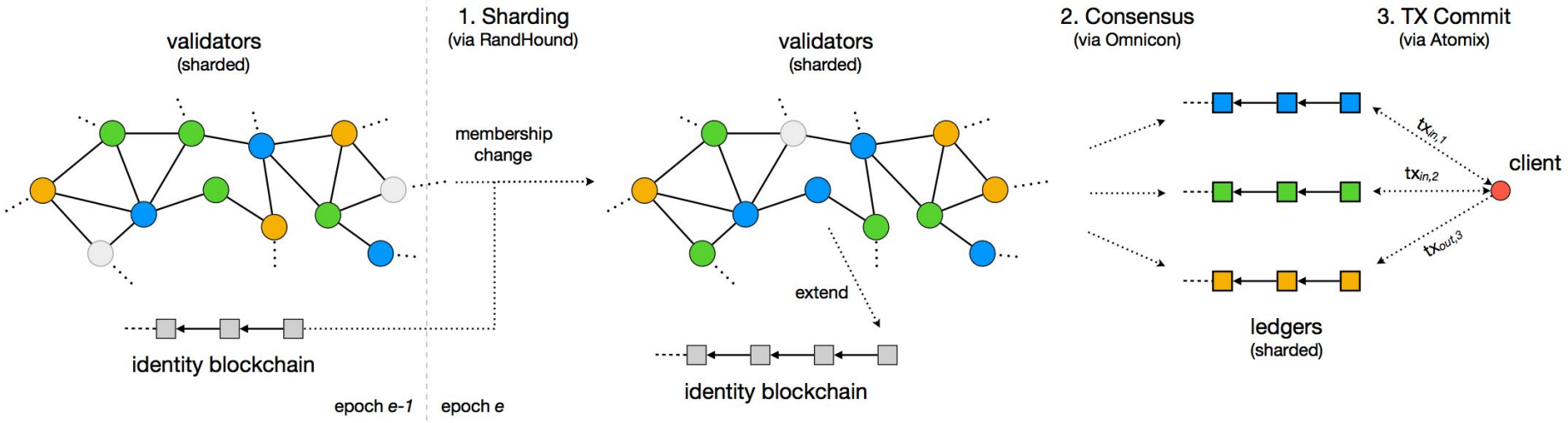
Open Consensus for 10 Billion

Harmony is a Fast & Secure blockchain

To scale trust for billions of people and create a radically fair economy

Bring Research to **Production**

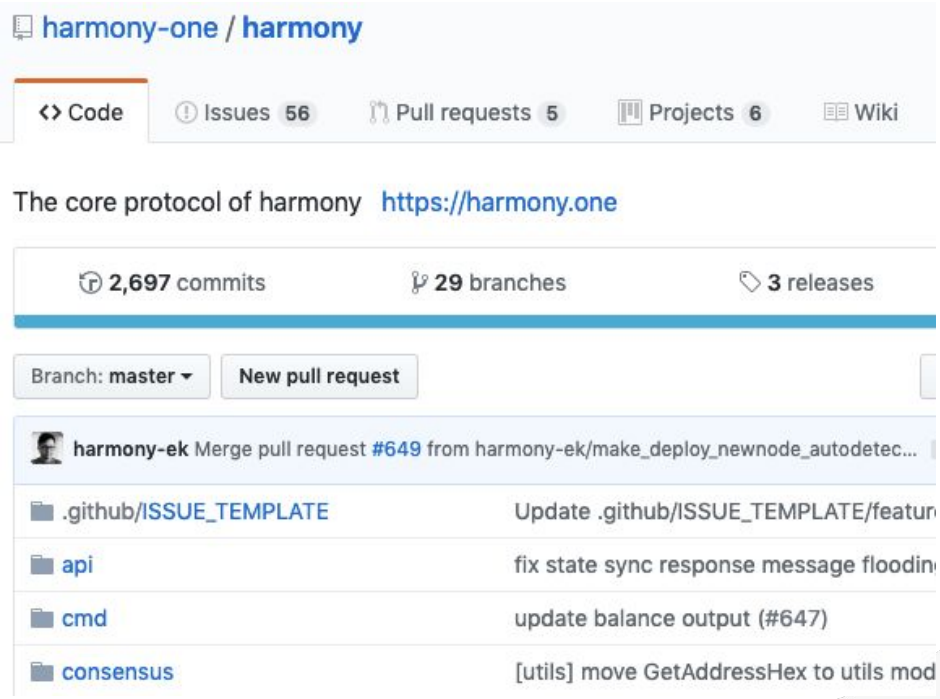


A high-performance blockchain demands ***10x innovations*** in transport networks, consensus protocols & systems tools.

State Sharding with Secure Staking

Open source & Solidity support
O(n) consensus & O(1) resharding

Tx benchmark with 41k nodes
O(log n) cross-shard routing
Failure-resilient propagation in 1.3s



(Hungry & Foolish) Security Protocol Ph.D

Stephen Tse has been obsessed with protocols and compilers since high school. He reverse-engineered ICQ and X11 protocols, coded in OCaml for more than 15 years , and graduated with a doctoral degree in security protocols and compiler verification from the University of Pennsylvania.

Stephen was a researcher at Microsoft Research, a senior infrastructure engineer at Google, and a principal engineer for search ranking at Apple. He founded the mobile search Spotsetter with institutional venture capital; Apple later acquired the startup.

Adaptive-Thresholded Proof of Stake

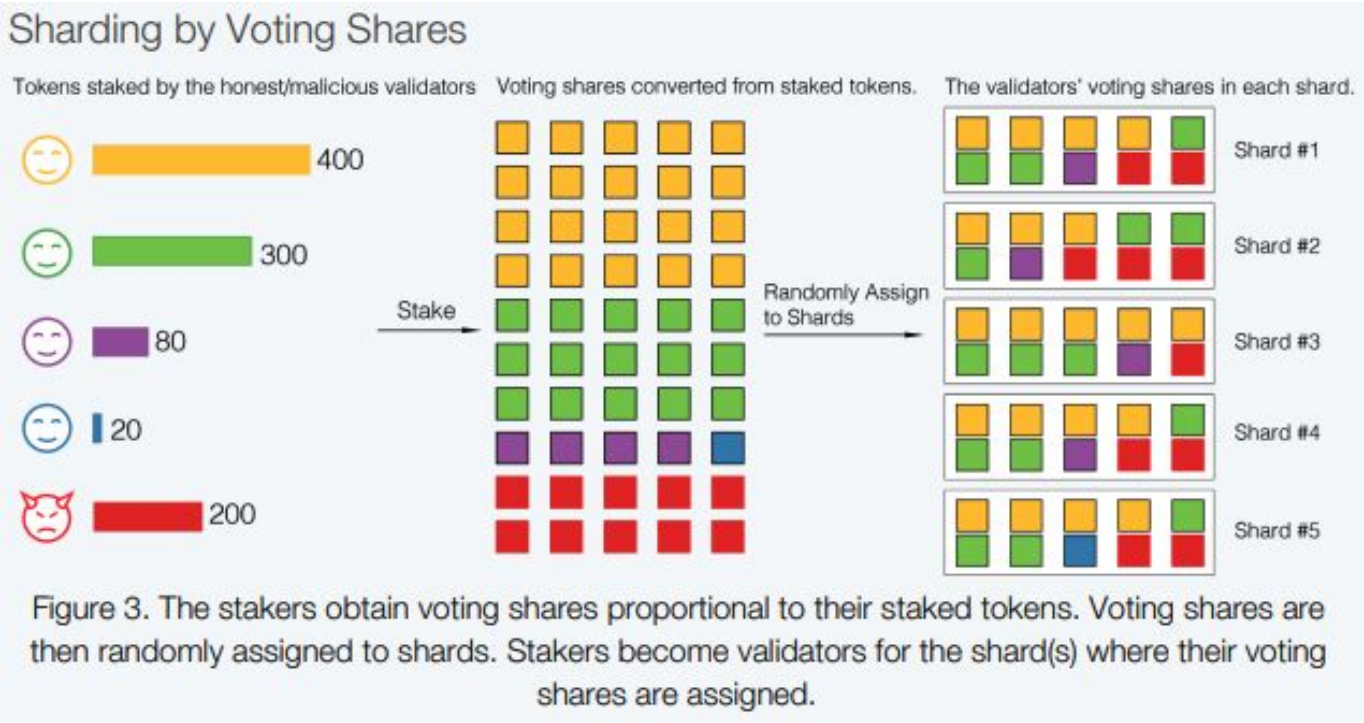


Figure 3. The stakers obtain voting shares proportional to their staked tokens. Voting shares are then randomly assigned to shards. Stakers become validators for the shard(s) where their voting shares are assigned.

Radical Fairness: are you feeling lucky?

Lottery & gambling

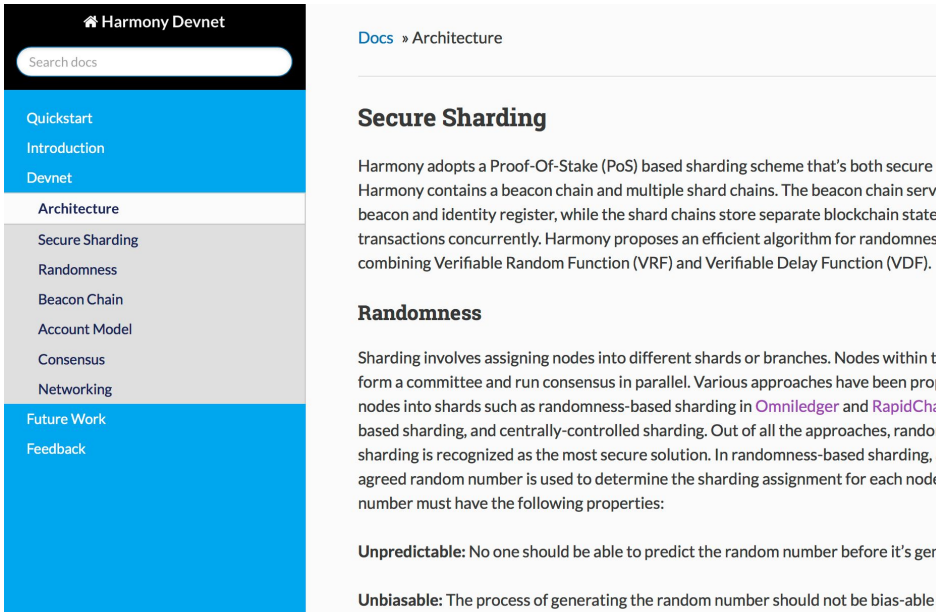
Game mechanics

Matching & ranking

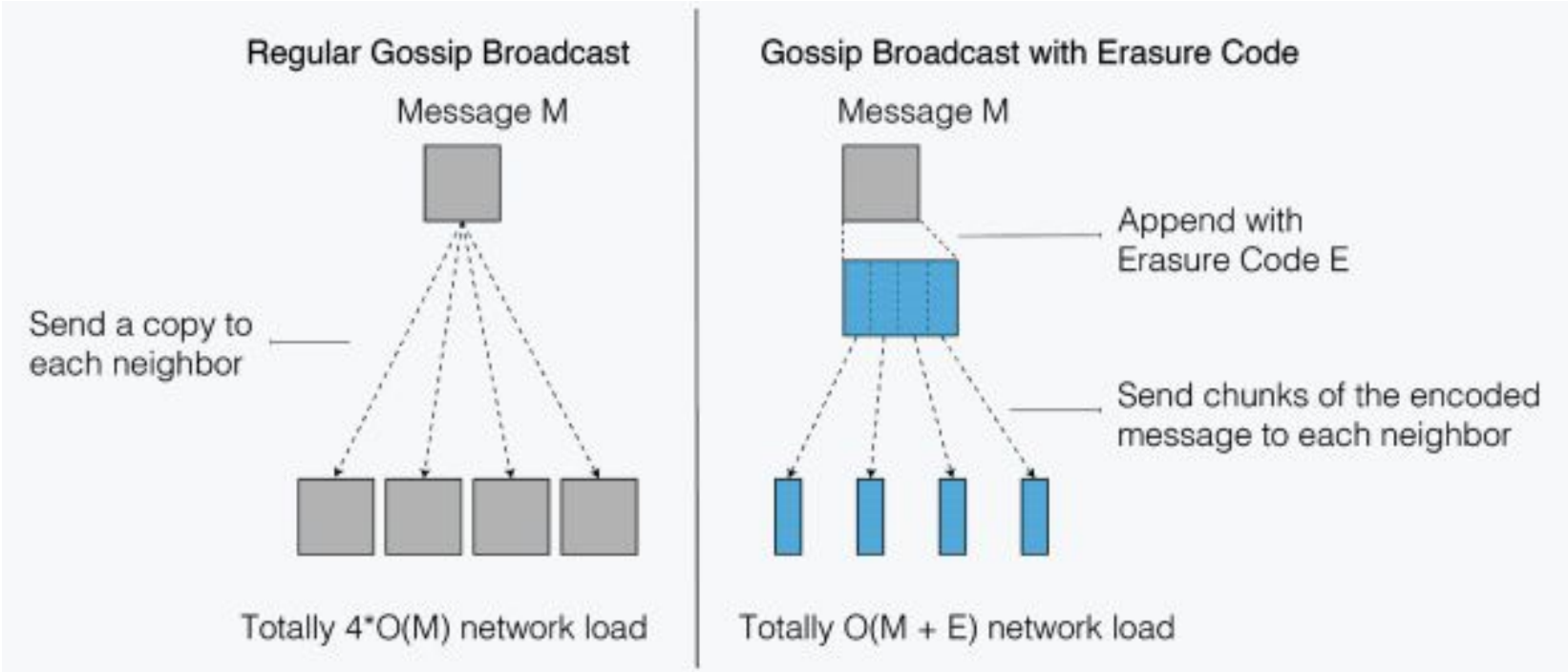
Prevent single-shard overtakes

Verifiable delay functions

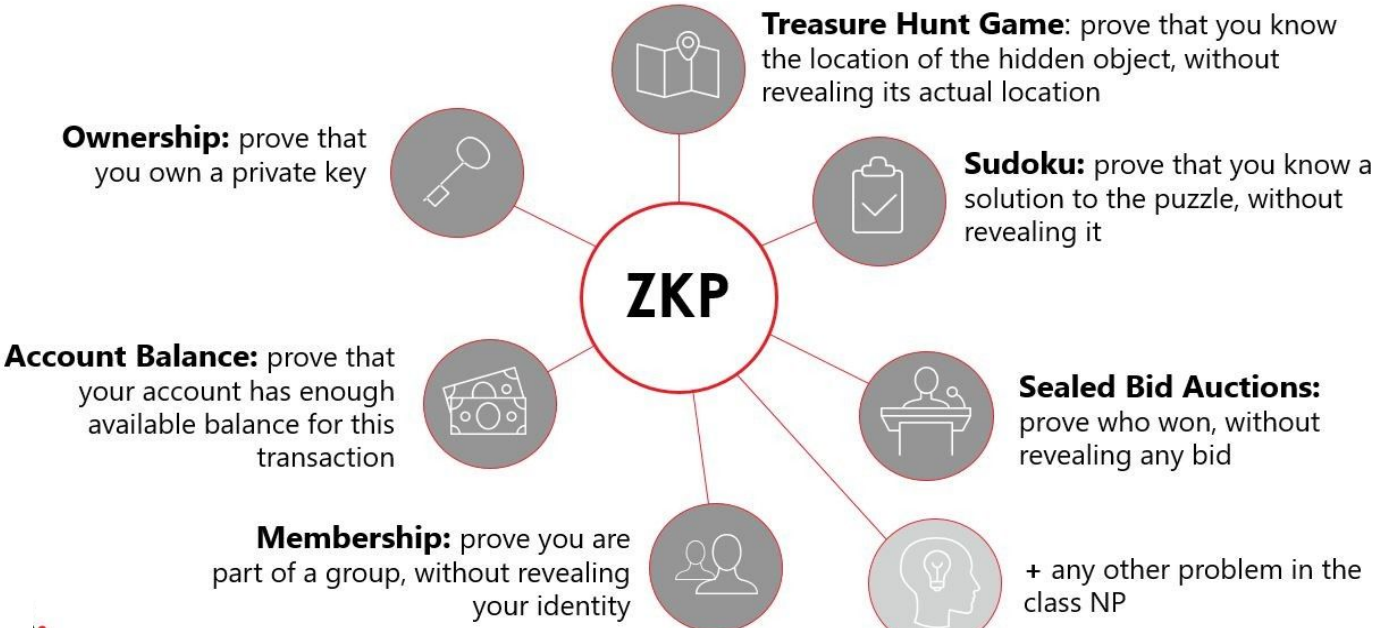
Zero-knowledge arguments



P2P with O(log n) routing & erasure coding



Zero-knowledge: privacy in data marketplaces



Harmony Nodes & Mainnet

Open Source

Tesnet 2.0

Node Operators

EVM tooling

Asset trading

Partners

ZKProof apps

Mainnet

Roadmap: Ethereum 2.0 **Now**

Q3

Popular apps (DeFi, Dai, lottery) at 200%+ faster, storage rent *(not gas price)*

Deployed prototypes of Zero-knowledge proofs (zkDAI, AZTEC, Zether)

Q4

WebAssembly backend

Fountain code (rateless erasure encoding) over libp2p

Light clients with fraud proofs

Democratizing Credit, Data & Marketplaces

Confidential asset trading
ERC20/721 but
privacy-preserving

Decentralized credit

Data sharing & marketplaces

VPN on Internet
Private computation and consortium platform on public blockchain

7 **Google/Apple/Amazon** Engineers & 2 PhDs

Stephen
Protocol PhD

Nicolas
VR Startup Founder

Alok
Apple Siri

Rongjian
Google Search

Minh
Google Voice AI

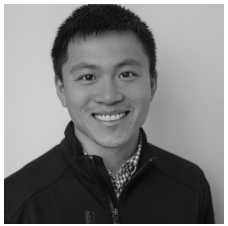
Nick
Stanford AI

Sahil
Harvard Business

Eugene
AWS Networking

Leo
Amazon Lab126

Kunal
Samsung Security



Li
GSV Capital

Chao
Math PhD

Google Microsoft amazon Penn Carnegie Mellon University HARVARD UNIVERSITY Stanford University

Partners & Community at talk.harmony.one

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Hyperion

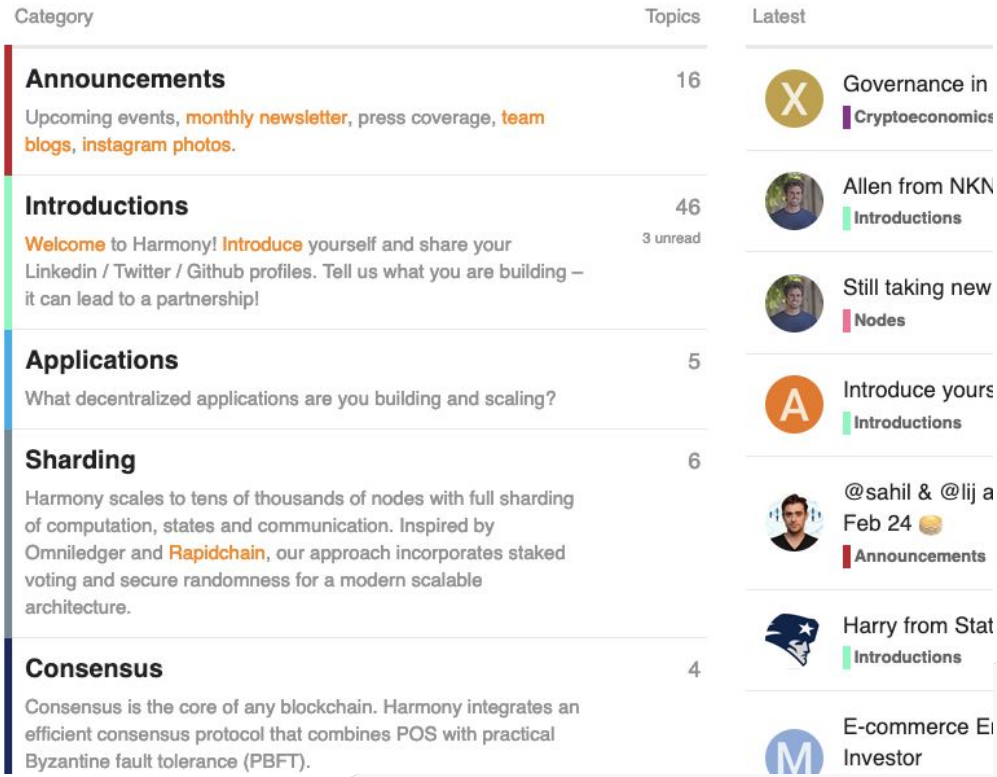
Blue Vista

NoIZ

Picolo

Quanta

hBits



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Research & Community on Forum

talk.harmony.one

Wear Your Ambitions on Sleeve

harmony.one/2019-roadmap

Harmony Tokens & Node Operators

harmony.one/partners

Mainnet Launch in 2019 Q2

harmony.one/newsletter

harmony.one/cmu-talk