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The Future of L2

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Offchain Labs

Mission:
Onboard the next billion

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Alignment

User Alignment

Six big moves

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Big move #1:
Build in layers

A rollup-centric ethereum roadmap

ethereum-roadmap, layer-2

vbuterin 4 Oct 2020

What would a rollup-centric ethereum roadmap look like?

Oct 2020

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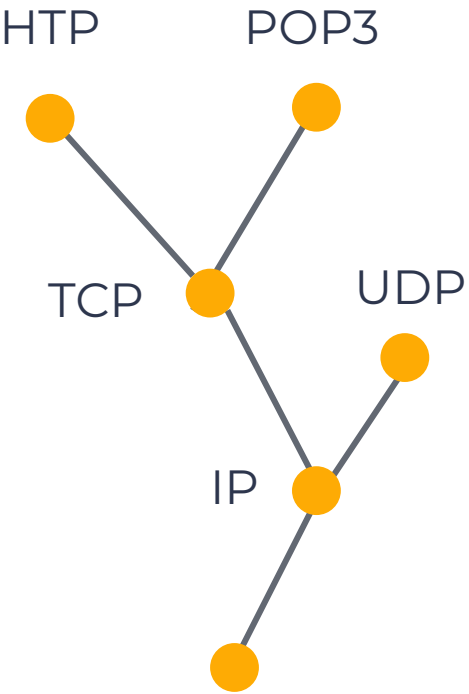
Oct 2020



TCP/IP - Model

- Application
- Transport
- Internet
- Link

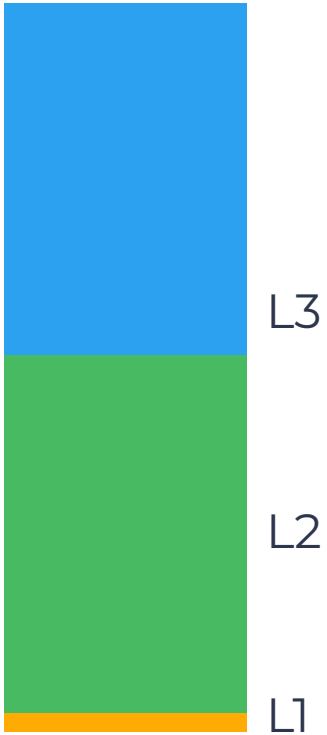
Layer 2/3: throughput in Ethereums

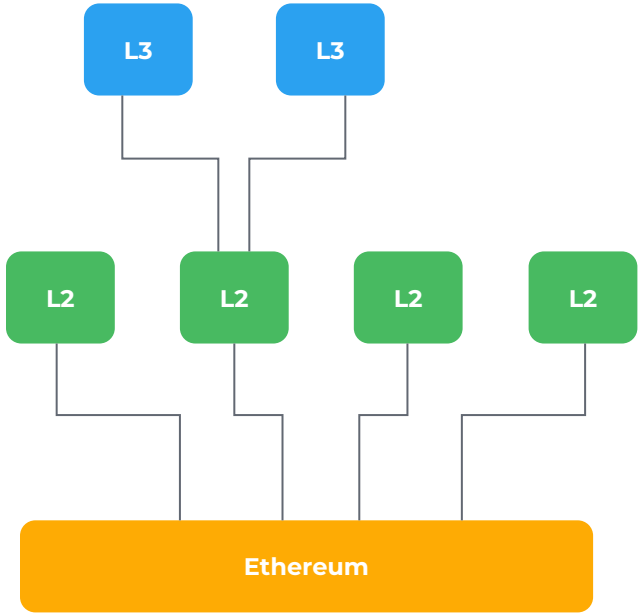
30x TPS

80x Gas used

40x Calldata

~ 100 L2 and L3 chains


L3
L2
L1



Lowest cost
Innovative execution (e.g. MultiVM)

Low cost, fast response time, scale
Innovative execution (e.g. MultiVM)

Economically secured consensus,
Settlement and interchange

Big move #2:
Connect everything

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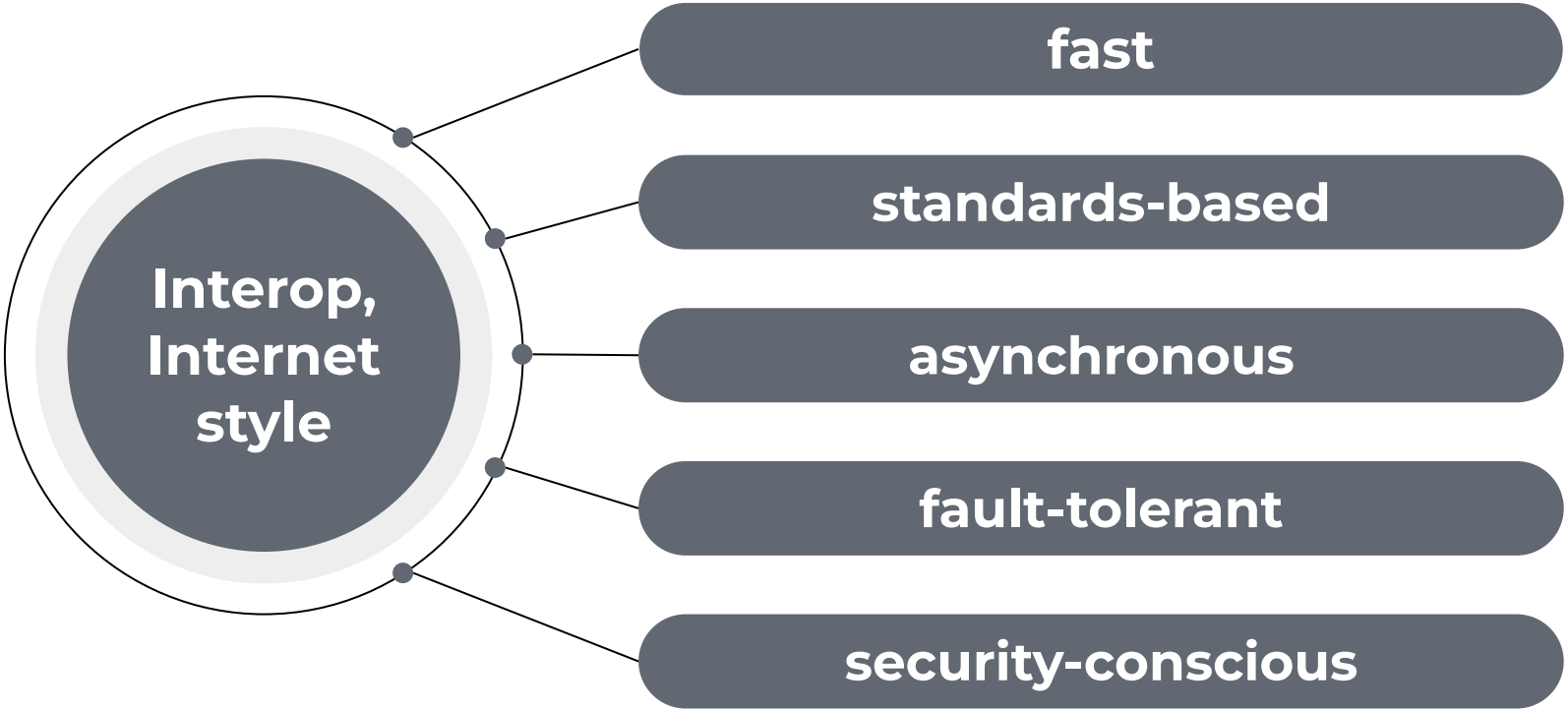
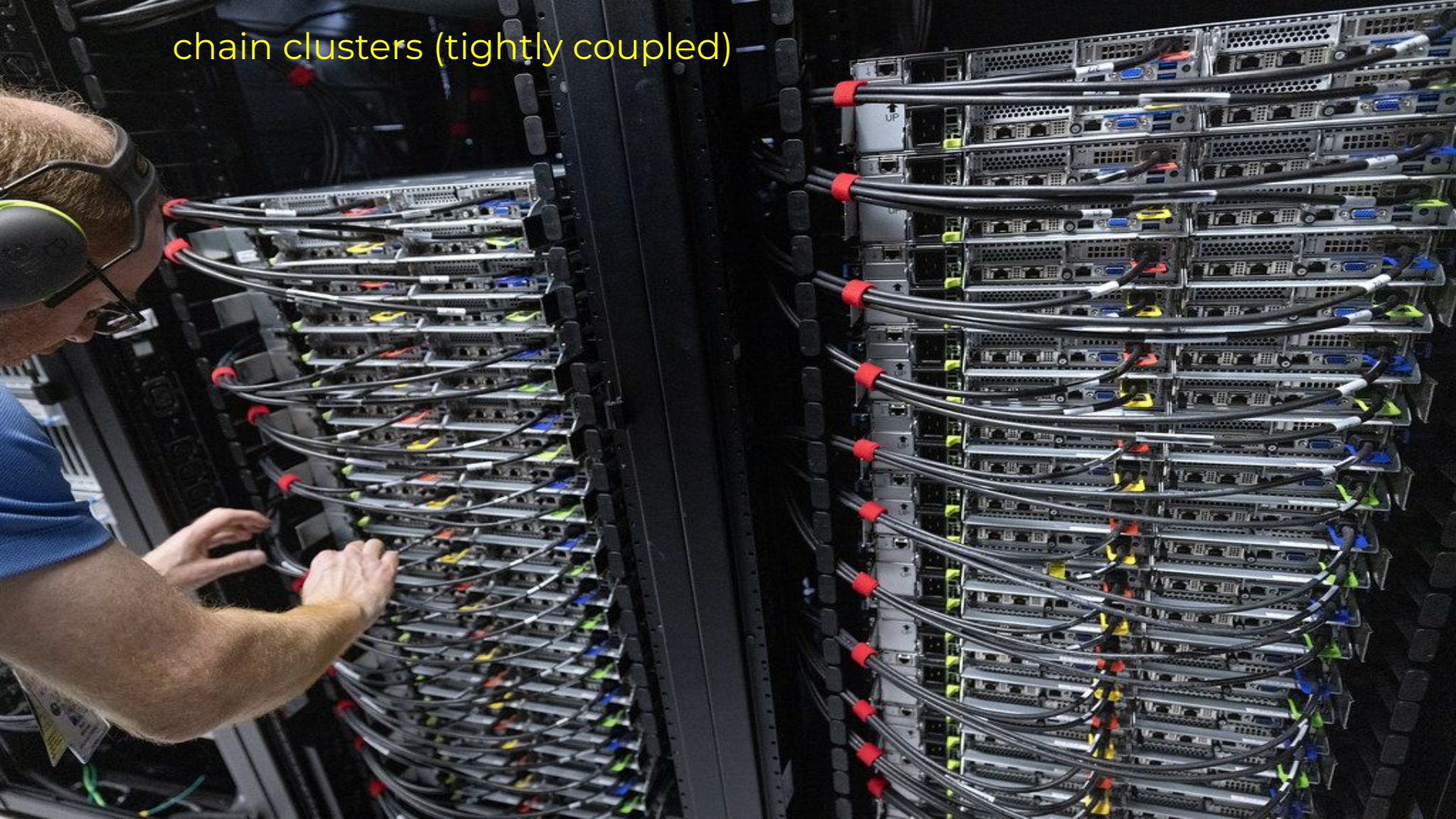
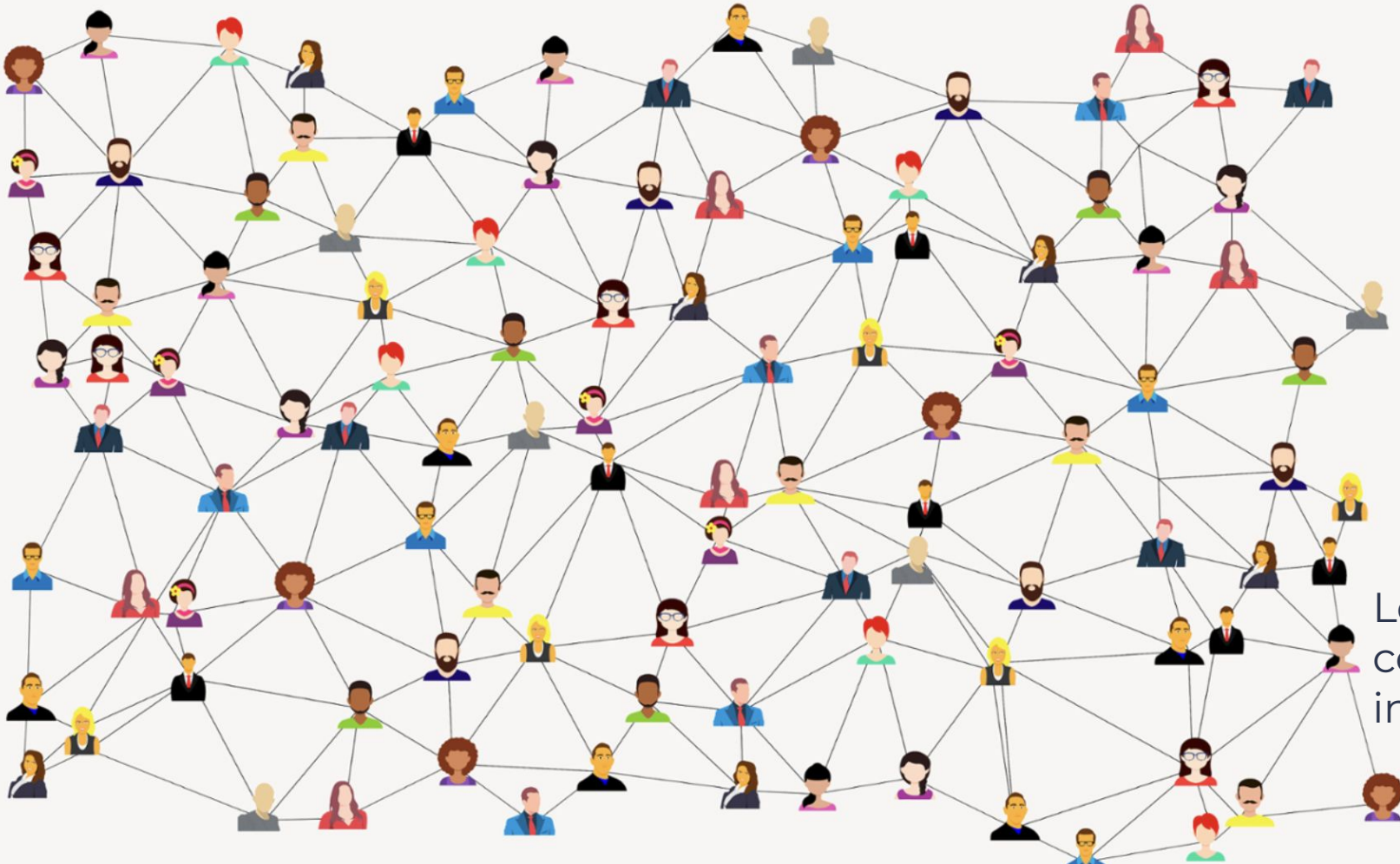
L2 Interop

Big move #2:
Connect everything

It matters ***how*** you connect


Interop, Internet style
fast
standards-based
asynchronous
fault-tolerant
security-conscious


chain clusters (tightly coupled)



Loosely coupled interop

Big move #3:
Developers, developers

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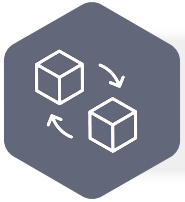
What developers need

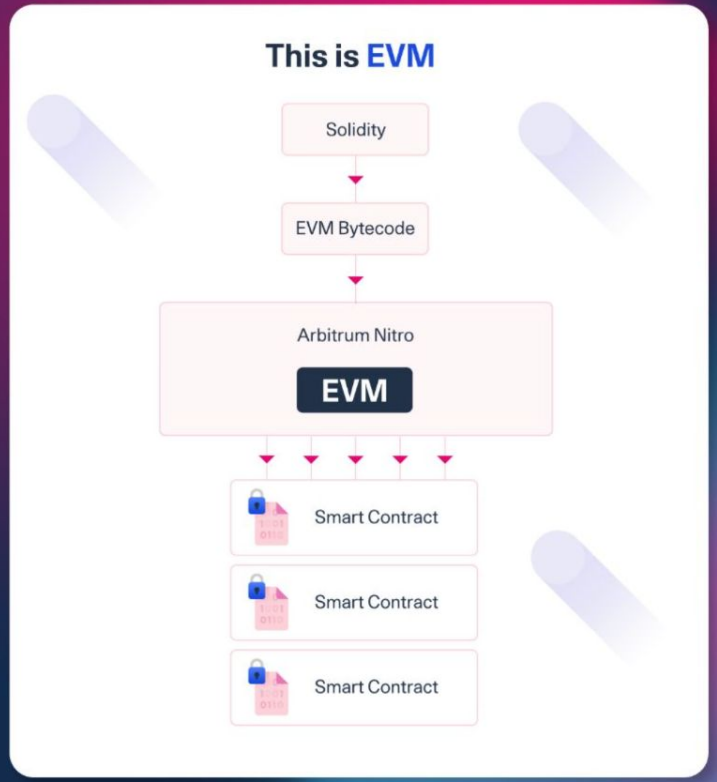
Familiar, standard, battle-tested languages and tools

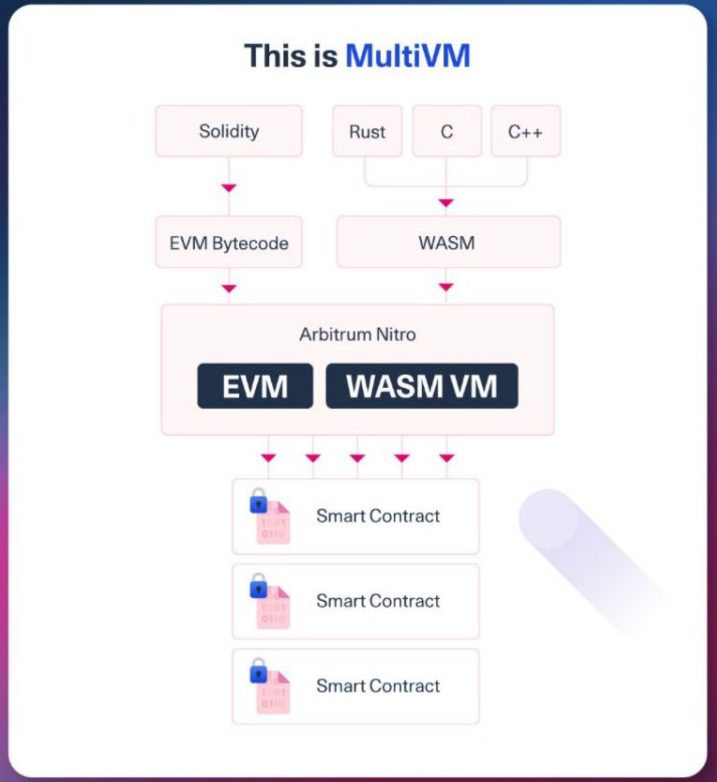
Fast execution



Fully composable

Stylus Gives You **MultiVM**





Stylus

Big move #4:
Make it fast, for real

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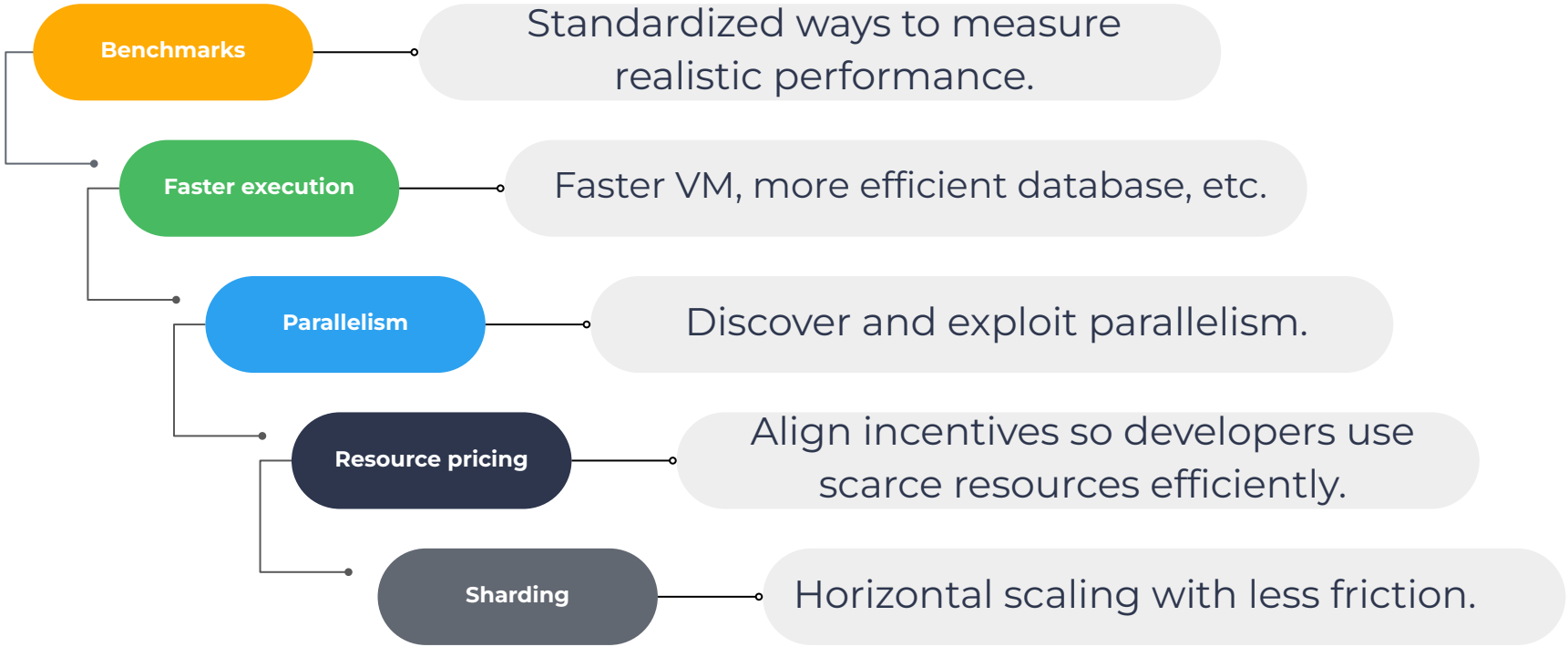
Making it fast



Big move #5:
Technical decentralization

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BoLD: efficient, fully decentralized proving

first and only fully secure fraud proof that:

- is resilient against 7 days of L1 censorship
- has fixed completion time
- allows honest parties to pool their stakes
- doesn’t rely on security council veto

Guarantee: Any one user can enforce safety and progress.

Sequencing properties

- Fast response time for user txs
- Fast arbitrage time
- Almost never reorg
- Protect users from front-running and sandwiching attacks
- Simple, fair, and easy to understand
- Internalize MEV value for the chain
- Decentralized

Timeboost: capturing MEV revenue

- Create an “express lane” in the sequencer
- Use FCFS sequencing, but delay non-express txs by 200 milliseconds
- Each minute, auction off control of the express lane for the next minute
- Captures MEV revenue, without sacrificing any of the checkmarks

Decentralizing sequencing

- ✓ Fast response time for user txs
- ✓ Fast arbitrage time
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Decentralized

Decentralizing sequencing

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Big move #6:
Decentralize control

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A Declaration of the Independence of Cyberspace

by John Perry Barlow

Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.

We have no elected government, nor are we likely to have one, so I address you with no greater authority than that with which liberty itself always speaks. I declare the global social space we are building to be naturally independent of the tyrannies you seek to impose on us. You have no moral right to rule us nor do you possess any methods of enforcement we have true reason to fear.

Governments derive their just powers from the consent of the governed. You have neither solicited nor received ours. We did not invite you. You do not know us, nor do you know our world. Cyberspace does not lie within your borders. Do not think that you can build it, as though it were a public construction project. You cannot. It is an act of nature and it grows itself through our collective actions.

1996

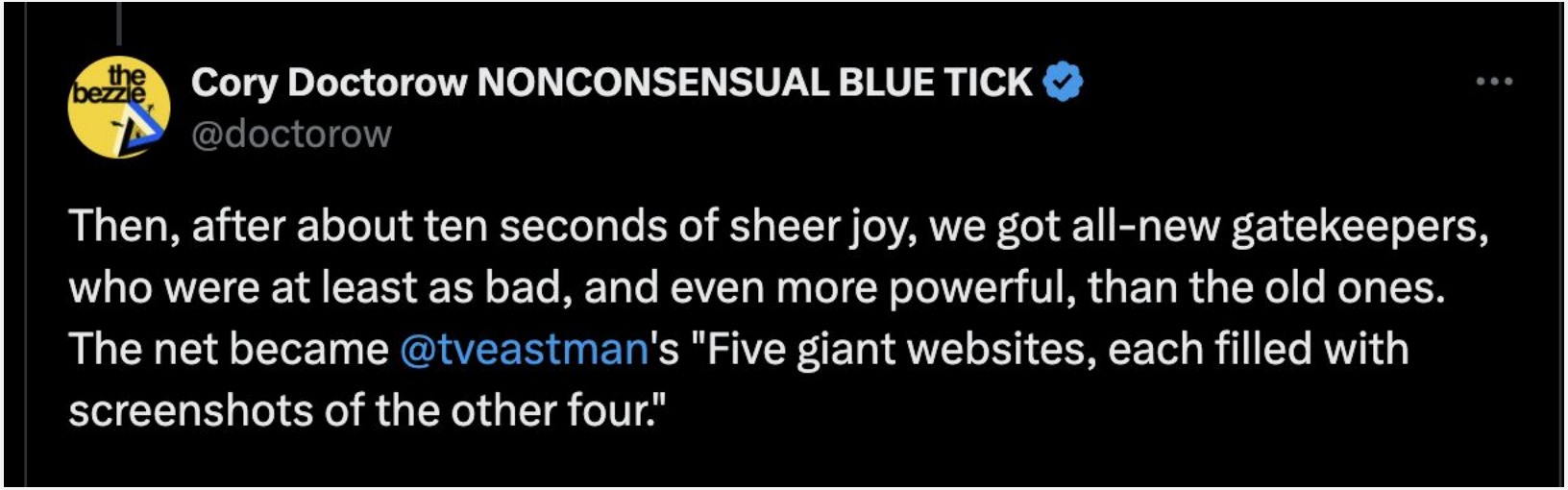


photo: jonathanworth.com, CC BY 3.0

What happened?

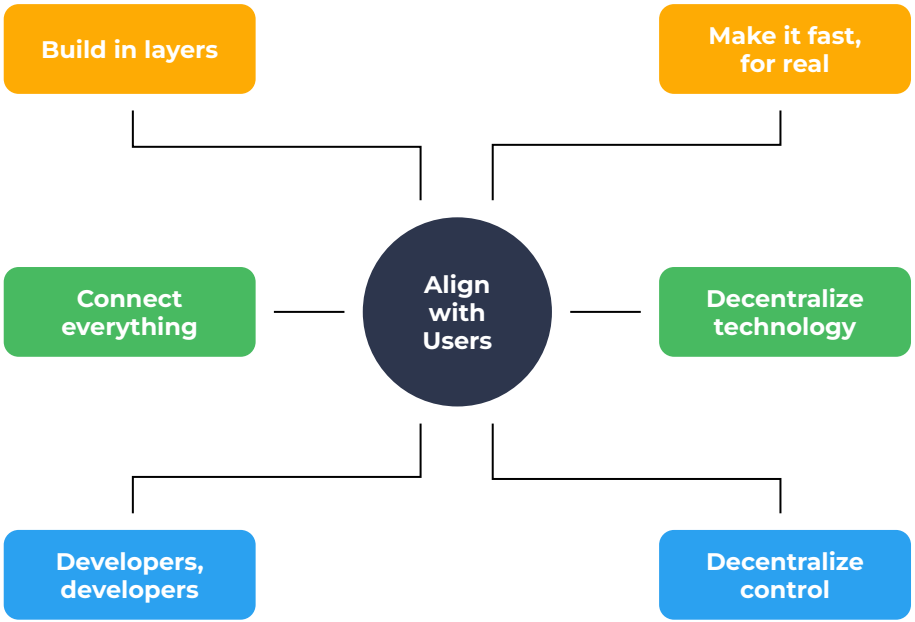
Decentralization theater

- Pretty words about community, but the system is custodial.
- DAO votes are just advisory.
- Multi-sig action is part of the plan, not just an emergency backup.
- You have a theoretical right to participate, but no real power.

True decentralization

- An active, independent community.
- The DAO holds the master keys.
- Security council is chosen by the DAO; its powers diminish over time.
- Anyone can run a node or validator, and stakes can be pooled.

Six big moves



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The future of L2 is the future of Ethereum

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Your chain. Your rules.

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The Future of L2

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