DELPHI DIGITAL

CryptoEvolution: Developer Capture
Thematic Insights

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Analyst

Tom Shaughnessy
tom@delphidigital.io

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Preface

We've been <u>tweeting</u> **about the Smart Contract Wars for a while, and in the next 12-24 months we'll see this vague notion take center stage as an explosion of new layer-1 blockchains launch.** Hedera Hashgraph (original $6B valuation) <u>launched</u> this month, Blockstack recently <u>closed</u> its REG A+ offering, NEAR protocol's impressive team <u>raised</u> money, Polkadot's semi-testnet went <u>live</u> and Algorand <u>raised</u> $60M, to name a few events. The space is heating up.

Each new blockchain will enter the war with a bang, touting massive valuations and a perfect roadmap for the future. However, the majority will die off slowly as they fail to gain traction with developers and liquidity for their protocol token dries up. An explosive open which could become quickly forgotten.

In my opinion, the extent of Ethereum's current Developer Capture will put new competitors at a disadvantage. New chains have to launch, attract developers, create primitive building blocks and then attain network effects to compete. We all learned about acceleration in science, its the speed of speed. **It will be hard enough for new competitors to catch up to Ethereum's current situation. To beat it, they'll need to accelerate even faster.**

This is a follow up piece to CryptoEvolution <u>part 1</u>. In this report, we'll dive into the launch of new blockchains and explore the concept of Developer Capture further. Blockchains are social experiments which need to gain developer mindshare in order to build out their ecosystems. Once a dominant chain has attained this, it can be very hard to unseat.

Key Points

There are many new smart contract blockchains launching over the next 2 years. It will be hard for them to differentiate themselves from each other.

Large initial funding does not necessarily result in a viral developer ecosystem or significant protocol level development.

Network effects and composability are major moats for existing blockchains.

Developer Capture is very hard to overcome as larger networks grow stronger.

Ethereum can fail but its biggest risk is itself. The network will need to scale on time to resist competition.

Blockchain Launch Chaos

There are a multitude of new layer-1, smart contract blockchains launching over the next two years, with several planned to release by year-end. On the below chart, Blue represents blockchains aiming to launch before year end (~3 months) and red represents future launches. Telegram is excluded since its $1.7B raise skews the data. **The projects pictured below raised collectively ~$2.5B, and is not an exhaustive list.**

These projects are impressive; Near Protocol has one of the most distinguished teams, Blockstack plans to roll out smart contract support and has already attracted 250+ applications, and Polkadot wants to compete with everyone. Handshake is rebuilding the broken security of the internet. Telegram has been secretive, but its 300M users can be leveraged to drive network effects around the TON token, if done correctly. Nervos and Solana also plan to release by year-end and in the future there are a handful of other layer-1's launching, including Dfinity, Coda, Casper Labs, Ava Labs, NuCypher, Dapper Labs' Flow, and Oasis Labs.

Non Launched Layer-1 Blockchains
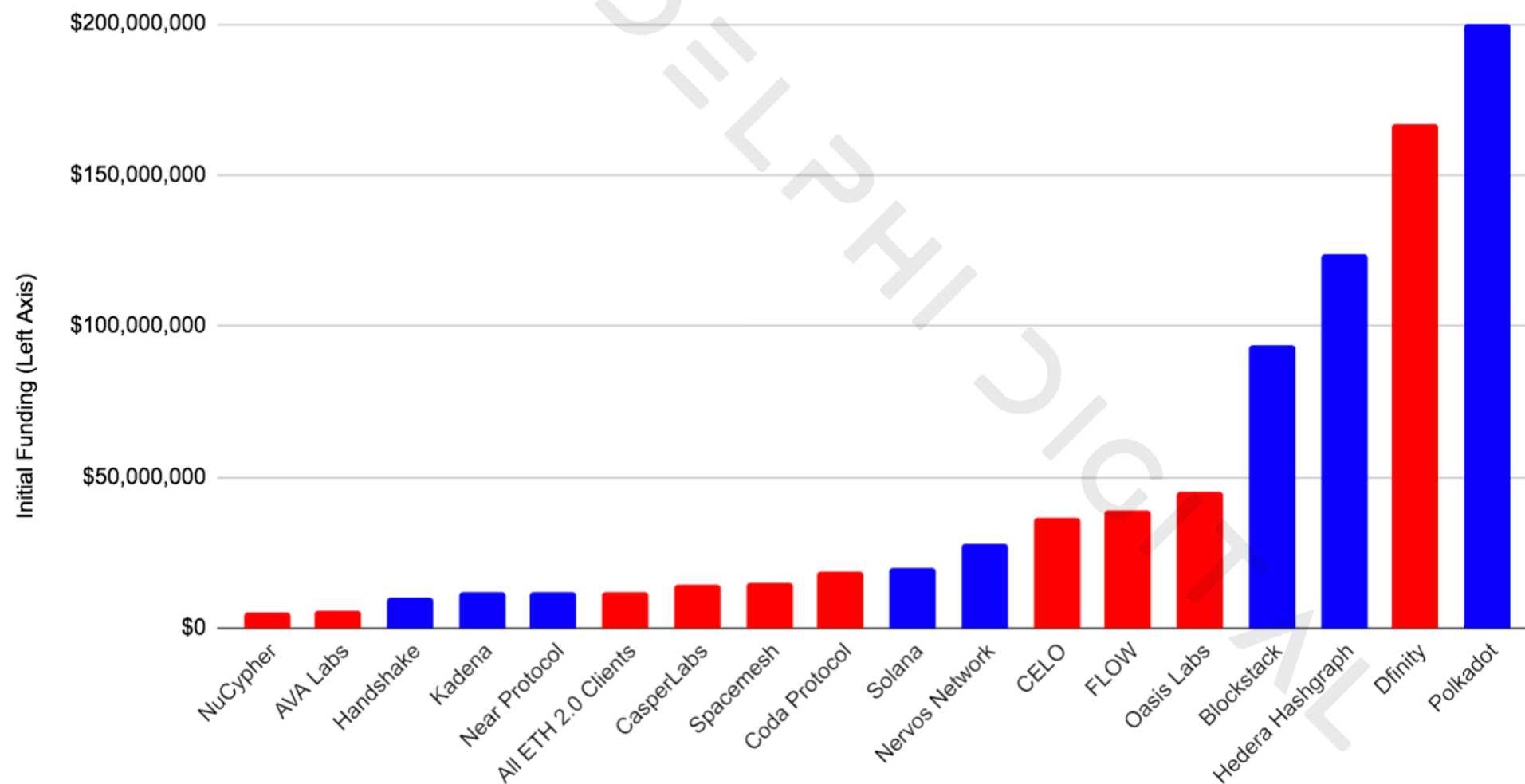
DelphiDigital

Blue = Planned Launched Before Year End, Red = Launch In The Future

Proof-of Stake Focus

Of the projects on the previous slide, 79% of them (15) plan to launch using proof-of-stake as their sybil resistance mechanism, while only 4 plan to use proof-of-work (Handshake, Kadena, Nervos and Blockstack). Spacemesh is unique and intends to use another mechanism called proof-of-space-time. Blockstack may also implement a different scheme in the future as well.

Proof of Work 21.00%

Proof of Stake Variant 79.00%

Sybil Resistance Mechanism
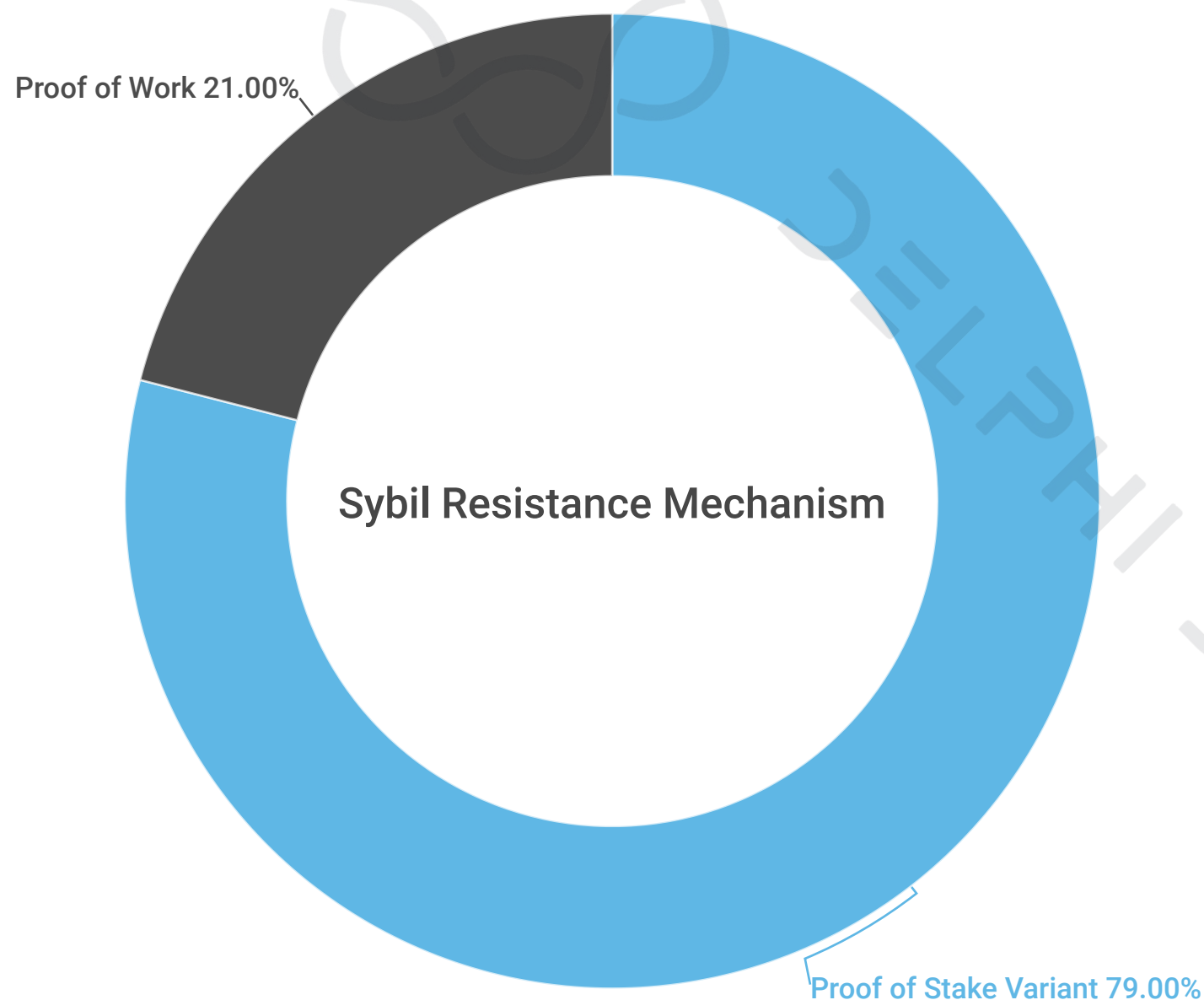
|	
All ETH 2.0 Clients	PoS
AVA Labs	PoS
Blockstack	PoW
CasperLabs	PoS
CELO	PoS
Coda Protocol	PoS
Dfinity	PoS
FLOW	PoS
Handshake	PoW
Hedera Hashgraph	PoS
Kadena	PoW
Near Protocol	PoS
Nervos Network	PoW
NuCypher	PoS
Oasis Labs	PoS
Polkadot	nPoS
Solana	PoS
Spacemesh	PoSt
Telegram	PoS

Sources: Respective Project Websites

Funding vs Developer Activity

A lot of emphasis is placed on initial funding, as some believe that the more a project raises, the greater it can fund expansion, R&D and marketing. This couldn't be further from the truth. For instance, some projects that received under $15M in initial funding (NuCypher, Handshake, Casper Labs) have more GitHub commits than projects that raised 10x that: Polkadot and Dfinity have 433 and 170 commits, and raised $200M and $167M respectively. We excluded Telegram since their $1.7B raise skews the graph, and we are unable to locate their secretive GitHub Repo. It's important to note, that not all GitHub repos are public, such as Hedera and Dfinity, which is why the commits are so low.

This data does not include the on-going warchests of projects and focus on initial funding since this is more important in a project's early life. For instance, Ethereum has ConsenSys and the Etheruem Foundation funding its future, but these both came after original funding, and their warchests are a function of ETH's early success and price appreciation.

Commits vs. Initial Funding (Excludes Telegram)

Initial Funding (Left Axis) — GitHub Commits (Right Axis)
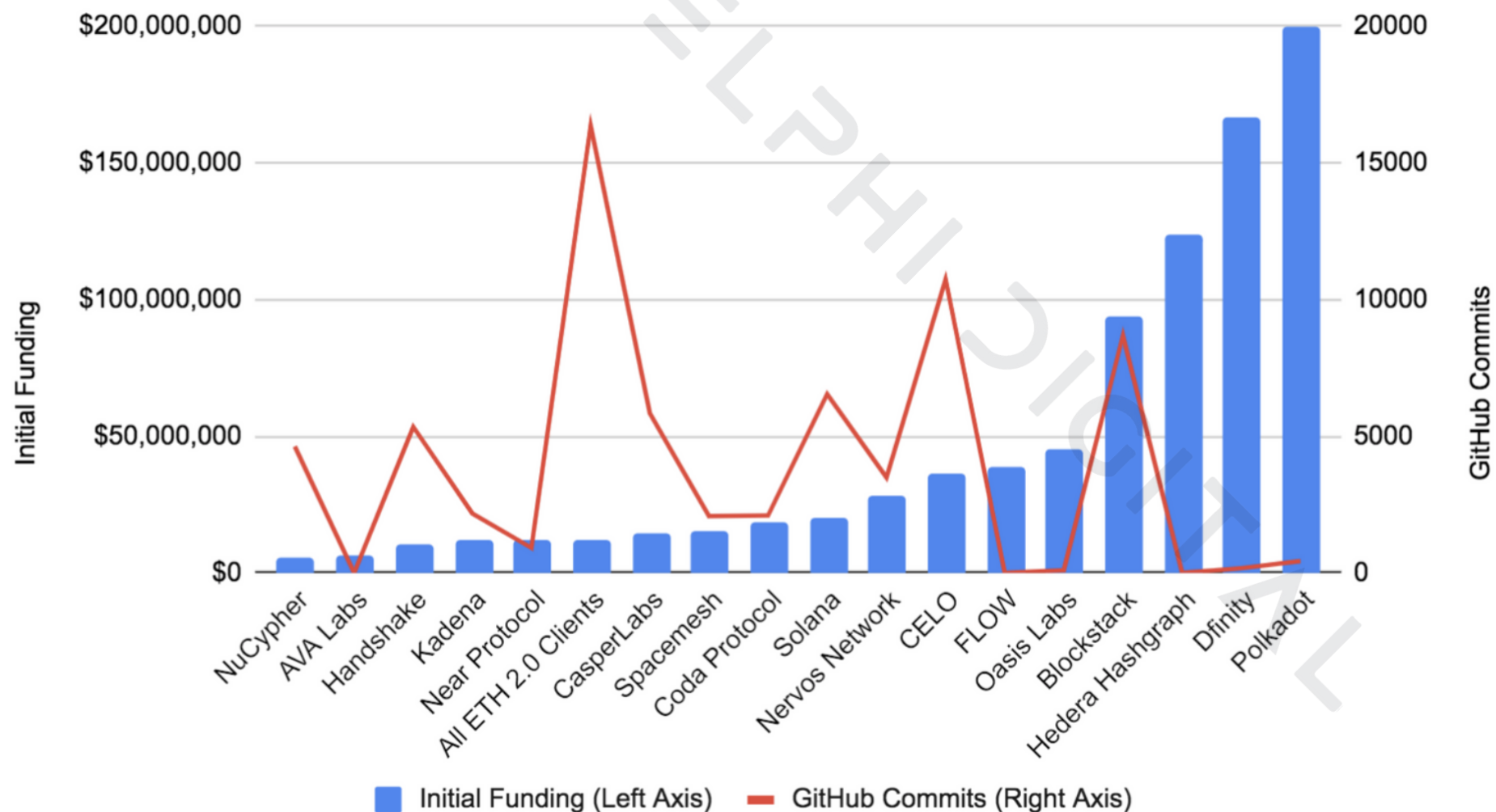
Funding vs Developer Activity

While GitHub commits are one way to track development activity, it can be a flawed metric. Not every commit is a meaningful change, and it's easy to make small updates to inflate the metric.

Two other measures we can look at are contributors, how many people are working on a project, and watchers, those looking to track development progress.

For instance, all ETH 2.0 Clients collectively have the most watchers of any new project (~250) which does not correlate with increased funding. Also, Blockstack is a close second and is 4th in line for most funding.

On contributors, CELO has the most contributors at 388 and next in line are all ETH 2.0 clients. Both of these projects are not the highest funded either.

In summary, a project does not need massive funding to attract a viral developer community that is passionate about it. Never forget what Bitcoin was able to achieve and it never raised a cent.
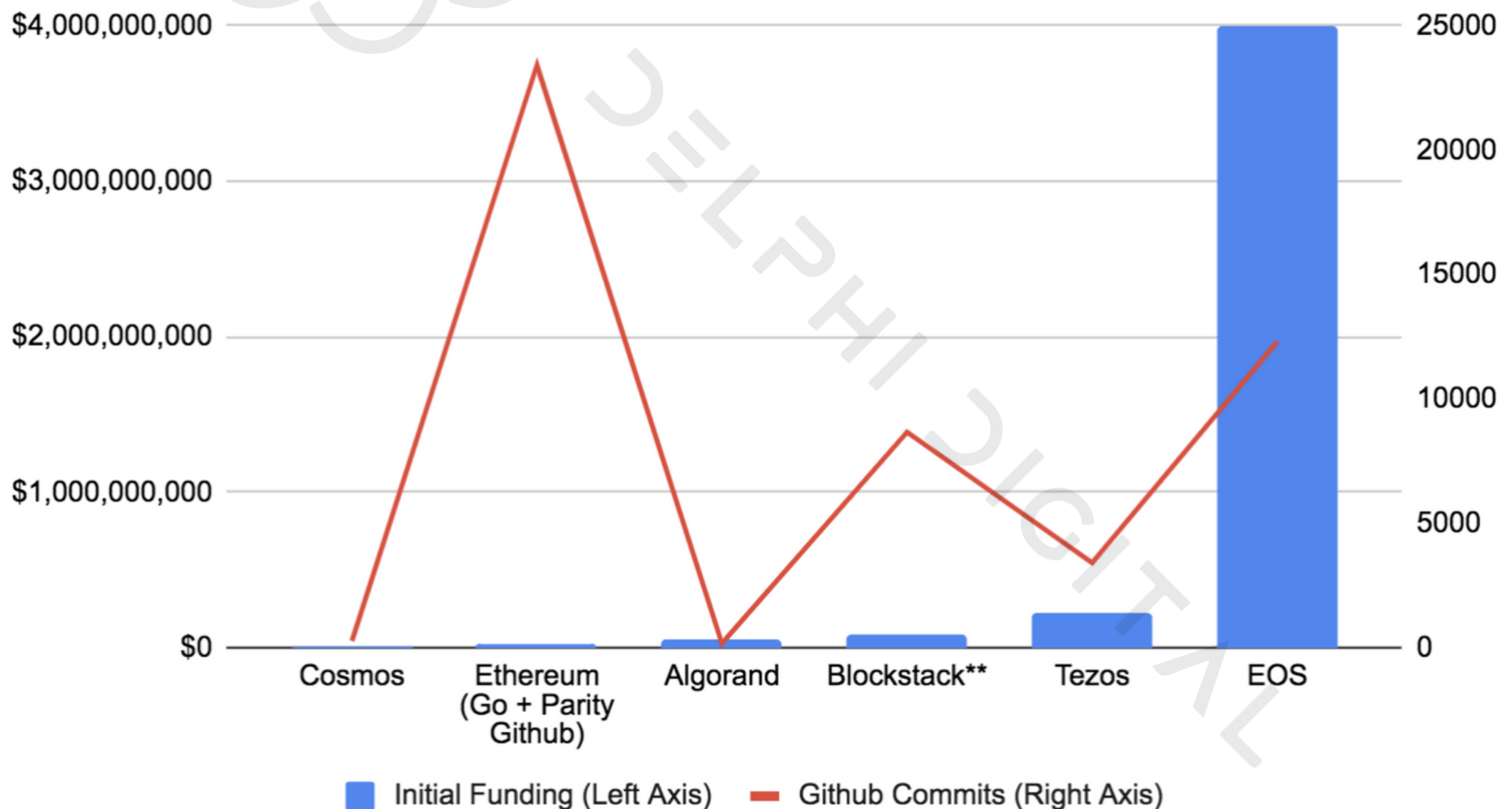

Watchers vs. Initial Funding
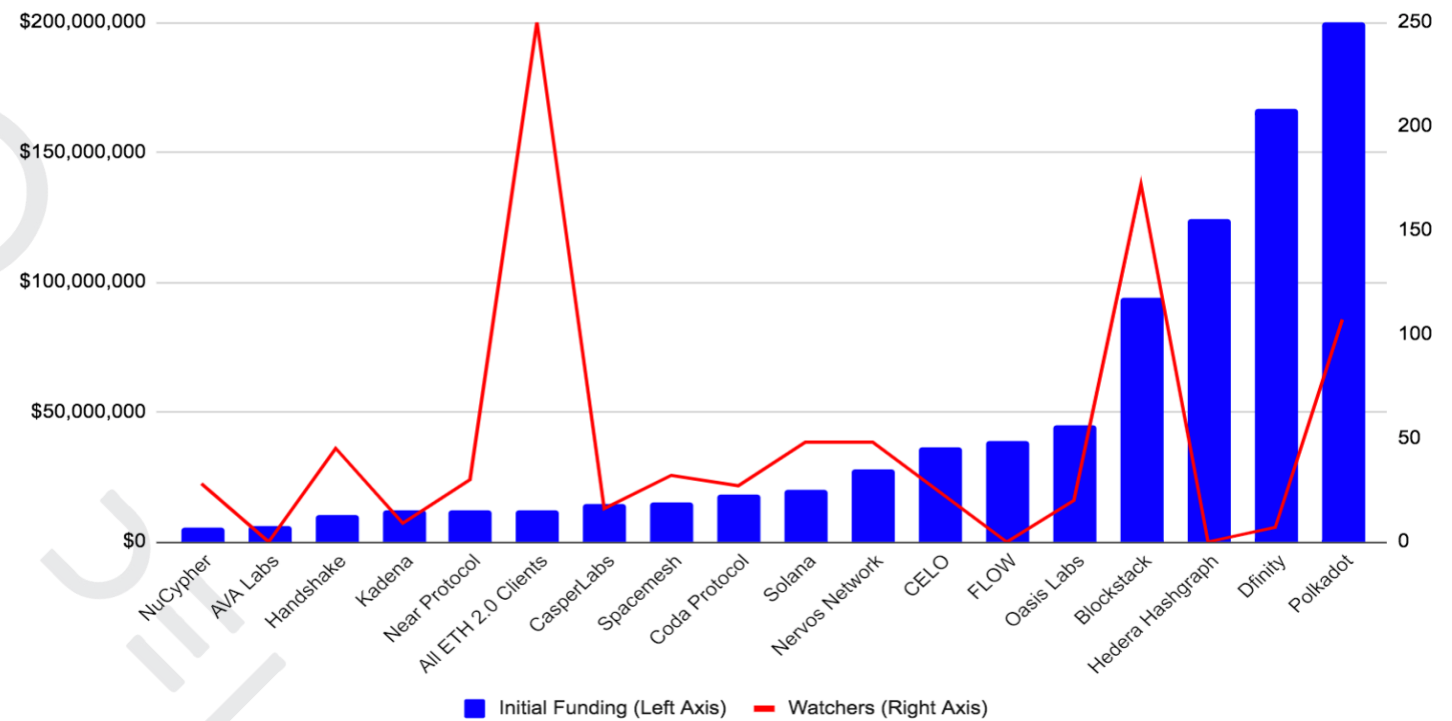
Contributors vs. Initial Funding (Left Axis)
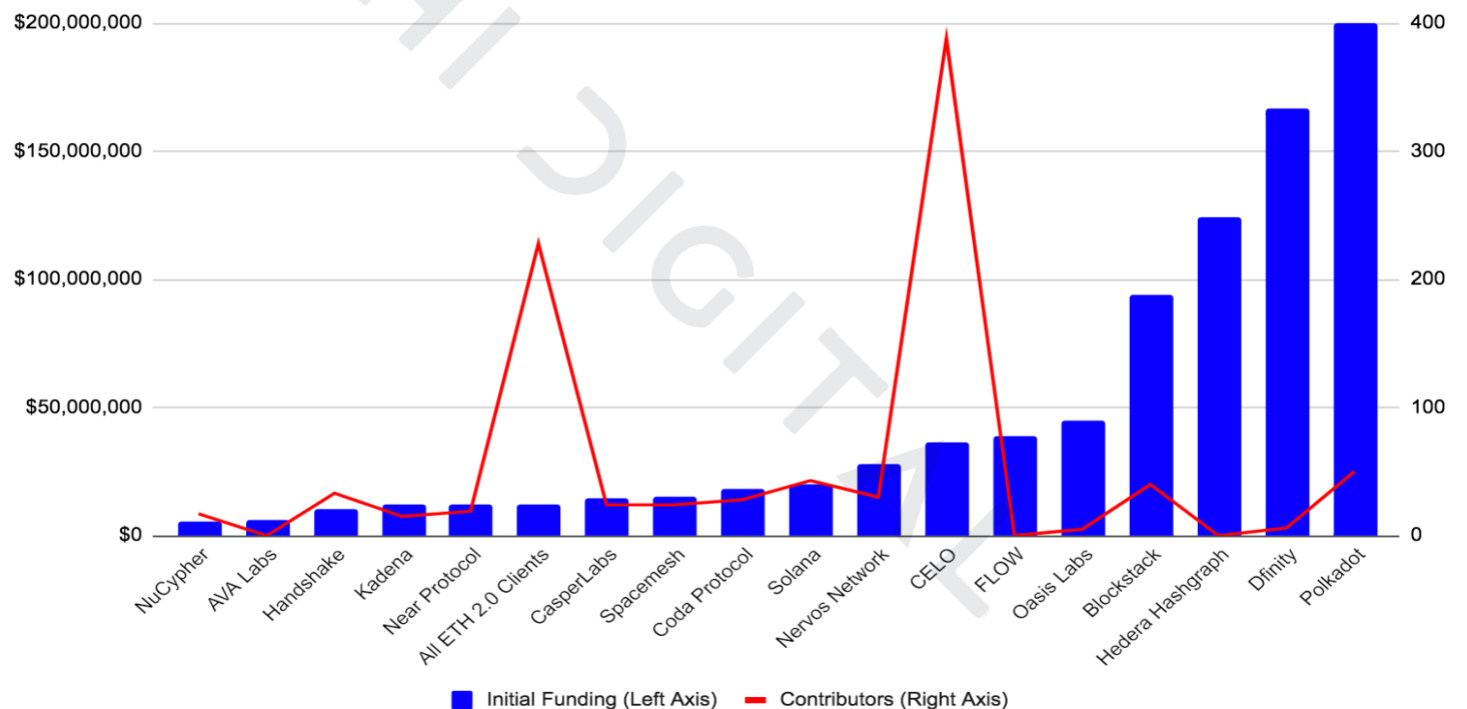
Live Blockchains vs Funding

Funding does not equal a viral developer community. If this were the case, EOS which raised $4B would have the most active ecosystem. Since EOS is live, lets compare it to the other well-known live smart contract capable blockchains. When excluding Ethereum, EOS does stand out on Github Commits (12,312), although for raising $4B, its pretty close to **Blockstack (8,680) which raised just 2.5% what EOS raised.**
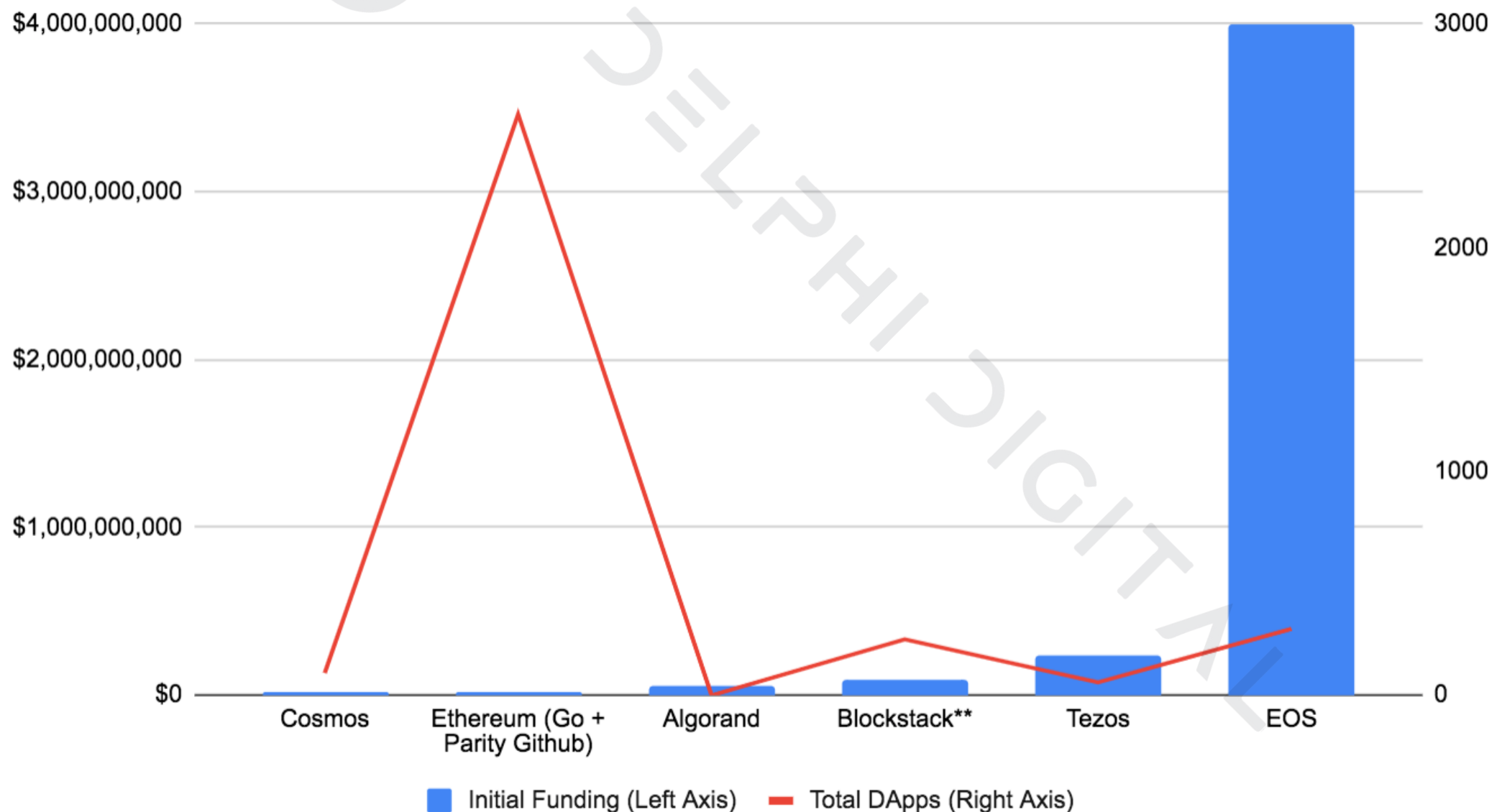

Launched Layer-1 Protocols

Initial Funding (Left Axis) — Github Commits (Right Axis)

Sources: GitHub, Dozens of funding reports, Note: Note all GitHub repos are public, such as Hedera and Dfinity. A private GitHub is not open for developer review, and does not have public metrics.

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Beyond Protocol Level Development

Since the protocols on the previous slide have already launched, the focus should be on whats being built on-top of them. Ethereum has 2,597 DApps, EOS boasts 297 and Blockstack has 250. Net, if Blockstack can attract nearly as many DApps as EOS, despite having 2.5% of the funding, **it's clear that a project does not have to raise substantial funds to attract a strong ecosystem.** Developers want a strong ethos and belief that what they build on a protocol can change the world. We excluded Ethereum given its time lead, but with 2,597 DApps and over $500M locked in DeFi, its clear Ethereum is in the overall lead.

Layer 1 Funding vs DApps

Chart x-axis categories: Cosmos, Ethereum (Go + Parity Github), Algorand, Blockstack**, Tezos, EOS

Legend: ■ Initial Funding (Left Axis) ── Total DApps (Right Axis)

Developer Capture Is A Moat

Attracting developers away from incumbents like Ethereum will be a difficult hurdle for new networks to overcome. As a result, I believe it will be very hard for new public smart contract platforms to compete with Ethereum for developer mindshare. **For perspective, ConsenSys put Ethereum's developer ecosystem in perspective with 1,243 monthly active Ethereum developers (4x the 2nd most active), 2.1M truffle downloads (developer suite).**

This idea of "Developer Capture" goes beyond protocol level development and also includes the developers building applications on these networks. New projects will need to move faster than the Ethereum community in order to catch up. While Ethereum can certainly still fail, we believe its more likely that this happens due to its own inability to scale rather than from the threat of a new network.

New layer-1 blockchains need to attract developers in order to establish the necessary building blocks (liquidity protocols, lending protocols, etc.) for their ecosystems. Those protocols will have to gain some degree of network effect for them to function properly and then, ideally, they need to be combined in new ways to help differentiate themselves from Ethereum. All the while, developers are speeding ahead at an even faster pace on Ethereum given its head start. The future impact of interoperability will be important to watch. If applications on a new blockchain can leverage Ethereum it may stunt development on their own network. However, without interoperability, Ethereum's moat may be even stronger because less developers would want to reinvent the wheel elsewhere instead of just joining its ecosystem from the start.

Composability: Many of the building blocks I need to create something already exist, so there are fewer reasons to use a new chain that lacks the same ecosystem

Interoperability: If applications on a new blockchain can leverage Ethereum it may stunt development on their own network

Initial Launch

Attract Developers

Developers Build Out Core Components, Tooling and Docs

Infinite Experimentation Leads to Viral Use Cases

Back To CryptoEvolution

The hard part is a new layer 1 has to do this faster, catch-up, and beat the current incumbent, to have the largest developer mindshare. **This all feeds into our original idea of** <u>**CryptoEvolution**</u>**, that larger networks with developer mindshare will outgrow smaller networks, allowing them to capture network effects first. For example, a prediction market on the 4th largest layer-1 doesn't matter if the one on the largest chain has the most users and liquidity.**

Developer Acceleration is the idea that a new layer 1 has to accelerate faster than the incumbents, and I believe this will be very difficult given the existing developer capture and network effects of Ethereum.
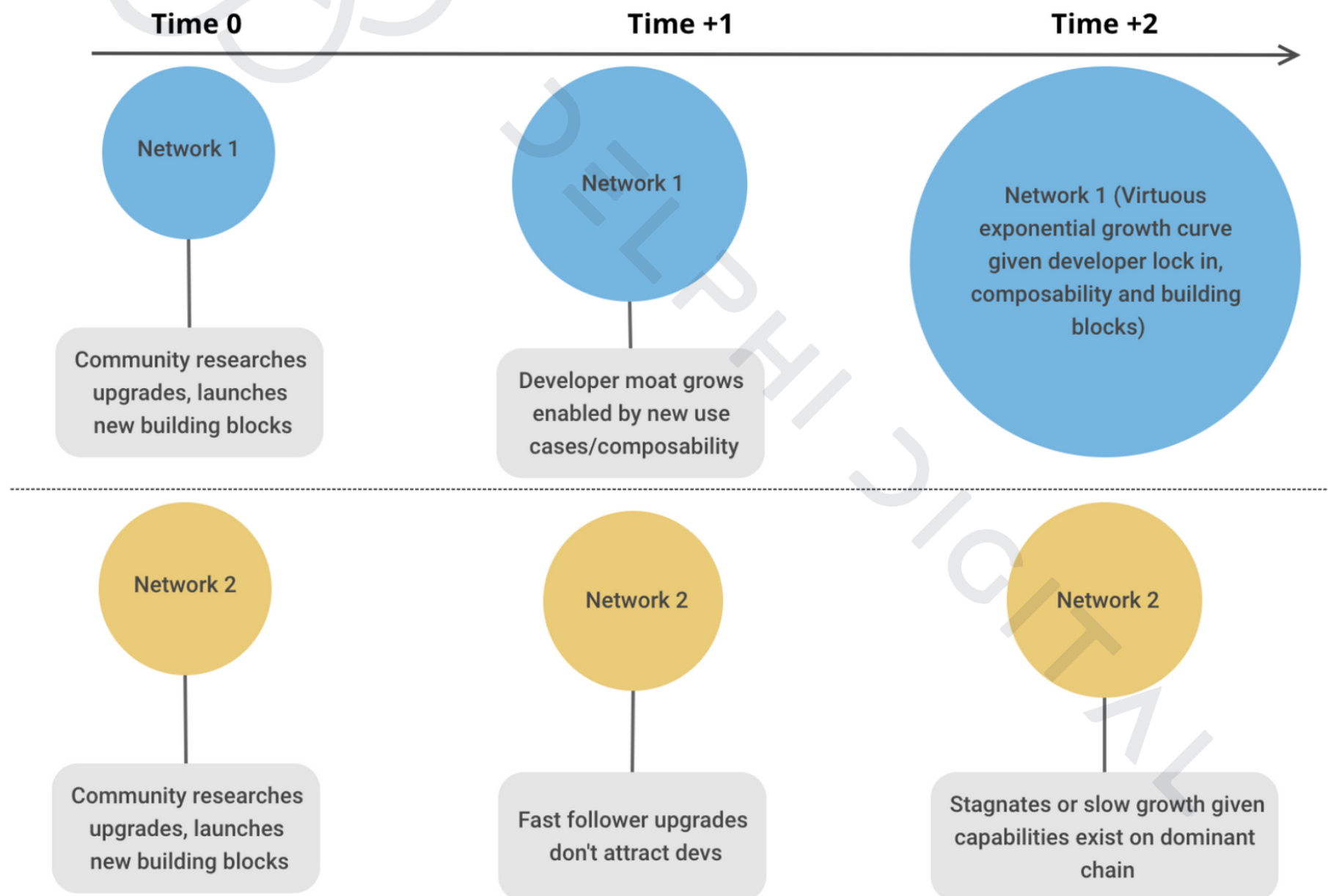
Composability Is A Moat

Ethereum is currently the smart contract platform incumbent and composability is a clear driving force behind its dominance. While the applications that developers will build in the future is clearly important, so too are the ones that already exist on a network. It means that developers don't have to recreate an entire ecosystem just to deploy their new application successfully.

For example, Set Protocol is built on Ethereum and leverages MakerDAO and Kyber Network. Sure, the framework behind Set protocol can be deployed on new networks but without those other components it won't work as well. While someone tries to do this, Set on Ethereum will continue to grow its AUM increasing its network effect.
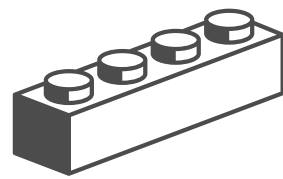
Base Layer + **Existing Building Block 1** + **Existing Building Block 2** = **New Use Case, Coming To Market Faster**
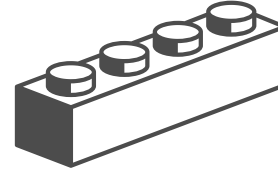
Ethereum + **DAI Stablecoin** + **Kyber Liquidity Network** = **Set Protocol: Tokenized Trading Strategies**

Stakeholders Are A Moat

Encompassing developers and stakeholders, one of the most important metrics to track is the health of the discussion within a community. Attracting X developers is great, maintaining X developers over a long time horizon is much better. Ethereum has a strong off-chain governance discussion sphere that ranges from Ethereum magicians and Ethresear.ch to ETH Gitter (87 discussion rooms with 63k people) to its core developer and ETH 2.0 implementers calls that on average have around 30 and 25 callers, respectively.

Problems are not an issue, they are vital for growth and unavoidable, not having an active set of stakeholders to discuss them is the real force that puts one protocol way ahead of another. A new layer-1 won't boast higher engagement on an absolute basis, and this is a risk factor for that layer-1, but the competing few that have the potential to be successful will have a strong and engaged stakeholder base. Look for real discussion, not the tweets of the XRP army.

Ethereum Magicians and Ethresear.ch

Legend: Ethereum Magicians (blue), Ethresear.ch (red). Categories: Posts, Likes, Users, Topics.
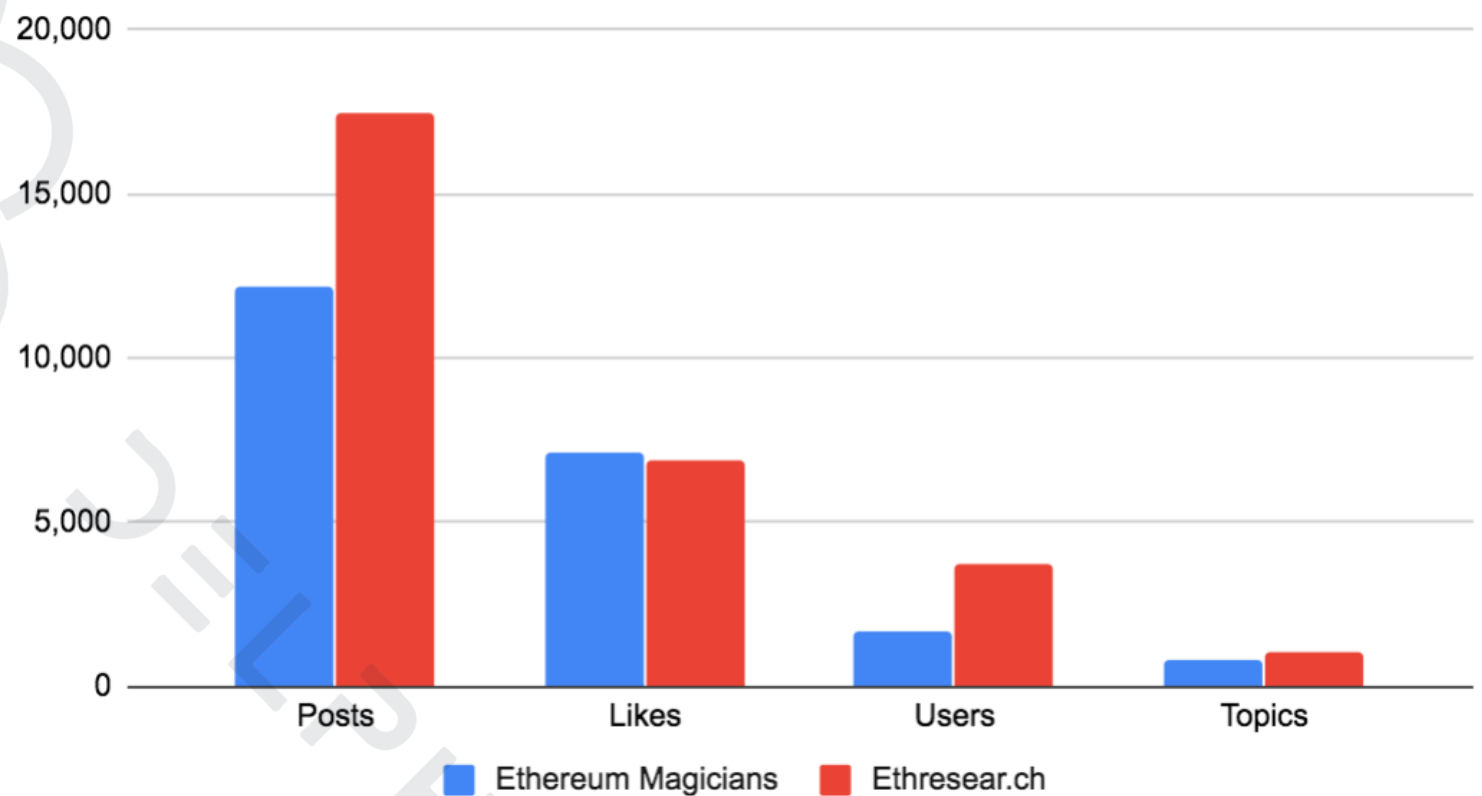
- **Core Developers Call: ~30 Callers**

- **ETH 2.0 Implementers Call: ~25 Callers**

- **ETH Gitter: 63k People**

Ethereum Can Still Fail

As is the case for most incumbents, I believe the biggest threat to Ethereum is Ethereum itself. Ethereum's biggest potential risk is the inability to scale (sharding, layer-2) while maintaining decentralization. This can open the door to a new dominant smart contracting layer-1. While I believe Ethereum will hit its scaling deadlines, there is always the risk that it won't. Aside from developers, new blockchains have numerous other hurdles to overcome, such as achieving a secure network. However, that topic is beyond the scope of this report.

Ethereum has gone through growing pains and criticisms, which can be expected given the transparent nature of open-source, decentralized development. Remember though, all new blockchains will face similar pains if they're around long enough. Its just that many won't survive them. On the positive side, this space is still very small and nascent relative to what it can become. There is still plenty of time for new layer-1s to capture developers and succeed. Will there be one dominant chain or a few? That's hard to predict right now. New layer-1s face an uphill battle but for the right venture capitalist, choosing the winning ones could lead to outsized returns in the future.

Major ETH Risk Factors

The inability to scale (Layer-1 with sharding, or Layer-2 through dozens of projects).

The loss of its developer mindshare (unable to compensate them, or a competing ethos better attracts developers).

A major technical issue (state bloat, a disastrous bug)

Disclosures

DELPHI DIGITAL

85 Broad Street

New York, NY, 10004

www.delphidigital.io