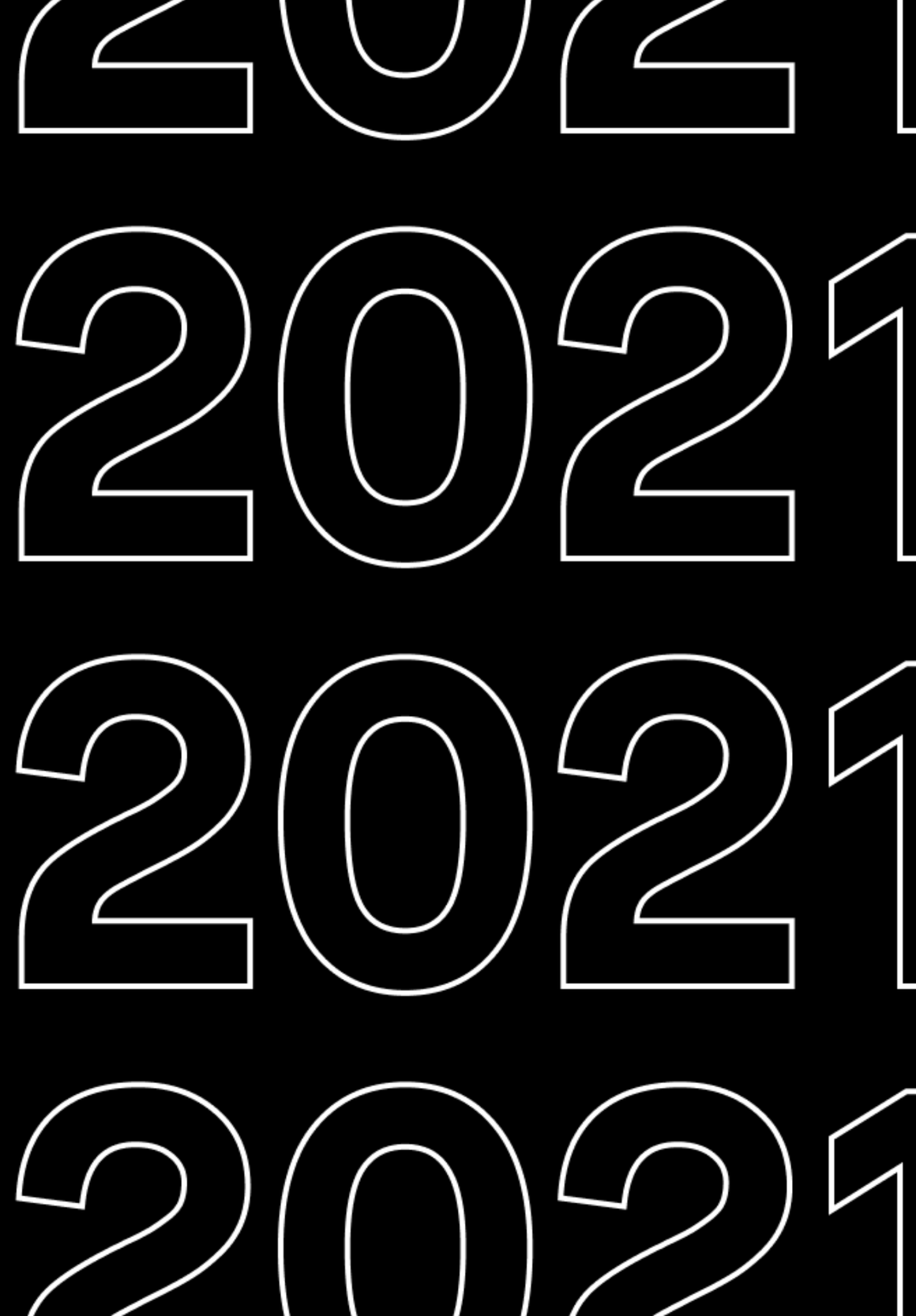
Staking Rewards

Staking Ecosystem Report 2021

In collaboration with StaFi



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An Analysis of the Current State of Proof-of-Stake Technology and The Staking Industry

Annual Overview of the Staking Industry - 2021

Over the past number of years, the shift of focus away from Proof of Work (PoW) and onto the Proof of Stake (PoS) consensus algorithms has been evident and timely. The PoS dominance rate, relative to PoW, has increased substantially over time from ~5% in October of 2019 to over 20% in October 2021 (see chart below). We anticipate that this trend will continue for the foreseeable future with 19 out of the current 20 largest smart contract platforms being powered by some form of Proof of Stake consensus.

It is becoming clearer by the day that blockchain technology will greatly disrupt both traditional finance and the Web2 world as we know it & that Proof of Stake will be the underlying technology to power our future Web3 economy. Smart contract platforms are not winner-takes-it-all however and it is likely that a multichain future will exist down the line as interoperability between protocols continues to iterate and improve.

At the time of writing, the Proof of Stake market cap is sitting at $326.775B, which is up from $21.117B just one year ago. An increase of 1,550%! While the overall crypto market is “only” up by 673% ($338B in October 2020, and $2,278B in October 2021).

Contributing factors to the success of Proof of Stake as the go-to-consensus layer for smart contract platforms versus Proof of Work are:

- Higher performance & faster finality
- Environmental sustainability
- Zero economies of scale (& Lower cost of security)
- Larger design space to optimize blockchains for decentralization, security, and scalability.
- And more

Staking Rewards

Staking Rewards' vision has always been a world of multiple blockchains empowered by Proof of Stake consensus. As an independent and trusted hub, we have been supporting the ecosystem of protocols, providers, and stakers (retail and institutional alike) with data, and tools to navigate the space and contribute to the long term success of the industry at large. We have always been an advocate to foster a healthy staking ecosystem and to enable the space to learn, grow & collaborate.

While we are evangelizing Proof of Stake and Staking to the broader market, Proof of Stake comes with challenges as well. We have addressed them all in this report, and map the current status quo around PoS.

Challenges aside, the form of consensus has positioned itself clearly as the go-to-solution for most blockchains other than Bitcoin, further highlighted by Ethereum's upcoming switch from PoW to PoS. The recent London Fork received notable industry attention and the road to ETH 2.0 is clearer and nearer than ever before.

There are so many facets to this emerging industry that we focus on a daily basis at Staking Rewards but explore throughout this report for you to learn a bit more from insiders building the decentralized future. These include but are not limited to Yields, MEV, Governance, Security, Liquid Staking, Validator Business and more.

We have collated the thoughts, insights and opinions of 19 diverse industry thought-leaders and 200+ Staking Rewards' users in this report to get an inside view on the world of Proof of Stake as it is and where it will be in the not too distant future. We hope you enjoy this year's edition of the Staking Ecosystem Report!

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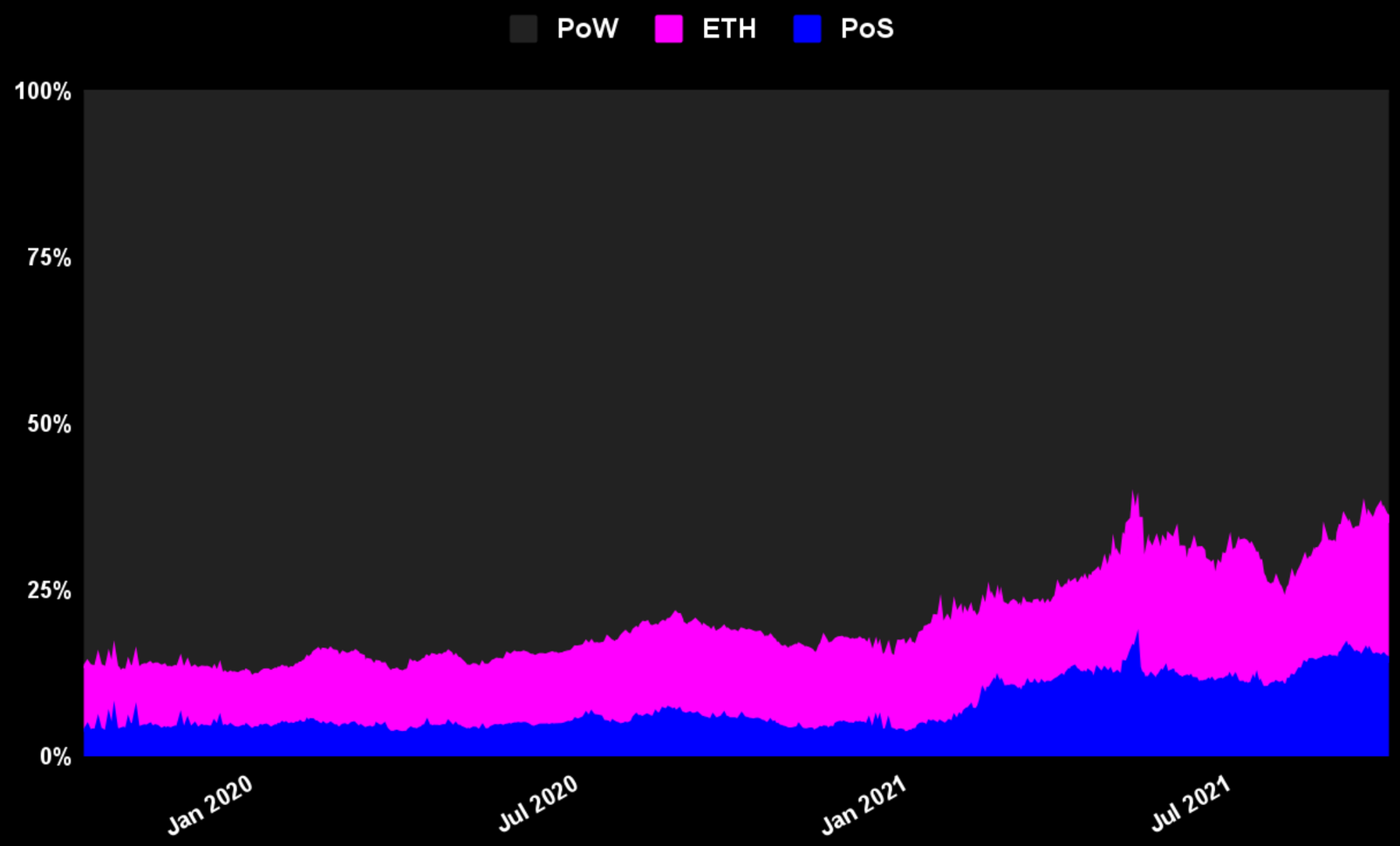
Proof of Stake has been gaining traction on Proof of Work over the past two years.
We at Staking Rewards anticipate a flippening in the coming years.

PoW vs PoS Dominance 2020 - 2021 (Dominance vs Time)



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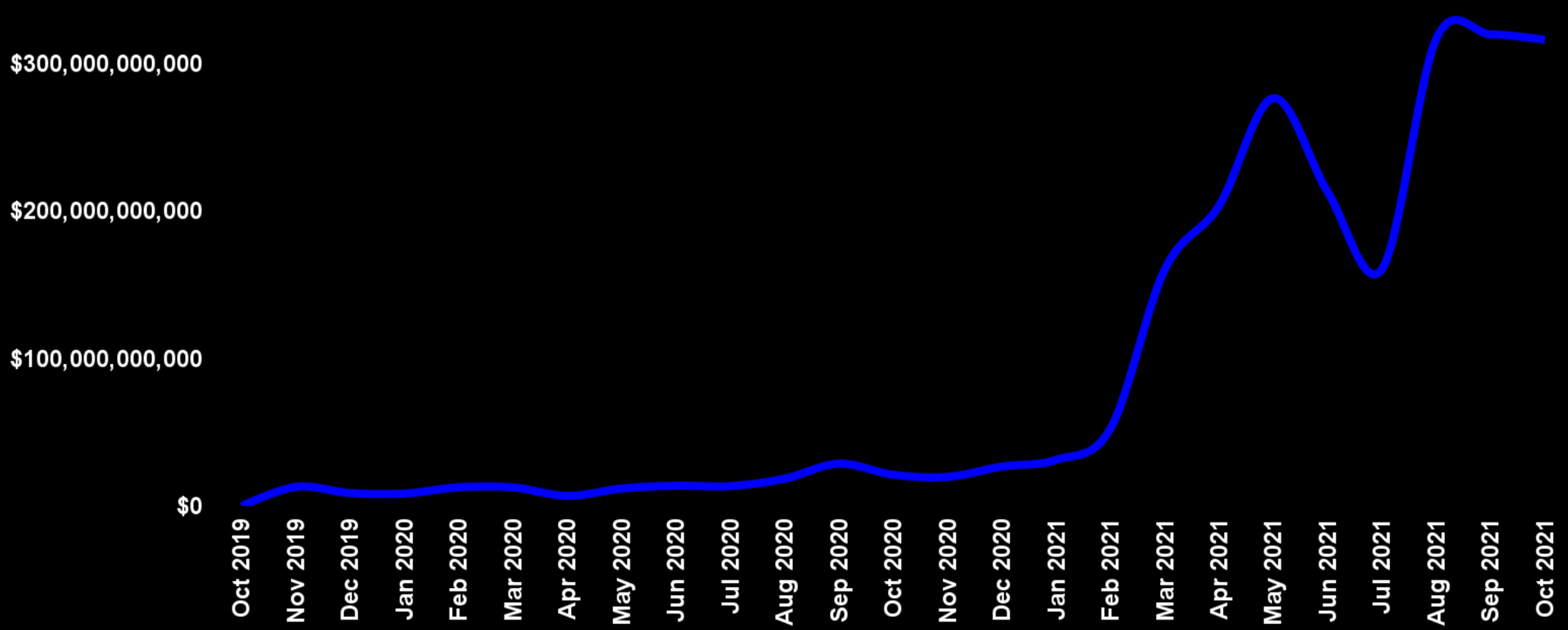
The Proof of Stake Market Cap has grown from ~$9B USD in October 2019 to over ~$339B USD at the time of writing in October 2021.

Proof of Stake Marketcap (October 2019 - October 2021). Source: Staking Rewards



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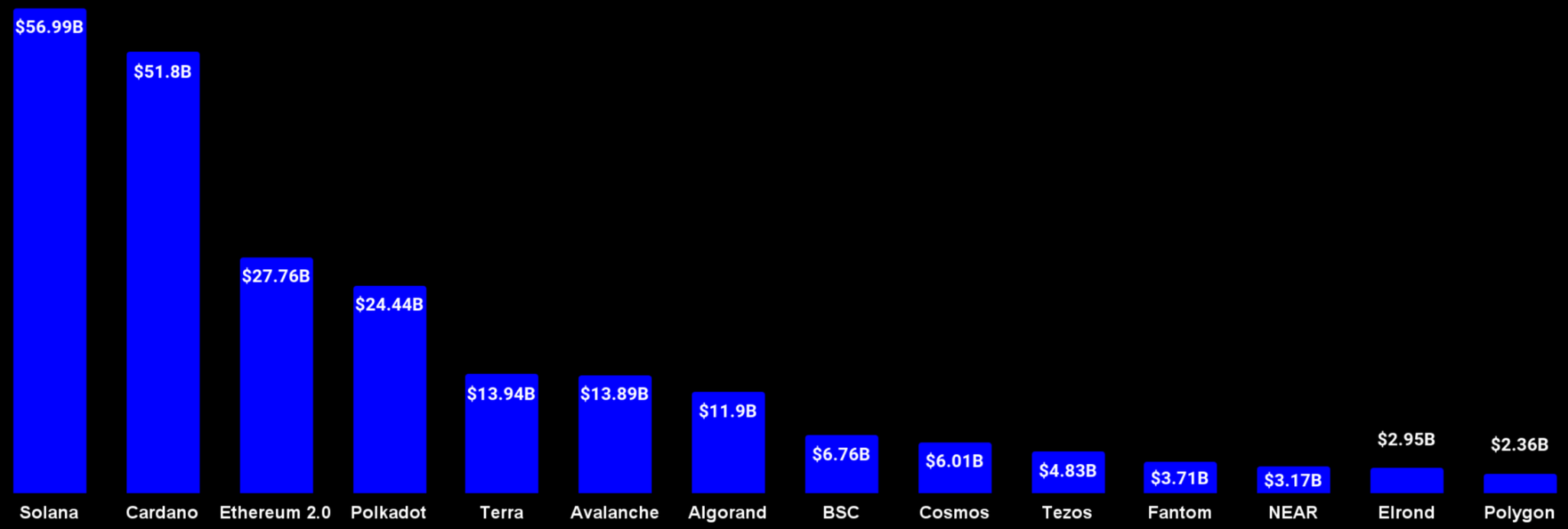
Staked Value refers to the total value of USD participating in staking. Assets such as Solana, Cardano, Ethereum 2.0, Polkadot and Terra are market leaders as of October, 2021.

Top 15 Proof of Stake Assets by Staked Value (as at 11th of October, 2021). Source: Staking Rewards



Traditional Finance is Broken.

The purchasing power of the US Dollar has decreased by 86% over the last 50 years, while the US Dollar money supply has increased by 9589% over the same timeframe.

In contrast, banks are offering interest rates of less than 1% annually.

The traditional financial system is value-extracting and dilutes the spending power of your hard-earned money, in order to fuel the inefficiencies of banks and to make up for the flaws in monetary policy.

Bank Interest Rates (as at October 2021):

- Goldman Sachs (US) - 0.50%
- Citibank (US) - 0.50%
- Barclays (UK) - 0.40%
- BBVA (Spain) - 0.65%

While crypto does not fix the traditional system, Proof of Stake and staking empowers people for the first time in history to hedge not only inflation, but also to hedge increase in money supply, via a transparent system that cuts out the inefficient middleman through code.

Tablecoin Yields:

- USDC $USDC - 5.52%
- USDT $USDT - 6.83%
- UST $UST - 20.63%

Digital asset staking rewards tend to be even higher with investors making 10x or more than those with their money in a traditional savings account. The average APR being ~11% as at October, 2021 according to our data. Below we take a look at some of the yields on assets in the top 15 by Staked Value:

- Cardano $ADA - 6.06%
- Solana $SOL - 6.58%
- Ethereum $ETH - 5.35%
- Polkadot $DOT - 13.33%
- Avalanche $AVAX - 9.53%
- Cosmos $ATOM - 9.81%
- Tezos $XTZ - 5.48%
- Binance Smart Chain $BNB - 9.51%

The necessity to seek alternative forms of investments begins to accelerate once one begins to investigate current inflation rates around the world.

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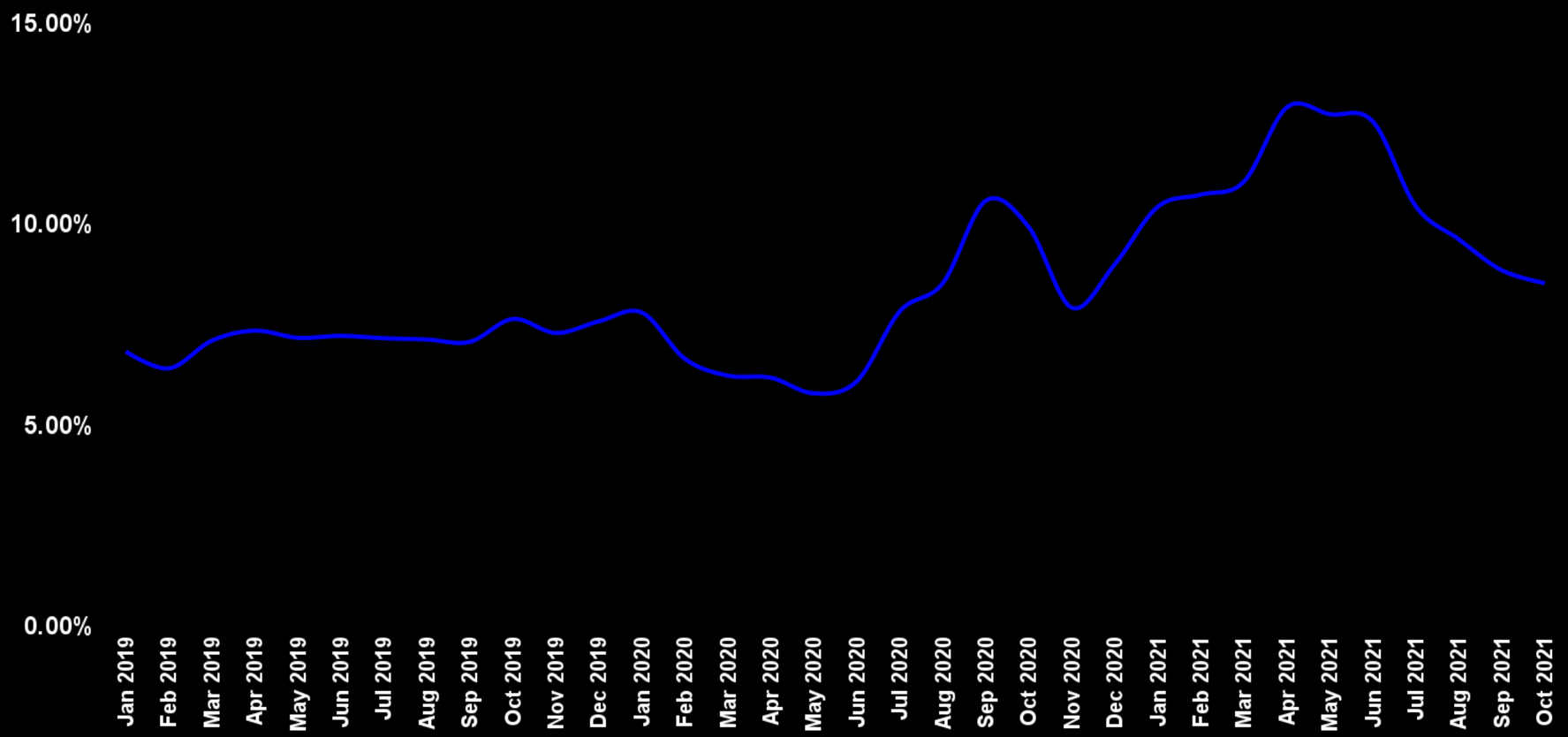
Stakers are earning an average of ~8.53% APR on their digital assets, actively hedging rising inflation rates.

Total weighted average interest rate % on Proof of Stake digital assets listed on StakingRewards.com from January 2019 - October 2021. Source: Staking Rewards



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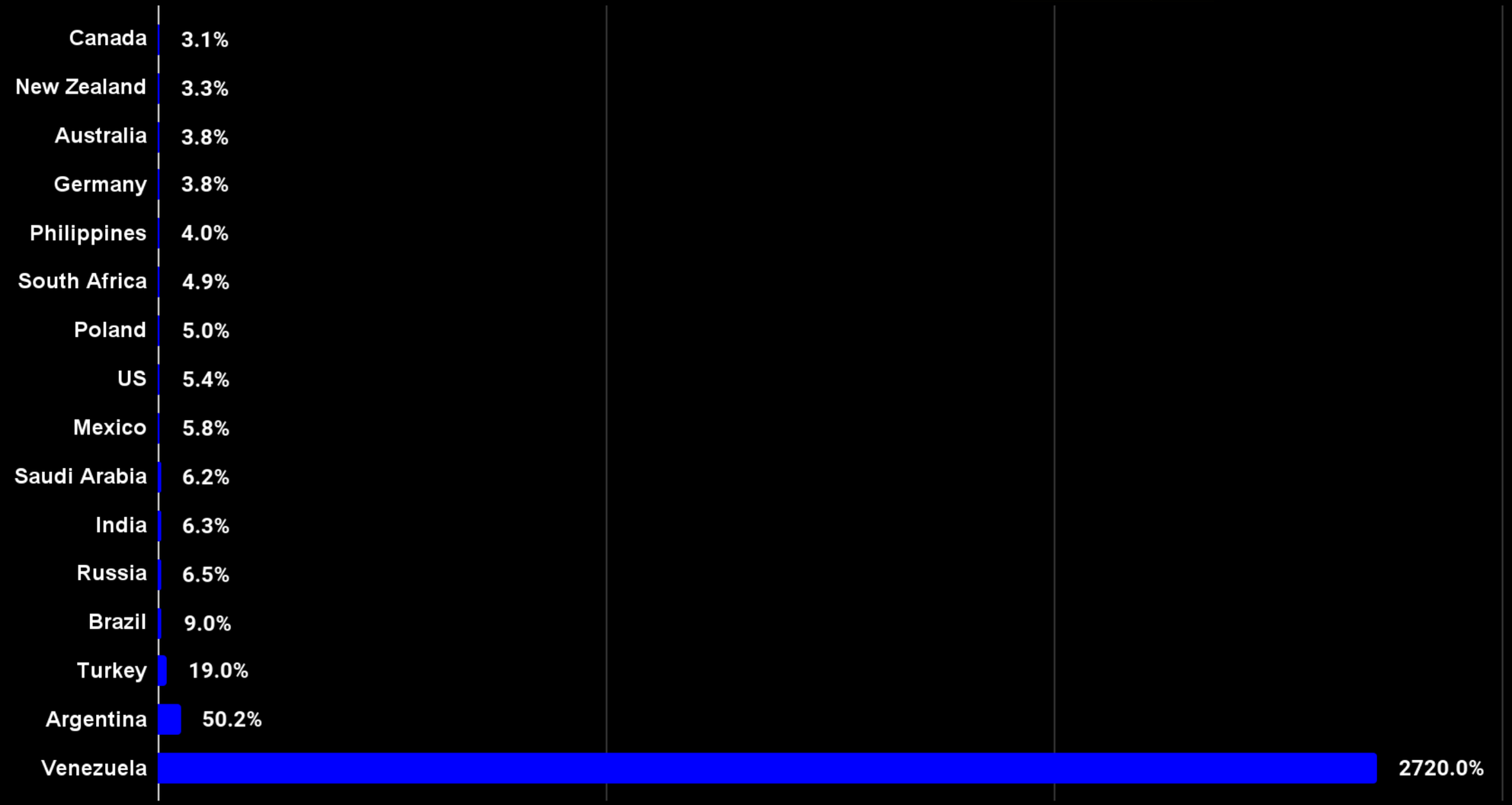
Inflation rates from around the world between 2020 and 2021. Source: [Charlie Bilellio, 2021]



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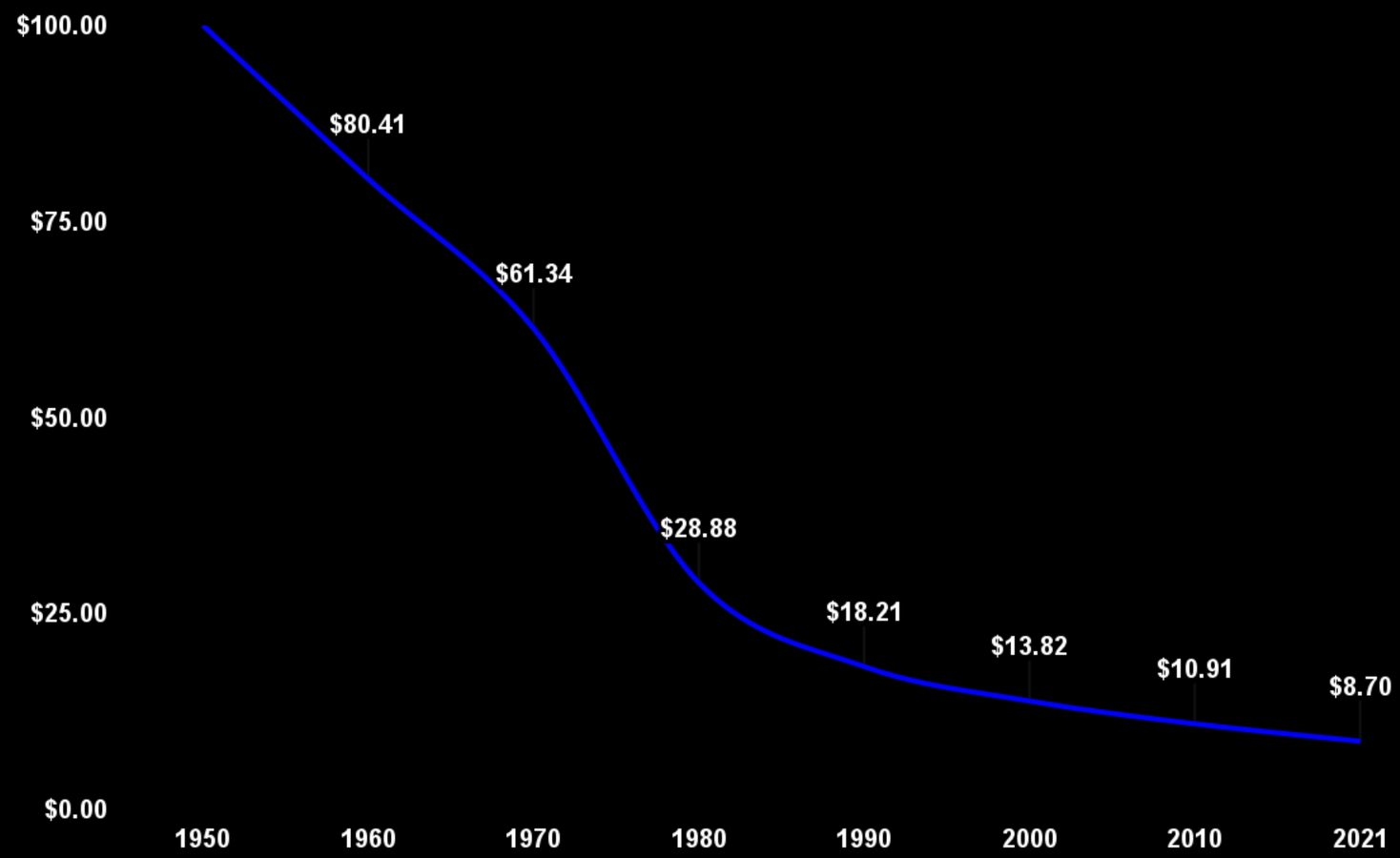
The value of your dollar is declining by the hour due to Central Banks around the world believing that quantitative easing is the solution to all of our monetary and fiscal concerns. Below is a graphical representation of the purchasing power of $100 since the 1950s.

Purchasing power of $100 over time



The concern about Proof of Work.

Bitcoin has an extremely sound monetary policy, underwritten by code, that is solving many of the issues inherent to the traditional financial system. So why do we need Proof of Stake at all?

In order to serve as a widely accepted public ledger, permissionless blockchains exist and thrive while allowing anyone to participate and anyone to maintain them. There always needs to be fair game for transaction validators to be truly trustless and to be truly decentralized.

Proof of Work allows anyone to participate through cryptographic puzzles. Whoever solves the most cryptographic puzzles aka “Mining”, gets the right to validate and gets the financial reward.

Unfortunately “solving the most cryptographic puzzles” turns out to be a game around:

1. Access to the cheapest electricity
2. The best technology to translate electricity into solving cryptographic puzzles

The industry is heavily dominated by only a few players in the world and while technology evolves over time, it is unclear if the competition is going to be fair over time. As things stand, a company who finds a far more efficient technology, opposed to others, has no incentive to share their technological advantage with others. While this has happened once on a relatively small scale, this could happen any time again and may become critical with the invention of quantum computing.

Proof of Work Energy Consumption
If we compare the electricity spent to maintain the Bitcoin blockchain to the amount of transactions, then 1 Bitcoin transaction would use the same amount of electricity as letting your washing machine run for 4.6 months straight, or you accidentally forget to turn off the lightbulb in the kitchen for 38 months!

Designed for Maximalism
Mining power by design is fungible. Even though each blockchain may have different cryptographic puzzles, the same machines could still solve the same puzzles. Keeping that in mind, it becomes clear that there can be a maximum of 1 Proof of Work blockchain in the world. Any other blockchain (with less total mining power) could be easily attacked by Miners of the largest blockchain.

So naturally, people who believe in a world with fair and open competition for the best technology, have explored alternatives to Proof of Work.

Proof of Stake is Not Perfect.

While the move towards Proof of Stake based consensus algorithms is evident, there are many challenges remaining and many questions unanswered.

At Staking Rewards we have created an independent platform of open concourse. Consider us as the unbiased R&D department around Proof of Stake and Staking. It is in our own best interest to identify issues, challenges and potential flaws within the economics, designs and dynamics around these technologies.

Over the past number of months, we have interviewed 20+ key industry stakeholders and surveyed 200+ investors on the various topics and trends that we have seen emerging. From Custodial to Non-Custodial Providers, Institutional Players to Protocols, Wallets to VC Firms, we have aimed to collate as diverse a set viewpoints as possible to really examine the industry in this report.

We have attempted to tap into their various sets of expertise around topics such as governance, security, their business models, what the future holds, etc. to allow our users and readers of this report to get the inside viewpoint from some of the leaders in the space.

There are more questions that we all need to understand and think about to continue the trend of positive growth, ensure decentralization and create an environment where investors feel safe.

- *Other than Proof of Work, Proof of Stake heavily relies on the underlying economics being in place and stakeholders acting accordingly in attempting to make it a success. So where do we stand today?*
- *Is Proof of Stake justified sufficiently to claim the number 1 spot as the go-to-consensus for smart contract platforms?*
- *What challenges are remaining for Proof of Stake?*
- *What untapped potentials are still undiscovered surrounding Proof of Stake?*
- *Which case studies and mistakes can we learn from?*

Let’s go on a journey to explore the state of Proof of Stake today and look into the telescope, watching out for the Proof of Stake stars that are yet to be discovered!

If you would like to read a summary of the study first, feel free to check out our article *10 Key Takeaways from the Staking Rewards Ecosystem Report* in our Journal.

Staking Rewards

Validator Business

validator busines

Validators are blockchain nodes in charge of processing, confirming and writing transactions into a new block. They act in a similar manner to a banker who verifies every incoming and outgoing transaction in a bank.

In decentralized fashion, every blockchain consists of a group of validators who compete to perform those tasks in order to earn a share of the protocol's revenue from transaction fees and from protocol's security budget, which currently sits at $33B annually and is expected to grow tremendously in the coming years.

Below we dive deeper into the business model of companies that run validators professionally.

Besides validating blockchain networks, what are you primarily focusing your business operations on?

Validators have expertise around the core infrastructure of Proof of Stake networks, thus many validators are primed to offer dev tooling and development services to blockchains and dApps. We have found that most successful validators have expanded their core operations from offering validation services only towards development services or launching their own dApps. Validators also play a key role in education, awareness and growth of the web3 world.

Chainflow
Stake decentralization, e.g. advocating for the success of other smaller validator operators. We also build validator monitoring and alerting tools. I help projects build out their governance processes too.

Everstake
Everstake collaborates with blockchains and creates its own projects on developing software / products within the blockchain ecosystem, like bridges, wallets, apps for stake tracking, staking calculators and so on. We work closely and build on Solana, Terra, Cosmos, for instance.

Figment Networks
Encouraging the stable growth of Web 3 via developer-first resources, capital, and community.

Stake.fish
Other than validating, we're focused on building tools and products that are important to protocol ecosystems.

Chorus One
We are focusing on developing protocols and tools that advance the Proof of Stake ecosystem. The two main areas for us here are liquid staking and interoperability.

What do you think are the most important functions of Network Validators, besides running secure and performant infrastructure that validates the blockchain?

Validators play a key role in the ecosystem away from solely focusing on secure and performant infrastructure. We have found that validators focus on awareness/education, act in a manner similar to today's TradFi auditors, being active participants in governance, providing tools and in general, having the ability to be fluid across various networks.

Chainflow
Validators need to be active governance participants. We also need to serve a check-and-balance for other key network stakeholders, e.g. the core development team. For example, it's the validator's responsibility to ensure that code pushed to mainnet is stable and secure and tested on a testnet prior to mainnet deployment.

Everstake
The first thing that comes to mind is the awareness-raising function, in other words, the educational function. Network validators are the ones who take an active part in the development of blockchain technology and know it's architecture, structure and how the blockchain functions from the inside, thus validators should be the ones who will enlighten ordinary users about the blockchain technology.

Figment Networks
Staking node operators are typically the first real businesses operating on a protocol, so they tend to be the most invested on a day-to-day basis, beyond the core protocol team. This uniquely positions operators to drive some of the earliest network decentralization by owning and driving governance responsibilities. Beyond being active and proactive in governance, Figment dedicates resources to education to better bridge the tech with the humans who are or will be stakeholders in the protocol.

Chorus One
Being one of the core participants that understands network dynamics and is able to transfer and apply knowledge from other network ecosystems or other expertise, ultimately helping the network to grow and succeed.

Stakin
Overall validators should go beyond running secure and performant infrastructure, they have to be involved in governance, and they are also very well positioned to help grow the network and ecosystem via marketing/tooling/building. In some networks, validators are mostly focussed on infrastructure while in some others they are pro-actively contributing.

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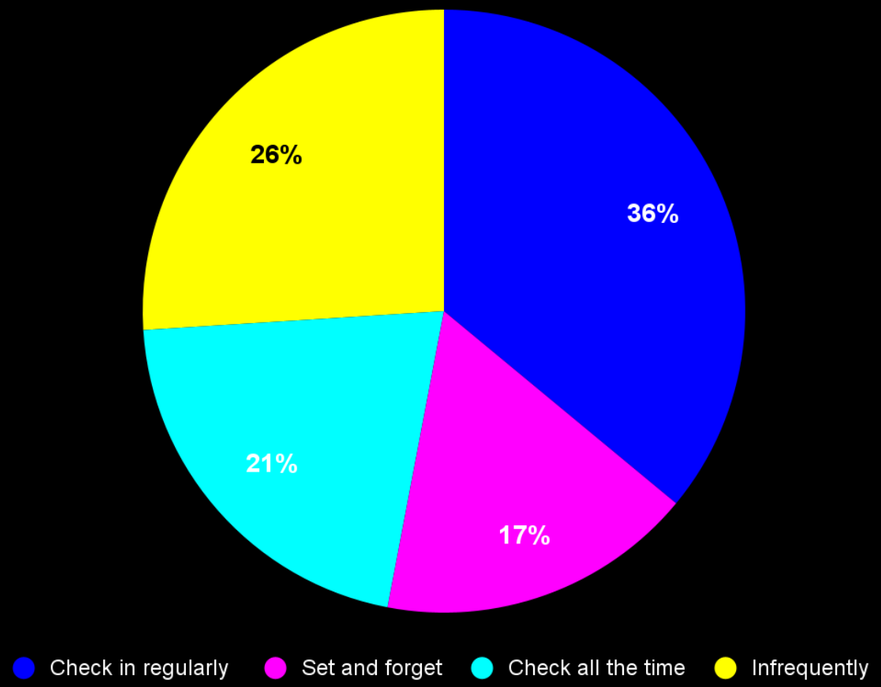
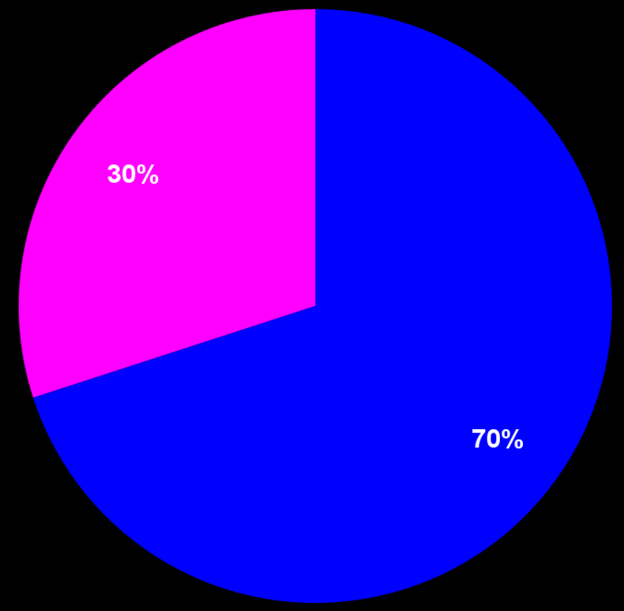
How often do you revisit the decision for your staking service provider / validator?



What's more important to you? A provider’s reputation or the reward offered?



What percentage of your revenue comes from network incentives commission rates?

An interesting observation we have found through the analysis of the responses is that the vast majority of validator revenue is still derived by core validation services. This suggests that most development services offered by validators are not overly profitable, but do directly contribute to higher delegation commitments and increase revenues indirectly. Validators will need to be conscious of this potential weak point going forward but based on our user survey of 207 people, we have found that, in any case, users value a validators reputation over the reward they offer. Given these responses on users' elasticity, validators could potentially raise their commission by 1-2% without much of a drop off in demand (provided they maintain a high quality service)

Chainflow
In my experience, validator operators receive the majority of their revenue from network commissions. Some then subsize this revenue stream by doing other work through grants or offering third party services to the communities they validate for. But you can see by the investment in loss leading tools such as block explorers and some wallets, which are meant to help the community and drive delegation to the creator, that most validators rely heavily on network commissions.

stake.fish
100%. We are focused entirely on earning our revenues from the commissions we charge on delegators.

Stakewith.us
85-90%.

Stakin
The majority of Stakin's revenues comes from charging commission to delegators for staking services.

Chorus One
Most of it in some shape or form. We do some software development for which we have in part received grants and also strategically invest our funds and use our treasury to be able to grow our team.

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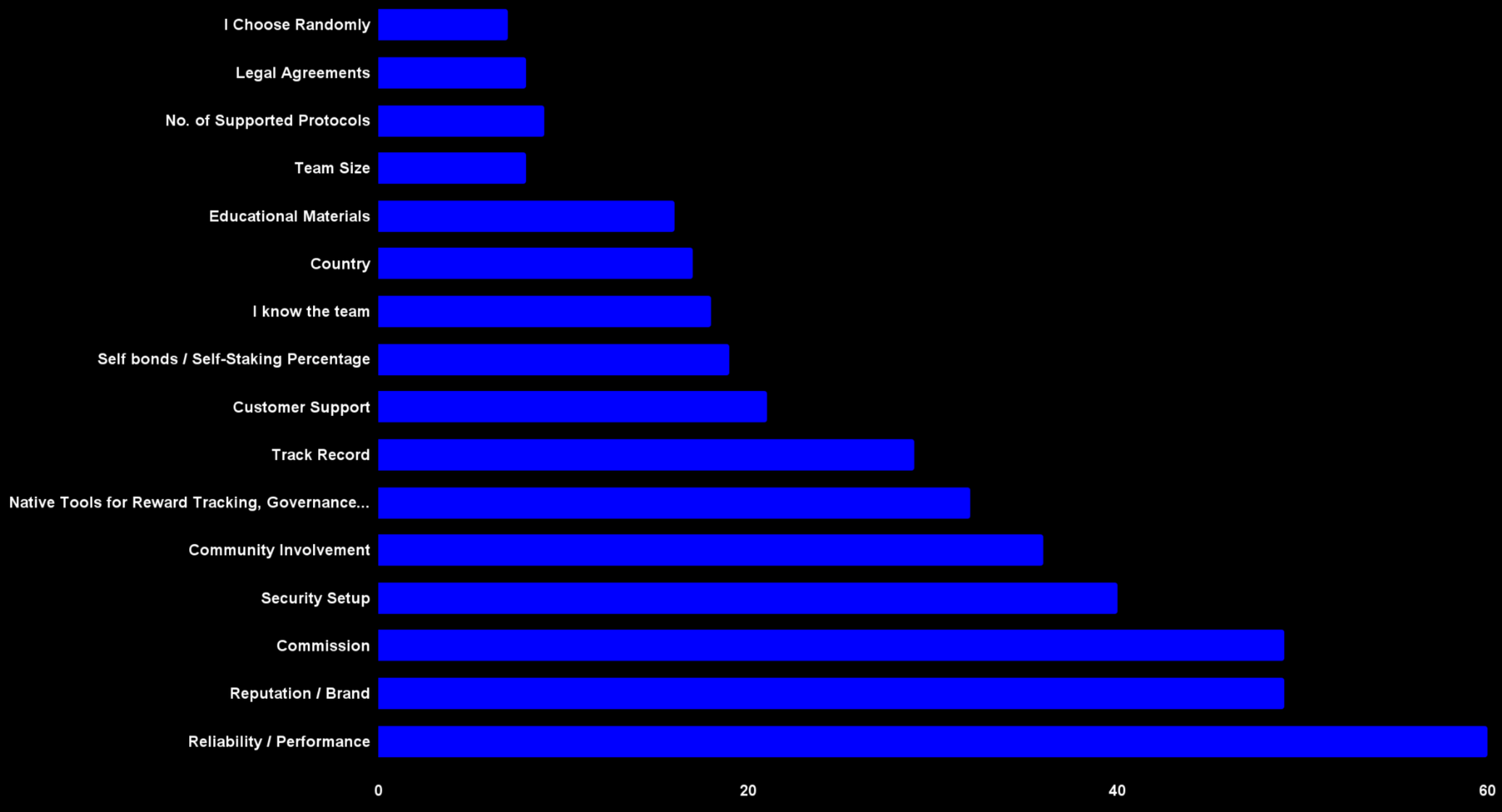
What's most important to you when choosing a Staking Provider?



What do you consider to be the most important aspects to attract users to your staking service offering?

Based on responses from our user survey, validators who focus on Reliability/Performance, Reputation/Brand, Commission Rates, Security Setup and Community well should perform well with Reliability/Brand being the most important factor when stakers are deciding on a provider.

These findings align with responses from key ecosystem stakeholders. Other notable mentions in terms of attracting stakers are privacy, UX and infrastructure.

Kraken
Kraken's industry leading security is the single-most important characteristic of our staking service. At Kraken, safeguarding your funds and your privacy is our number one objective. Beyond that, we have a wide and increasing range of staking assets with competitive yields, wrapped in an easy-to-use interface or API for developers. Finally, clients can instantly unstake their assets without having to wait for protocol-imposed lock-up periods.

Binance
Simple (clear and easy to stake with one click), secure (principal guarantee) with attractive yields.

Bitcoin Suisse
There are two factors that everyone looks at, which are easy to use for comparison and rankings: (1) the rewards earned, and (2) the fee paid to the service provider. These are the most important aspects to attract users, but other factors should be considered as well, such as: asset security, transparency, slashing protection, governance opportunities and many more.

Finoa
It is a combination of our reputation as trusted custodian and the market positioning of our staking offering, including those of our partners. First and foremost, asset security is our highest priority. On the other hand, staking is an exciting and attractive activity that is requested by most of our customer base. We ensure that they are able to stake in a secure environment. We have taken all necessary steps so that they can participate in staking of their preferred assets while minimizing the risk. Finoa only works with validators that have undergone thorough scrutiny and that adhere to the best practices in the industry.

Figment Networks
Along with our attention to detail and prioritization of security, our deep technical expertise and commitment to the entire PoS ecosystem attracts users to our services.

stake.fish
Firstly, a long standing reputation with a consistent track record. Users need to recognize our brand and understand that we deliver top validator performance.

Second, philosophical alignment. We want to be the go-to choice for users who recognize us as a long-term contributor to this ecosystem. We are in it for the long run!

Stakin
In addition to maintaining a good uptime and infrastructure on each network where Stakin operates, we offer a dedicated customer service to all delegators, no matter their size and stake. As a multi-asset staking provider operating on multiple networks, we’re able to understand the small differences and specifications of each, which translates into our services to customers. For institutional customers, we are also able to build tools and APIs that simplify monitoring and reporting.

Chorus One
Overall we think the most important aspect is to create trust and build a brand that our delegators can rely on for their staking needs. This includes, among many other things, reliable node operation for a strong portfolio of staking networks, clear communication, and support for the network ecosystems we operate in various ways (e.g. by building tools and protocols, participating in governance, publishing research and content, etc.).

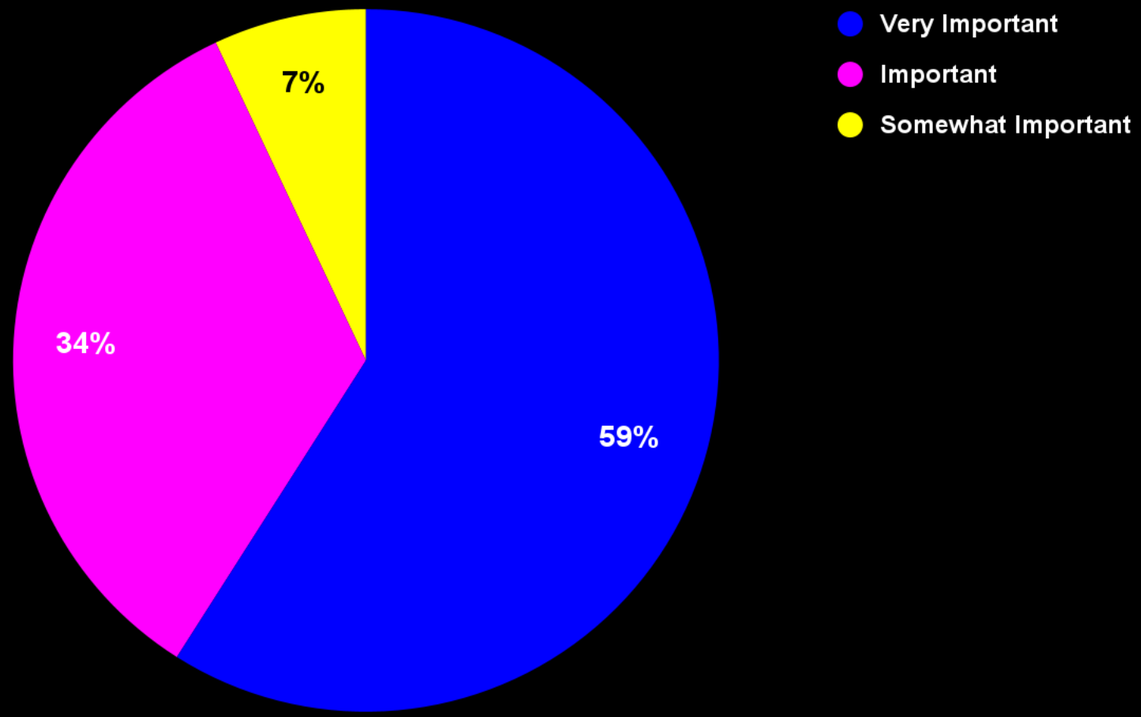
T-Systems
We think that, before everything else, staking is about trust in competence.

The question where to stake your assets is, whether you trust in the competence of someone else enough to delegate your assets to them. Individuals and companies have known Deutsche Telekom as a professional technical infrastructure provider for decades and are therefore willing to trust in our expertise.

Thus, we are able to operate highly reliable and trustworthy validators. For example, all of our blockchain infrastructure is run in our own data centers located in Germany. It operates independently of all other node operators which mainly use the big hyperscalers.

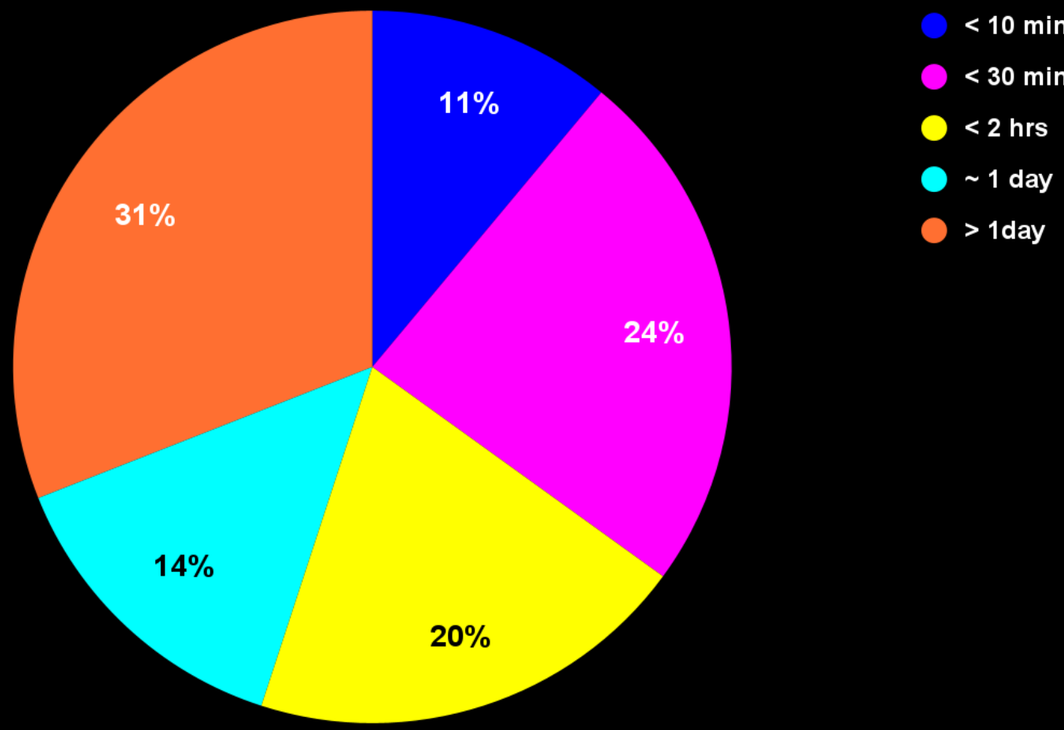
It is evident based on the below graphic that reputation and brand is important/very important to over 90% of delegators. While this may be a barrier to competitiveness for new ecosystem entrants due to being secondary movers, it should not rule out the possibility that with consistency/quality over time, their staked value should increase.

How important is a staking provider's brand/reputation to you?



Furthermore, 55% of delegators are taking 2 hours or less to make their decision on who to stake with. This backs up the idea that reputation and brand awareness is a key determining factor for delegators.

How much time do you spend when choosing a staking provider?



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Regulation & Taxation

regulation taxation regulation taxation regulation taxation regulation

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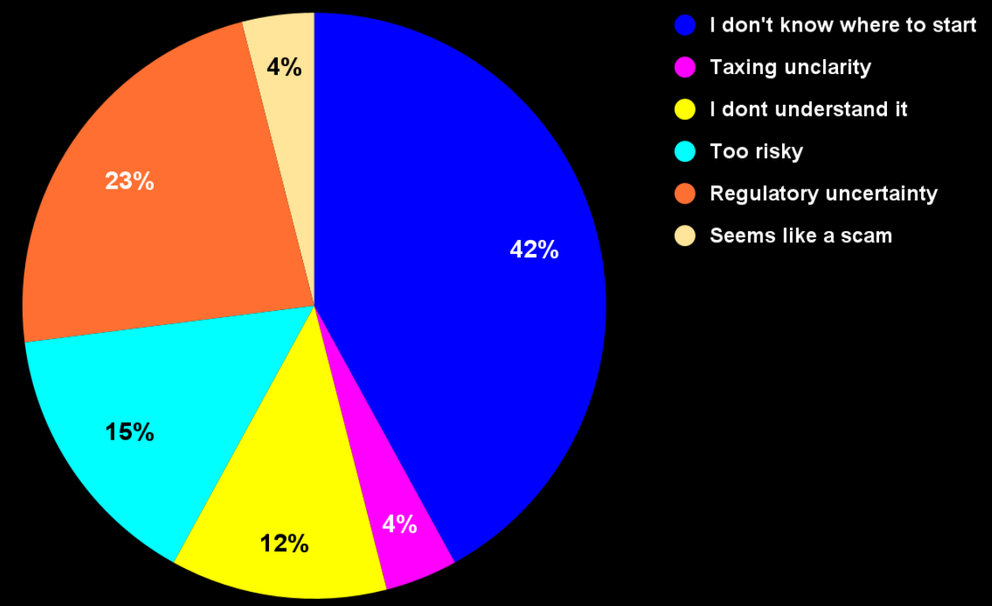
Proof of Stake consensus algorithms are nascent and early in their development/adoption. It is justified that regulation is yet to catch up to the speed of which the industry is moving.

Based on our user survey, it is clear that regulation definitely plays a role in deferring users from staking their crypto with 23% of respondents citing Regulatory Uncertainty as a primary reason to not staking. Taxation Uncertainty plays a minor role in deferring individuals with only 4% having issues with this while 15% state that staking is just too risky in general. It is evident that more awareness, education and understanding needs to be done in order to reduce this uncertainty.

In recent months, digital assets have been under the spotlight in various regions throughout the world. But while regulators are still trying to figure out the general concept of digital assets, there is little progress or clarity for Proof of Stake and Staking

So how pressing is the regulatory clarity for the space? What are the things that protocols, providers, and regulators should keep in mind when dealing with Proof of Stake? And at what point would regulation actually add value to the space? Take a look below to hear some thoughts.

What are factors that would stop you from starting to stake?



What are your thoughts on the permissionless nature of staking from a legal standpoint? (due to no KYC / verification process, delegators cannot be explicitly forced to agree to the terms of service)

The permissionless nature of staking comes with great challenges for Validators and for Stakers, but the tone is clear that no compromises should be made in order to protect the robustness and security of a network.

We believe, there lies an opportunity in the protocol design to provide a simple & clear framework that protects validators and delegators equally.

stake.fish
It's potentially a huge problem from a legal standpoint. Due to how staking looks like fixed income in some sense, this could invite regulators to consider validators closer to financial entities than miners. If this occurs, then there would be no way for validators to stay compliant without becoming a fully licensed custodian and guarding delegator access (which again, may technically be impossible to enforce).

Stakewith.us
Service providers will eventually be able to use some sort of tools/products to perform simple tracking on their user's address and crowd source data to assign some sort of identity to the user. However, we do not think that much can be done to circumvent the permissionless nature of staking, unless the whole underlying protocol revamps itself for the sake of regulation, which could be very bad for the staking space.

Harmony
Delegators agree on the commission set by the staking provider and whatever on-chain rules the network itself has. Risk factor and trust is on the delegators, they should learn and get to know their staking provider as much as possible.

Persistence
A permissionless ecosystem can be more difficult to regulate from a legal standpoint since building a well-defined governance structure on the basis of accountability of actors is challenging in such a scenario.

However, the accountability and scalability in a permissioned ecosystem comes at the cost of decentralization and security. A permissionless ecosystem ensures anonymity, is more transparent, and is more reliable in terms of chain security. This is because the chances of collusion amongst bad actors is minimized by the presence of a higher number of validator nodes and delegators. Measures like slashing, jailing etc. also act as fail-safes, by disincentivizing malicious behaviour in a permissionless ecosystem.

Different stages in a project lifecycle may allocate varying importance to these parameters, which leads to several projects starting with a permissioned environment to ensure scalability and accountability of initial participants. They slowly evolve into permissionless as the project matures, in order to build security through decentralization.

Given that the industry has not yet matured, at which point do you think governments and central banks should move to regulate the staking space?

The first steps are already being made to regulate the space. An interesting observation is that from key stakeholders, not the regulatory uncertainty, but potential overregulation too early is being considered an apparent threat. While the technology is still very young, it does need simply a rough and clear framework.

The challenge and opportunity is here for big players in the industry to educate the public and regulatory authorities.

We see quite some efforts being made already with the Proof of Stake Alliance in US and the European Blockchain Association in EU.

But unfavorable regulation still remains one of the biggest risks for staking providers and also the industry at large.

Finoa
We are already seeing that move towards regulation. But from what we have experienced, it is a highly complex matter. So a comprehensive regulatory framework will not happen from one day to another and cannot be rushed into widespread enforcement. It is a slow and ongoing process and it will require several iterations before it can benefit all involved parties. There are reasons to remain optimistic. We are involved in an active conversation with regulators and see genuine interest for cooperation to promote the healthy evolution of what seems to be a new financial paradigm.

T-Systems
In the past few years, a new industry has emerged with the provision of infrastructure for public blockchains. We are pleased that there are incredibly innovative and successful startups to be found globally and especially in Germany. The EU, and Germany in particular, must now be careful not to over-regulate this new industry, causing a wave of emigration of innovative companies. They need to embrace the current innovations and provide regulatory clarity. This would provide the long-expected security for the evolving industry, wanting to plan and invest in the future development. Especially us as a corporate with high visibility and a lower risk profile, that diverges highly from startups, it is essential to get long-term regulatory security aiming to ensure and promote innovation. We support a rough and clear framework to ensure a compliant functionality of the industry, but we fear that an overly detailed regulation might make practical implementation very difficult.

Persistence

The staking industry is still evolving and the true potential of the staked assets has not yet been realised. As the staking ecosystem evolves through the transition of the Ethereum DeFi ecosystem onto PoS, unlocking of the staked assets through staking derivatives, and ease of interchain asset flow across PoS networks through efficient bridges, industry's market cap and monetary opportunities will expand at an explosive pace. This will naturally attract multiple attack attempts within the ecosystem. At the same time, as the industry matures, an external catalyst can also help direct further growth and mass-adoption.

Government interventions like that seen from El Salvador can serve as this catalyst. The governments and central banks should intervene to protect the ecosystem participants from exploitation and also provide the necessary push to the ecosystem to be accepted by a broader audience. Participation of regulatory authorities in the staking activities would open gates to a huge capital reserves that can be deployed for then-realized use cases. The scale and nature of intervention will also be crucial so as to bolster the natural growth of the ecosystem, while putting in regulatory safeguards to prevent attacks.

Stafi Protocol

We think it's close. According to a report by JPMorgan, the current staking mechanism brings about $9 billion in revenue to the crypto industry every year. The report predicts that after Ethereum switches to Proof of Stake, this number may increase to $20 billion, and finally it will reach 40 billion by 2025. The point would be sometime after the phase1.5 of ETH2.0 is live, ETH could be a 2 way staking mechanism(staking and redemption) at that time, which means staking ETH is more feasible.

Staking Rewards

2021 Industry Challenges

2021

Given the nature of the budding industry emerging within crypto and decentralized finance, it is hardly surprising that a number of teething problems/challenges are emerging across various facets of the industry. What needs to be done to resolve these? Will they always exist? If not, what measures are being taken to alleviate these?

What is the biggest challenge for your business as a custodian when offering staking solutions?

Finoa
Staking is still a highly innovative service. Thus, regulators are taking all the necessary steps to ensure the service is aligned with local and international laws to protect customers who decide to participate in these activities. As a custodian, we must do our part to educate the public as we cooperate with regulatory agencies so that together we establish a robust framework that will enable these new types of financial services to become widespread while minimizing risks.

An increasing portion of miner income on the current Proof of Work Ethereum comes from ordering transactions (often referred to as Miner Extractable Value). It is likely that this will also continue into the Proof of Stake world. How do you think this will impact the staking market? Do you think the existence of MEV bears risks for the network? Do you think this can be mitigated?

Miner Extractable Value (MEV) is the profits earned by miners in the current Proof of Work Ethereum ecosystem through their ability to freely select, omit and order transactions within the mined blocks. The majority of MEV is currently being exploited from the traders/bots competing to realise arbitrage opportunities by paying increasing amounts of gas fees (the bidding war is called a Priority Gas Auction) to have their transactions included in the blocks on priority.

With the evolution of ETH 2.0 and the growth of DeFi in the PoS ecosystem, MEV is likely to stay as the validators will now take on the responsibility of ordering transactions.

stake.fish
MEV will be of huge interest in the Proof of Stake world as well. Validators will need to adopt and integrate MEV in their stack just like miners are doing today. If not tackled in a transparent way, MEV certainly could bear risks. However, I don't believe it's an existential risk for the network. MEV will be mitigated through solutions like Flashbots. Additionally, dApps are already experimenting on methods to mitigate MEV natively on their products.

Stakewith.us
As block proposers have the final authority to order transactions in their proposed blocks, MEV issues will continue to exist even as we move forward into a PoS world. This means that the largest validators could potentially start monetizing their ability to order transactions, which could lead to unfair economic gains on other user's transactions. There are no good solutions to avoid MEV if the economic incentives to re-order transactions in proposed blocks are large enough. The only advantage for PoS networks on MEV is that it is a lot harder for collusion to happen to reorg a number of blocks. There are some talks about separating transaction inclusion from transaction ordering, but we think that overcomplicates the issue and makes it even easier for MEV to take place.

Chorus One
MEV may increase centralization as larger players will likely be able to do a better job here, increasing the APY for delegators and thus differentiating. Overall, I do think MEV can be a risk to the network as it may lead to instability or if it means extracting value from users. I think the dynamics in Proof of Stake are more favorable than in Proof of Work, since staking providers can be held accountable better. That is because token holders can remove their delegations if they are not happy with how a validator engages with MEV, which is not possible in the Proof of Work world.

Persistence
Negative:

- Since MEV is exploited majorly by the block proposer, there is a possibility of increase in the income gap between the bigger and smaller validator nodes as the bigger nodes with higher stakes are more likely to be selected as block proposers and earn MEV incomes. This will add to the stake centralization challenge already faced by PoS networks.
- Validators can also be incentivized to re-mine blocks that contain the arbitrage transactions. This can lead to frequent forks and chain re-organizations, which can harm the network's stability. These are also called time-bandit attacks.
- The validators themselves can start exploiting the arbitrage opportunities for themselves that can risk the trader's positions.

Positive:

- With an increase in average validator incomes through MEV, the number of market participants running validator nodes is likely to increase, which can increase network security.

Some mitigations steps that can be taken are:

- Better design for dApps to decrease the MEV opportunities created
- Enhance finality to make time-bandit efforts more difficult
- Stricter slashing measures for validators who attempt to maliciously re-org the chain for MEV

The existence of MEV does bear risks for the network's security and stability that can be difficult to mitigate. Attempts to prevent validators from accessing this revenue stream can trigger creation of secondary markets and also incentivize collusion between validators and traders to execute certain transactions at priority. It is a tricky problem to solve.

Greenfield One
The combination of potential centralization on the staking derivatives level and the increasing market share of these might prove to be a fertile ground for centralization of MEV extraction net detrimental to the space.

Generally speaking, there are two schools of thought here, some think of MEV as a core feature of any network and thus the approach to minimize its negative impact on users is to build solutions around it which would maximize fairness. Others regard MEV as a bug which should be mitigated. MEV analogs in traditional finance are illegal, while crypto space operates primarily under “code is law” regime.

We as a crypto space need to collectively find our way forward via experimentation and trial and error as the question of fairness is very subjective and oftentimes lands in a rather philosophical domain. Vega is worth pointing out as one of the projects deeply exploring the concept of fairness in the context of derivatives and trading overall.

What are the biggest business risks for your business? Are you worried about any developments in the industry?

Chainflow
One of the biggest business risks smaller operators face is getting squeezed out by larger operators with greater access to capital. Unfortunately, access to capital is still a competitive advantage in Web3 economies. Staking then rewards access to capital with rapidly compounding rewards. The resources afforded large capital accumulators then work to secure even more capital. For example, larger operators can deploy large marketing teams, allowing them to dominate conversations in social media channels, chat rooms and panel discussions. Also, some of these large operators are using their capital access in attempts to subtlety control network governance and knowledge dissemination.

If left unchecked, these same forces will continue expanding control efforts in the regulator direction. The difficulty here is that these larger operators will lobby for regulation that only they can afford to comply with, squeezing out smaller operators.

stake.fish
The biggest risk is how regulators will categorize validators. If we're considered equivalent to financial institutions, this would be catastrophic news to validators as well as Proof of Stake networks.

Stakewith.us
The performance of the overall crypto market. While we are highly positive that the overall crypto market will continue to grow, it is routine for the market to normalize after an extended bull run. Staking returns are denominated in native tokens but operating costs for staking companies are denominated in USD. Staking companies should always have a healthy treasury in the event of market drawdown to tide through the lows. While the quality of projects launching recently are of much higher calibre compared to 2017/2018, we still think there exists a valuation bubble that can be easily burst due to a highly reactive market.

Stakin
We're seeing a growing concentration of stake around custodial platforms and exchanges, which, in some cases, can have a negative impact on the networks. Some players tend to be less involved at the governance level, or less present in case of emergency upgrades.

Chorus One
Biggest risk is compromised key material or other attacks or mistakes that may cause us to be slashed. Other than that, I think unfavorable regulation is still a risk for staking providers, but also the industry at large.

What is the biggest uncertainty for institutional investors to tap into blockchain staking and lending?

Finoa
There is no standardization in many cases of staking dynamics and DeFi lending related products. I think the staking industry and the DeFi ecosystem have expanded the possibilities of finance to previously untapped potential. Thus, institutions still need some time to get acquainted with different dynamics that dominate the system as well as new concepts and terminology.

However, I see their interest as legitimate and with players providing easier access to it by taking out some of this complexity, it might be only a matter of time until they get the hang of it and the system becomes more efficient.

What are the biggest challenges for Proof of Stake and staking, that we still have to overcome or may still face?

Kraken
While UI/UX can be improved to make staking less initimidating for new users, education remains a key challenge. Industry players have an obligation to ensure that both consumers and institutions understand how the mechanism works and how their yields are generated.

Binance
There is an inherent problem of POS it is difficult to solve. The tokens are becoming more and more concentrated, which means that some big whales or token holders hold more tokens they can earn even more. This is very hard to solve.

Bitcoin Suisse
One of the major challenges is simply explaining it. For Bitcoin, most users don't have to worry about how mining works – as they won't participate in the mining process. But staking works especially well when the overlap between stakers and users of the blockchain is high – and this is only achievable if people understand what staking is, why they should/should not stake, what the risks associated with staking are etc. This is a difficult challenge, and it takes time. Education is key.

Finoa
As mentioned above, PoS protocols are still highly centralized. I believe this is also due to the fact that Proof of Stake protocols are still in an experimental phase. As they move forward and attract more talent and participants, we will start to find out how effective staking can be and the challenges of centralization and stability will continue to unwind as networks grow and participants work together to enable even more user cases.

T-Systems
There are many different challenges. At its core as a consensus algorithm, PoS raises a few questions regarding decentralization. How do you optimize for an equal distribution of stake and thus power? In terms of business acceptance, regulatory and legal issues are expected to be debated more heavily. Every staker is currently operating in a gray zone and the legal battles have not yet settled. Last but not least, education about token economics in PoS are key for mainstream adoption.

Figment Networks
Accessibility is a challenge, which could be remedied with better UX design. More clarity on regulations and taxes would also help improve the ecosystem overall.

stake.fish
1. Proof of Stake still requires fine tuning on its economics. Most key inputs were determined ad hoc since there wasn't a ton of data to work with. Now that Proof of Stake has been running on different networks for years, the time is ripe to reform staking economics.
2. Staking on Proof of Stake protocols is extremely difficult. The user experience is a few fold worse than DeFi. This will lead users to stick with centralized exchanges to conduct their staking needs.
3. Proof of Stake is extremely different (both on technicals and economics) across networks. This creates a barrier to new developers and stakers.

Chorus One
I think the biggest challenges will be to bring staking mainstream at a scale that allows the entire financial and other coordination systems to run on Proof of Stake networks. The main issues to me include welcoming non-industry insiders into the space and getting past regulatory hurdles. I do think that it is clear that most technical problems like scalability are basically solved as platforms and the space at large is maturing.

Persistence
While the Proof of Stake consensus mechanism effectively deals with the shortcomings of the Proof of Work mechanism, it has its own downsides. Some of the biggest challenges with for PoS and Staking are:

- *Nothing at Stake:* Since voting on a particular version of a PoS blockchain requires no additional resources, validators are financially incentivized to mine on every fork of the chain, unlike in PoW where the miners need to channelize their mining power to a particular chain. This makes the system more vulnerable as an attacker, in order to launch a successful attack, needs to overpower only those nodes who vote on only the correct chain.
- *Long-range attacks:* This is a problem closely related to the above mentioned Nothing at Stake problem. The attackers can try to create an alternative chain by circumventing the penalties introduced by a project for maliciously forking the chain. An attacker has to try to get as much stake as possible to grow the attack chain faster and with more deposit than the correct chain.
- *Stake Centralization:* The probabilistic selection of the next block miner in PoS chains leads to validators with larger stakes to be able to mine more blocks. This in turn leads to them earning higher returns. Those with larger stakes also have a higher voting power and are able to influence the network more than their peers. Bigger validators can also form cartels, concentrating the voting power in a few select hands. This can make the network not less decentralized but also less resilient.
- *Decentralization and Speed:* An increase in the number of validators on a chain adversely affects the chain's finality as higher number of governance participants lead to a higher consensus time. Finding the right balance between security and speed has been a big challenge for the staking ecosystem.
- *Token distribution:* The initial token distribution is crucial for PoS chains to ensure the participation of a diverse set of active stakers, while avoiding bulk distribution to a few users. Relying on natural distribution can lead to accumulation of tokens in few accounts and can in turn cause centralization of voting power.
- *Opportunity cost for staked assets:* Assets staked to secure the PoS chains are locked up and can not be used in the DeFi ecosystem, which causes the stakers to incur a substantial opportunity cost.

Cardano
The persistent false belief that PoS is less secure than PoW is the biggest challenge we're facing. In fact, because PoS doesn't have the same hardware requirements as PoW - having the most computing power isn't essential for creating new blocks - more people can participate in running nodes. With more people in the chain and with more nodes, this means that a PoS network is less vulnerable to 51% attacks.

Greenfield One
One of the primary concerns of staking, especially given the rise of DeFi, has been the fact that staking yields compete with DeFi yields. Staking yields can be seen as rather stable and risk-free (excluding slashing risks), while DeFi yields are rather volatile and subject to overall market conditions such as demand for leverage in the system, etc. Staking derivatives are here to address this issue as the users would be able to utilize staked/bonded assets in DeFi. Staking derivatives however bring another issue - potential for centralization if the space ends up in a winner-takes-all situation (more on that below).

Structured staking products and staking aggregators could also end up contributing to the centralization by being able to leverage larger pools of capital (if the aggregation thesis plays out).

Recent regulations have put significant pressure on staking providers and the staking industry overall. Some implications might be that staking providers would be recognized as VASPs and would thus require a license. Participating in on-chain governance has also fallen under scrutiny as it can be argued that a validator voting on behalf of its users is exercising certain rights tied to digital assets and thus falls under custodian classification. I feel like most of these regulations have been conducted without the understanding of underlying concepts and business models. Organisations like EBA and its stakign working group are working on contributing to the education of the policy makers on staking topics.

Fears of centralized exchanges gaining the major share of the staking market and outcompeting everyone by charging 0% staking fees did not turn out to be very justified as on the contrary, the fees CEXs are on the higher end compared to the broader market.

As the validator whitelabelling industry grows, more transparency would be needed on which infrastructure providers are larger entities utilizing to operate their validators. This, combined with the economies of scale and the ability to charge lower fees of these larger providers could lead to a "stealth-centralization" of the chain where the validators of separate entities are operated by the same provider in the background.

Staking Rewards

INVESTMENT
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INVESTMENT

The business of validators is directly dependent on the success of their supported protocols. The decision to support a certain protocol as validator is a large investment in terms of resources and actively required maintenance towards it. Thus validators are usually one of the earliest and most hands-on investors in the market. Nowadays many validators are also doing direct financial investments in early stage projects, where the line between being a VCs and being a Validator is very fine.

Here we ask questions around evaluation of new supported protocols, and the role of VCs. Further down in the section for “alpha”, we will go deeper into the findings and takes of staking providers on their investment journey.

What criteria are you looking at before you start supporting a project with network validation? What can protocol team's do to win you as a validator for their network?

Chainflow
First and foremost we look to see if a project’s walking the decentralized walk and not simply talking the talk. That’s to say we look for values alignment. Only after we decide we align well with a network’s commitment to true decentralization, do we then analyze the network for financial viability. We also prefer to work with teams who communicate clearly, accurately and consistently and that treat validators like equal partners.

Figment Networks
We have a research team that looks into the long-term value proposition of networks, their architecture, and their incentive structure for network participants. Assessing team credibility behind projects is another important part of our research process.

stake.fish
Is the protocol bringing something new to the ecosystem with their own network? It’s getting harder and harder to make a case for maintaining an independent blockchain, so the narrative/reasoning and technical credentials must be sound.

The protocol team can show actual adoption of their network. Specifically, I am referring to these sort of metrics: transactions per day, active addresses per day, contracts deployed per day, usage of dapps or contracts deployed, showcase of products deployed on chain, TVL, GitHub commits from community, hackathon participation.

Stakewith.us
The key criterias are the team, the technology stack it is using, foundation support and the tokenomics behind the staking token. To align incentives, we also prefer to have skin in the game by participating in the protocol's investment round.

Stakin
We typically look at the technology, team, ecosystem and traction around the project. We like to get involved early in the testnet phases of the network and usually give chances to most networks.

We typically start by exploring the network during such testnet phases, launch nodes, and operate these for a period of time large enough so that we're finally able to judge if we wish to validate on Mainnet.

Chorus One
We have a quite standardized due diligence process that takes into account core protocol design, go-to-market strategy, economics of node operation, team, technical factors (e.g. complexity of running a node) into account.

In general, having a clear picture of what the network is able to offer to node operators is very valuable (e.g. delegation programs). Other than that, I'd say following industry best practices (e.g. regarding how to do releases), listening to feedback, and generally communicating well will help node operators become excited about a project.

Should VC funds run their own validators and/or actively participate in decentralized networks? If yes, how do these two different business models (VC and IT infra/devops) synergize?

Greenfield One

One of the duties of a VC is to support its portfolio companies and their founders. Network Lifecycle Investment thesis, suggested by Coinfund, argues that Web3 networks go through a typical lifecycle, through which the token and investment character changes. It starts with a typical VC-style investment into an illiquid token or SAFT and later as the network goes live, there is a need to bootstrap its supply side (nodes, validators, keepers, transcoders, LPs, etc.) and assets become liquid and gain utility in the network and can be utilized within it.

Supply side bootstrapping is one of the main challenges new networks face. VCs can participate in that by either leveraging tech infrastructure (nodes, validators) or by bringing in liquidity in form of the acquired tokens bootstrapping TVL and/or initial network security. Some protocols are starting to experiment with merging the two by making validators also LP with their self-bond. This enables synergies as the funds tokens can be productively utilized in the network, earning additional returns, protecting from dilution as well as bootstrapping the network itself.

In the context of validation, a fund can either stake the assets, whitelabel the infrastructure (managed validator) or run one in-house. Staking should be a default option to avoid dilution. As funds get comfortable with staking, they might want to try out managed validators. Here there is a danger of shadow centralization where a lot of validators would look independent, but in reality be operated by the same large validation-aaS entities. The ultimate form of network support would be in-house validators, for which a dedicated devops person might be needed.

Liquid Staking

Many Proof of Stake protocols are designed with mechanisms like:

1. **Lock-Up Periods:** To make sure the network security is not threatened from immediate stake withdrawals in critical situations
2. **Slashing:** To make sure the Validators behave in the interest of the network.

Staking users, on the other hand, want to avoid both slashing penalties and locking up their tokens. Liquidity is a very important investment decision factor for many. Users want to be able to sell their stakes in critical situations.

Liquid Staking acts as a solution for this. It refers to tokenized staking positions aka derivatives, that can be freely traded on the open market among users, locations, and even blockchains.

Liquid Staking allows using staked crypto assets in other trading or investing opportunities to let you get the best of both worlds - a reward on your staked assets, as well as the returns from new trading/investing opportunities that you spot

There is a winner-takes-all sentiment emerging around staking derivatives. What do you think about this thesis?

Chainflow
This narrative could emerge, if the companies and projects building the derivative projects don't decentralize quickly or are started and run by founders looking at this with a zero-sum mindset.

Again, there is currently a big centralization problem on many staking networks. This is showing us the danger is real and happening. Smaller operators need to work together to counter this trend.

Among other efforts, we need to collaborate and work together to educate delegators on the dangers of centralization. We can't be thinking of Silicon Valley, VC-exit, zero-sum economics. There's enough to go around for everyone, really, as long as we all have reasonable expectations.

Yet the zero-sum mindset still exists. This is especially true among those larger crypto financial institutions being run by serial start-up entrepreneurs and/or those from the legacy financial industry, who see staking as simply another market to dominate and conquer.

Figment Networks
We are a multi-chain and apply this theory to all blockchain solutions. There is no perfect staking derivative solution for all network participants.

stake.fish
No, it won't be a winner-take-all. It will look largely like the centralized stablecoin markets today, where there may be a market leader (USDT), but many will slowly find their footing and challenge that position (USDC, BUSD).

The only reason why Lido is capturing most of the market today is because they understand the entire staking stack. No other staking derivative projects come close. There will be a challenger in the future that will have as much knowledge on staking as Lido does today (the only moat is integration with other projects in the ecosystem, but as we've seen in DeFi, with proper incentivization, this can be easily challenged).

Stakin
Staking derivatives will be a key component in the future of the staking industry. I believe that as staking derivatives and liquid staking solutions grow, we will see more alternatives and competing products.

Chorus One
It's likely that only a handful of staking derivatives will manage to get meaningful liquidity and integrations so I do agree with this thesis. The more widely a staking derivative is integrated, the more useful it is, the more others want to use and integrate it etc., so there are clearly network effects here.

Persistence
The yields generated from a particular staking derivative are heavily dependent on availability of liquidity across various DeFi protocols, which associates a network effect to a particular derivative.

While this argument tries to justify the thesis of a winner-takes-all sentiment emerging around staking derivatives, there is an important additional aspect that needs to be considered here. The TVL in PoS ecosystem is about twice that in the DeFi ecosystem and these staked assets are siloed across multiple ecosystems, largest being Ethereum followed by Cosmos, Polkadot, Cardano etc.

Multiple factors including the growth of PoS market cap with increasing chains adopting PoS consensus, increase in staking rations due to reduction in the opportunity cost for stakers, and rise in interchain assets flow, create ample opportunity for multiple market participants to capitalize in the staking derivatives space.

Greenfield One

One of the main arguments for the winner-takes-all situation in staking derivatives is based on the fact that the token holder will always go for the largest player whose staked token derivatives have the highest liquidity and largest number of DeFi integrations, which in turn would minimize or completely mitigate discount these derivatives might have compared to the original liquid un-staked token. Such centralization might put a lot of power in the hands of such a DAO, from curating the validator set and thus also being able to monopolize MEV extraction. Monopolizing MEV extraction would allow DAO to boost the staker rewards higher than the competition.

Such a prospect of decentralization is obviously not good for the space as no matter how hard we decentralize one part of the stack, if another one is centralized the system ends up being centralized anyways. Our platforms are as much decentralized as their most centralized component. I believe we won't end up in a winner takes all scenario as the staking space even on one major chain like Ethereum has a large spectrum of players and stakeholders with different interests, investment horizons and risk tolerance. One example could be institutions either not staking assets due to regulatory or a risk-management standpoint or choose to run their own validators in the first place. Capital pouring into staking derivatives space will also not flock to one single project but rather facilitate competition and growth of alternatives.

In his Onion model for blockchain security, Hasu argues that the last security layer of a blockchain are social guarantees. In other words once a system approaches such a state that would negatively impact the participants with the vested interest in the system (miners, validators), they tend to decentralize on purpose not to shake the trust in the system. I would imagine a similar forced decentralization system to happen if any of the staking derivatives DAOs would approach gaining a majority network share with regards to staked ETH for example.

What are the core value propositions of liquid staking solutions, besides liquidity?

Chorus One
Improved UX and the ability to use staking tokens as collateral in decentralized finance, which enables liquid staking tokens to become a building block for an unlimited amount of applications.

Stafi Protocol
Besides liquidity, the first one should be the DeFi capability. Value that has been staked could be used to integrate into the DeFi project. DeFi needs new assets, especially for the interest-bearing-assets. The other factor is the Mainnet security of PoS Chains, liquid staking will theoretically increase the staking rate of the consensus as many holders are afraid to stake.

Greenfield One
The main goal of the staking derivatives besides liquidity is to avoid the opportunity cost of not being able participate in DeFi and leverage the staked assets.

Staking derivatives and the broader class of staking structured products open up for several use-cases such as being able to utilize leveraged staking or speculate on staking yield speculation, similar to what we can see emerging in DeFi. Being able to speculate on yields can also open up for a fixed-rate staking, where the tokenized future yield is exchanged into more of the principal token giving them a bond-like characteristic.

Decentralization

In a decentralized blockchain network, no one has to know or trust anyone else. Each member in the network has a copy of the exact same data in the form of a distributed ledger. If a member's ledger is altered or corrupted in any way, it will be rejected by the majority of the members in the network.

Decentralization and subsequent trustlessness makes blockchains valuable as a credible and neutral public record for thousands of use cases. The degree of decentralization is a key determining factor for the success of widely adopted blockchains.

Proof of Stake fosters grassroots participation and is rather referred to as an inclusive technology. But with large players entering the game, how can we remain resilient and foster decentralization?

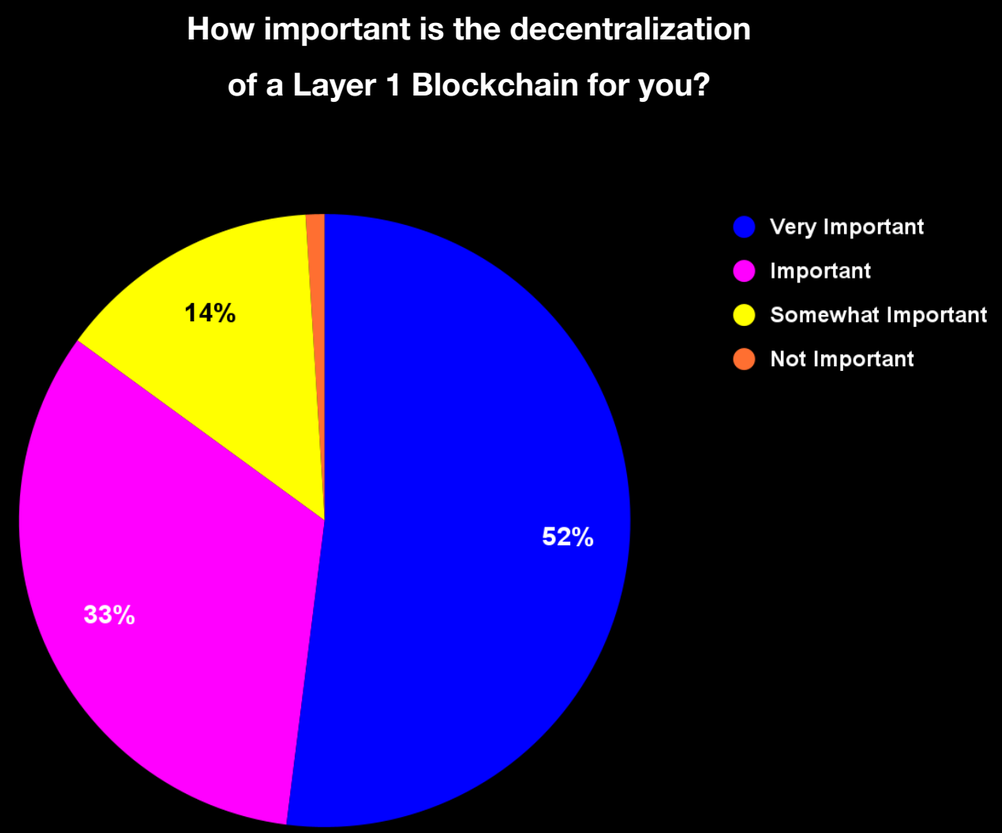
Staking Rewards

Below is a comparison of common centralized and distributed networks vs decentralized networks by Amazon:

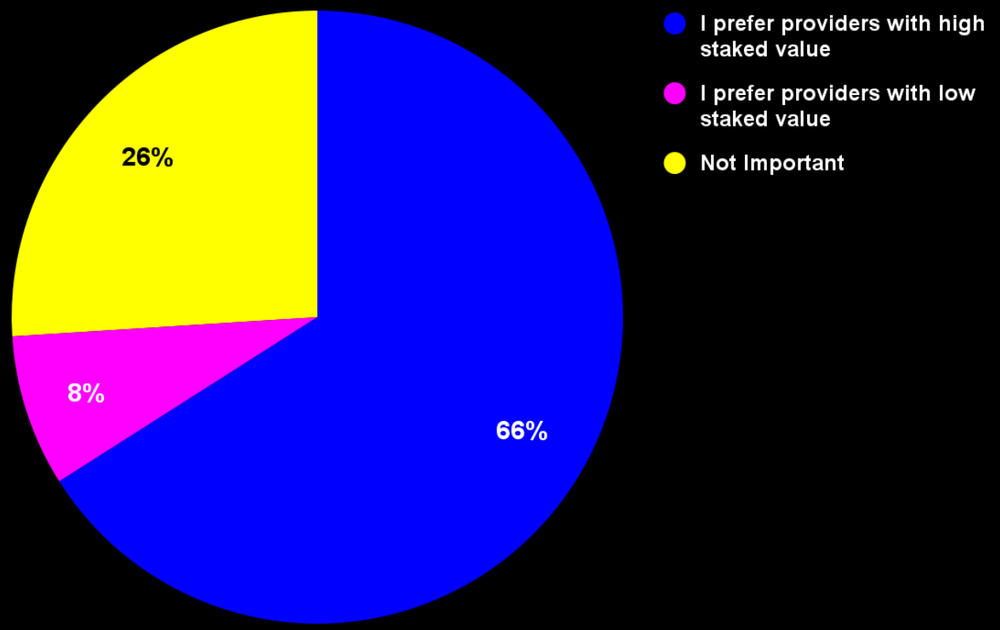
	Centralized	Distributed	Decentralized
Network/Hardware Resources	Maintained & controlled by a single entity in a centralized location.	Spread Across multiple data centers & geographies; owned by the network.	Resources are owned & shared by network members; difficult to maintain since no one owns it
Solution Components	Maintained & controlled by central entity	Maintained & controlled by solution provider	Each member has exact same copy of distributed ledger
Data	Maintained & controlled by central entity	Typically owned & managed by the customer	Only added through group consensus
Control	Controlled by central entity	Typically a shared responsibility between network provider, solution provider & customer	No one owns the data & everyone owns the data
Single Point of Failure	Yes	No	No
Fault Tolerance	Low	High	Extremely high
Security	Maintained & controlled by central entity	Typically a shared responsibility between network provider, solution provider & customer	Increases as # of network members increase
Performance	Maintained & controlled by central entity	Increases as network/hardware resources scale up and out	Decreases as # of network members increase
Example	ERP system	Cloud computing	Blockchain

In our user survey, we asked participants how important decentralization was to them with regard to their choice of asset investment. We can clearly see below that it remains a necessary feature of the technology with 52% staking it is very important, 33% saying important, 14% saying somewhat important and only 1% suggesting that it was not important at all.

Saying this, responses regarding provider decentralization seem to contradict the above. Two thirds of respondents state that they prefer to stake with providers that have high staked value. This trend suggests that smaller providers should start incentivising stakers in other forms to counteract this trend. In contrast to the above, only 8% of respondents actively opt to choose providers with a lower staked value to ensure decentralization remains intact.

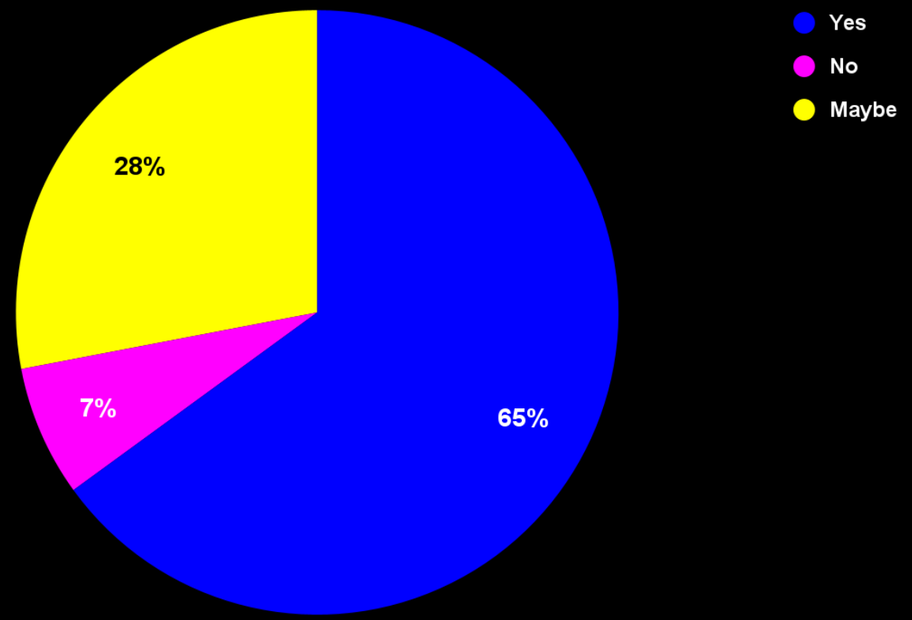


What role does the balance/staked value of a staking provider play for you?



The majority of respondents also state that they would be willing to at least think about running their own node if it was simple with a plug and play setup.

Would you run your own staking node if the setup was plug & play?



So what do the key stakeholders in the staking industry think about the state of decentralization?

Read below.

How can smaller Staking-as-a-Service companies differentiate themselves from large players like exchanges providing staking services (e.g. Binance, Kraken, Coinbase)? Is there a danger of centralization?

Kraken
The growth of Staking as a Service as a business offering has been dramatic with staking becoming highly profitable recently. The diverse set of assets, staking terms, risk management options and more have created a greater choice and competition in the space.
Smaller SaaS companies can differentiate themselves by being first-to-market offering staking services to new assets at launch. Moreover, smaller staking providers can focus on the user experience and education to attract new users to staking instead of competing directly with larger providers.

We believe that the decentralization of staking will be positively impacted as the education of staking increases alongside the inclusion of staking capabilities in non-custodial cryptocurrency wallets. While there will always be larger staking providers that can offer efficiencies and economies of scale, the barrier to entry for staking will be significantly reduced as staking capabilities are built into non-custodial wallets.

Bitcoin Suisse
The “easy” answer would be to see what the larger companies are not doing – and start doing it. But that is easier said than done.

The largest staking-as-a-service providers are offering staking for only a few, but large protocols. The best way to differentiate is to offer staking services for the ones that they do not include in their offering. At some point, time will catch up – but that is a luxury problem as a service provider, because that means that the tokens they had offered for staking were the “right” ones.

Stakewith.us
Find a specific niche that bigger players are not working on - for example, providing ecosystem updates, building simple FE tools, infometric websites, etc.

Chainflow
There is currently a big centralization problem on many staking networks. This is showing us the danger is real and happening. Smaller operators need to work together to counter this trend.

Among other efforts, we need to collaborate and work together to educate delegators on the dangers of centralization. We can't be thinking of Silicon Valley, VC-exit, zero-sum economics. There's enough to go around for everyone, really, as long as we all have reasonable expectations.

Yet the zero-sum mindset still exists. This is especially true among those larger crypto financial institutions being run by serial start-up entrepreneurs and/or those from the legacy financial industry, who see staking as simply another market to dominate and conquer.

Everstake
Smaller validators are able to compete while proposing lower validator's fees (at least in the beginning of their journey) and a more meticulous approach when it comes to marketing / servicing real delegators. We can see this happening in the dedicated Telegram or Reddit community channels where validators promote themselves. While smaller validators may run only a couple of nodes, they are narrowing their efforts to attract users. Applying enough time for self-promotion and assisting delegators with the staking process, they have good chances to win a big audience.

In addition, the blockchains are normally built to promote and encourage decentralization, hence the smaller validators are being supported often in different ways. Blockchain core teams provide the space for validators to promote themselves, hold giveaways and use other marketing tools, encourage participation in the governance and so on.

stake.fish
Exchanges will take a big share of staking, but will always have an upper bound since they cannot deliver the most efficient staking reward rates. Therefore, I don't perceive exchanges as a long-term threat to the health of Proof of Stake.

Competition with exchanges should not be the focus of smaller staking-as-a-service companies. Their main focus should be on building their reputation and carving out a share of the staking market on a single protocol. This should help propel them towards expanding into other protocols and accelerating their growth.

Stakin
The clientele of smaller staking providers is very different from the one from Binance, Kraken and Coinbase.

There is a danger of centralization, however, smaller staking companies tend to be focussed on non-custodial staking and usually cater to the non-custodial kind of users, the ones who like to keep full ownership of their digital assets.

There are advantages in terms of liquidity and eventually UX when staking on a centralized platform, however the risks are quite different, as ultimately the user is entrusting that platform to store their funds and not get hacked.

I feel like the users of decentralized staking providers typically do not store their funds on such platforms. Taking a fully non-custodial approach is already a big differentiating element.

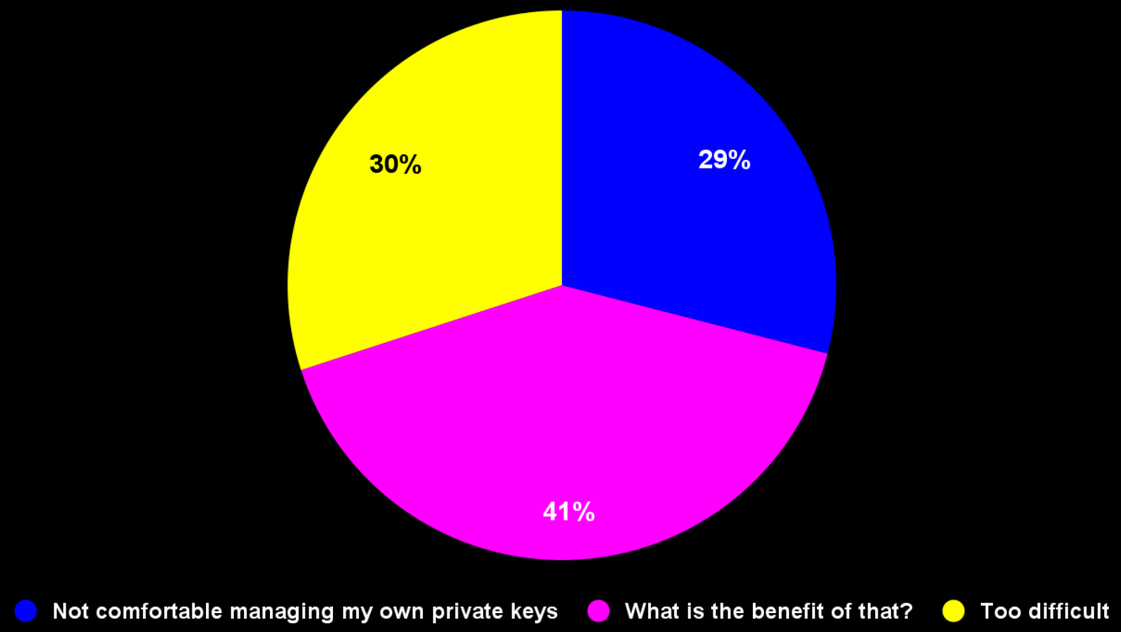
Harmony
Smaller staking services are usually more hands on with customers and they give better APY compared to exchanges. Exchanges usually do not maintain their validators well so they are frequently offline or produce sub-par rewards compared to staking providers. The staking as a service has actually boomed lately and there are quite a few serious companies in the field already.

Stafi Protocol
Consensus needs smaller staking service providers to be decentralized, if all stakes are from large players like exchanges, security issues are obvious. Stakers from the community should be aware of the issues and delegate their stakes to the smaller and professional service providers. There are many professional providers out there, most of them have made a great contribution to the protocol, actively playing a heavy role on the development, governance and community, etc, I think those are the best way to differentiate themselves from the large players.

Cardano
One thing that Staking-as-a-Service companies can do is provide localized services for their clients, creating a more personal approach in contrast with the large players.

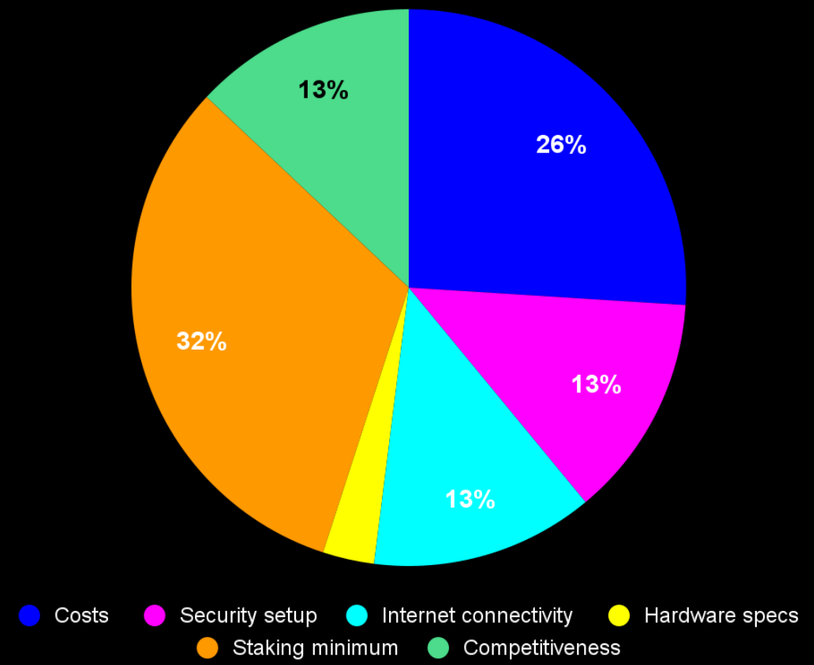
Staking Rewards

Why are you not staking/delegating your tokens directly on-chain with a non-custodial provider?



Based on the above graphic, we can see the primary reasons for our users opting to stake with custodial providers rather than non-custodial providers. It is evident that some users are not aware of the differences between the two types of providers, again coming back to the educational issues.

What are the biggest pain points for running your own node?



Above we can see the biggest pain points for someone running their own node.

How decentralized should a blockchain be? Is there a sweet spot tradeoff between decentralization and performance?

Chainflow
Ideally, a small number of wealthy stakeholders shouldn't control any aspect of the network, i.e. capital, governance or knowledge. It's tough to put exact numbers on what control actually equates to, as networks vary in many ways.

Conceptually, the degree of a network's decentralization should increase as it's mainnet lifespan increases. Some degree of centralization is required to launch. However, core teams should take real action to begin decentralizing after the first few months of a mainnet's existence.

If this doesn't happen, core teams start getting addicted to centralized control. This makes it even harder to decentralize and less likely the network will become "sufficiently decentralized". A big warning sign is if a network hasn't taken significant steps to decentralize by its one year mainnet anniversary.

Figment Networks
A protocol needs to balance the economic incentives of running a validator and contributing to governance to encourage expertise to develop and guide the direction of a protocol. Just as in a public forum, there needs to be a balance between the team and the foundation, those with experience (validators) to support and help the general public (token holders) to achieve end goals that benefit everyone.

stake.fish
A blockchain must strive for maximum decentralization. It's okay to make some compromises in the beginning in order to stabilize the network. However, there should be constant progress being made towards decentralization over each quarter.

Stakin
The more decentralization the better. However, the blockchain should still be usable. 50+ to hundreds of validators has so far proven to be a resilient enough model in terms of decentralization, but it depends on the Tech and quality of that validator set. As the technology matures, we can expect that many PoS networks will actually feature high TPS, stability and a large set of validator nodes operated by hundreds of different entities.

How do we ensure and incentivize further decentralization within the staking ecosystem?

Kraken
Decentralization needs to be encouraged on the infrastructure level (i.e. more independently operated validator nodes) and on the user level where the staked funds are distributed heterogeneously. More equitable governance decisions can be made when staked funds are widely distributed. By lowering the barrier-to-entry and making staking as easy as possible in a wide-range of different assets, staking providers like Kraken are making this a reality.

Bitcoin Suisse
Token economics design plays a key part. Currently many protocols have been designed in a way that it is cumbersome to stake by yourself, and easy to delegate to another validator or simply hand over your tokens to a professional custody service that is providing staking-as-a-service.

Both ways are disincentivizing decentralization; hence the industry needs to be aware of this and work in the other direction. Few are trying and even fewer are succeeding in this. Despite that, it is still more decentralized than the current mining landscape, where economies of scale play too important a part.

Another way to ensure decentralization in decision-making is by encouraging users to perform governance actions – and this can easily be done through centralized service providers.

Finoa
PoS protocols should aim for a minimalistic approach with regards to the infrastructure requirements to spin up and maintain validation nodes. Otherwise, the barriers of entry to participate in the critical activities of the protocol will be too high for the wider public. In newer protocols, this could lead to power centralization in the hands of only those that can afford to pay the high infrastructure costs.

Chainflow
When you see a trend toward centralization happening, speak up, call it out, bring attention to it. When you see others do the same, investigate the points and if you agree, support the observation. This goes for decisions, e.g. network proposals, that may increase, rather than decrease the trend toward centralization, too.

Secondly, we need to further educate delegators, particularly new entrants to the crypto community. We need to explain the importance of decentralization to them and help them understand how their choices play an important role in preventing stake centralization.
Delegators do at least a little research. Get to know your chosen validator operator. Or better yet, choose two to three to delegate to. This helps reduce your risk and decentralizes stake. Choose validators whose values align with your own. Hold them accountable for their actions and contributions, or lack thereof, to the communities of the networks they're operating on. Understand their business model.

Are they pursuing a high-growth, Silicon Valley model that relies on them capturing as much market share as possible? These types of business models are directly at odds with the concept of decentralization in the first place. Instead, choose validators who don't see the staking economy as a zero-sum game.

Finally, from a more tactical perspective, those building network block explorers can help too. They can do this by highlighting validator performance, rather than total stake. The single biggest and probably the simplest thing you can do to counter stake centralization is default sort your validator list by performance or even alphabetically. DON'T default sort by stake, with the highest stake at the top of the list. Provide background information on the valiator and an area for delegators to review validators.

Figment Networks
Protocols should continue to lower the barriers for entry by including validators into the set and incentive all the stakeholders in the network to participate in governance.

Stakewith.us
There are recent attempts to skew the distribution of rewards (including airdrops) to incentivise stakers to stake with smaller players. Perhaps a similar concept on skewing governance voting power itself can be explored. Personally, I think staking derivatives, together with a functional, cross-chain DeFi market to rival that of a CEX would help encourage further decentralization as trading, yielding and farming can all take place without prejudice to smaller operators.

Harmony
Decentralization is the third stage in a staking ecosystem. The first stage is to ensure network stability. The second stage is to ensure communication and coordinated action. Once systems and norms are in place to accomplish the prior two steps, you can turn to decentralization. Here, decentralization can be accomplished by lowering the barriers to participation. Lower the minimum amount someone can stake. Facilitate the establishment of validator nodes with technical how-tos, services, and even recommended specs. Provide channels for technical and marketing support. The easier it is to set up and run a validator node, the more people will participate in decentralization.

Persistence
Proof of Stake decentralization relies on the decentralization of assets staked through a chain's validator nodes. This means there are two aspects to the decentralization - first is the distribution of assets amongst the stakers, and second is the distribution of stakes on the validators.

To ensure a meaningful distribution of PoS tokens among stakers and prevent accumulation in a few wallets, several efforts have been made towards devising better token launch strategies. New token launch strategies like Initial DEX offering (IDO), Liquidity Bootstrapping Pool (LBP), Liquidity Mining etc have been evolving to provide token access to a wider audience, furthering the goal of decentralization.

Keplr
This may be an unpopular opinion, but I don’t believe that an exceptional validator with highly valuable contributions having 10% of network stake is bad. There’s nothing worse than ‘decentralization for decentralization’s sake’. Proof of Stake is largely proof-of-contribution. Work hard to create valuable products and services for the chain, get delegations in return.

That being said, it’s true that sometimes builders are not fully recognized for their contributions–and this is the part where I think foundations/communities can assist in highlighting their value.

Greenfield One
I would look at decentralization from infrastructure (validator set) and stake distribution point of view. Both the validator set as well as stake distribution across it have to be sufficiently decentralized as to avoid a situation where one staker or a large validator entity amassess enough voting power to single-handedly influence governance proposals, critical cut-off value in PoS networks being 33% of staked tokens.

One of the current bottlenecks contributing to centralization in context for institutional staking are the custodians which for the most part lack sophisticated staking support via limiting the selection of validators one can delegate to as well as limiting whitelabel opportunities. I see this changing over time as the market becomes more competitive, which would allow more flexibility for institutions to delegate to multiple staking service providers.

In terms of fostering decentralization on the validator set level, protocol foundations should support smaller validators and incentivize new validators to come in via grant programs or token lease agreements. Foundations have to be very careful though with regards to treasury staking as this can sway the network economics in one way or another and price out smaller validators or kick them out of the validator set. Incentivised testnets with broad participation are also helpful to bootstrap initial validators set in a decentralized manner.

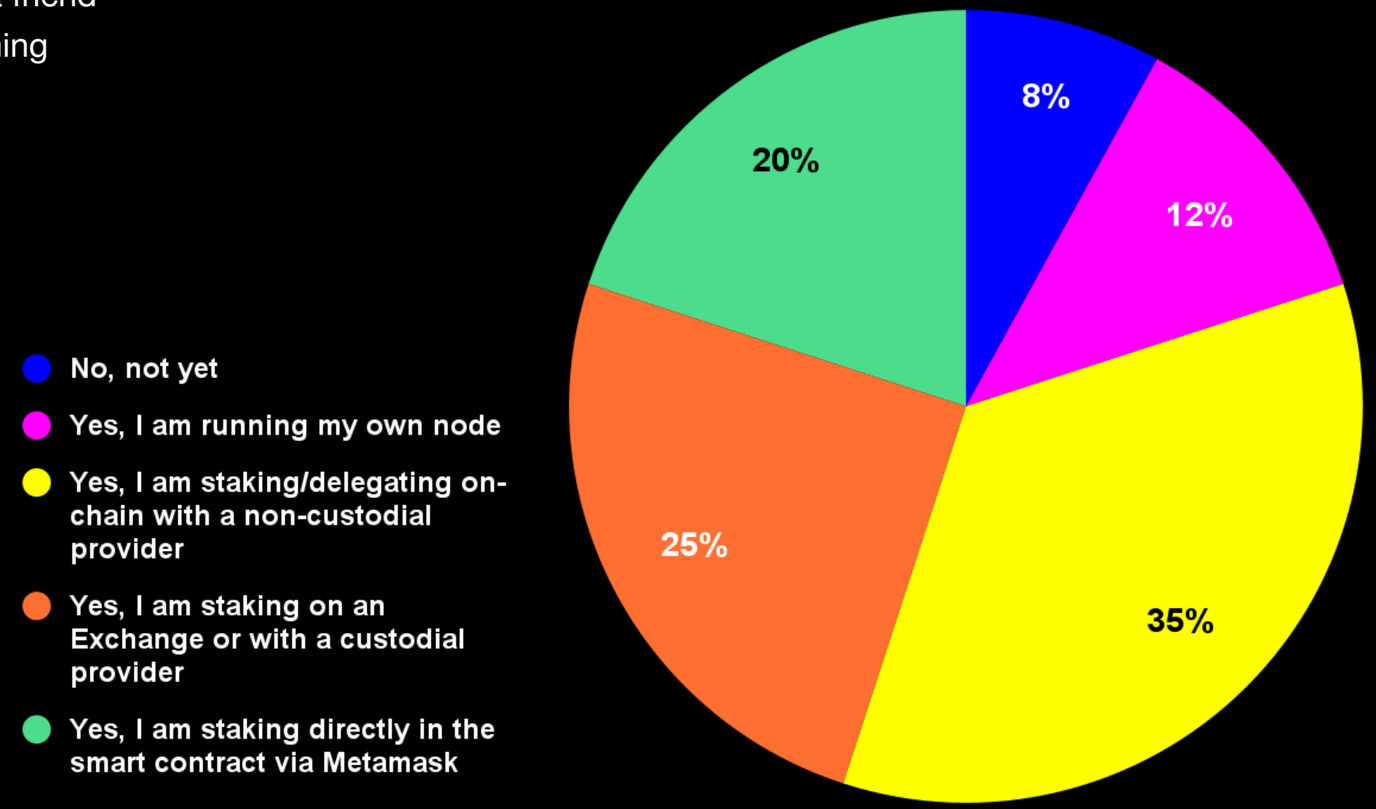
One of the primary means to decentralize on the stake level is for the larger validators to delegate some tokens to the smaller validators. This can be to some extent achieved on the protocol level by incentivizing even stake distribution across nodes (Polkadot/Kusama). Here initiatives like #KeepStakeDecentralized by Chris from Chainflow are helpful and worth supporting.

Decentralization is a means to an end and is not valuable by itself. The primary outcome of a decentralization is censorship-resistance and high availability of a network. As long as these characteristics are achieved, the network becomes sufficiently decentralized and the additional unit of decentralization we bring into the network does not bring much utility anymore. That means that there is a decentralized sweetspot, with most networks viewing it differently. Solana has been perhaps leading in exploration of where this “decentralization sweet spot” can be.


Staking Rewards

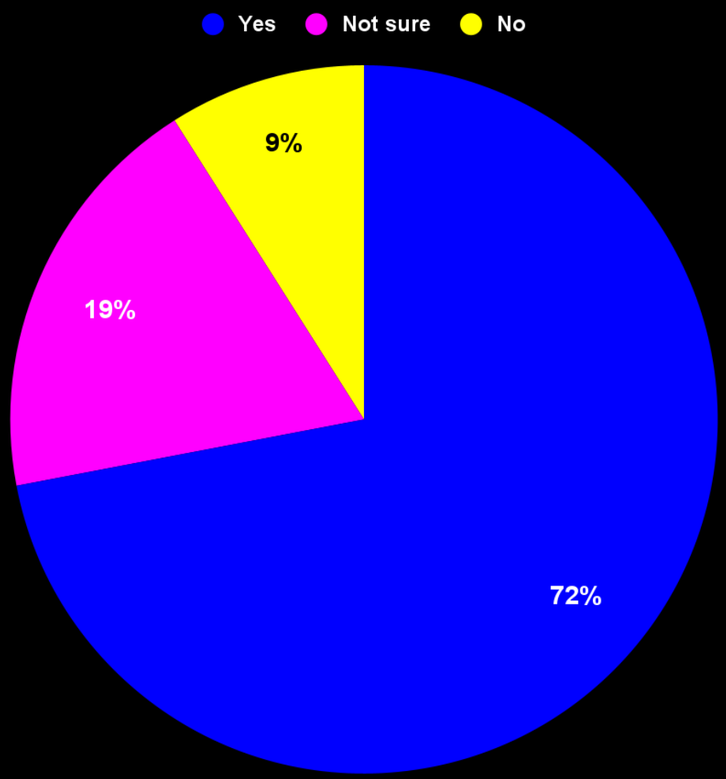
Staking Rewards

Our users are crypto-intelligent and are more often than not active in pursuit of creating a passive income stream using their assets. These users have been in the industry for months/years on average. We found that 92% of respondents are staking in one form or another and it is also evident that these users are willing to suggest staking to a friend highlighting the likelihood of industry growth over the coming years/decades. Results can be seen here.

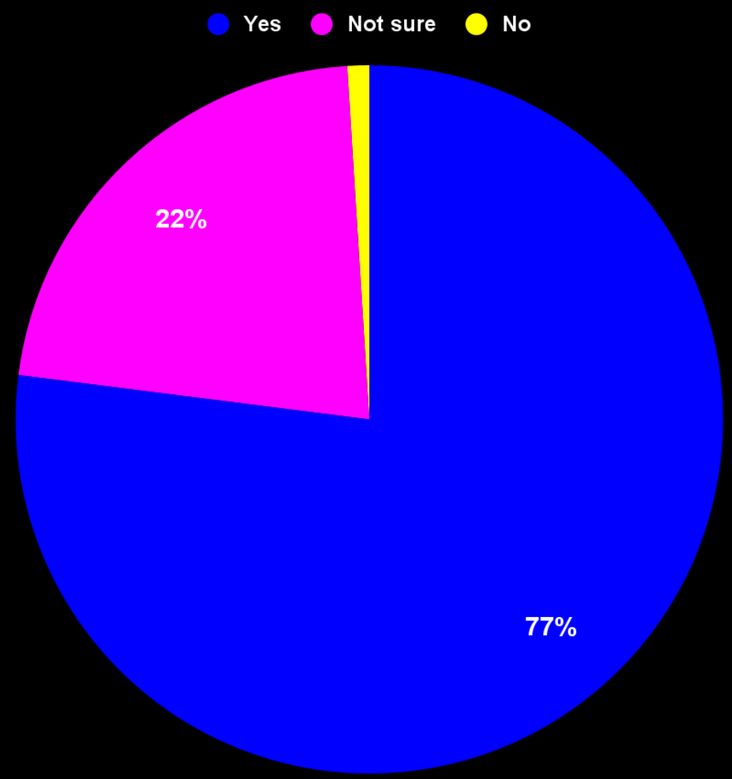


Staking Rewards

Do you feel that you are ahead of the rest because you are staking?



Would you recommend staking to a friend?



Which protocol has the most sophisticated token economic staking incentives design? And why?

Chainflow
Projects with real world use cases, like Livepeer and The Graph come to mind first. Both reward infrastructure operators for real activity happening on the network, in addition to inflationary rewards. In Livepeer's case an orchestrator gets rewarded for transcoding video on the network. Graph indexers receive query fees. POKT has an interesting model as well. It pays node operators for relaying queries to non-validating network nodes on a variety of networks.

Everstake
We could mention EOS here since originally it comes without an intuitive rewards mechanism. The voters were not supposed to be rewarded when voting for Block Producers. Also, staking resources with the goal to cover transactions while dealing with the network also doesn't incentivise stakers. Bottom line, the concept of staking resources along with the voting for proxies that provide rewards was established, to make rewarding possible. Still, up to now, some users have questions about the actual process, so we've created guides for it.

Figment Networks
Easily The Graph. The Graph has two sources of indexer income: new issuance rewards and query fees. However, the new issuance rewards are pooled and divided amongst subgraphs, and the division is dictated by a curation market. The curation market uses a bonding curve. The commission structure is a fixed cut, meaning that a new delegation or undelegation dramatically changes the staking revenue shared between the indexer and its delegators.

Stakewith.us
Hands down Terra Money with its algorithmic stablecoin (UST) design that is closely tied to LUNA burning/minting. And all the associated applications with their own token issuance which also ties back to UST utility. And the fact that the network has 0 inflation, but still manages to generate sufficient incentives for LUNA holders to remain staked for network security.

Chorus One
It seems to me that most Proof of Stake blockchains are converging to similar models. Stake delegation, deflationary fee designs (e.g. EIP-1559), state rent, and similar features are implemented or planned to be implemented in most noteworthy layer-1 networks. I think NEAR can be highlighted as one of the best documented and, in my view, comprehensive token economic designs overall.

Which upcoming protocol projects are you most excited about and why? Is there a protocol no-one is paying attention to but should?

Kraken
Polkadot and Kusama-based parachain networks are an area of intense focus for us most recently and we are watching this space closely to see the opportunity around these native tokens and their staking capabilities. There are some teams that are introducing a new concept called Dapp Staking that look pretty compelling. Kraken is trying to find innovative opportunities to help advance decentralization and introduce our clients to new options.

Bitcoin Suisse
For me, it is not one particular project that I am most excited about, but there are many very interesting projects to watch. The projects that people should pay attention to are all the application projects on existing layer 1 protocols. All those teams who are building on Ethereum, Polkadot, Kusama, Tezos etc. The success of these protocols will help shape the future of layer 1 protocol dominance landscape – and that's what's really interesting.

Finoa
Personally, I like projects enabling me to re-think use cases in the traditional world and translate these into a tokenized world. Thus, I like the DeFi projects (e.g. Balancer) but also projects like Centrifuge.

T-Systems
There is a plethora of relatively unknown protocols with potential but there are a few elephants in the room. Ethereum's innovation speed to overcome its scaling challenges is just mind-blowing: EIP 1559, ETH2.0 merger and all that's happening with layer 2 networks. If your concern is interoperability, then check out Polkadot and Cosmos which are really gaining traction.

In our opinion, the landscape will look very different in 1-2 years from now but not because of the new kids on the block taking over, but because proven platforms like Ethereum become ever more mature and value creating.

Chainflow
Althea is a real-world use case building physical communication infrastructure, solving a real world problem. Stakebird is a project building decentralized social network tools, also with a real use case and being built by a team with a true open-source and decentralized ethos

The Compound Gateway chain is interesting too and I'm a bit surprised and happy to see the early validator testnets not dominated by the usual larger validator operators. At the same time, they may swoop in after Mainnet launch with dominating stakes, which is another issue.

Everstake
ETH2, Arbitrum, Optimism

Figment Networks
Unslashed finance for slashing insurance, Qredo for decentralized custody, and Osmosis for reverse staking derivatives.

Keplr

A bit biased, but Osmosis.

Stakin

Very excited about Solana and Polygon these days. Great traction and strong ecosystem approach.

Chorus One

I am currently most excited about the Cosmos ecosystem now that IBC is starting to be adopted and showing some signs of product market fit after the Osmosis launch. There's also a variety of interesting projects upcoming here including e.g. Agoric, Sommelier, Celestia and others.

Harmony

Axelar, since it is a gateway network to connect all other networks; eg. doing contract calls or simply making a trade within 2 different chains, all directly from Axelar.

Stafi Protocol

Layer2 would be the one I am most excited about, it will release the power of Ethereum and bring dapp built upon it into a new era. Some migrate projects from layer2 should be in your watch list, especially for the one which is limited by the higher gwei.

Which protocol has the best approach towards governance? And why?

Kraken
The parathread and parachain slot auctions that were recently deployed on Kusama, Polkadot's testnet, demonstrate robust and transparent governance mechanisms. It was fun to watch the various phases of development go through a governance vote and see the results on-chain.

Bitcoin Suisse
The question anticipates that there is a "best" approach. Governance is like crypto-democracy, and every model has its upsides and downsides. There is no "objectively" best. There are thoughtful approaches and careful considerations of the trade-offs made in each model, and some protocols are definitely better than others to embrace these trade-offs and be open about it, so that applications, businesses and end-users are not left dissatisfied in the long run.

Chainflow
All networks are in the early days of their evolution. Right now "best" to me means experimenting with processes, while committing to doing so in a decentralized way. Web3 infrastructure projects that seem to be doing that well are POKT, The Graph and Radicle Regen, in its very early days, is making sincere efforts with the right intentions to get their process right from the outset.

stake.fish
Polkadot has a nice approach to governance with committees that can take care of enacting certain proposals (i.e. technical upgrades) that do not require the entire community to vote on. However, it is complex and therefore could hinder newcomers.

Stakewith.us
Really like governance on networks such as Cosmos and Terra, where we see a lot of proposals launched by ecosystem participants, community members and other validators. It's very democratic in some way, not necessarily the Foundation pushing everything there + possibility to ask for grants etc. There's also a good rhythm in proposals (not too many which would be spammy + hard to DD, and not too slow either which is good for iteration speed, network upgrades etc)

Chorus One
I think many protocols have good elements, but overall we are still very early and there is a lot of room for growth in this area. In my opinion, we haven't seen that much innovation in the past few years since initially projects like Cosmos and Tezos came out with their governance designs. I am seeing more innovation in the DeFi ecosystem. One thing that I find exciting are "continuous" governance mechanisms like Curve's gauge weighting for incentives as they can be quite straightforward and don't require such a strong understanding of particular issues, but of course they are not suitable for every decision. I also believe delegated voting is a decent solution to avoid voter apathy.

In general, a larger trend appears to be to minimize governance, which seems to be a good idea, but I am of the opinion that in many systems there inevitably needs to be some form of governance, so it makes sense to try and optimize those protocols.

Cardano
A decentralized approach to governance is proving to be more efficient than the centralized, authority-based model we're used to. At IOHK, we believe that blockchain technology offers a way to encourage participation in collective action. Governance is something that's a crucial part of the Cardano roadmap. We have a sophisticated voting system, Project Catalyst, to fully decentralized governance. Project Catalyst establishes a democratic culture for the Cardano community by allowing developers to propose projects on Cardano for funding, and then allowing community members to vote on which projects they would like to see funded. Everyone has an equal say in Catalyst, and the project's value lies in enabling the community to learn how to collaborate, make decisions, and generate great proposals. We're also looking to implement zero-knowledge proofs for each vote, to ensure their security and anonymity. Not only this, but anyone can make suggestions for improvements on Project Catalyst. Decentralized governance is crucial for Cardano, and Project Catalyst is allowing us to achieve this.

Atomic Wallet
I like how Tezos is built, it has truly decentralized governance with distributed protocol update. In terms of the governance implementation, I like Polkadot with their council voting system, pretty similar to real life.

Keplr
Secret Network. They have found a good balance between on-chain votes and off-chain committees, and have a passionate group of communities that run it.

Which network or protocol in the market do you think has the most future-proof token economics? And why?

Kraken
While nothing is ever fully future-proof, the token economics of several projects, including ETH2 and DOT/KSM, are laying the foundations for a long lasting decentralized ecosystem.

Bitcoin Suisse
Only the future will truly tell, since attacks, congestion and other dynamics will test the robustness of each protocol. It is obvious that many have borrowed elements from the other, which tells me that they will also be adopting each other's models – this is when flaws might come to light in the future.

Ethereum 2 has created a very sophisticated token economics, which theoretically seems to be the most futureproof model. At the same time, it carries a high complexity and is hard to explain to both staking operations and end-users of staking services.

Finoa
Bitcoin. Tried and battle-tested like no other. Also, often competition among newer protocols ends up benefiting the incumbent leader by dividing participants into smaller networks.

Chainflow
I'd say those whose token value is tied to the direct utility they provide to the network. This has to be utility above and beyond simply providing the ability to vote in the network's governance process.

Everstake
Solana, Polkadot, Cardano

stake.fish
None. Protocol token economics have still yet to be figured out. Most of the key parameters have remained sticky from when they were first determined and have not gone through any robust reform.

Stakewith.us
None, because finding the perfect tokoenomics is an iterative process, and will be adjusted time and time again to suit the market.

Chorus One
It seems to me that most Proof of Stake blockchains are converging to similar models. Stake delegation, deflationary fee designs (e.g. EIP-1559), state rent, and similar features are implemented or planned to be implemented in most noteworthy layer-1 networks. I think NEAR can be highlighted as one of the best documented and, in my view, comprehensive token economic designs overall.

Harmony
There are a few protocols with deflationary tokenomics and a few that get there later on with higher usage of their network. There is no one perfect tokenomics model. Steady and small inflation might, also, not be bad for mass adoption.

Atomic Wallet
In terms of staking mechanics, I like the Cardano implementation. The chain has thousands of validators, many of them are independent holders, which is cool for the chain decentralization.

Keplr
None. Even Bitcoin. Token economics is more about being responsive than predicting the future.

Which network or protocol has the most sophisticated staking mechanism or staking use case that is not a Proof of Stake Layer 1?

Kraken
Synthetix has one of the more sophisticated non-L1 staking mechanisms, which is fundamentally tied to the core function of the protocol to mint synthetic assets.

Chainflow
I'd say either Livepeer or The Graph, as they tie token value to utility above and beyond simply providing the ability to vote in the network's governance process. Note that I don't particularly see sophisticated having to be directly correlated to complicated.

Everstake
Skale

Figment Networks
The Graph with their curation element. There are similarities between an AMM, but applying it to the utility of the network outside of creating a market for assets.

stake.fish
The Graph definitely leads in sophisticated staking design. It carefully integrates various stakeholders (Indexers, Delegators, Curators) to signal with their staked tokens and incentivize healthy network behaviors. There are still parts of their tokenomics that have not yet been fully activated, but promising signs are already present.

Stakin
Staking is used more and more out of the Layer 1 PoS protocols. Haven't seen anything super innovative yet but I think it's great as in general Dapps implementing staking do it to create some kind of lockup incentivizing long-term token holders, and add some decentralized governance to it.

Chorus One
The Graph protocol has many different roles and integrates staking in interesting ways to create a marketplace for indexing and querying valuable blockchain data. It also enables nodes to differentiate by optimizing their operations, which can lead to higher APYs for delegators. It’s still quite early and it is a very complex design, but it’s definitely one of the most intriguing protocols that have launched recently.

Stafi Protocol
Tezos' staking mechanism is hard to understand but it is stable and solid, its philosophy solves the problems,like nothing at stake, long range attack, etc with an elegant “lock-up”, staker will receive all rewards and they can redeem part of staked token on each cycle, differential from some projects locked all staked token directly. Details of Tezos’ staking would be more interesting, you can read their paper.

Harmony
When it comes to Layer 2 solutions, Polygon has grown to be one of the most popular networks, aiming to target some of the major challenges faced in the current Ethereum ecosystem like heavy fees, low TPS and poor user experience.

In order to make the staking and governance mechanism more decentralized, the network has taken multiple steps:

- Polygon Improvement Proposals to discuss and decide upon various network attributes and activities. One interesting feature
- Auction mechanism to replace underperforming validators in the active set
- Weighted stakes mechanism to adjust voting powers of validators and prevent centralization issues
- While building a sophisticated staking mechanism is a challenge that still requires more research, Polygon has taken multiple steps towards doing justice to the trust acquired by the network from the staking ecosystem.

Which network or protocol in the market has so far proven to have the best “product-market-fit”? And why?

Kraken
A clear example of product-market-fit we’ve seen this year is Dapper Labs’ FLOW and the spectacular growth of their inaugural application, NBA Top Shot. FLOW was created to solve the scaling issues that Ethereum encountered in the CryptoKitties mania in 2017. It’s certainly no small feat that Dapper Labs was able to create a viral consumer product, after investing and building their own independent product. By effectively setting the benchmark, NBA Top Shots on FLOW have propelled the still-nascent NFT space to mainstream global attention.

Finoa
Ethereum has proven a wide variety of use cases and has been the victim of its own success on more than one occasion. Nevertheless, it’s great to see that their community is so active and how its evolution enables ever more interesting use-cases like the entire ecosystem of defi apps.

T-Systems
The answers seem obvious. There are only two networks which have consistently proven a solid product-market fit and they are both PoW: BTC as a decentralized and censor resistant store of value and Ethereum as an unstoppable decentralized Turing machine. And they are successful for very different reasons: While Bitcoins has never changed its value proposition and remains incredibly stable compared to the rest of the protocols, Ethereum is the everchanging ecosystem which manages to adapt to every single challenge that's being thrown at it.

Chainflow
Solana seems to have gained quite a bit of traction, as there seems to be quite a bit of end-user-focused development activity happening on the network.

stake.fish
The Graph, Chainlink, Polygon are three that have the most real usage and have proven their place in the ecosystem.

The Graph and Chainlink have become a necessity for most decentralized applications at this point, especially in DeFi land. Polygon has proven that it's not enough to simply build a protocol. Their team has worked tirelessly to onboard developers and application teams, and are a living testament that business development is another piece of the puzzle to gaining developer adoption.

Harmony
Chainlink and The Graph. They both serve data to all other projects and these projects need this data to operate. One is a price oracle and the other uses GraphQL to index and serve data queries. Both should be here to stay for a long time. Both are also chain agnostic which is a great way to offset layer 1 risks.

Figment Networks
Ethereum

Stafi Protocol
Uniswap I would say, simple, permissionless and easy to use.

Keplr
Solana & Cosmos ecosystem. Both contrarian takes on blockchains that have found huge success

Persistence
Talking about product-market-fit, Terra has been aggressively driving its vision to lead a decentralized finance movement through its product suite catering to both crypto-native and retail audiences. Terra is a stablecoin platform that has built a suite of products around its stablecoins.

Terra's approach was unique and exceptional in the sense that they simultaneously built out the use cases for their stablecoins, specifically UST instead of relying on third party applications to integrate with their stablecoins (UST, KRT, SDT, etc). Terra's Anchor protocol and Mirror protocol both utilize UST, giving users the ability to generate yield by minting and using UST in Terra products.

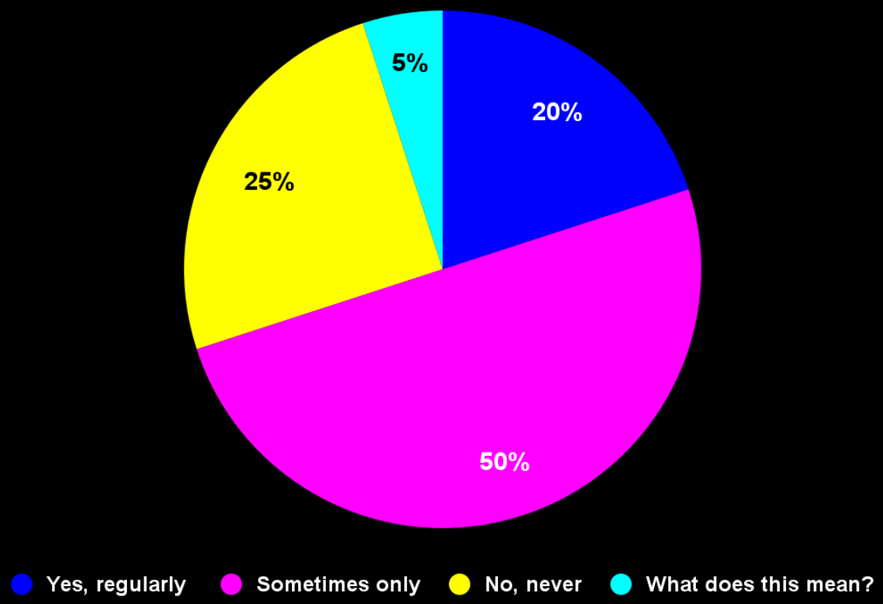
- E-commerce payments platform, Chai, helped in bootstrapping the network's adoption. The network's exposure to the booming payments market in East Asia helped the platform reach 2 million users and $1.2Bn annualized transaction volumes
- Mirror protocol was the next feather in Terra's hat. The synthetic assets platform allowing users to gain exposure to equity market and leverage price actions without owning the underlying assets helped Terra penetrate the cryptonative market
- Finally, Anchor protocol catered to the requirement of a stable yet attractive yields in the DeFi space, especially during given the rapidly fluctuating market sentiment

All these steps together led to an explosive growth in Terra's user base and adoption of UST and LUNA, helping the network achieve product-market-fit in the staking industry.

Staking Rewards

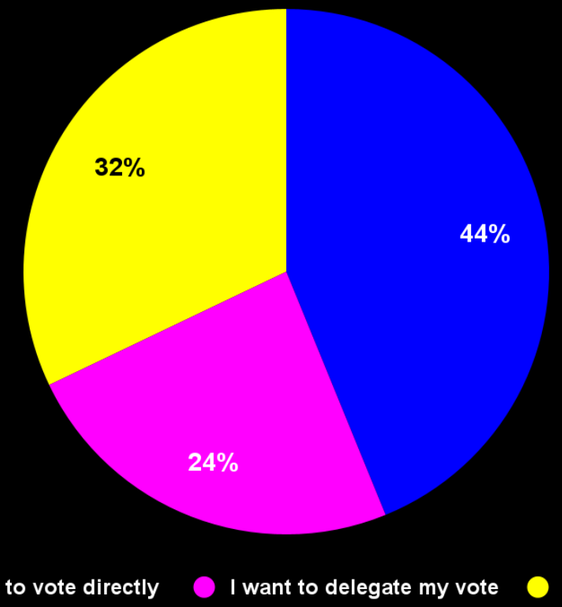
GOVERNANCE

Do you participate in governance?



User survey respondents do primarily participate in protocol governance with 20% stating that they participate regularly and 50% participating sometimes. This clearly goes to show that more education needs to be done on the importance of using their vote.

Do you want to be in control of protocol governance decisions or would you rather prefer to delegate governance decisions?



User survey respondents primarily want to vote directly (44%), with just under a quarter of respondents saying they are willing to delegate out their votes.

Do you think Proof of Stake based governance systems can be applied outside of protocol governance and grants?

Kraken
While protocol governance and grants are the primary use-case of Proof of Stake governance systems, they may also be used to create social networks where access and contribution privileges are granted exclusively to stakers. These social networks could empower the community to coordinate wider governance decisions.

Bitcoin Suisse
Proof of Stake based governance systems has a name: plutocracy. The term itself was coined hundreds of years ago, but the idea is much older. Basically, it means that power is distributed according to wealth – exactly like PoS.

Like other political systems, it has its pros and cons, and like the design of the token economics, the importance is to actively be aware of the trade-offs and to embrace the downsides it ultimately comes along with.

Finoa
We live in a proof of stake financial system. The governance of traditional banking depends upon the amount of stake that market participants lend to the markets. That way, money flows from the surplus to the deficit via lending and interest rates provided by commercial and corporate banks. Proof of Stake protocols and their governance could be a reflection of that same system in a decentralized digital space.

Figment Networks
PoS governance includes both on-chain and off-chain governance, which are two different types of governance. But certainly, the principles and tactics that networks use to organize and govern themselves can be applied outside of those circumstances. We're seeing this with investment DAOs that mirror protocol DAOs.

stake.fish
No, Proof of Stake based governance has still a long way to go before we can call it functioning. We don't think we have a golden standard in the ecosystem yet.

Stakin
There are definitely some interesting models around PoS governance systems to explore in the overall organization space, and especially starting with DAOs. Some decentralized organizations, which are not Layer 1 PoS protocols, have already adopted systems that reward token holders for locking up their tokens, and give these stakers right to vote on governance and strategy. We've seen DeFi protocols implementing models similar to PoS governance to vote on anything from interest rates, to the issuance/redemption of circulating tokens… We also see some models emerging around decentralized signaling and curation.

Chorus One
I do believe at some point they could be expanded, but at this point blockchain governance systems are still in their nascency and there should be more innovation in this area. There are a lot of problems including voter apathy, high barriers to entry to get involved and to have an impact, etc. I think a lot more experimentation and analysis in protocol and DAO governance designs is needed to see what is working. I do think the crypto space should take lessons from other governance systems, i.e. corporate governance and/or nation-state governance; after all these issues are not new to crypto.

Stafi Protocol
Proof of Stake governance is more like DeFi governance, projects like Curve and Uniswap have done in a great way, a voting system and a contributed community are needed. Holders stake tokens and get voting power, The voting power could not only be used to vote for blocks but also vote for governance, that should be easy.

Keplr
Most Proof of Stake based governance systems enforce a highly rigid governance system to ensure maximum security and resilience. I believe the standards for grants and out-of-protocol votes should be relaxed–opting for lesser quorum, shorter voting period, and perhaps delegating the responsibilities to a DAO-like process. Not all proposals merit a full on-chain vote. Having a responsive and quick process can be immensely beneficial for grants processes.

Persistence
Proof of Stake decentralization relies on the decentralization of assets staked through a chain's validator nodes. This means there are two aspects to the decentralization - first is the distribution of assets amongst the stakers, and second is the distribution of stakes on the validators.

- To ensure a meaningful distribution of PoS tokens among stakers and prevent accumulation in a few wallets, several efforts have been made towards devising better token launch strategies. New token launch strategies like Initial DEX offering (IDO), Liquidity Bootstrapping Pool (LBP), Liquidity Mining etc have been evolving to provide token access to a wider audience, furthering the goal of decentralization.
    - As an attempt to tackle this challenge Persistence launched its stakedrop campaign through which native tokens were allocated to be distributed to PoS stakers from seven networks - Cosmos, Polygon, Kava, Terra, IRIS, Tezos, Polkadot.
- Distribution of the stakes across validator nodes is also a big challenge which has invited multiple solution attempts.Currently for the Cosmos network, the top 10 out of 125 validators have more than 45% of the voting power. To make the Staking ecosystem more decentralized, an incentivization mechanism is required that promotes smaller validator nodes to compete with the bigger validator nodes
    - A particularly interesting approach that has been evolving is the weighted voting mechanism. This approach decouples a validator’s voting power from the stakes by decreasing the voting power received per staked token with increasing stakes.
- Foundations can engage more with smaller validator nodes in order to promote their prominence in the ecosystem through higher delegations. Persistence, for once, has been actively working with smaller validator partners to foster their presence in the wider PoS ecosystem.

What could be done to increase overall awareness and participation in protocol governance?

Kraken
From Kraken's perspective we don't currently provide a means for our clients to participate in governance decisions. They stake their coins through our infrastructure and we generally vote Abstain on any initiatives we're required to participate in. We do intend to rectify this in the future and give more control to staking clients but we do not have anything official to announce at this time.

Bitcoin Suisse
One could definitely be inspired by Maker here. The MakerDAO is not even a layer 1 protocol, but still has a governance model with widespread adoption.

The key here is a sleek user interface. MakerDAO has built an application layer which is easy to use with a Metamask integration, providing very good sourcing for the user to understand what is being voted on.

Dash was in principle a pioneer in this regard with their 10% marketing allocation of newly minted token supply, but Maker has shown how to increase overall awareness and participation.

Finoa
We are starting to see investors and VC funds becoming increasingly aware of the incentives of being active in the governance of the networks they participate in. They have added key people to their organizations who are only responsible for supervising these matters. The next step could be to use these assets to make an active outreach to the community to spread the awareness to a wider audience.

Chainflow
Clear, consistent and concise communication, happening in a single, persistent communication channel. Educate governance participants on the importance of participation, how it adds value to the network and the consequences that can occur due to low participation.

Figment Networks
Clear pathways and directions for foundations to organize their governance, more concise governance instructions for stakeholders to participate, and lower barriers for entry for token holders.

stake.fish
We need better standards on how governance proposals are submitted along with an aggregator of governance proposals. This is being done to some extent in DeFi land through Snapshot and an equivalent product will be required for protocols.

Stakewith.us
Participation is very incentive driven within the crypto markets. Perhaps some % use of the community fund can be used to award stakers who voted. Or some disincentive could happen to stakers who does not vote.

Chorus One
Currently, there are too many protocols and too few experts understanding the nuances of the protocols leading to core teams and selected voices having a large sway over what is being brought up to governance and how votings turn out. I think educational efforts and advanced governance systems that enable protocols to make better decisions and gather token holder sentiment need to be the focus.

Harmony
Unify the governance and staking platforms. Right now, to fully participate in protocol governance, it is necessary to visit one location for information and debate about an upcoming vote, visit a separate one to verify that my validator (if I delegate) will vote for my position, visit a third to either vote or see the results of the vote and maybe even a fourth location to acquire governance tokens and/or sign my transaction. This fracturing of vital components in protocol governance makes it difficult to participate and onerous to remain up to speed.

Keplr
Increasing the link between discussion forums, group chats to voting power.

Persistence
The idea of a perfect protocol governance seems to be a little ill-conceived in the current staking ecosystem.

Drawing parallels to the real world, there are always multiple attributes up for discussion in a democratic setting that people can provide their opinion/vote on. In absence of an effective incentivization mechanism, it is unrealistic to expect all potential governance participants to vote on a proposal. This is due to a variety of reasons:

- The decisions to certain proposals affect some stakeholders more than the others
- Some actors like to actively participate in discussions and governance while others prefer to take a back seat and not get involved in the decision making process
- There is a lack of foresight amongst stakeholders while evaluating long term effects of certain decisions

PoS protocols attempt to address this complexity through incentive alignment. However, PoS networks today do not incentivize participation in governance. A protocol where a user is made eligible for additional incentives in the form of voting rewards (this could be similar to staking rewards) by voting on governance proposals, can attract a lot more participation. There can be a lot more thought put into designing a voting rewards mechanism, but this would definitely incentivise people to do some research and participate in governance.

Furthermore, expecting most token holders / stakers to participate in governance is a wrong approach to governance. As long as stakers with enough domain-expertise and alignment with the project's long-term vision vote on proposals by doing enough research, protocols should move in the right direction.

Stafi Protocol
Maybe incentives are a way. I prefer Futarchy, there is a phrase that describes its core: To have a say in a speculative market, you have to "put your money where your mouth is." Those who know they are not relevant experts shut up, and those who do not know this eventually lose their money, and then shut up. Speculative markets in essence offer to pay anyone who sees a bias in current market prices to come and correct that bias.

Staking Rewards

Are Staking Lock-Up times any good for protocols? Or unnecessarily overthinking protocol security?

Atomic wallet
Most of the DeFi yields are highly speculative even if they offer higher rewards. It's simply more risky for users rather than locking funds for staking. So it's not a direct competition, these are just different ways to make money work.

Kraken
From a user's perspective, they can be a frustrating factor to account for when staking/unstaking. One of the key benefits of staking with Kraken is that clients can instantly unstake their assets, irrespective of whether the underlying protocol has lock-up times or not. Going forward, we expect to see new chains adopt protocols that do not require a lock-up period (e.g. Cardano's Ouroboros, Avalanche) as the security and longevity of these systems are demonstrated.

Bitcoin Suisse
Regarding the second part of your question, it is the opposite. Staking lock-up times is a simplification of protocol security. It is easier to understand, but less dynamic. If a black swan event occurs on a protocol with a predefined lock-up time, it all comes down to whether the blockchain can solve the problem before the end of the lock-up.

The only major layer 1 blockchain that is implementing dynamic lock-up periods is Ethereum 2, but the protocol is still far from enabling transferability, thus we have not seen it in action yet.

Finoa
It remains to be seen. It might seem like overthinking in some cases, but most protocols have expressed the concern regarding bad actors potentially exploiting the network without unbonding periods. So I would assume they have done their homework as the stakes are high.

Chainflow
Delegation lock-ups are necessary for network security. Zaki Manian explained this in a way that resonated with me in a Tweet exchange a while ago. The way I understand it now is that an effective lock up policy helps ensure a malicious actor can't game the network and escape before being discovered and penalized for the malicious behavior.

Figment Networks
In addition to security, it ensures long-term value past the initial launch.

stake.fish
Staking lock-up is not a bug, it's a core part of consensus security. In both Casper and Tendermint papers (which are arguably the most tested and used consensus mechanisms), considerations for lock-up periods are made to address potential attack vectors.

Stakewith.us
I think it is a good tokenomic design to always try to incentivise stakers to remain staked to prevent staked ratio from becoming overly volatile (which impacts network security). A lockup period helps to serve that purpose.

Everstake
Actually, staking lock-up times are of great value. This could be simply explained. As we know, staking is locking funds in a decentralized crypto network to ensure the integrity, security and continuity of the network. In case the PoS protocol does not require the lock-up period there is a risk that people would stake when things are good and stop when there is negative price fluctuation. This could drastically affect the network security. It's for security of the network, to prevent attacks, in particular 51% attacks, impulsive and ill-considered decisions. Almost every PoS protocol uses locking, slashing and other mechanisms to ensure the network stays secure.

Stakin
I feel like it's not all about security on this, some protocols also see it as a way to add more stability to crypto price as stakers are usually locked up and cannot sell without taking the opportunity cost of unlocking their tokens.

Chorus One
On a high-level, I think it is important to be able to hold validators/other protocol participants accountable for potential attacks on a network, and lockups enable this. At the same time, I think normal end users should have the possibility to exit their positions at any point (potentially at a discount), which is what liquid staking protocols like Lido help to solve. It is important to note that such solutions create different risk dynamics which could become problematic especially if they grow very large.

Keplr
This one's a difficult one to answer. I don't think it's realistic to pull off an attack where someone accrues 66% of stake regardless of lock-up periods. But we always have to prepare for edge cases.

Persistence
Staking lockups are necessary for the PoS networks to ensure network security. The locking up of staked assets and the unbonding periods imposed on exiting the staked position together keep the network security relatively decoupled from the market events. In absence of the staking lock-ups, sudden changes in market sentiment can trigger a lot of stakers to exit their staked positions which will adversely affect the security. However, the staking lockup also leads to a downside where the stakers have to incur the opportunity cost of not being able to use the staked assets anywhere else and settling with the fixed yields earned on these assets. While this problem can be solved through liquid staking, the locking up of assets is essential to maintain security.

Stafi Protocol
Yes, lockup times are necessary to prevent protocol from attacks, like Nothing at stake ,long range attack, etc , it is an important part of the consensus, a permissionless proof of stake chain can't be secure without it.

Do you see staking yields competing with DeFi yields? What are the implications of this on network security? How to balance these?

Kraken
On the face of it, it looks like staking yields compete with DeFi yields. However, liquid tokens representing staking positions are becoming increasingly common (e.g. Lido, Bifrost). This will allow token holders to stake their assets and still participate in yield-generating DeFi protocols to compound the total rewards they receive.

Binance
Both are important for the industry: L1 staking improves the project security and decentralization, which is the foundation; DeFi staking is on the application layer that improves the liquidity. Both are important and the market will find the balance.

Bitcoin Suisse
They should not compete. DeFi yields carry additional risk to staking and therefore as a rule should always result in higher returns. If for some reason (e.g. market demand) they are not, then the blockchain must amend its token economics to accommodate DeFi yields.

Finoa
Even though defi yields are far more attractive than staking yields, token holders prefer to take advantage of those higher returns. However, higher yields usually imply higher risks. I think the balance is achieved naturally by matching yield types with the spectrum of risk preferences of market participants. The extreme case would be if all token holders of an asset would chase defi yields so that the security of the protocol would be in jeopardy due to lack of stake to protect the blockchain.

T-Systems
We see staking yields complementing DeFi yields in many DeFi protocols already such as liquid staking via Lido, so we wouldn't see a competition per se.

This answers a slightly different question, but staking yields are compromising network security once MEV strategies become too extreme. This is going to be hard to balance: On one hand: MEV methods are desirable for both miners and stakeholders. In fact, they could become the main source of income for infrastructure providers. But on the other hand, correlated multi-party MEV strategies spanning over multiple blocks impair security and decentralization.
Figment Networks
These are two different types of yield, therefore cannot be compared in this way. DeFi yields are similar to yields in traditional finance, where staking yields are unique to PoS and inflationary token rewards.

stake.fish
Only to some extent. Yes, the yields could be considered comparable, but the risk profiles on these two yields are extremely different. In the long run, I don’t believe anyone will view staking and DeFi yields as interchangeable and will choose one that better suits their risk appetite. Additionally, with the introduction of staking derivatives, there will be plenty of opportunities for people to double dip on both staking rewards and DeFi yields.

Stakewith.us
Yes, the competition for liquidity between staking and DeFi is real. DeFi yields are usually highly speculative and match or beat staking yields of matured POS networks. This means stakers are economically incentivised to unstake staking assets and use it in DeFi instead, which weakens network security. We will need superfluid staking deris to allow for assets to be used as staking tokens and for DeFi at the same time.

Keplr
Short term, no. Long term, yes. The answer is liquid staking.

Chorus One
I do not see direct competition here. At the current stage, staking and DeFi attract somewhat different user profiles. I do believe that there will be more and more financial products that help bridge the two worlds and allow users flexibility in how they want to deploy their capital. Tokenizing staking positions appears to be a core building block for this to happen. It is likely that staking will be the backbone of a lot of decentralized finance products in the medium run. I'm excited about further innovation in the liquid staking realm. Examples include two token models where the rewards are separated from the principal or the superfluid staking model introduced by Osmosis (a Cosmos DEX), in which liquidity provider (LP) tokens involving the native OSMO tokens can be staked to generate staking rewards on top of LP rewards (as opposed to deploying a tokenized staking position in a pool).

Persistence
Staking yields and DeFi yields can not be seen to compete because of the yield farming opportunities available in the DeFi ecosystem.
PoS stakers participating in network security and governance have to lock up their assets that can't be used anywhere else. This incurs a substantial opportunity cost for those contributing to the PoS ecosystem's security. Hence, the attractive DeFi yields can draw stakers to exit their staked positions, which can compromise the network security. An effective balance between network security and yield generation is being sought through staking derivatives, which allow PoS stakers to use the liquid representatives of their staked assets in the wider Defi ecosystem to generate additional rewards.

The TVL in the PoS ecosystem is twice that in the DeFi ecosystem, which has led to an increased demand for additional yield on the staked assets. At Persistence, we witnessed the increasing demand for additional yield on the staked assets during the Stakedrop campaign, which led us to build the liquid staking solution pSTAKE.

Staking Rewards

What is the right-to-play of enterprises in Web3? Do you think Web2-native business models apply to Web3, if so, how?

T-Systems

To answer this question, I would like to give some background from Deutsche Telekom. Since 1995, DT has provided essential technical infrastructure for the general public in Germany and around the globe.A predecessor of DT started to build the telephone infrastructure in the 19th century in the form of cables and poles to enable instant communication over long distances. The next step was the internet, which enables information exchange at scale. Now we are providing infrastructure in the form of nodes or validators for public blockchain networks to facilitate global and decentralized value exchange.

As a telecommunication company, it is our mission to provide technical infrastructure and our vision is that public blockchain networks are the next iteration of essential technical infrastructure. But we are not just an infrastructure provider. In our understanding, networks can be supported mainly in the levels of investment, infrastructure and use cases. As DT, we are one of a few companies in the world that is motivated in being involved in all three of them. This is due to the different interests of the various departments within DT and the associated synergy effects. Celo was the first network where we applied this holistic approach and we are more than eager to apply it to other networks as well.

How does an enterprise deal with directly interacting with crypto-assets? How was your journey up to this point?

T-Systems
We are looking back on a long and bumpy road, but we are happy that we made it to this point: We, as a traditional TelCo Company, are now running token native business models like staking services.

The first step was to engage the different departments within Deutsche Telekom, e. g. Legal, Tax, Accounting, Compliance. We educated them about Blockchain in general and which services will be needed in the future. With the support of the different departments, we found a compliant way to buy and sell different crypto assets together with our partners Bankhaus Scheich and Finoa. The biggest challenge we encountered on the way was to master crypto custody and tax regulations, but now we are able to run our infrastructure and monetize it in a compliant way. After our first success story with Chainlink and Flow in 2020 we joined forces with the DT Strategy and DTCP team: To not only provide infrastructure for networks but also invest in them as DT. We achieved that in mid of 2021 by investing in CELO Tokens and starting to operate validators on the network. We are happy to say that we are one of the first enterprises being able to interact with crypto-assets and we are working hard on expanding our engagement here.

Staking Rewards

With an increasing market-lead for Proof of Stake based networks. Is there a future for Proof of Work besides Bitcoin?

Bitcoin Suisse
Certainly. Proof of Work still has the longest track-record of a working blockchain model and blockchain security is not to be underestimated.

Finoa
It certainly doesn’t seem that way. I could envision a world where only bitcoin remains as PoW, while all other L1 protocols run on PoS while they find a way to connect and interact with the bitcoin network to attract more value and stability to their networks.

T-Systems
We see the future of networks in alternative architectures than PoW. PoS has advantages in terms of energy consumption and capital efficiency. With more applications coming to blockchains, PoW wouldn't scale either. Although the Bitcoin maxis wouldn't want to hear it: Why not fully emulate Bitcoin or other PoW protocols on the EVM, assuming you can give the same security guarantees?

Chainflow
My initial feeling here is no. Comparing the number of PoW vs. PoS networks that have launched over the past two years seems to support this conclusion.

Everstake
We think it will always occupy its main niche as a payment instrument, we will certainly bite off the significant role of the market, but we think the situation will change even more when ETH2 comes to the game

stake.fish
It’s extremely difficult to bootstrap sufficient hashrate for new Proof of Work blockchains, hence why there is a migration towards using Proof of Stake. I think it’ll be very unlikely we’ll see another major Proof of Work blockchain.

Chorus One
At the current stage and in its current form, I don’t think there is.

Persistence
Despite the constant comparison between the PoW and PoS algorithms, and an increasing market-lead for PoS networks, there can be a balance achieved between the two. PoW networks fail to serve as a sufficient solution for use-cases which require faster transaction throughput. Furthermore, the expanding energy-footprint, increased strain on the environment, adverse media coverage, and centralization of mining operations, together make it difficult for PoW to continue as the algorithm of choice for several use-cases other than a currency serving as a store-of-value. While Bitcoin is perceived as an effective store of value, the PoW's future seems bleak as far as mass-adoption across multiple use-cases is concerned.

Cardano
Not for classical PoW so much, but "Proof of useful work" certainly has a future. 'Proof of useful work' is where network participants compete to solve computational problems which are of practical interest to solve. This means that while energy is still expended, the energy is used to solve important problems such as increased privacy and security of the network as a whole.

Atomic Wallet
Apart from Bitcoin, the other blockchains are more vulnerable in the sense of the hashrate security. To avoid potential risks, the majority of the projects will probably switch to PoS sooner or later. But they need to work on the issues like initial distribution, long range attacks, etc.

Keplr
Yes. Mining is a beautiful token distribution mechanism that hasn't been replicated on Proof of Stake yet.

Greenfield One
Merge-mining with BTC would probably be the way to go for newer chains which still want to rely on PoW. Adding new revenue streams for BTC miners might to some extent tackle the ever decreasing block subsidy of Bitcoin and emerging long-term network security concerns.

What is your vision of the staking economy/industry in 5 years?

Kraken
Only a minority of token holders actually participate in cryptocurrency staking. This is something we want to change.

To users around the world, where assets - if they're not being traded - are immediately staked. Not only will this help secure the protocols of these assets and further decentralize governance decisions, it will increase opportunities for people to earn passive income on their savings. Our mission at Kraken is to accelerate the adoption of cryptocurrency and the use of staking and DeFi so that everyone has increased opportunities towards financial freedom.

Binance
With the development of ETH 2.0 and they are transforming to POS, we believe that POS will lead the consensus in the blockchain industry.

Bitcoin Suisse
We will see a lot of changes and modifications to the token economic models as they are not widely tested against mass usage yet. I foresee lots of changes, learnings, and increased engagement in the blockchain ecosystem from stakers.

Finoa
Very bright. We are excited to see the continuous growth in the space. As custodians, we've had a front row seat to witness the exponential growth of the staking economy. Product-market fit is clear. I think the staking industry will still find some bumps ahead, but they are part of a learning process so that in five years the result will be an efficient and robust standard that will enable applications to flourish.

T-Systems
We assume that the industry becomes more professional and decentralized. At the same time, we expect massive consolidation in the next 2-3 years. Especially layer 1 networks really have to prove their value contribution or they will remain in the dust of history. In the future, retail investors will be able to participate easily and staking will be integrated seamlessly in end user interfaces. Why not have your wallet define and execute a staking strategy for you with a guaranteed yield? This idea seems more like 12 months away than 5 years. We are just opening the box of pandora here… and remember: 5 years ago, Ethereum was just a toddler.

stake.fish
Roughly half of the market capitalization of cryptocurrencies will be for protocols that include staking and roughly another 80% of that will actually be staked. So, for example, as of today, total market cap is $1.4T. I expect $700B will be running on Proof of Stake or include staking mechanisms and $560B to be actively staked.

Additionally, staking will be used as a benchmark rate for decentralized applications.

Stakin
It will be larger than PoW, and derivatives will probably represent an even bigger market than staking itself.

Chorus One
I believe the staking industry will continue to flourish. At some point, I see a consolidation of networks and also staking providers coming. Networks that didn't manage to get traction will become irrelevant and operators that didn't find a way to differentiate will leave the ecosystem. I hope that it will become easier for smaller holders and enthusiasts to be engaged in the protocols they are invested in, so that we are able to create a diverse and decentralized crypto ecosystem.

Persistence
Proof of Stake is seen by many as a future-proof mechanism that is secure, efficient, cost-effective and can serve as a suitable solution for both large-scale cryptocurrencies like Ethereum as well as small-scale institutions. Although it has certain drawbacks also, the staking ecosystem has seen multiple advancements to solve major challenges faced by the PoS mechanism. Multiple derivatives of the PoS consensus like Delegated PoS, Bonded PoS, Liquid PoS, Hybrid PoS have been developed as an attempt to make the PoS algorithm more suited for mass-adoption.

The staking industry is surely evolving at a tremendous pace and, within 5 years, is set to become the market leader against alternative consensus algorithms. Having said that, we might also see governmental interventions in the coming years with an increase in the staking market cap, which might lead to some unforeseen reforms within the ecosystem. But it can be safe to say that the staking industry is here to stay.

Atomic Wallet
I believe in mass market services people will use PoS chains, they're cheaper and faster. We will see many private or corporate chains. However, the large transactions will be going through PoW chains as the most secured.

Keplr
Increased specialization. Right now the staking economy is a group of generalists, but I expect each of them to find different areas that they specialize in.

Greenfield One
Staking and staking-based financial products will go mainstream. Most of the institutions would offer staking on top of the pure-play custody. As the space is being professionalized and the institutional share is increasing,s o will be the stake ratio.Some banks and more corporates will run validators and provide infrastructure to blockchain networks. Most of the PoS assets will be made liquid via staking derivatives and utilized in DeFi. MEV will become ever more relevant, boosting the staking rewards for stakers.

Ethereum 2.0 - What are you most excited about? What are you concerned about?

Kraken
Aside from the scalability and increased transaction throughput, we're most excited about the explosion of consumer-facing dApps that can now take advantage of lower-cost transactions. While we remain quietly confident in the transition to ETH 2.0, we are cognisant of the fact that there are now many billions of dollars worth of funds that need to be safely and smoothly transitioned onto the new network.

Bitcoin Suisse
The same point actually answers both questions: transitioning from two blockchains to one. My concern is that the transitioning from Ethereum 1 to a shard in Ethereum 2 will not go as smooth as hoped and planned. My excitement is about everything that will come post-transitioning, where all the fruits of the Ethereum 2 design are ready to be harvested.

Finoa
Seeing the day that Ethereum finally is able to move away from PoW is thrilling to anybody who is involved in this space. My concern is to see how the shift affects all other networks that looked to gain an edge in the industry by beating Ethereum to proof of stake.

Chainflow
I'm most excited about the excitement ETH community members have about actively participating in securing the network through operating validators. It's much more inclusive than mining. I'm most concerned about stake centralization. ETH2 valiators are relatively simple to run and staking as a service companies are running 100s if not 1000s of validators for large customers, e.g. exchanges.

Everstake
Ethereum 2.0 comes with an update that will make Ethereum better and faster.

The crucial thing to know about Ethereum 2.0 is that no one has completed such a sophisticated transition. It is truly difficult to predict how the transition to Ethereum 2.0 will impact the price of Ethereum. In order to avoid causing panic, the Ethereum Foundation did not announce the date of the big release of Ethereum 2.0. Therefore, it is not easy to guess the exact time of its release and its price.

Figment Networks
Most exciting: more participation by ETH holders in running and securing the network.

Most concerning: failed/abandoned transition to PoS.

stake.fish
With regards to staking volume, no other protocol will come close to Ethereum 2.0 in 1-2 years. Therefore, I'm excited to see what other stacks will be built around Ethereum's staking ecosystem. We'll be able to see how well DeFi and Proof of Stake staking mix together.

I'm mostly concerned about network stability after the Merge. While Ethereum 2.0 has been extremely stable so far, there's no telling what other unforeseen bugs await us in the future. Any critical bugs after the Merge would be far reaching since the entire Ethereum ecosystem will rely on it.

Chorus One
I am most excited about the largest decentralized finance ecosystem migrating to Proof of Stake and the implications of that for the staking industry. Specifically, I think it will be interesting how the MEV (miner extractable value) dynamics will develop when validators instead of miners are the block proposers.My main concern is the timeline of the merge and the risk that miners could make decisions that impact Ethereum network health and performance as their role diminishes in the protocol.

Persistence
Ethereum 2.0 marks an important milestone in the evolution of the staking industry, and comes with multiple benefits as well as challenges. Ethereum, unlike other major PoS chains, is not a dPoS chain (stakers cannot delegate their assets to other validators).

- Exciting things
  - Tackling the MEV challenge
  - Liquid staking around ETH2: utility of staked ETHER derivative would decide how much ETH2 chain could be centralised
  - Validator deactivation time: A queue formation when ETH2 withdrawals are activated. Stakers might rush out to withdraw staked ETH and stake with liquid staking protocols to earn additional yield on staked Ether. This queue could be potentially long and would be exciting to see how it plays out
- Concerns
  - Validator activation time: which can cause misalignment of incentives among active validators and validators in the activation queue.
  - Centralization in staking pools, which can be be more attractive to stakers because of lesser activation times

Greenfield One
It is very easy to get excited about Ethereum 2.0, the concerns are more interesting. The primary concern for me is the potential break in DeFi composability with the sharded approach. Another concern, as discussed above would be the danger of centralization in the winner-takes-all environment in case of stkaign derivatives and the subsequent centralization of MEV capture.

We have seen a lot of talk about PoW's energy consumption in recent months. How important is energy efficiency for PoS' case when it comes to long-term adoption?

Kraken
The sustainability of the cryptocurrency industry is increasingly being scrutinised by both governments and the media like never before. The environmental impact of Bitcoin has cast PoS-based protocols favourably as they continue to demonstrate that a decentralised system can be secure without a trade-off in high energy consumption.

While energy consumption is a problem that extends far beyond cryptocurrency mining, it is nonetheless an important issue the industry must address. Ultimately, bitcoin miners are energy agnostic and will opt for the cheapest source of energy so they can ensure future profitability. As the cost of renewables continues to subside, many miners will switch over to green energy. Indeed, this is already happening. A 2020 study from Cambridge University found that approximatel 76% of bitcoin miners already relied on renewable energy.

Bitcoin Suisse
Energy efficiency plays a big role in the wider context, as it has been on the world agenda for a long time in terms of politics – and the importance will only increase.

On the other hand I see security, decentralization and scaling as much more important topics for PoS' case than energy efficiency. To the underlying raison d'être it does not matter how "eco-friendly" a protocol is, if it doesn't scale or is insecure.

Finoa
It's important, but I don't think it's a deciding factor. Attacking Bitcoin and other PoW networks via the energy consumption vector has been common throughout the lifespan of the industry. I believe there are other ulterior motives to attack the industry by any means necessary. Should PoS become the dominant standard, I'm pretty confident similar attacks will start to pop up.

T-Systems
Besides capital efficiency, energy efficiency is one of the main benefits of PoS. Still: the energy debate around almost exclusively Bitcoin's energy consumption is to a large extent populist and simplistic answers are given to a complex question: Does Bitcoin use less energy than the infrastructure it strives to replace and how is this energy generated?
It is also clear: Assuming Blockchains become mainstream and all next-generation blockchains relied on a PoW-based consensus, the effects on energy consumption might be disastrous. Energy efficiency and usage of sustainable energy sources remain important challenges, not only for blockchains but for any innovation.

Chainflow
Personally, I feel it’s very important. My hope is that neworks will economically align incentives to sustainability over the long term. This way, even those who are only in this for the money will still feel compelled to do the right thing when it comes to environmental sustainability.

Everstake
Energy efficiency is extremely important for all areas of a future society. When it comes to the PoS concept, we’ll most likely witness more PoW projects sliding into PoS, and more and more PoS projects competing with each other, populating the relevant market. In this highly competitive environment, each slight functional advantage plays a significant role in attracting a crypto audience. When it comes to the possibility of building new products based on blockchain, the speed of transactions and energy efficiency become the major factors to choose between different protocols, which, in turn, define a future landscape of blockchain industry in terms of the long-term adoption.

Figment Networks
It’s not any better or worse than non-blockchain alternatives.

Persistence
Optimizing energy consumption is extremely important for ensuring the mass adoption of the blockchain technology. With a global focus shifting towards tackling the environmental problems and devising sustainable processes, PoW has faced a lot of criticism pertaining to the increasing amount of energy that the network's miners consume in order to mine the next blocks. This energy consumed per block keeps increasing with an increase in the size of a chain, which can limit the chain's scalability and efficiency.

PoS networks' energy consumption is orders of magnitude less than the PoW networks. This has been a key selling point for the advocates of the staking ecosystem. Even though there are increasing efforts towards building sustainable energy sources, the energy-footprint will be a very important factor when it comes to building the case for mass-adoption of PoS.

Chorus One
I think it is extremely important. I believe that Proof of Stake-based networks will help make the financial services industry (and others) more energy efficient and ultimately help prevent the devastating effects of climate change.

Atomic Wallet
I don't think energy consumption is such a huge problem. People spend a lot to mine gold. It's similar to Bitcoin, which has the most secure chain at the moment. However, for daily small transactions you don't need such a level of security, so speed and small fees are more important. Thus, PoS is better in this case.

Staking Rewards

Closing Statement from Staking Rewards.

At Staking Rewards we have been following the Proof of Stake industry closely since 2013, and have been devoting our primary focus towards it since 2017 onwards. It is humbling to watch the sheer immense level of innovation coming out of the Proof of Stake ecosystem, and finally being applied to production environments, which are already securing economies of hundreds of billions. The last year has been a hyper-growth year with multiple remarkable milestones. The growth of the industry is at its peak, but it has nowhere near peaked.

While nearly all highly anticipated Layer 1 Proof of Stake blockchains have launched their mainnet in the last 2 years, we have now fully transitioned from “Exploration” into the “Realization” Phase for Proof of Stake. We are seeing the ideas with their first learnings being realized to full versions. The Polkadot Parachains, the Eth2 Merge, and the final Cardano Voltaire Upgrade will mark the closing of Realization. We suspect that much hype will be built towards these events, and they will mark the peak of the current market cycle.

The coming bear market, starting 2022, lasting until 2025, will put the test to protocols in regard to their long term sustainability. Clear governance frameworks will allow blockchains to optimize economics faster than others, in order to maintain a healthy balance between security, decentralization, and scalability.

Proof of Stake blockchains will then enter the final growth phase, which will ultimately warehouse the majority of our entire financial economy without any middleman, and the web 3.0 world which is entirely owned by their users.

Staking Rewards

The Roadmap for Proof of Stake.

Ideation | Exploration | Realization | Optimization | Growth

PeerCoin Whitepaper

NXT Blockchain launched

Tezos Whitepaper

Tendermint Whitepaper

EOS Blockchain launched

Tezos launched

Mainnet Mania

Eth2 Deposit contract launched

Cosmos IBC

Polkadot Parachains

Cardano Voltaire

Polygon live

Eth2 Merge

🚀

Staking Rewards

2011 | 2021 | 2031

Let’s make sure that we can smoothly optimize, wash out the losers and be prepared for the coming “Growth” Phase. Areas that we have to keep watching and optimizing for are:

1. **Validator Business:** We need long term viable business models, allowing professionals to earn a premium for providing top notch infrastructure services, while fostering a culture around running your own nodes. M&A may pose a threat to the industry as long as a healthy balance between profitability to infrastructure and requirements remain a challenge for small businesses.

2. **Liquid Staking:** Staking Aggregators will play a crucial role by introducing single points of failure to the system. Their rise is inevitable, and thus we must encourage competition, while supporting the most decentralized solutions.

3. **Governance:** Upgradability will play a major role in the upcoming Optimization phase, and will likely remain one of the biggest challenges itself with no battle-tested standard having emerged yet.

4. **Regulation:** Proof of Stake is at risk of being over-regulated. We need a clear and rough framework, so we can keep optimizing economics. Regulations can get more precise once we transition from “Optimization” to “Growth”. Large players in the industry have to step up their game. The ground work should be supported not only by Staking Providers, but also Protocols themselves - as it remains one of the biggest threats to the ecosystems at large.

5. **Education:** Proof of Stake Systems rely on the active participation of their stakeholders. Governance & Decentralization shall be top of the mind for retail-facing interfaces and be part of the agenda towards institutional participation. Economic opportunities may convince Regulators. And especially smaller validators have to pressurize larger players and protocols on the importance of their existence.

It is clear that Proof-of Stake is here to stay based on the opinion of the industry's thought-leaders as well as on-chain metrics.

What remains to be seen are how the industry matures, what direction and pivots it may take, and how central banks and governments will opt to regulate and tax the industry. These will remain to be seen but in the meantime, we will all keep building.

Our position in the industry remains constant and that is to be an independent third party platform that users around the world can trust for objective data and research regarding all things Proof of Stake and Staking.

We have thoroughly enjoyed preparing this report for you, our users and would like to thank you immensely for your ongoing support. This year we have been averaging 400k monthly platform visitors and without you, none of this would be possible.

Thank you also to all the interviewees on both a personal and professional level and here's to creating an open, fair and decentralized financial system for all over the coming decades!

For more information on what we do, you can find us at www.stakingrewards.com and you can follow us on Twitter, YouTube, LinkedIn, etc. to stay up to date on the latest developments in the industry.

As always, happy staking and see you next year!

Staking Rewards

Thanks to the respondents!

Please feel free to check out their services, profiles and the individual interview with each participant available soon in our Journal.

Respondee	Industry Area	Name
Kraken	Custodial Staking Provider	Brian Hoffman
Binance	Custodial Staking Provider	Katherine
Bitcoin Suisse	Custodial Staking Provider	Mikael Bondum
Finoa	Custodian	Christopher May
T-Systems	Institutional Staking Provider	Daniel Schrader
Chainflow	Non-Custodial Staking Provider	Chris Remus
Everstake	Non-Custodial Staking Provider	Bohdan Opryshko
Figment	Non-Custodial Staking Provider	Elizabeth Barnes
stake.fish	Non-Custodial Staking Provider	JK
Stakewith.us	Non-Custodial Staking Provider	Michael Ng
Stakin	Non-Custodial Staking Provider	Edouard Lavidalle
Chorus One	Non-Custodial Staking Provider	Felix Lutsch
Harmony	Protocol	Li Jiang
Persistence	Protocol	Rudraj Mehta
StaFi	Protocol	Liam Young
Cardano	Protocol	Lars Brünjes
Atomic Wallet	Staking Wallet	Christine Khachatryan
Keplr/Chainapsis	Staking Wallet	Josh Lee
Greenfield One	VC Firm	Gleb Dudka

Staking Rewards

About the Authors

Mirko Schmeidl - CEO and Co-Founder

Twitter | LinkedIn

Mirko is the Co-Founder and CEO at Staking Rewards where he created the company with his brother Jannik. He has been researching Proof of Stake Networks and yield-bearing digital assets since 2013, eventually turning his passion into a career. He currently leads a team of 12 on a mission to bring passive income to all through digital assets. Prior to Staking Rewards he led a Bitcoin Mining Operation in Southeast Asia.

David Walsh - Growth and Marketing Manager

Twitter | LinkedIn

David is the Growth and Marketing Manager at Staking Rewards. He joined the company from KPMG in June, 2021 while he previously also worked with EY Ireland in their Consulting business. He holds an MSc in Management from UCD, Ireland and a BA in Economics from UCC, Ireland.

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Staking Rewards

About Staking Rewards

Staking Rewards is the leading data provider for staking and crypto-growth tools. We provide benchmarks and information to make staking easy for retail and institutions alike.

About StaFi

StaFi is a DeFi protocol unlocking liquidity of staked assets. Users can stake PoS tokens through StaFi and receive rTokens in return, which are available for trading while still earning staking rewards. Check them out here *https://www.stafi.io/*

Staking Rewards

Staking Ecosystem Report 2021

In collaboration with StaFi