

DELPHI DIGITAL

Decentralized Autonomous Organizations (DAOs)

Thematic Insights



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Executive Summary

A **decentralized autonomous organization ("DAO")** is essentially an organization that can run on its own without hierarchical management. It operates through a trustless protocol which executes collective decisions for a certain cause. Most of you are probably familiar with the word due to The (infamous) DAO Hack of 2016. Ever since that vulnerability was exploited and Ethereum hard forked, the word "DAO" has had a stigma around it. It almost felt like community members had written off the concept of decentralized autonomous organizations just off of this one event. Fortunately, this has not been the case as you'll see throughout this report. Development around DAOs has accelerated in recent years and it's clear that the impact DAOs will have on how organizations are structured will be remarkable.

DAOs have the potential to make a huge impact in how communities and groups of people are organized and collaborate in the future. While we tried to highlight a few organizations across the various types of DAO, it's important to note that this report is not an exhaustive list. As you'll see throughout this report, most of these organizations are currently running as experiments to further the developments of DAOs in the future.

Advantages:

- Decentralized Decision Making- A DAO has no leader or management so members of a DAO have a very direct and immediate impact on key decisions.
- Community buy-in & involvement- Stakeholders at any level can submit proposals and ideas for improvement.
- Efficiency & Automation- With most DAOs, a set of rules and policies have been prearranged and put into place. Once the rules are established, the DAO carries them out without the need for management.
- Transparency- Everything that happens within the organization is recorded by the blockchain for everyone to review.

Potential Disadvantages & Concerns:

- Manipulation- Deterring bad actors and manipulation is vital when designing incentives for a DAO.
- Plutocracy- There's always the risk of plutocracy depending on how the DAO is put together.
- Uninformed Decision Making- Members may not have the technical expertise for the issues they're voting for.
- Legal Classification - Still unclear how to classify DAOs within current regulatory framework.

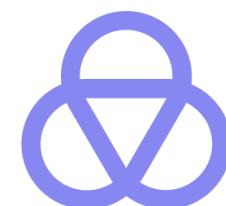
Membership / Registry DAOs:



The DAO



MolochDAO



Humanity

Infrastructure DAOs:



Aragon



DAOstack

Protocol Specific DAOs:



MakerDAO



dDAO



KyberDAO

Layer-1 On-Chain Governance DAOs:



DASH



Decred



Tezos

The Factors of A DAO

From a high level, DAOs are made up of two attributes: (i) internal capital, and (ii) a set of rules or governing protocol that controls its actions and the management of the internal capital.

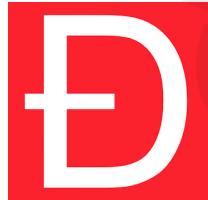
		Internal Capital		No Internal Capital	
		Automation at the Edges	Humans at the Edges	Automation at the Edges	Humans at the Edges
Automation in the Center	AI (holy grail)	DAOs		Daemons	DAs
	Robots (assembly line)	Traditional Organizations		Web Services	Forums

While DAOs can take many forms, there are a few factors which need to be configured and thought through which our team view as essential for a decentralized autonomous organization to operate properly.

- 1. Purpose** - As with any organization, there needs to be a purpose. It's important to note that while a DAO may be created with a specific purpose in mind, this may change over time.
- 2. Decisions** - As a community, members will have to make decisions on proposals to help fulfill the purpose of their DAO.
- 3. Incentives** - Having the proper governance system in place for each DAO is crucial to its long term success and sustainability. Members need to be incentivized to actively participate in the decisions which will ultimately shape the future of the DAO.
- 4. Participants & Decentralization** - The level of decentralization heavily impacts every decision including who can join a DAO as well as what the overall purpose of the DAO is.

Membership/Registry DAOs

With the recent launches of Moloch and Humanity, membership DAOs have become pretty popular within the community. A common theme among these three DAOs are that they are not too decentralized in the beginning. Also, these DAOs have all been vocal in the fact they are experiments and may not work out in the long term. These are essentially proof-of-concept DAOs which help test out game theory and governance mechanisms for future DAOs. Interestingly enough, both The DAO and HumanityDAO both ran into issues shortly after they launched. While we touch on these issues below, we take a closer look into MolochDAO and its success so far on the next page.



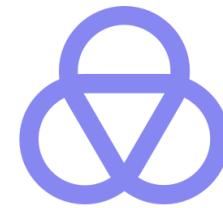
The DAO

- At the beginning of May 2016, a few members of the Ethereum community announced the inception of The DAO.
- **The DAO was meant to operate like a venture capital fund for the crypto space.**
- It managed to gather 12.7M Ether (worth around \$150M at the time).
- **In June of 2016, a hacker found a loophole in the coding that allowed him to drain funds** (around \$70M at the time) from The DAO.
- However, the funds were placed into an account subject to a 28 day holding period so the hacker couldn't complete his getaway.
- **To refund the lost money, Ethereum hard forked** to send the hacked funds to an account available to the original owners.



MolochDAO

- MolochDAO was launched by Spankchain CEO Ameen Soleimani in February of 2019.
- Similar to The DAO, **MolochDAO is meant to operate like a venture capital fund.** However, at the moment they are only focused on Ethereum. As with most DAOs, this can change based off the member's proposals.
- Inspired by the flaws of The DAO, MolochDAO allows its members to "ragequit" if they dislike a proposal. This essentially allows said member to take a proportion of MolochDAO's funds with them.
- **In May of 2019, Vitalik Buterin and Joseph Lubin donated 1,000 ETH each and became members.**
- We take a closer look into MolochDAO on the next page.



Humanity

- Earlier this month, Marble Protocol (an open-source bank on the Ethereum blockchain) announced HumanityDAO.
- **Humanity is designed to incentivize a set of economic actors to maintain a registry of unique human identities.**
- Main incentive for participants in the long term is to gain access to smart contract applications that reference the list.
- **As a proof of concept, HumanityDAO deployed a Universal Basic Income contract where their members get 1 Dai per month.**
- There are currently 523 ETH addresses mapped to humans in the registry.
- Unfortunately, rules for ID verification were unclear which led to many applicants getting unfairly kicked out while coincidentally allowing Vitalik Buterin in. They have since apologized.



Launched in mid-February 2019 by a group of Ethereum developers, MolochDAO is designed to be a communal source of funds which members can use to help finance new projects and enrich the wider Ethereum ecosystem. It is governed using relative majority with no quorum.



47
Members

Key Stats



58
Proposals



\$1.6 Million
Guild Bank Value

Purpose & Incentives

Purpose: To review proposals and fund Ethereum-based public good development by issuing grants to developers. While the core focus for now is on ETH 2.0 development, this can evolve over time depending on members' preference.

Incentives: If a member does not agree with the outcome of a vote and voted "no" or does not want to participate anymore, they have a post-vote grace period during which they can "ragequit" (aka redeem voting shares for a proportional share of funds in the 'Guild Bank').

Links



[Website](#)



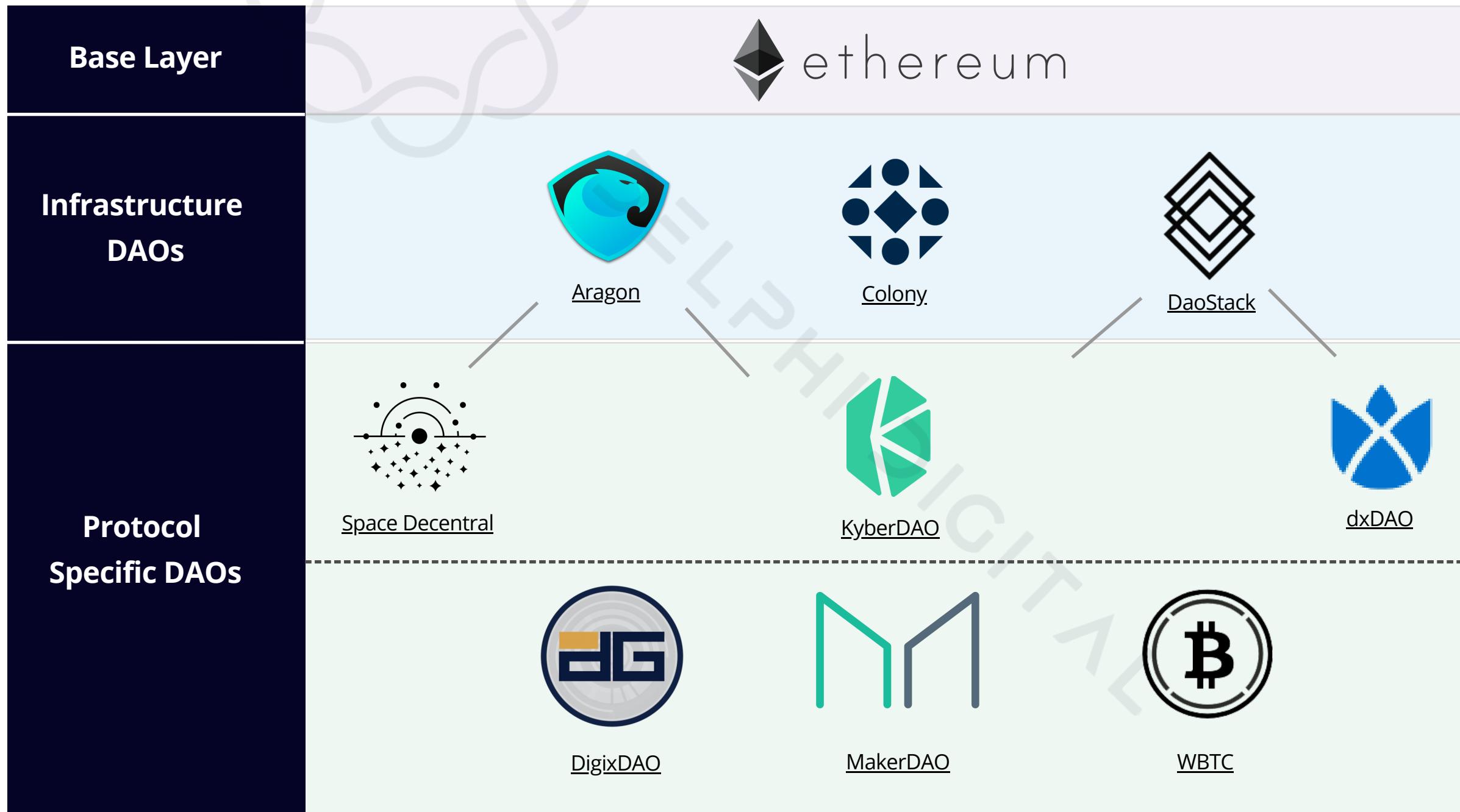
[Twitter](#)

Performance

- Out of the 58 proposals, 5 were Grant Proposals (while the rest were Member Proposals).
- While the amount of members has continued to grow, the amount of voters has stayed between 3-5.
- None of the Grant Proposals received any "No" Votes.

Infrastructure DAOs

An important piece of the DAO ecosystem are what our team likes to call "Infrastructure DAO Platforms". These platforms essentially streamline the process of creating decentralized autonomous organizations and allow any community or organization to freely organize and collaborate without borders or intermediaries. We'll take a closer look at a few of these projects on the next few pages.



Aragon



Aragon is a dApp built on top of Ethereum that allows projects to create and manage decentralized organizations. Aragon aims to become the digital jurisdiction for decentralized governance while functioning as a DAO in its own right. The ANT token acts as a governance token (10-18 ANT represents one vote) used in quarterly vote cycles. According to DAOList, there are over 500 DAOs leveraging the Aragon infrastructure, one example being Kyber.

Aragon has plans to roll out Aragon Fundraising, an ICO fundraising app modeled after Vitalik Buterin's outline of Decentralized Autonomous Initial Coin Offerings. In short, this process provides smart-contract enforced accountability between project investors and developers, in which token holders vote to allocate the raised funds from a discretionary vault. The mechanism also ensures liquidity to support the lifecycle and growth of the project, via a bonding-curve smart contract (an automated market-maker where one deposits a proportional amount of collateral in exchange for the ICO token). You can read more about Aragon Fundraising [here](#).

Key Stats



20
Proposals



4.0%
Voter
Turnout



Kyber Network, the on-chain liquidity protocol, is working to add governance as a use case for the KNC token with their transition into KyberDAO. This will slowly take place over the course of 2019.

In the future, voting will determine changes to the broader protocol, in addition to the different implementations that will exist across various blockchains. For example, KNC holders will be able to vote and decide which tokens to list on the EOS implementation. KyberDAO will also have a KNC-based treasury managed by the token holders. It will be used to fund development and growth through an open grant program.

In March 2019, Kyber held its first voting exercise through the Aragon platform to decide if a community grant program should be established. There were 60 voters that participated, accounting for 0.76% of the circulating supply, and passed the proposal with 95% of the vote. Kyber has announced [plans](#) to evaluate DAOStack too to determine which platform is best suited for KyberDAO's needs.

DAOstack is a framework and infrastructure layer for creating DAOs and is governed by Genesis DAO, the first DAO created under DAOstack. Alchemy, a Dapp built on Ethereum, acts as the interface for projects managing their DAOs. Some of these projects include DutchX, Sapien, Gnosis, and PolkaDAO.



DAOstack employs holographic consensus, a governance mechanism that aligns global opinions and local decisions to allow fast, correct decisions to be made at scale. This is done through a two token system, in which people vote on proposals via a reputation token, as well as stake their predictor tokens on a certain proposal they believe will pass. If a proposal receives enough prediction tokens that predict pass, the proposal is boosted up the voting process rewarding predictors with the correct prediction. **This process incentivizes people to filter out spam proposals and is a possible solution to the scalability and resilience problem in DAO governance.** DAOstack also incorporates a quite ending period, which prevents vote saving by adding extra voting time in response to a last minute switch in the pass to fail ratio (and vice versa).

Key Stats



166
Reputation Holders (Genesis)



8
DAOs



An Example of A DAO Being Built With DAOstack

dxDao is a community-governed DAO with total control over the DutchX trading protocol, a decentralized exchange built using a dutch auction mechanism. dxdao uses DAOstack's governance infrastructure and their holographic consensus. This is basically a combination of both absolute and relative majority. Proposals can be "boosted" by people who put stake behind being right about that proposal's outcome.

dxdao is easy to get involved with and 100% community-owned. Anyone can join and it's currently free to join. There is a 30 day locking period which started this past week in which you can gain reputation (voting power) by locking ETH or ERC-20 tokens which they accept. **Just 48 hours after officially launching, dxdao already has over \$9 million locked into their contract with 144 unique participants.**

In the near term, dxdao can update the smart contracts, change the fee scheme, launch marketing, etc. However, dxdao is capable of growing well beyond that, with the ability to do anything that is currently possible on Ethereum.



MakerDAO is a smart contract platform built on top of Ethereum that manages the DAI Credit System. Users can borrow against collateral by opening a Collateralized Debt Position (CDP) and, in return, receive a loan denominated in the platform's stablecoin, DAI. Maker is a DAO, and is governed by the community of MKR token holders.



-
**Executive Votes
Are Continuous**

Key Stats



9
**Exec. Votes
Approved YTD**



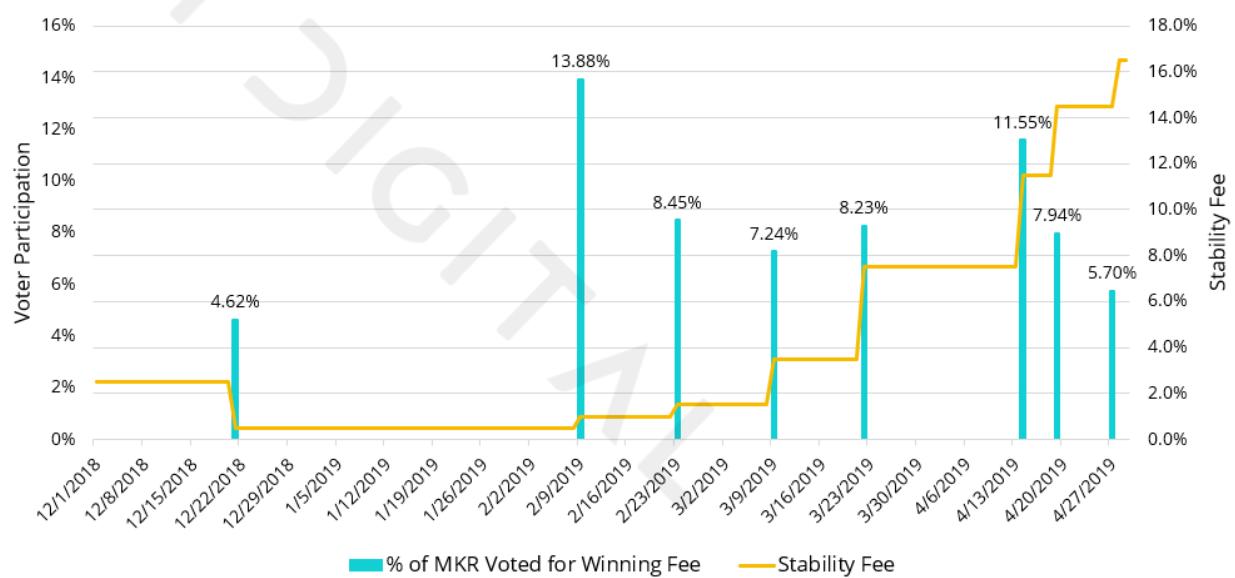
< 10%
**Average
Participation**

Purpose & Incentives

Purpose: Ultimately, MakerDAO's purpose is to administer the running of its stablecoin, Dai, whose value is stable relative to the US Dollar.

Incentives: Appreciation of the MKR token when the Dai stablecoin system functions well and grows over time. In the Dai stablecoin system, the CDP creators will have to pay a Stability Fee in MKR which would be burned, indirectly increasing the value of MKR.

MKR Voter Participation Per Fee Change



Layer-1 On-Chain Governance DAOs



Layer-1 protocols incorporating on-chain governance in many ways mirrors that of membership DAOs, but with additional layers of consensus and coordination challenges (and more value at stake). For layer-1 protocols, native tokens are used to vote on protocol upgrades, fund allocation, and system parameters, in addition to underpinning various consensus mechanisms. The mechanics of voting processes range from masternode voting, pure stake-based voting, delegated voting, to time locked-based voting.



DASH

Dash DAO revolves around a network of masternodes and proposers. Anyone willing to pay an upfront fee of 5 Dash can submit a proposal outlining the project and budget to the network. Unlike most other layer-1 protocols, masternodes are the only eligible voters. For a vote to pass the net total of 'Yes' votes must exceed 10% of the masternode count at the time of the vote. Proposals with the highest 'Yes' score will receive funding first. 10% of block rewards are set aside for these community projects and are distributed every 30.3 days via a superblock.

Approved Proposals

2019



19%

Voter Turnout

Approved Proposals

2019



16%

Voter Turnout



DECRED

Approved Proposals



31%

Voter Turnout

Rejected Proposals



28%

Voter Turnout

Decred stakeholders participate in off-chain governance through Politeia, a GUI and backend system that allows stakeholders to submit and vote on contributor proposals. All governance uses tickets as the atomic unit of account, and are obtained through time-locking DCR. Like Dash, 10% of block rewards go to a treasury to fund Decred development. As of now, a set of Decred developers manage these funds, but a proposal is set to transition management towards a DAO.



TEZOS

Athens Exploration Period



87%

Voter Turnout

Athens Promotion Period



84%

Voter Turnout

Although not commonly referred to as a DAO, Tezos' amending protocol functions along the lines of a DAO. The voting process is autonomous, and the bakers govern the protocol and its internal capital (XTZ). Tezos' governance mechanism progresses through four stages: the proposal period, exploration vote period, testing period, and promotion vote period. For the exploration and promotion periods, the Tezos protocol requires a quorum to be met with a supermajority of 80%.

Leader Commentary



Below, we've included a few relevant comments regarding DAOs from community members.



Vitalik Buterin

Founder of Ethereum

"The kind of paradigm shift I'm interested in with DAOs is that instead of teams raising money, you have ideas raising money. Then teams can compete for which team can spend the money to implement the idea most effectively. And if one team stops performing well, then it can be replaced."



Ameen Soleimani

Summoner of MolochDAO

"I don't think that everything is going to be in this DAO, you know, this instance of the DAO, like the specific contract, I think people are going to run with it, and make their own DAO's for their own types of, you know, coordination that they want to see, and we'll all learn a lot from each other, and over time, maybe these things will grow in ways that they're compatible."



Luis Cuende

Co-Founder of Aragon Project

"Democracy has been fundamentally broken for a while. At least as a way to govern large groups. We don't have a clear successor to it, but we need to stop being nostalgic about the past and experiment with new models."

Disclosures



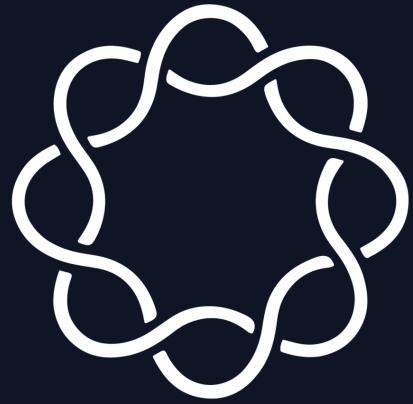
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