Gitcoin and Championing Public Goods on the Open Web

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Public goods in the physical world are rights to clean air, drinking water, free education, and law enforcement—-goods and services that are non-excludable and non-rivalrous. Typically, public goods receive funding from taxpayers and government grants as they aim to benefit every person that resides in that jurisdiction. Translating the idea of funding public goods to the internet is a much more difficult task as there is not one single entity to rule them all, especially with a decentralized, open-source web. Closed source projects are private goods since they are rivalrous and excludable. Web3 is encouraging a massive shift towards open-source projects and Gitcoin is a crucial piece in getting those off the ground in the Ethereum ecosystem.

Gitcoin: A Brief Introduction

Founded in 2017 by Kevin Owocki, Vivek Singh, and Scott Moore, Gitcoin launched as a Consensys portfolio project focused on creating a platform to pay open-source software programmers. After years of development, Gitcoin raised a $11.3 million funding round led by Paradigm which enabled the company to independently spinout from ConsenSys as an independent entity.

Gitcoin is a platform focused on providing funding and grants to the development of the open web and empowering developers to build public goods for the internet. In the digital space, this means products on public technology, public blockchains (e.g. Ethereum), free education, newsletters, services, and privacy. Gitcoin has four major ways that it tackles this initiative as it empowers the web3 community (especially developers) to earn, learn, connect, and fund:

Earn: Get paid while contributing to open-source projects
Learn: Participate in hackathons and other projects to build web3 knowledge
Connect: Get involved with the broader web3 developer community
Fund: Contribute to or collect grants for open-source projects

This piece will deeply focus on Gitcoin Grants as it is an important facet in the growth of Ethereum's application layer.

GTC and Community

Closely following its funding round, Gitcoin launched the GTC governance token in May of 2021. There is a total supply of 100M GTC tokens with 15% airdropped to past users, 35%

distributed to existing stakeholders (i.e. team, investors), and 50% GTC allocated for the Git-coinDAO. The goal with the launch was to progressively decentralize Gitcoin and push for GitcoinDAO, which will focus on recruiting developers and building public goods tools.

GitcoinDAO uses a fork of Compound's governance framework. Currently, the DAO has about 18,000 members and about 0.43% voter participation according to DeepDAO. In order to encourage participation, Gitcoin has employed a steward or delegate system, which the community can enlist to vote on their behalf in an effort to drive up voter participation. Stewards are an important facet for the GitcoinDAO's success: they have additional responsibilities to provide support on all matters including deciding grant round parameters, improving the product, monitoring, and flagging potential signs of collusion on the platform.

Workstreams are the primary mechanism through which work and operations are organized in the DAO. They are a similar concept to Orca's pods or the working groups employed by Index Coop. Each of these have their own budget, leadership structure, and independent processes within the broader DAO–-like a subDAO.
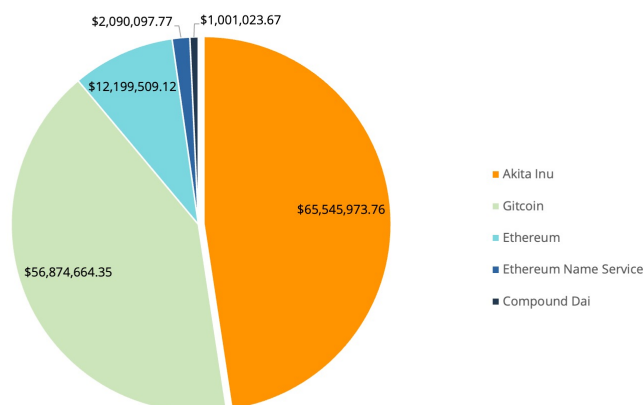
The Bags

Gitcoin has a fairly diversified treasury compared to most projects, with 46 different assets in the portfolio. Below is a look at the top 5 tokens that are currently held by Gitcoin–-surprisingly, GTC is their second most valuable asset only surpassed by AKITA.

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Top 5 Assets in Gitcoin's Treasury
By USD value, AKITA and GTC lead the way as the largest holdings for Gitcoin

$2,090,097.77 $1,001,023.67

$12,199,509.12

$65,545,973.76

$56,874,664.35

- Akita Inu
- Gitcoin
- Ethereum
- Ethereum Name Service
- Compound Dai

Data as of: Dec. 10, 2021
Source: DeepDAO

In May of 2021, Vitalik Buterin received a large amount of AKITA from the Akita Inu team and proceeded to donate 49 trillion AKITA tokens (worth $5M at the time) to the Gitcoin community in order to fund development, projects, and grants. After the event, the community voted to gradually sell off their entire AKITA holdings, but the Akita Inu team intervened and threatened to fork the project in order to block Gitcoin from using the tokens if they executed on the community vote.

This threat from the Akita Inu team pushed Gitcoin to revamp their decision on what to do with the tokens–-choosing to go forth with a buy back and burn program with the holdings that would help fund the AKITA LBP. This example of an outside team influencing governance decisions caused a bit of unrest internally and externally, as it moved to make decisions that were based on an external threat, which is atypical of a closed governance system like a DAO.
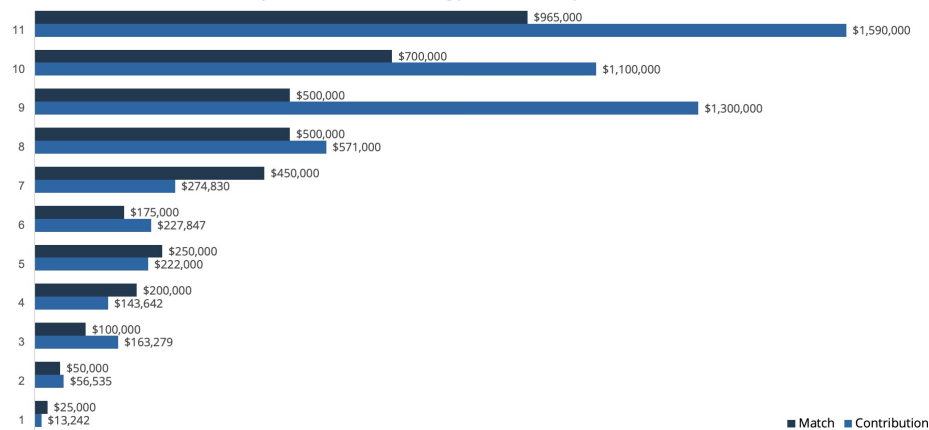
Grant Round Process

Gitcoin kicked off their current round of Grants, Round 12, which ends today (December 16th). Since the inaugural Grants round in Feb 2019, the team has iteratively improved the Grants product through each round in order to improve the experience for grantors and grantees.

Gitcoin typically specializes in low priced donations from a variety of individuals which has historically been harmed by increasing gas prices. Gitcoin has integrated Layer-2 and batch transactions over the years in order to help reduce gas fees for grant donors. With the continued uptick in gas prices, Gitcoin's current round utilizes a Polygon/MATIC system to perform bulk checking out which lowers incurred gas fees. This way, contributors can choose to donate to several projects cheaply. Previously, a zkSync checkout system was implemented starting Round 7, which also tackled checking out multiple grants at once.

⓴ M E S S A R I

Gitcoin Grants: Contributions vs. Match Pools

A look into how cumulative community contributions vs. matching pool measured up for Rounds 1-11

Round	Match	Contribution
11	$965,000	$1,590,000
10	$700,000	$1,100,000
9	$500,000	$1,300,000
8	$500,000	$571,000
7	$450,000	$274,830
6	$175,000	$227,847
5	$250,000	$222,000
4	$200,000	$143,642
3	$100,000	$163,279
2	$50,000	$56,535
1	$25,000	$13,242

■ Match ■ Contribution

Round 11 donations reached an all-time-high (ATH) for contributions and the matching pool, in line with our observations of an ever growing community of developers and tools upon Ethereum.

DeFi Projects Support the Development of the Open Web

The top 10 matching pool providers for Gitcoin Grants

Data as of: Dec. 10, 2021
Source: Gitcoin
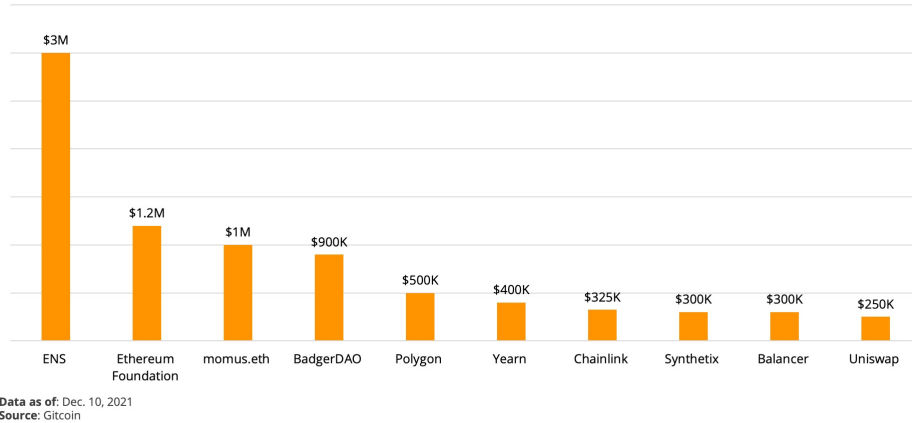
The Ethereum Foundation and Vitalik Buterin are huge proponents of the Gitcoin grants system as seen through their donations to the Grants matching pool. Additionally, plenty of DeFi projects have been constantly providing capital as well—-pointing to the fact that Gitcoin is indeed the focal point of open source development. Notably, non-venture funded projects like Yearn and ENS have also been large supporters of Gitcoin Grants.

Entering Quadratic Lands

Perhaps one of the most important tools that Gitcoin puts to use is quadratic funding. The concept of quadratic funding champions the ethos of public goods—-encourages participation by the maximum number of people. Quadratic Funding is a mathematically optimal way to fund public goods in a democratic manner and works by matching funds raised by casual contributors with pools raised from larger donors and in turn benefits the crowd's favorite projects through larger matched funds. Gitcoin's ultimate goal is to reach Quadratic Lands, which refers to a promised world where public goods are regularly funded and maintained democratically.

$$QF = v_i^p((\sum_j \sqrt{c_j^p})^2) - c_i^p$$

Quadratic Funding (QF), or the matched amount, is equal to the square root of each contribution (C) to it, which is summed up and squared. As an example, Rotki received $17,408 from 3,752 contributors. This input led to about $132,248 in additional matched capital.

Rotki - The portfolio tracker and accounting tool that protects your privacy

DApp Tech   Uniswap   Polygon   DeFi   ETH2.0

🔗 https://rotki.com   ♦ 0x9531...1306 📋 zkSync Polygon

🐦 rotkiapp ✓   🌐 Europe

⏱ Updated 5 days ago

Lifetime funding received
$193,521
raised from all contributors

Grants Round Uniswap, Polygon, GR12 - Main

$17,408   +$132,248
raised from 3752 contributors   estimated QF matching ⓘ

Though quadratic funding is mathematically sound, in practice, collusion is not too surprising.

Building a Sybil-Resistant Ecosystem

With Gitcoin grants seeing more and more success, moving $5M in funding each quarter, projects are depending on grants in order to take advantage of the community fund. With that uptick in capital, there has been an increase of spammed microdonations to several projects.

Although QF provides a way to understand where the public wants funding to flow, it is not attack-proof. A GitHub account connection is needed in order to use Gitcoin and a BrightID verification option was also made available starting Round 7–-those who complete verification hold higher weight when the matching pool is calculated. In Round 9, the increase of collusion prompted a greater push from the team towards thinking about Sybil-resistant systems–-an important topic to get right for the broader DAO ecosystem.

Similar to QF, the Mirror team employed quadratic voting for one round of the WRITE Race. In this scenario, the number of votes mattered much less than the number of voters; if someone was able to gather a small number of whales to give them heavy votes vs. someone with several voters with lighter votes, the latter person would end up ranked higher. Several candidates started receiving votes from what looked like bot accounts–-it was immediately visible to the Mirror community. However, the team was not able to fully discern how those bot accounts were created and were able to vote on the race.

Sound detection methods and infrastructure will be crucial in order to properly detect activity that is fraudulent from when it's not. As Gitcoin founder Scott Moore puts it, the big

question is "when is collusion just squads vibing?" Oftentimes, seemingly adversarial behavior can be innocent and so dependence on only code to take down actors without a second review could yield highly inaccurate results.

To tackle future adversarial behavior, these are the following steps taken by the Gitcoin community:

- Deploying detection algorithms to flag patterns that might be potentially concerning activity

- Community involvement in detecting fraudulent behavior, with Stewards being at the center of defining what should be concerning and reviewing cases detected by the system that might be wrongly flagged

Projects such as Proof of Personhood Passport (PoPP) are pushing the needle forward on internet identity and privacy. PoPP would be instrumental for one-human-one-vote instead of one-token-one-vote to systems that would greatly improve security against collusion and provide better grounds for quadratic voting and funding.

The Next Phase

For Grants, there is a constant effort to increase the discoverability of grants and provide a better experience. We will see more from the Gitcoin team in terms of building a more intelligent Sybil-resistant system with Quadratic Funding and one that is envisioned to be exported to the rest of the Ethereum ecosystem.

Broadly, Gitcoin is still largely built on web2 infrastructure and is still fairly centralized from a technical standpoint. Gitcoin's roots as a centralized system have collected a lot of centralization-debt over the years that will need to be addressed as it progressively becomes a DAO, similar to undoing technical debt. There is a workstream dedicated to decentralizing Gitcoin's API and Grants process so that anyone can participate and fork the project. The end goal of Gitcoin DAO is to eventually reach a point of being antifragile and credible neutral.