

# Water Margin DAO

## Whitepaper

Sanhuo; Xiath; Hsiang; KellyX.



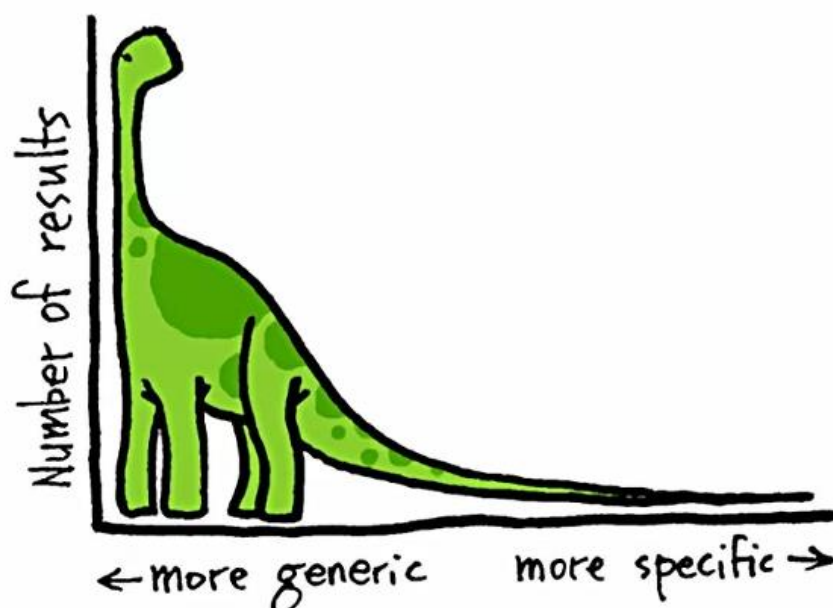
### Abstarct

To solve the issue of motivating members of open source community, we adopt Web3 technology to make NFT of 108 heroes in the Water Margin and use it as the governance tool of open source community. We distribute limitedly-issued NFT with a maximum 108 pieces to members of the community who have made outstanding contributions, and set up an NFT trading market for members to trade. To calculate members' voting weight, we also combine the NFT and DAO governance module, and use oracle module to connect members' contribution data with on-chain contracts in real time. In this way, we hope to achieve an automated, transparent, long-term value incentive DAO management system.

# 1. Introduction

Open source communities often suffer from low and unsustainable member contributions. While star projects such as TensorFlow, OpenSSL, Ethereum and others can attract tens of thousands of developers to participate, in stark contrast, 71% of repository contributors have fewer than 10 people<sup>1</sup>. An appropriate incentive mechanism of open source community is the key to encouraging more new people to participate and invigorating the continued output of existing members.

For older members, most of whom contribute to the open source project repository in a way that fits into the long tail model. It is reported that 99.95% of repositories are low activity<sup>2</sup>, including star projects with many contributors. After the initial enthusiasm period, and as maintaining the project becomes more detailed, the contributions from older members decrease significantly.



For contributors to open source projects who are joining or trying to join, the growing stock of content has raised the barrier to maintenance, making it prohibitive for newcomers.

The shackles of the development of new and old members lead to a vicious circle of

---

<sup>1</sup> Report on the status quo of Chinese indie developers in 2020

<sup>2</sup> Github 2020 Digital Insight Report

community development. The contributions of old members gradually decline over time. Meanwhile, some junior or unfamiliar people find it difficult to join the community, and there is no fresh blood to supplement the community, which leads to a bottleneck in the development of open source community.

Open source projects are public goods, non-exclusive and non-competitive. People will not be affected by their use of open source projects even if they do not pay any fees, which makes few people willing to support these projects<sup>3</sup>. As a result, most open source projects are always underfunded, and thus let alone financially incentivize project members. Therefore, how to solve the incentive problem of project members in a sustainable way has always been a difficult problem for open source projects.

In view of this widespread problem, we initiated the idea of using Web3 technology to solve this problem and better promote the vigorous development of open source.

## **2. Solution**

As a treasure of Chinese literature, 108 heroes in the Water Margin are made into NFT, which is used as a governance tool for the open source community to participate in the better construction of the open source community.

### **2.1 Group Identity**

The limited issue (maximum 108) NFT is regularly distributed to members of the community who have made outstanding contributions. It is a symbol of community status, a badge of honor, an abstraction of the contributions made to the community, and an embodiment of the community's recognition of the contributions made to the community.

As open source communities flourish, the value of group identity from these rare NFTs will be reflected. There is a strong binding between the quality of the community and the value of membership. An NFT will indicate that the member are experienced in running an open source community and that their work has been recognized by the community. In society, there

---

<sup>3</sup> [https://en.wikipedia.org/wiki/Tragedy\\_of\\_the\\_commons](https://en.wikipedia.org/wiki/Tragedy_of_the_commons)

is no need to painstakingly describe one's competence for a position, an NFT will embody members' working abilities.

## **2.2 NFT Transaction**

To meet the preferences of different members for different NFT features, we also set up a secondary market, so that owners can trade them freely in the market, increasing the liquidity and profitability of NFT. In the market, members can keep their existing NFT, or they can choose to sell them for economic benefits.

## **2.3 DAO Governance**

These NFT are also an important part of community DAO governance. NFT holders will have the right to vote on community proposals, and different voting weights will be allocated according to the contributions.

If the community receives donations, NFT voting weights can act as the basis of capital allocation.

We combine the NFT module with the governance proposal module, and use the oracle module to connect members' contribution data and on-chain contracts in real time. In this way we can calculate voting weights, and realize an automated, transparent and value-motivated community management system.

It is worth noting that we believe that the voting weight should not be a commodity, so when ownership of the NFT is transferred, the voting weight on it will be automatically cleared to zero. This also prevents centralization of governance systems.同时，这些 NFT 也是社区 DAO.

## **3. Features**

### **3.1 Blind Box NFT**

#### **3.1.1 WaterMargin NFT Blind Box**

In the initial release, the first whitelist addresses will be generated into Merkle Tree, and root will be stored in the contract. When the contract is deployed, the Merkle Tree will be used to verify whether the user has mint qualifications. Random numbers are provided by the predictor to complete the user's random hero extraction function.

#### **3.1.2 Display and trading platform**

The platform provides fixed price auction and unfixed price auction functions.

#### **3.1.3 Subgraph**

We deployed a set of SubGraph to track on-chain state of the contract chain and provide front-end calls.

### **3.2 DAO Governance Module**

The future of the community should be jointly decided by all community members, and the DAO governance module will help the decentralization of community governance.

Governor Manager, proposal management smart contract - accept new proposals, manage, ruling on, and implement proposals.

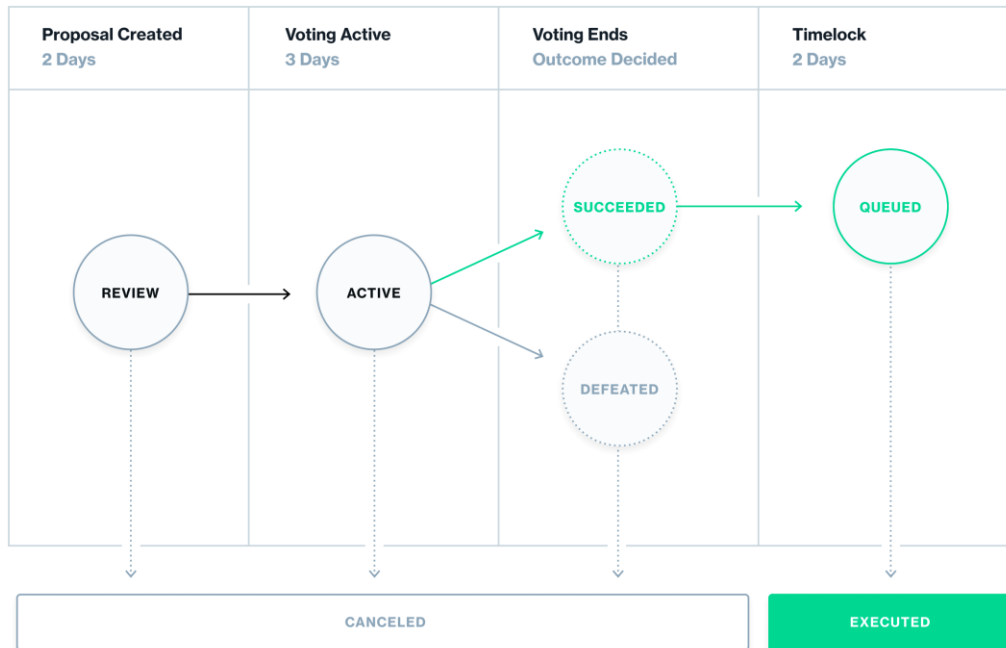
Governor Weights, vote weights data smart contract - with NFT contracts, manage each NFT and governance-related state, accept calls from the oracle module and automatically update the weight data for each NFT.

Autonomous Proposals, autonomy proposal generation contract - assist users in generating exclusive autonomous proposals, accept the trust from other members to vote.

Gnosis Multi-sig wallet - community treasury, 80% deposit in AAVE, Curve, PoolTogether to do stable financial returns, and as a source of community members rewards, 20% do risky

investments, such as UniswapV3 LP market, and act as a communal start-up incubation fund. As the contract manager, each proposal execution must be co-signed by several core members to initiate the execution process.

### 3.2.1 Proposal Process



### 3.2.3 Case

Community member Alice wants to propose a change in the voting weights, which would increase the weight of PR quality and reduce the weight of commits. It is going to happen as follows:

- 1) Initiate a pre-proposal in Github Issues in a format set by the community, detailing the reasons and the implementation. This step is not necessary, but we suggest that prior to initiating on-chain proposals, it is helpful to have a full discussion in the community.
- 2) Initiate Autonomous Proposals smart contract, and an exclusive autonomous proposal smart contract is generated on chain. The contract is used to accept a proxy vote from other members.
- 3) When the autonomous proposal smart contract receives enough votes, the initiator can call the smart contract method to initiate a formal proposal to the Governor Manager smart contract. The new proposal will be created and then enter a publicity period.

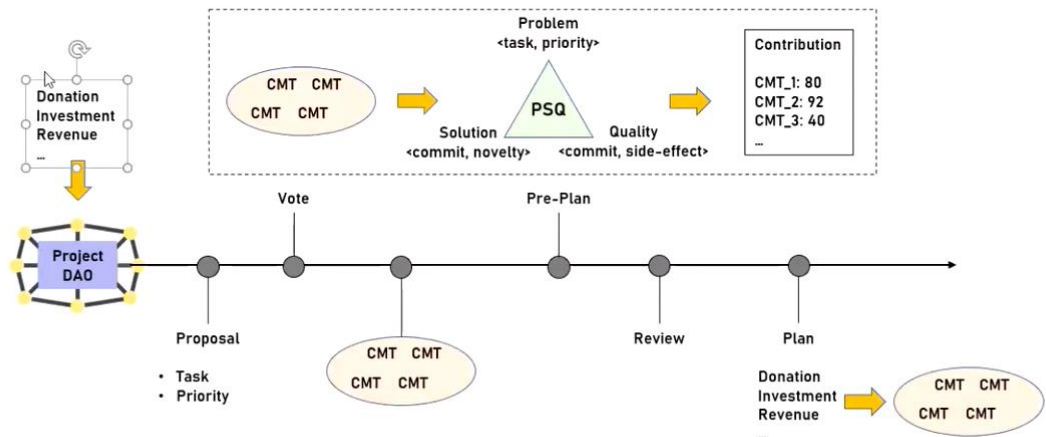
- 4) In the voting period (Active), particular members (i.e. Water Margin NFT holders) can vote on the chain. They can also delegate the weight to other holders. There are three options on the ballot: yes, no and abstention.
- 5) At the end of the voting period, the Governor Manager smart contract decision process is automatically triggered. When the votes in favor are in the majority and above a threshold (to prevent the total number of participants from being too low), the proposal will be put into the pending queue.
- 6) After entering the queue, the proposal will have a period of execution time, during which the core members of the community will use the multi-signature wallet to jointly sign a transaction, triggering the Governor Manager contract to execute the proposal. If the proposal exceeds the time limit for implementation, it will be expired.

### **3.2.4 Vote Weight**

To better quantify the contribution size of members, we have cooperated with the Committable project to generate corresponding CMT for each commit feature of members by using the CMT from the Committable. Then the contribution value of each member can be calculated according to the PSQ model. The specific process is as follows:

- Decide mission objectives and proposals, generating CMT in the process.
- Preplan, each CMT contains a record of contribution and produces quantified contributions. This quantified value contains the actual concrete work content.
- PSQ model, a three-dimensional evaluation framework are proposed to evaluate the contribution of all people. Based on CMT and 3 dimensional evaluation, the specific contribution value is calculated. The calculation process can be configured according to the actual situation and members' opinions, and finally set up a relatively reasonable framework.
- After the task is completed, the contribution amount of each person is determined according to CMT, and then the voting weight and incentive allocation amount of community members are determined based on it.

## Governance



### 3.2.5 Self-built Oracle Module

Ensure the whole process is open, transparent, automatic, and integrated with on-chain data.

- Listener layer - automatically listens for code records submitted by members using GitHub API. Monitor the uploaded data of YouTube videos, and automatically add the contribution weight of sharers. The NFT Mint event of contributors' articles on the Mirror is captured to automatically screen out articles that are beneficial to the development of the community. The mint event is counted into the contribution.
- Weight layer - a set of adjustable weight distribution system, such as the number of submissions, quantity, quality, innovation and other dimensions to allocate weight. Community managers can directly adjust parameters, or combine with third-party AI model to complete automatic calculation.
- Executive layer - a set of oracle smart contracts that accept calls for data updates and write the calculated weight results into a governance contract

### 3.2.6 NFT Fractional to Assist in The Distribution of Crowdfunding

A research group will be established, whose common research results will be represented



by an NFT, which will accept community crowdfunding and fairly distribute the benefits. We will use NFT fraction technology to facilitate the process.

- Set up a research topic, for which an NFT will be cast. There will be three states, preparing, in progress, and completed.
- Preparing stage, NFT will be factionalized into corresponding fragments according to the sub-tasks divided by team members in advance, and members will claim the sub-tasks and hold the fragments. The research will also be crowd-funded by the community, which will fund the contract as a prize pool.
- In progress, group members will display research result regularly.
- Completed, group members will submit their research results for public publicity. After winning the recognition of crowdfunding, they can combine their NFT fragments together to re-compose a complete NFT, and they will receive bonuses in the prize pool in proportion.
- The NFT will again be fragmented and divided, in a predetermined proportion, among the funders and the researchers, who will share in the earnings of the research results

## 4. Construction Process

Our team is formed from one Web3 technology community, consisting of three developers and a product manager:

- ✧ Sanhuo: Smart Contract, Frontend Development;
- ✧ Xiath: Graph, Frontend Development;
- ✧ Hsiang: Smart Contract, Frontend Development;
- ✧ KellyX: Product Manager, Experience Officer.

The project was approved on December 1, 2021, and the basic functions of NFT mint, display, price auction and non-price auction will be completed by the end of December.

Repo: <https://github.com/maroonstar/WaterMargin>

Implementation path:

- Build NFT platform, complete NFT smart contract development test deployment, basic functions of front-end interface, such as display, mint, fixed or unfixed price auction; random numbers in mint phase will use ChainLink temporarily. When the self-built oracle is completed, it will be converted to self-built one.
- The Subgraph node's set up and deployment, complete the event monitoring of related contracts and provide the data interface to the front end.
- DAO governance module, complete governance related contract development and deployment, front-end interface proposal display, launch, voting and other functions. Connect NFT and combine it into votes.
- Oracle module, GitHub related API program development, weight policy generator development, oracle smart contract development of the execution layer.
- NFT fractional assists in the distribution of crowdfunding results, build interaction platform of smart contract and front end.