
Decentralized Financial Autonomous Organization



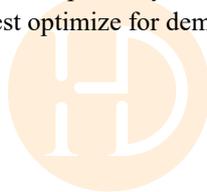
HUBDAO

Abstract

Decentralized finance (DEFI), corresponds to traditional finance in that it offers access to financial applications (transactions, loans and synthetic assets), but omits the role of the third party. DEFI moves the transaction behavior of both parties to the blockchain in an open and transparent way.

Since 2020, DEFI lending projects like Compound and AAVE had the number of on chain lending transactions increase sharply, attracting the attention and usage of many people. Although most of the projects are run on the Ethereum network, the chains on which these projects are built on are not connected to one another, so users end up paying a high transaction fee (gas) for transferring assets between platforms.

HubDAO proposes a solution to aggregate lending, which can aggregate the lending liquidity of Compound, AAVE and other DEFI applications. HubDAO also runs its own lending platform, lending zone, to provide users with more personalized services. In addition, users who provide liquidity to HubDAO can also participate in farming and receive additional rewards. But most importantly, HubDAO adopts the organizational mode of DAO (decentralized autonomous organization) to best optimize for democratic governance.



HUBDAO

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1. Introduction

During the 2009 financial crisis, an anonymous developer Satoshi Nakamoto proposed a novel currency system through his paper, Bitcoin: Peer-to-Peer Electronic Cash System. With bitcoin, which operates as a digital currency, Satoshi Nakamoto was able to overcome the existing flaws of a centralized financial system by unlocking transparent and secure decentralization payments through blockchain technology.

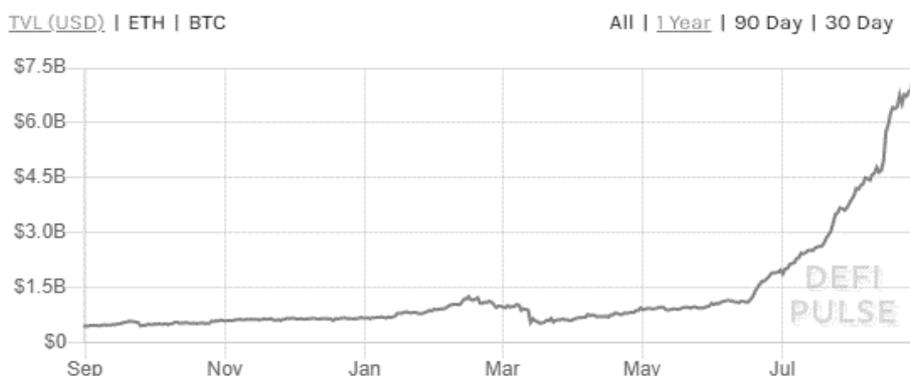
Ethereum, a distributed computing platform also on the blockchain added smart contracts, further expanding the capabilities of what a decentralized payment system can do. Unlike Bitcoin's single distributed decentralized payment system, Ethereum's smart contract supports various decentralized transactions and contracts, enabling people to improve the existing financial system through various projects.

The most promising innovation amongst these projects was the financial system called DEFI (Decentralized Finance). It's the most popular trend within the entire Blockchain ecosystem, showing an explosive growth since 2019.

Decentralized finance includes diverse types of financial applications seen in traditional finance, such as lending, synthetic assets, trading, asset management, flash lending and more. Projects such as MakerDAO and Compound introduced blockchain technology into the existing collateral-based lending systems to make centralized and inefficient financial transactions efficient and transparent.

The amount of funds locked in the decentralized finance applications experienced exponential growth and many anticipate this rapid growth to continue in the future. The total amount of value locked currently stands at 7.2 billion US dollars and the biggest collateral amount is 1.4 billion US dollars.

Total Value Locked (USD) in DeFi



Data source: DEFI PULSE

In this white paper, we present a new decentralized financial broadcasting ecosystem, 'HubDAO,' which improves upon the features built by lessons we have learned from other DEFI projects to enable a fully decentralized financial product for all.

2. Problems in the Existing Decentralized Financial Systems

The biggest advantage of decentralized finance is that its governance is operated transparently by the members of the community without a few centralized decision makers. Through this, a fair and autonomous financial transaction ecosystem can be established. However, they still have problems to overcome on the instability side.

For decentralized financial projects based on collateralized loans, in order to ensure that there is excess collateral support behind each loan, the liquidation mechanism will be triggered after the price of the collateral drops to a certain extent to automatically repay the loan. However, after a rapid fall of the Crypto-market, the liquidation mechanism can easily lead to a downward spiral of serial clearing, which will damage the profit of borrowers.

For example, the price of Ethereum fell sharply in March 2020, which led to the network bottleneck and clearing error of most loan projects guaranteed by Ethereum. At the same time, due to the rapid rebound after plummeting, many users experienced excessive losses. This is the "black swan event" that is not handled well by the existing decentralized finance ecosystem.

At present, the vast majority of decentralized finance projects are based on the Ethereum environment, so their tokens and collateral funds are all circulated on the Ethereum blockchain. The decentralized finance should operate under one ecosystem, but each project is on separate chains and their functions and future directions are all not aligned.

In the DEFI-Market, there are loan projects like Compound and AAVE, synthetic asset projects like Synthetix & WBTC, and transaction projects like Curve & Uniswap. If users have complex needs, they can only use them in combinations to utilize the composite assets, collateral lending and transaction services provided by these different projects. It is not only time-consuming and labor-consuming, but also has to pay a high transaction (gas) fee on the Ethereum blockchain many times.

HubDAO was made to solve this inconvenience caused by this market fragmentation in the decentralized finance ecosystem.

3. Decentralized Financial Autonomous Organization

HubDAO is aiming to build a Decentralized Financial Autonomous Organization ecosystem. The Hub refers to the hub of the "hub and spoke (H&S) system," which is like the central point at which various spokes on a bike wheel converge.

The DAO (decentralized autonomous organization) is quite different from the common company organization, which is often a centralized management that makes decisions based on the opinions and the votes of the top leaders of the company. Thus, in order to decentralize the decision-making of the DAO, the operation and development of overall governance depends on the distribution of the votes to enable a complete direct democratic

governance system. However, the problem is that the efficiency is low and it is difficult to count everyone's votes.

The Blockchain technology makes this DAO vision possible, as the voting system on the chain is efficient. Individuals can show different voting weights by holding onto different numbers of tokens.

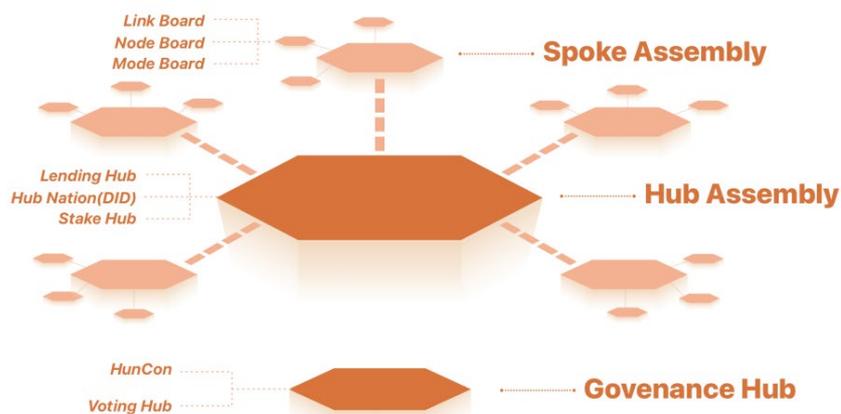
Hence, HubDAO is a decentralized ecosystem in which the volunteers participate in the management by using the blockchain technology to build a community operation and autonomous decentralized financial ecosystem based on direct democratic governance. HubDAO improves the external scalability of the original decentralized finance system by combining various external platforms, financial services and hub and spoke (H & S) system.

4. The HubDAO Protocol

There are two native tokens used in HubDAO. The 'HD' tokens are for governance operations and the 'HDT' tokens are issued to incentivize actions by the participants that support the ecosystem. The tokens will be used for loan, collateral and governance voting and can be burned too. The relevant detail regarding the governance mechanisms with tokens can be found in the "Token Economy" section below.

HubDAO has three layers in its ecosystem. 1) The 'Hub Assembly' layer where the participants of the ecosystem use various decentralized finance services; 2) the 'Hub Governance' layer that determines how the governance system of the ecosystem operates through direct voting; and 3) the 'Spoke Assembly' layer that holds a variety of financial systems based on the blockchain.

HubDAO will gradually be linked to various other blockchain ecosystems and evolve into a fully decentralized financial system centered on governance.



1. Hub Assembly Layer

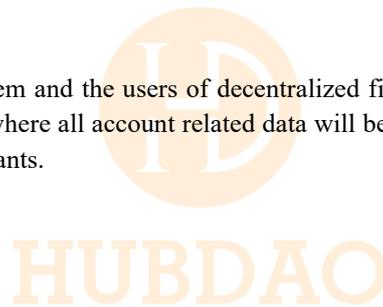
Hub Assembly is the foundational layer of the HubDAO ecosystem where participants in the ecosystem can use various decentralized finance and other blockchain services based on their Decentralized Identity (DID).

1.1 Hub Nation (DID)

If you become a member of HubDAO's ecosystem, you will be given a DID-based digital ID called Hub Nation. The application of communication technology and computer science lead to the development of digital identity. On the Internet, digital identity data lives on the isolated servers and the applications are not interconnected to one another, so users have to register multiple accounts and passwords in each application system and it's very difficult to realize a cross application business.

The chain data structure and consensus algorithm unique to the blockchain brings new opportunities in authenticating one's digital identity due to the transparent and unforgeable nature of data on the distributed database of the blockchain. Byzantine fault tolerance ensures that the system running across the entities will not be affected by the malicious behavior of a few nodes, solving the trust problem at the business level, while being on one chain enables integration between the different service providers. This greatly expands the possible usages of digital identity and makes them a lot more efficient for the user.

Participants of the HubDAO ecosystem and the users of decentralized finance services will be provided with a unique account based on their DID, where all account related data will be owned by the user, thus protecting the data ownership of ecosystem participants.



1.2 Lending Hub

"Lending hub" is a decentralized lending system within the HubDAO ecosystem. Members may borrow other stablecoins such as DAI, USDT and PAX as collateral with various cryptocurrencies like Bitcoin or Ethereum.

In order to solve the fragmented problem of a decentralized financial market, the lending hub will be divided into three zones. The Compound zone (Zone1), AAVE zone (zone2) and Lending zone (Zone3) independently developed internally by HubDAO. Users can choose the loan zone to find the most favorable lending rate.

The bottom layers of the Compound zone and AAVE zone on the lending hub are their own, as both are open source and mature decentralized finance platforms, ensuring the security of these two zones.

Users of the lending hub can play the role of the market liquidity provider by storing their assets in the loan collateral pool, so that they can earn interest from the loan pools.

In order to encourage contributors to participate in the liquidity provision of the system, we will provide HDT tokens to compensate the contributors who have made a deposit or a loan for more than 24 hours. The compensation will depend on the amount of loans or deposits one makes.

It should be noted that users who borrow from Compound and AAVE will get their native tokens COMP and LEND and the liquidity contribution compensation will be exchanged by HubDAO into HDT.

In the future, with the expansion of decentralized financial ecology, the number of zones under the lending hub of HubDAO will also expand, providing more abundant services for HubDAO users.

The lending zone (Zone 3) in the lending hub will use the automatic market maker (AMM) business model to calculate the relevant interest rate. The calculation method is as follows:

1.2.1 Loan Interest Rate

A) The liquidity provider receives the basic interest rate of 2% of the asset that has been loaned out + @ (demand constant, K)%.

B) Any person who uses the loan service may borrow up to 60% of their collateral. At this time, the interest on the loan that must be paid by the loanee will be 2.1% + @ (demand constant, K)%.

****Demand constant, K, calculation formula***

Demand constant $K = (\text{loan size of the pool} / \text{deposit size of the pool}) + (\text{loan size of the pool} / \text{loan size of total pool})$ For example, loan size of A asset=10,000 USDT; the lending deposit pool of A asset=20,000 USDT; the loan size of total pool is 200,000 USDT.

A Asset Demand Constant $K = (10,000 / 20,000) + (10,000 / 200,000) = 0.55$

*The interest rate that Alice will have to pay when lending assets A
= the basic interest rate 2.1% + the demand constant, K, rate 0.55% = 2.65%*

1.2.2 Liquidity Provider Order Priority

In the case of a loan demand for a particular asset, matching the loan is made in the order in which the asset is supplied with liquidity., and we would use the rule of “**first come first out**”.

e.g. Bob, Lisa and David deposited 10,000 USDT, 12,000 USDT and 3,000 USDT in order in the USDT loan pool for liquidity. Subsequently, if Alice applies for a loan for 23,000 USDT, Bob's 10,000 USDT, Lisa's 12,000 USDT and David's 1,000 USDT will be matched for that loan in order.

** Loan service users' collateral assets cannot be utilized as liquidity-providing assets for other loans*

1.2.3 Payment Mechanics

1.2.3.1 Interest payments

The Lending Hub's interest payment period is based on the 24 hours of the UTC day. Interest payments on the loan are automatically deducted from the collateral assets of the loan collateral. The daily interest rate of the loan is as follows.

** (value of loan execution * calculated annual interest rate) / 365*

1.2.3.2 Repayment of loans

If a user of a loan service intends to repay the loan, he or she shall pay 'the expected assets' and 'the HD equivalent to 0.2% for the amount of the loan as a loan termination fee'. At this time, the HD paid as a loan termination fee is burnt.

e.g. HD fees that Alice must pay when repaying loans worth 1,000,000 USDT

*1,000,000 * 0.002 = 2,000 USDT worth of HD*

1.2.4 Liquidation of Loans

Loans implemented in the Lending Hub are automatically liquidated in the following cases:

1.2.4.1 Depreciation of collateral

If the value of the collateral drops below 75% at the time of the loan, the collateral on the Lending Hub is automatically liquidated. The liquidated assets shall be refunded to the user of the loan, excluding the following amounts, from the difference between the amount paid out of the loan and the amount liquidated.

- 1. Interest payable on the day of liquidation*
- 2. HD Fees to be paid at the end of the loan*
- 3. 1% of liquidation fee*

1.2.4.2 Lack of interest for loan

Because interest payments on loan assets are made on a daily basis, interest cannot be deducted from collateral assets unless the loan cycle is completed for a certain period of time. If the interest deduction on a collateral asset exceeds 35 percent of the total collateral, a forced liquidation occurs, like in the case of drop of collateral.

The liquidated assets shall be returned to the users of the loan, excluding the following amounts, from the difference between the loan amount and the liquidation amount:

1. *Interest payable on the day of liquidation*
2. *HD Fees to be paid at the end of the loan*
3. *1% of liquidation fee*

1.2.5 Emergency liquidation standby pool

An emergency liquidation standby pool system is a liquidity pool that exists in case a sudden liquidity generation causes a delay in normal transactions on the blockchain network and does not liquidate the collateral smoothly. The pool, which is composed of stable coins, liquidates its collateral assets within the Lending Hub if the value of the collateral falls abnormally sharply. In the case an emergency liquidation standby pool is used, no additional interest will be generated, but the liquidity provider may have the following benefits:

A) In the event of a sharp drop in the price of a collateral asset, a safe margin can be secured by purchasing the collateral asset at a price lower than the existing price.

B) If an asset is deposited in an emergency liquidation standby pool, it is compensated with the HDT, which is 1.5 times the normal liquidity provision, as a compensation for the emergency liquidity supply.

1.2.6. Liquidity Mining

In order to incentivize contributors in the HubDAO lending system, HubDAO provides HDT token as additional rewards. Users automatically participate in farming when they loan or lend their assets on HubDAO for more than 24 hours. At the same time, in the initial genesis rounds of the HubDAO ecosystem, farming participants can also get additional HD governance tokens as rewards from a HD option pool through HDT. Their farming incentives works as follows:

1.2.6.1 Formula for calculating HDT Mining

The logic of mining HDT is simple — the system distributes HDT in proportion to the amount the user has staked over time. The mining occurs according to the rounds accumulated over time and the user can also withdraw manually after each round.

The calculation formula of 1 token income is as follows:

If the pledge time of 1 token is t_0 and the time to extract and obtain the income is T_1 , then within the time of $[T_0, T_1]$, the mining income of 1 token is P

$$P \text{ (theoretical revenue)} = \text{Total amount of HDT released in each round} * (t_1 - t_0) / (\text{total time of this round} * \text{total value of users in pledge pool})$$

If the user deposits X tokens, the revenue is $X * P$

1.2.6.2 Incentive Structure for HDT

HDT tokens are issued according to the behavior of the ecosystem participants. Total issuance is limited to 800 million and there will be no more issued after.

A) Genesis incentive plan

In order to encourage early users to participate in HDT liquidity mining, HubDAO will start three rounds of Genesis incentive plan in the first five weeks (will generate 8 million HDT)

Round	HDT output	Allocation
First Round (1 Week)	2.5 million /week	The first six mining pools will have HDT equally distributed for mining. Hence each pool will issue 416700 HDT.
Second Round (2 Week)	2 million /week	The Top 2 pools with the highest total staked value in the first round will be upgraded to Hub-X pool and each Hub-X pool will receive the right to stake 1 million HDT.
	0.5 million /week	Encourage the users who trade in CEX or DEX, and distribute them according to the situation.
Third Round (2 Week)	2.5 million /week	The community will vote with their HD for the creation of five new mining pools (including Hub-X pool) and the HDT available for mining will be distributed equally, so that each pool will issue 500000 HDT.
	0.5 million /week	Encourage the users who trade in CEX or DEX, and distribute them according to the situation.

The First six mining pools : wETH, USDT, HT, Golf, BNB, GXC

B) Daily mining rule

After the completion of the Genesis incentive plan, HDT will enter the daily mining stage and dynamically adjust the mining income.

It is estimated that every 205 rounds (one week for each round, making it ~4 years each), halving will occur until the excavation is completed. After the five weeks of Gensis incentive plan, the output will be 1 million

HDT per week.

80% of the newly distributed HDT will be allocated to the Lending Hub, while the other 20% will be allocated to the Stake Hub for staking/farming.

The estimate of the total issued value of HDT is as follows:

<i>Year</i>	<i>~4Y</i>	<i>4~8Y</i>	<i>8~12Y</i>	<i>12~16Y</i>	<i>16~20Y</i>	<i>20~24Y</i>	<i>---</i>
<i>n(1Y)</i>	<i>52 million</i>	<i>26 million</i>	<i>13 million</i>	<i>6.5 million</i>	<i>3.25 million</i>	<i>1.625 million</i>	<i>---</i>

1.2.6.3 Plans to incentivize HD Farming

HubDAO hopes to have many participate in the construction of the HubDAO protocol and distribute HD governance tokens in a decentralized way. Therefore, HD mining will proceed as follows:

A) Genesis HD mining incentive Plan

At the end of the third week of the Genesis round, the liquidity mining of HDT to obtain shares of HD will start, where participants will obtain HD in proportion to the amount of HDT they staked. In order to encourage users to participate in the governance of HubDAO protocol, in the fourth week and the fifth week, two rounds of Genesis HD mining will be carried out, with a total allocation of about 1.1 million HD in the first round, and about 1 million HD in the second round.

At the end of the Genesis HD mining period, 10% of the HubDAO governance rights (about 2.1 million HD) will have been distributed.

B) Daily HD Mining Distribution

After the Genesis HD mining stage, it will enter the daily mining distribution stage, where 1% of the total HD (210 thousand HD) will be allocated to the community each round (1 round = 1 week). A total of 42% of the governance rights (about 8.82 million HD) will be allocated to the community in this way.

Hub DAO will transfer 52% of the community governance rights to the community through 44 rounds of HD mining to make HubDAO achieve a fair, transparent and efficient decentralized autonomous protocol.

1.3 Stake Hub

Stake Hub functions to stabilize the HDT and HubDAO ecosystems. The staking/farming is conducted by staking HD or HDT to the stake hub and it's very similar to the farming of other DeFi ecosystems.

Stake Hub will continue to expand its diverse pools for HD and HDT mining.

Pool 1: HDT Mining with HD Staking

- 1 HDT per block is paid as an incentive and distributed according to the amount staked by the staker and the miner.

Pool 2: HDT Mining with HDT Staking

- 1 HDT per block is paid as an incentive and distributed according to the amount staked by the staker and the miner.

Pool 3: Mining HDT by staking LP token on the Stake Hub after holding HD/ETH as a collateral on Uniswap

- 2 HDT tokens per block are paid as an incentive and distributed according to the amount staked by the staker and the miner.

A wider variety of pools will be opened to encourage liquidity in HD and HDT, with the incentive quantity shrinking over time after each halving.

In summary, the incentive per block will be distributed as follows: 40% for deposits, 40% for loans, 2.38% for pool 1, 2.38% for pool 2, 4.76% for pool 3 and 4.76% for pool 4, and 5.76% will be reserved for additional pools in the future.

1.4 Additional Hub

The ultimate goal of HubDAO is a decentralized finance autonomous organization that can further expand the ecosystem to handle diverse use cases depending on the decision of the ecosystem governance in the future, in order to quickly iterate the functions of the system. The Additional Hub is an ecosystem that could be newly added by governance voting, which can be used for games, communities, derivatives, and more depending on the future HubDAO ecosystem governance voting. We envision HubDAO to become a more powerful decentralized self-organizing market with the HDT token used as a key currency in these Additional Hubs.

2. Hub Governance Layer

The Hub Governance Layer is where proposals and votes of the members of the HubDAO ecosystem and is a layer that promotes the long-term development of the entire HubDAO. Hub Governance directs democracy. Proposals and votes for the development of governance and execution of the results are carried out. All decision-making processes and results of Hub Governance are recorded in the block chain network, and everything is transparent and permanently preserved.

1. HubCon

HubCon is a space where various opinions and suggestions for the development of the HubDAO ecosystem are shared, and proposals are made in the form of HubDAO Implementation Proposal (HIP). HIP is a design document that provides new information to the HubDAO ecosystem and describes new functions. HIP provides a brief technical specification for features and a basis for those features. HIPs recognized as significant by the community

are voted on for actual application through the HD Voting Hub.

2. Voting hub & HIP Petition

Voting Hub is a space for voting on the application of HIPs deemed significant by HubCon, and finalizes the application of the new HIP through the Voting Power of the HD holder. However, HubDAO operates a petition system called HIP Petition to prevent the monopoly of Voting Power by a small number of ecosystem members. Although the agenda was finally approved through the Voting hub, anyone who believes there is a lack of fairness in the decision-making process can submit the HIP Petition. If the HIP Petition is submitted, the previously passed HIP will be invalidated if more than two-thirds of the HD voters, excluding the top 21 voters who voted for the agenda, agree to the HIP Petition within two weeks.

3. Spoke Assembly Layer

1. Node board

The Node board is the HubDAO's service ecosystem. Through HIP, various ecosystem services can be expanded and external partners can be selected. Nodes can take various forms, such as DEX, Payment, Donation, etc. Information about the ecosystem participants selected as nodes can be found on the node board within the Spoke Assembly. The HubDAO's Node participants are provided with a variety of support and ecosystem-specific incentives according to the Node board activity ranking.

2. Link Board

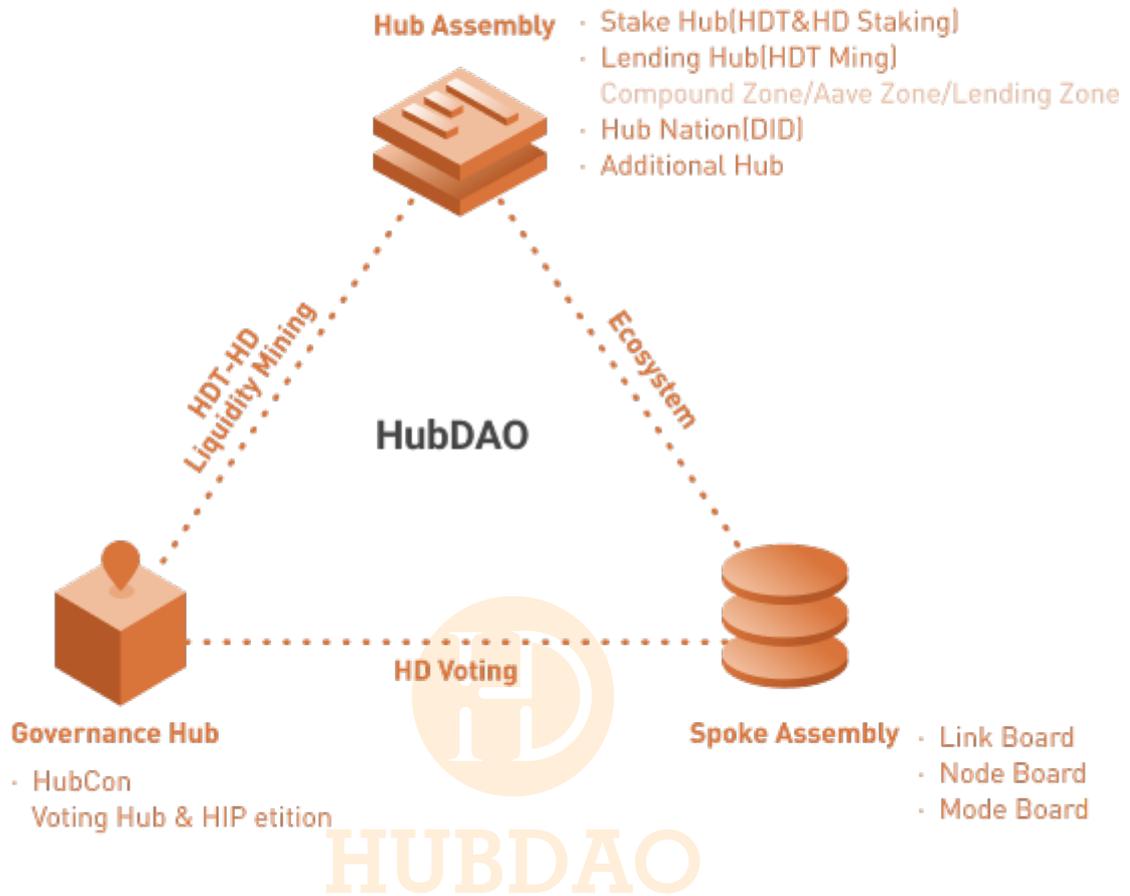
Link board is the connecting channel between the HubDAO ecosystem and external nodes. It refers to the various gateways that enable external ecosystem nodes such as cross-chain, oracle solutions, and IoT to integrate with the HubDAO ecosystem.

3. Mode Board

Mode Board is where each node that is effectively connected to the HubDAO ecosystem delivers and utilizes its value. For example, in the case of the logistics ecosystem, land trucks or trains, ships on the sea, and aircraft in the air are all part of this mode. In order for real decentralized finance to take place, actual use through various modes is urgently needed. Offline payments, donations, liquidity providers, currency exchanges and remittances can all be one form of this mode.

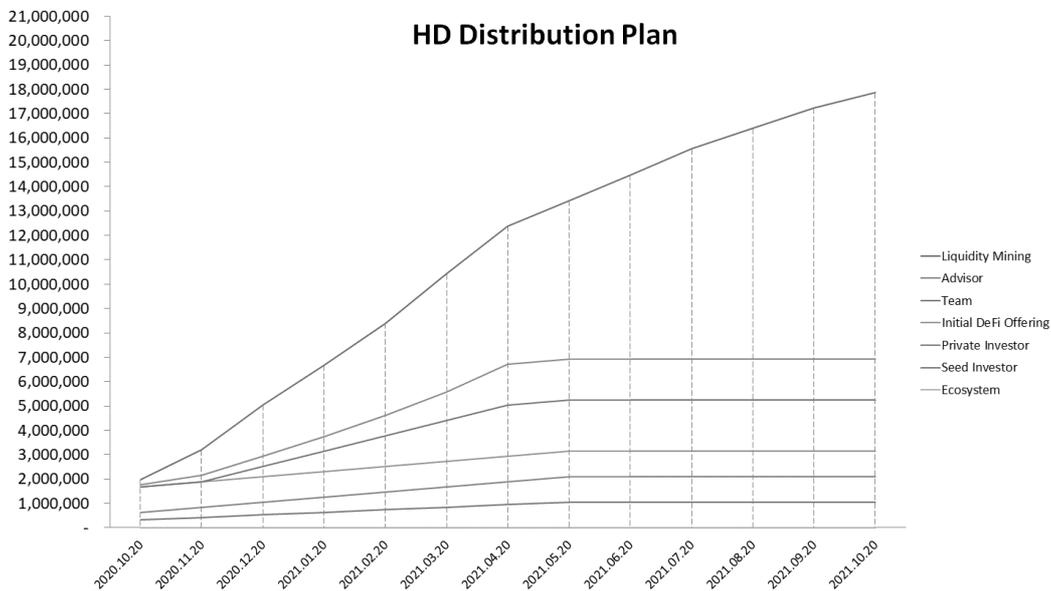
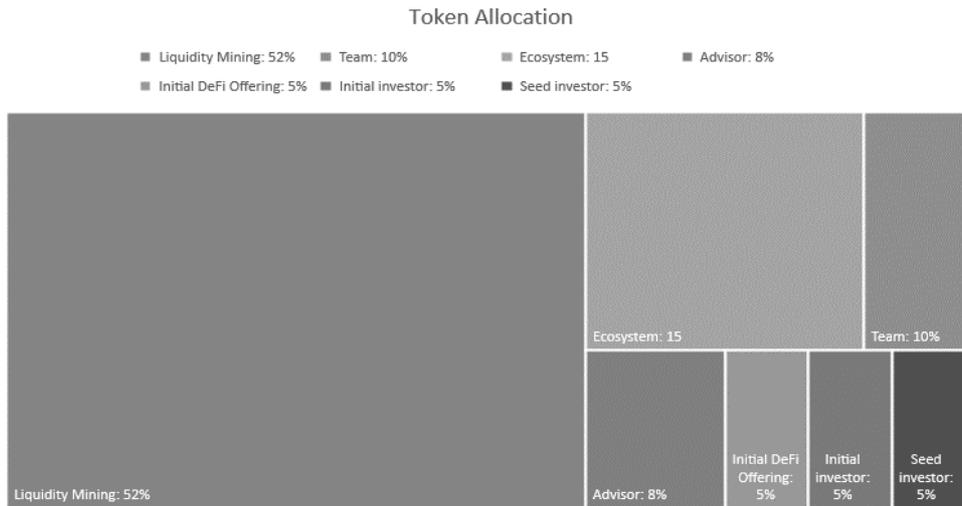
5. HubDAO Token Economy

HubDAO consists of HD, the governance Token, and HDT, the ecosystem utility token. Each token is issued and distributed in the following forms:



1. HD

1. Name: HD
2. Maximum supply: 21,000,000 HD
3. Token Type: ERC20
4. Token Allocation:



5. Payment of Loan Clearance Fees: The loan service user within the Lending Hub pays 0.2% of the loan at the maturity of the loan with HD token, and the HD paid as a fee is burned. Hence, HD has a deflationary model.

6. Participate in governance voting: HDT tokens are used to vote governance in the HubDAO’s ecosystem, and the voting power varies according to the percentage of token holdings. In addition, the HD used for HIP-applied voting is burned and the HD used in the vote is returned to the participant.

7. 47 weeks after the launch of HubDAO, the allocation of HD will be completed. The governance will then be dominated by the community and the main HD holders.

The fair distribution of governance token is only the beginning. The continuous updates to the technical support, governance mechanism and incentive mode of the organization will be key to the success of DAO organization.

2. HDT

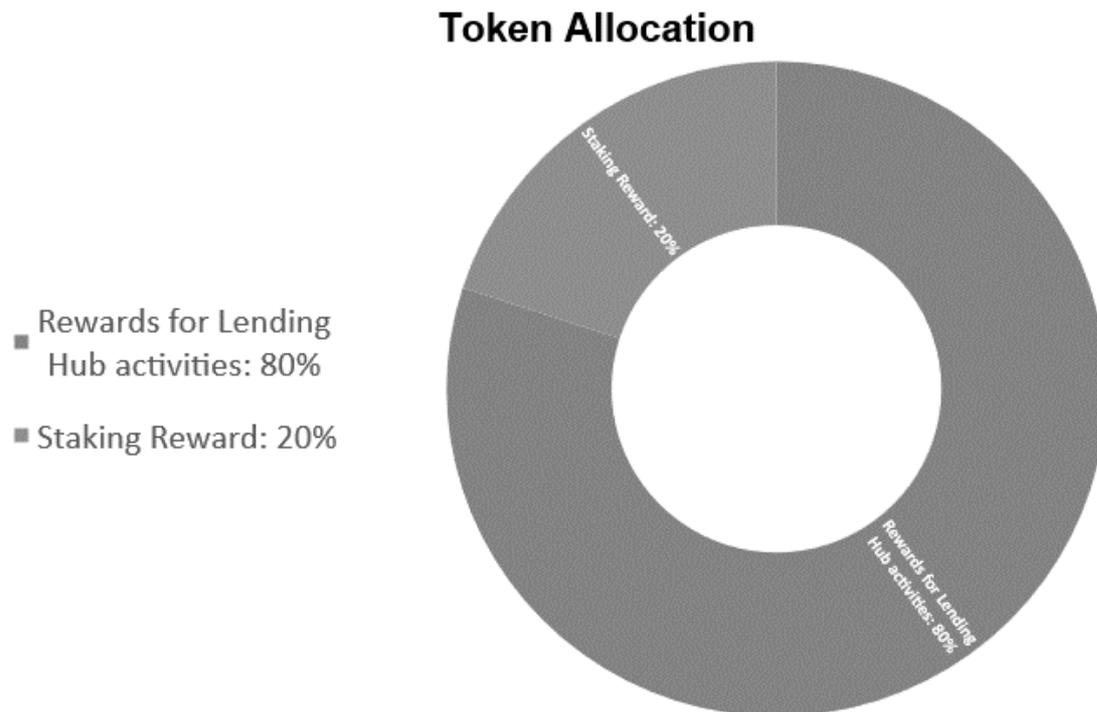
1. Name: HDT

2. Maximum supply: 800,000,000 HDT

3. Token Type: ERC20

4. Token acquisition: HDT is a utility token of the HubDAO ecosystem and can be obtained as a reward for Lending or Staking

5. Token allocation: 100% Liquidity Mining



6. Key currency within the HubDAO ecosystem: The HDT token is used as the key currency of the Additional Hub or Spoke Assembly layer, through which it is used for various services within the ecosystem.

7. Staking: The HDT holder is rewarded with a certain percentage of HDT tokens as a reward for staking their own HDT in a staking pool.

6. Legal notice

This white paper is intended to provide information on the new ecosystem and vision that HubDAO intends to create. In addition, it is indicated that it was not written for any particular purpose to encourage investment. The contents of this white paper are provided based on the current status and goals at the time of its preparation, and nothing in the white paper guarantees the exact timing of the future.

The theories described in this white paper do not guarantee commercial value, the interests of special stakeholders, technical errors and legal completeness. In addition, the scope of immunity is not limited to the above examples.

The theory in this white paper may be modified or altered by factors such as relevant laws, policies, regulations, technology, etc. Therefore, the version of the white paper does not guarantee the final outcome and is not legally binding. This white paper is a business introduction or a document equivalent to the promotion of a business that makes it clear that even if the theory of this white paper is referred to or based on the investment, the result is wholly attributable to the investor itself, regardless of profit or loss. HubDAO developers and teams shall not bear any liability, compensation, or other liability for losses, damages, liabilities, or other damages to investors.



HUBDAO