WHITEPAPER

The Power to Bridge More Emerging Chains

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Mission

To Provide Emerging Public Chains Friendly Cross-chain Solution with Better Security and Smoother Experience.

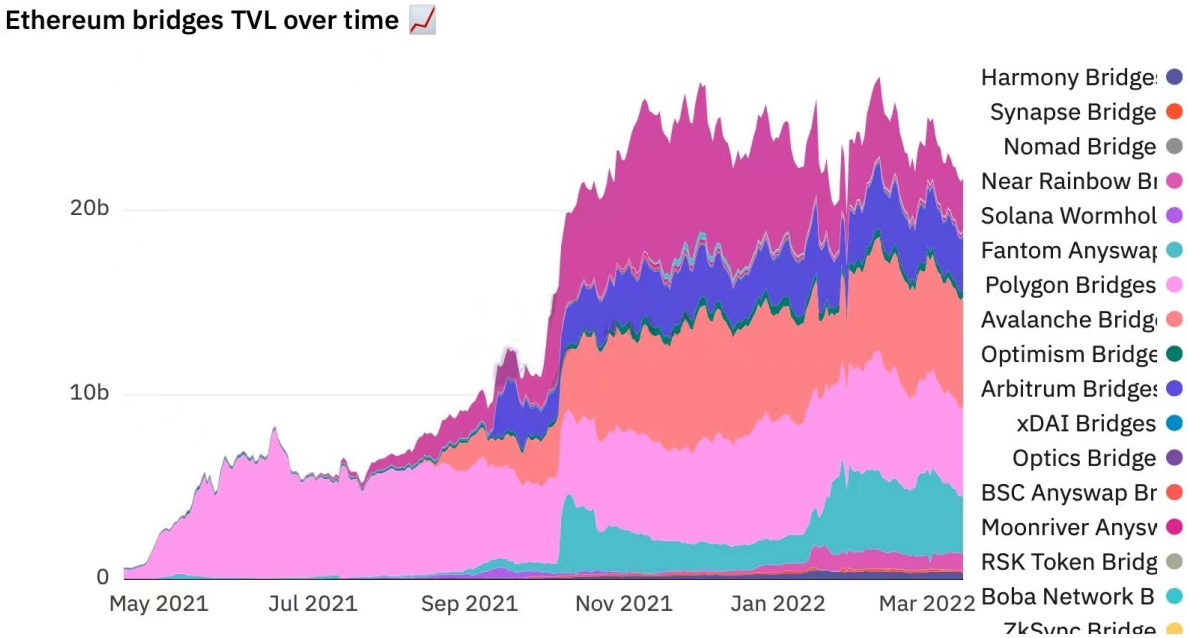
A Rising Star in Blockchain Chaos

Following the DeFi Summer in 2020 , the rise of financial applications in the blockchain industry has also facilitated the development of many new public chains. The history witnessed the increasing and diversified development of public chains. For instance, the rapid deployment of EVM compatible chains, the implementation of Layer 2 solutions, the highlight of Solana, the rise of the Cosmos ecosystem and the completion of the second-round auctions for Polkadot. Also, Cardano has supported smart contract in 2019. The diversity of public chains has driven the prosperity of the entire blockchain for one and a half years.

Except the largest camp Ethereum Virtual Machine (EVM) using Solidity as the smart contract development language, there are many chains that use non-EVM along with the emergence of various chains. According to DeFi Llama(https://defillama.com/chains), currently there are 36 EVM-compatible chains and 35 non-EVM compatible chains that support smart contracts. The wealth-making effect of the emerging ecology has driven funds to be dispersed in different chains. Cross-chain bridge has become the indispensable infrastructure for each chain to attract funds, and it has also become a necessary on-chain product for users.

Cross-chain is a protocol that resolves communication, transfer and exchange of data & assets, as well as the functional states on two or more different chains. A cross-chain bridge is a chain-to-chain bridge tool that allows the transfer of tokens and assets from one chain to another. Two chains can have different protocols, rules and governance models, and the bridge provides a way to communicate and be compatible with each other to securely interoperate on both sides.

According to the statistics of 17 cross-chain bridges by @eliasimos (https://dune.xyz/eliasimos/Bridge-Away-(from-Ethereum)) as of February 15th, 2022, Ethereum bridges TVL has reached up to $2.448 billion.



Among them, TVL No.1 project is Avalanche Bridge with $5.9 billion; the second is Polygon Bridge, reaching $5.8 billion; and the third bridge is Fantom Anyswap with $3.8 billion.

Main Verification Methods of Cross-Chain

According to the different types of validators, there are four mechanisms for cross-chain verification:

External Validation

External verification usually refers to the validation of assets on a specific address by one or multiple validators. The external third-party validator verifies the information and reaches a consensus to mint assets on the target chain.

WBTC is the largest cross-chain bridge that applies the single-node external verification. Anyswap, PolyNetwork,etc., are bridges that use multi-nodes external verification. Theoretically, the multi-nodes verification is more reliable than the single-node verification.

Native Authentication

Native authentication is verified by miners/nodes of the source chain without third-party validators. This method usually is of high costs, low speed, and is hard to expand to multiple chains and layers. Typical bridges are IBC of Cosmos, RainbowBridge of Near, etc.

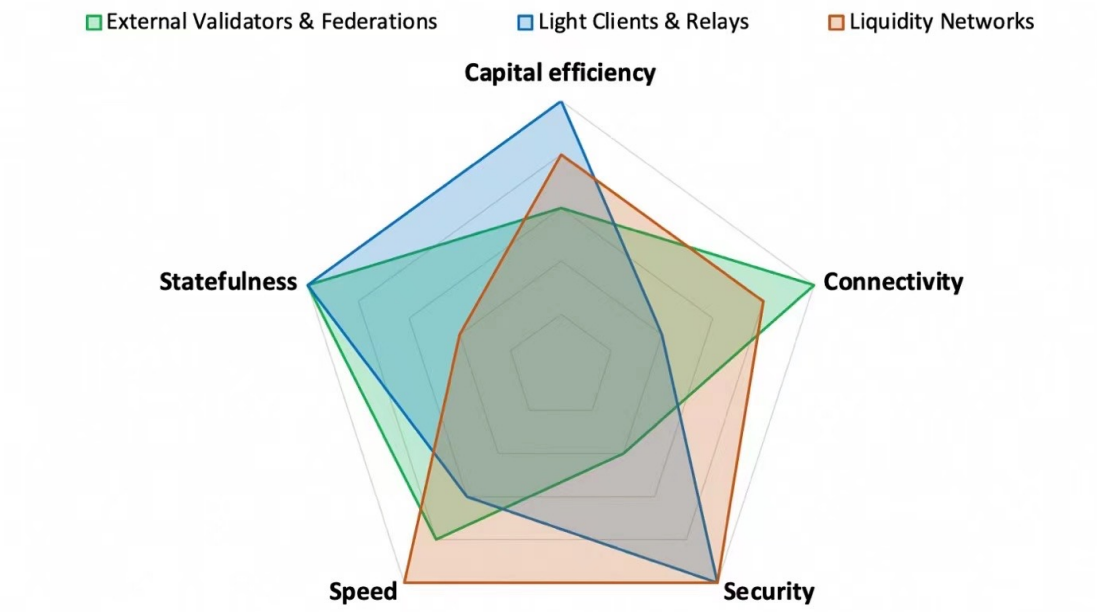
Liquidity Networks

Liquidity is provided for the assets of each chain through liquidity network. Meanwhile, assets are locked and cannot be easily taken away through locking and dispute resolution mechanisms. Typical bridges are Hop, Connext , etc. In this way, the security is well assured, but it is difficult to be generalized.

Centralized Exchange

In early stage, users swap and withdraw tokens among different chains within centralized exchanges to cross chain. However, there is no external supervision on centralized exchanges, the cross-chain assets provided by the exchange don’t have a strong security assurance due to insufficient transparency or compliance.

According to the research of 1kx's Co-founder, Dmitry Berenzon (https://medium.com/1kxnetwork/blockchain-bridges-5db6afac44f8), the comparison of external validators, native verification and liquid networks is as follows:



Each dimension is defined as follows:

- **Security:** Trust & liveness assumptions, tolerance for malicious actors, the safety of user funds, and reflexivity.
- **Speed:** Latency to complete a transaction, as well as finality guarantees. There is often a tradeoff between speed and security.
- **Connectivity:** Selections of destination chains for both users and developers, as well as different levels of difficulty for integrating an additional destination chain.
- **Capital efficiency:** Economics around capital required to secure the system and transaction costs to transfer assets.
- **Statefulness :** Ability to transfer specific assets, more complex state, and /or execute cross-chain contract calls.

None of the existing cross-chain bridges can securely connect all chains, nor is there a solution that can meet security, capital efficiency, and scalability at the same time.

As an infrastructure, security is the first priority of the cross-chain bridge, followed by supporting as many mainstream chains and tokens as possible. At present, the cross-chain between EVM-compatible chains is very mature, but there are still great challenges in the security of asset transfer from non-EVM compatible chains to EVM-compatible chains, and PoW to PoS.

The external validation mode can better access more chains, and is more suitable for the current fast development of public chains. WBTC (the bridge with largest cross-chain funds amount) and Multichain (the bridge with the largest number of cross-chain assets) both adopt a verification model of external validation. However, security incidents frequently occurs on Multichain (formerly Anyswap) which is the leading cross-chain bridge in the SMPC model with many contracts and exposed interfaces.

Project	Public Chain	Time	Amount involved	Reason
THORChain	Ethereum	2021-06-29	$140,000	THORChian ETH token fake deposit bug
Chainswap	Ethereum	2021-07-02	$800,000	Code bugs causing authorized address contract calls
Chainswap	BSC	2021-07-11	$4,000,000	Cross-chain quota code bugs lead to the token over-issuance of cooperative project.
Anyswap	Ethereum	2021-07-12	$7,870,000	Same R signature causing MPC private key leak
THORChain	Ethereum	2021-07-16	$7,600,000	THORChian ETH token fake deposit bug
THORChain	Ethereum	2021-07-23	$8,000,000	Refund bugs
Poly Network	ETH/BSC/Polygon	2021-08-10	$613 million (returned)	Cross-chain relay/Keeper address modified
pNetwork	BSc	2021-09-19	270 BTC	Code bugs causing fake peg-out to be executed
Synapse Protocol	Avalache	2021-11-07	$8,200,000	AMM partner Saddle metapool logic bug
Multichain _	Multichain	2022-01-18	455 ETH	Malicious token address is not well checked
Wormhole	Solana	2022-02-03	12,000 ETH	post_vaa function didn't verify the signature of the fake guardian
Meter.io	Moonriver	2022-02-06	$4,300,000	Code bugs cause the improper minting of Meter Tokens

In addition to the direct losses mentioned in the table, some users of project that is cooperating with the bridge whose assets have been liquidated and authorized addresses have also been stolen. Plus, some cooperative projects' tokens have also been sold, resulting in discontinued operations or project team running away. Most loss of cross-chain bridge funds comes from theft because of assets under the project's self-managed or non-custodial state. Another major reason is that the excessive minting of the target chain leads to insufficient mortgage assets in the source chain, causing a deficit in the project, and forcing users to suffer asset losses.

From the above incidents, it can be concluded that no matter what kind of attack method the cross-chain bridge is subject to, there are mainly two consequences: one is that the fund pool of the source chain is emptied; the other is that the assets of the target chain are over-issued, causing the assets of the source chain insufficient to be fully redeemed.

Security Solutions

MicroChains team has come up with a perfect cross-chain solution that ensures asset security without affecting the decentralized experience of users after analyzing past cross-chain bridge experiences and attacks on other projects.

WBTC applying the external single-node verification mode ranks No.1 in TVL among all cross-chain projects. More importantly, WBTC doesn't have any records of security incidents. The reason is that its source chain assets are in custody by BitGo, a professional licensed digital currency custodian in the United States. Most projects do not have the ability to safely store complex and diverse digital assets. History tells us the truth that it is far safer for a custodian to keep cross-chain assets than the project's self-managed fund pool (artificial risk) and contract lock-up fund pool (address attacked risk).

MicroChains has strategically cooperated with Huobi Trust that holds a Hong Kong TCSP license and Cobo Custody, and originally created the cross-chain bridge solution of POT+VOMEN (Proof of Trust + Verification of Multiple & Enhanced Nodes)

Reasons for choosing Huobi Trust:

- Huobi Trust is backed by the 8-year accumulation of blockchain technology of Huobi, and its experience in digital currency custody is much more sufficient than most projects in the industry.
- Huobi Trust officially launched its product in 2021, and the technical transformation is highly coordinated.
- Last but not least, Huobi Trust will soon be covered by insurance, and the security of funds will be better assured.

Reasons for choosing Cobo Custody:

- Cobo Custody, as an industry-leading custodian, owns numerous industry partners, solid technology and product strength. Huobi Trust officially launched its product in 2021, and the technical transformation is highly coordinated.
- Making asset custody diversified and reducing single-point risks by introducing Cobo Custody.

Multi-node Verification (VoMEN)

- Mint Verification: MicroChains verifies minting through internal multi-node risk control module, and performs strict posting verification of source-chain asset, thus ensuring the sufficient assets collateral.
- Custody of Lock-up Assets: Lock-up assets are kept by top third-party custodian service providers including Huobi Trust and Cobo Custody.
- Multiple Audits of Withdrawals: In addition to the multiple audits of the monitoring and warning mechanism, there are custodians that completed KYC acting as third-party enhanced validation nodes. For the extraction of any locked assets and minted assets, it can only be extracted after the verification of the sufficient asset collateral on the source chain by MicroChains team and custodians.

Enhanced Node Verification and POT (Proof of Trust)

MicroChains introduces top third-party trust service providers (Huobi Trust & Cobo Custody) to prevent assets stolen, over-issuance and asset abuse.

Prevention of Over-issuance

- Mint Verification: Mint assets can only be released to the user address after verification.
- Withdrawal Verification: Each withdrawal from locked account must be approved by validators before assets are officially released.

Prevention of Theft

- Third-party Node Verification: In addition to the multi-audits of the project's internal monitoring mechanism, all transfers and withdrawals of cross-chain delegated assets from Trust accounts must be verified by the third-party witness.
- Small-amount Withdrawal: Automatic verification through the system.
- Large-amount withdrawal: Both custodians (Huobi Trust & Cobo Custody) require internal multi-node manual review for large amount withdrawal.

Prevention of Asset Abuse

- Proof of Assets: Regularly publicize custody assets in Huobi Trust and Cobo Custody to show the adequacy of collateral assets.
- Audit Report: Regular audits for the escrow assets by well-known auditors after stable operation.

By the above security solutions, MicroChains will be able to access 30+ public chains every year and provide secure cross-chain services for more than 100+ crypto currencies. Meanwhile, the capital efficiency will exceed 99.9%. Besides, users will obtain positive benefits from minting in combination with the minting and mining campaigns, which would fuel the ecological development of the new public chain.

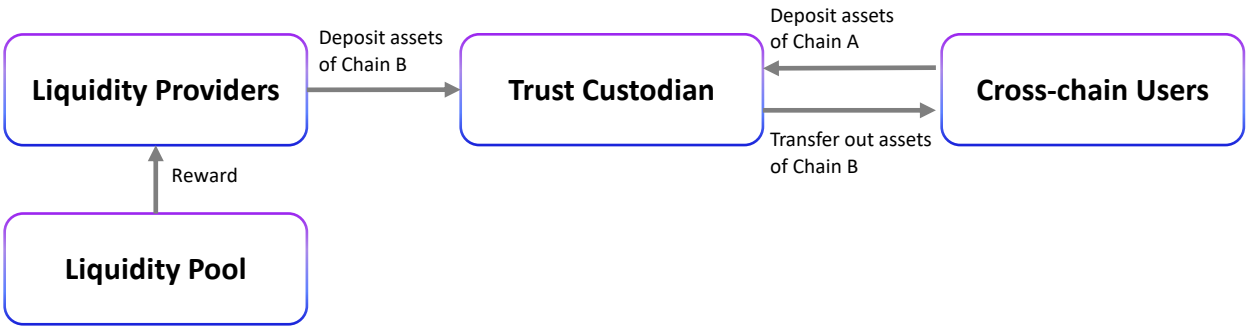
MicroChains will launch KYC validator program in Q4 2022 and make a transition from multi-signature to the expansion of validators by using MPC technology. KYC-passed validators are eligible to earn token rewards, and the incentive scheme will also be launched in Q4.

MicroChains Golden Loop Solutions

Cross-chain Solutions for Major Cryptocurrencies of Mainstream Public Chains

For current mainstream public chains, such as Ethereum, Polygon, Solana, Avalanche, BNB Chain, etc., we have adopted the method of liquidity pool. Two reasons behind this solution, one is that there is no usage scenario if we directly Wrap Asset to these mainstream chains, the other reason is wrapped assets are not powerful enough to compete with official coins like USDT, USDC and so on.

That is liquidity incentives. We incentivize users to provide liquidity on both ends of the mainstream public chains. For example, in the case of USDT, users who provide liquidity on both sides (Ethereum and Polygon) will be incentivized with MicroChains project tokens. Users with cross-chain needs can directly deposit USDT in Chain A and get the official USDT in Chain B for freely circulation after verification by our VoMEN Netwrok and Trust relay nodes, without using Wrap Asset.



For Emerging Chains and Tokens

MicroChains secures 1:1 cross-chain assets by locking assets of source chain in a compliant custodian, and then minting wrapped tokens in the target chain. At the same time, cross-chains between different chains are derived, which means assets can be burned in the source chain and new assets can then be minted in the target chain. This is how MicroChains realize the fast transfer of assets between emerging chains.

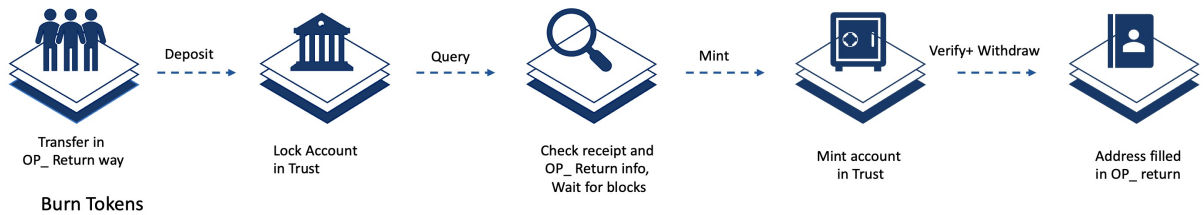
To sum up, there are following three situations:

- Lock+Mint : Deposit native assets and cross-chain into wrapped assets of any chain.
- Burn+Unlock : Deposit wrapped assets of any chain and cross-chain into native assets.
- Burn+Mint : Deposit wrapped assets of any chain and cross-chain into wrapped assets in another chain.

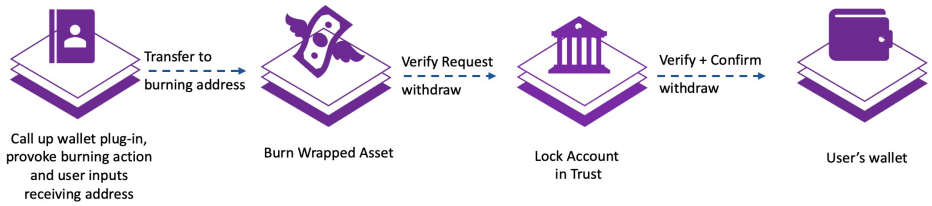
Users: Mint C-tokens with Underlying Assets

BTC-LTC-DOGE

Mint tokens

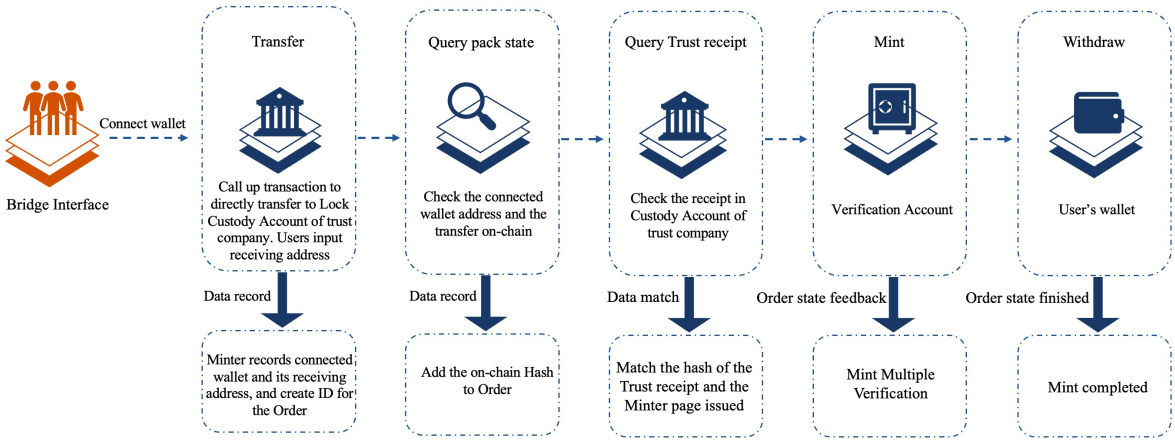


Burn Tokens

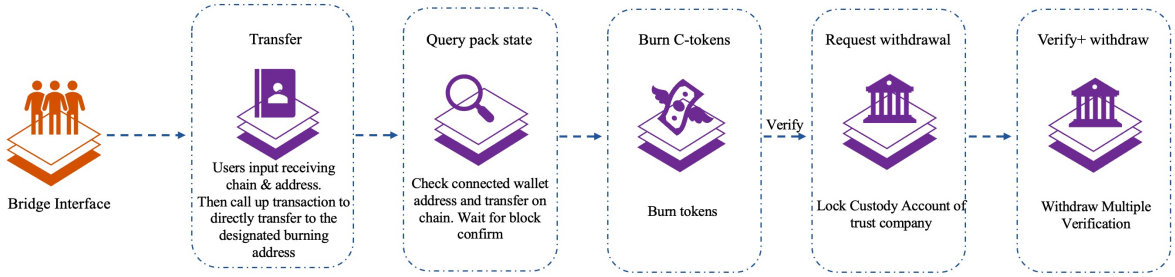


EVM and other account address mode chains

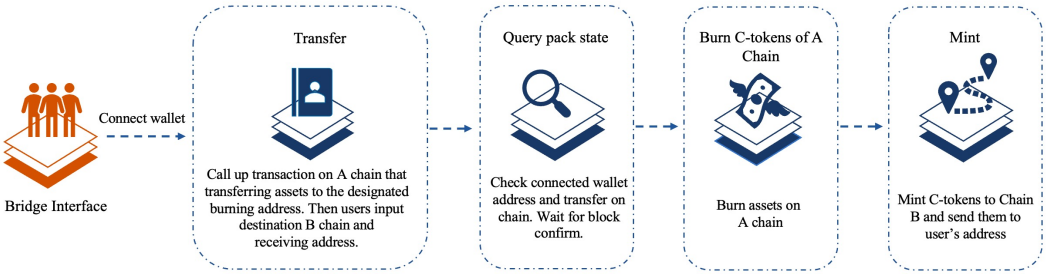
Mint tokens with ETH-assets &Trust-supported assets



Burning: Account address model



Mint C-tokens to other chains by using the minted C-tokens as the underlying assets



The cross-chain experience on MicroChains will be the same as the Web 3.0 experience. Users do not need to register a Huobi Trust account, but only need to Connect Wallet through the wallet plug-in of each chain on the MicroChains page to directly cross-chain assets. MicroChains will also open API interfaces to liquidity market makers, arbitrageurs, and DApp developers to expand the ecological influence of MicroChains while providing excellent cross-chain services .

The verification end can be developed into a node with strongly enhanced validation and credit in the future to realize the upgrade from multi-point verification to 100% decentralization.

Comparison

Through research, below is the competitive product comparison:

Elements	cBridge	Multichain	MicroChains
Verification Methods	Liquidity Network(AMM)	External validator & Multi-nodes verification	Multi-parts&Multi-nodes verification
Asset Custody	Project self-managed	Project self-managed	Custodian
Security	High	Low	Extremely High
Capital Efficiency	Low	Middle	High
Speed to Support Chains	Average	Fast	Faster
Cross-chain Mining	Not provided	Not provided	Provided
Ratio of small-cap Currencies	Few	95%+	To cover Top 200 marketcap crypto currencies
Number of Non-EVM chains Supported	Few	Few	Many

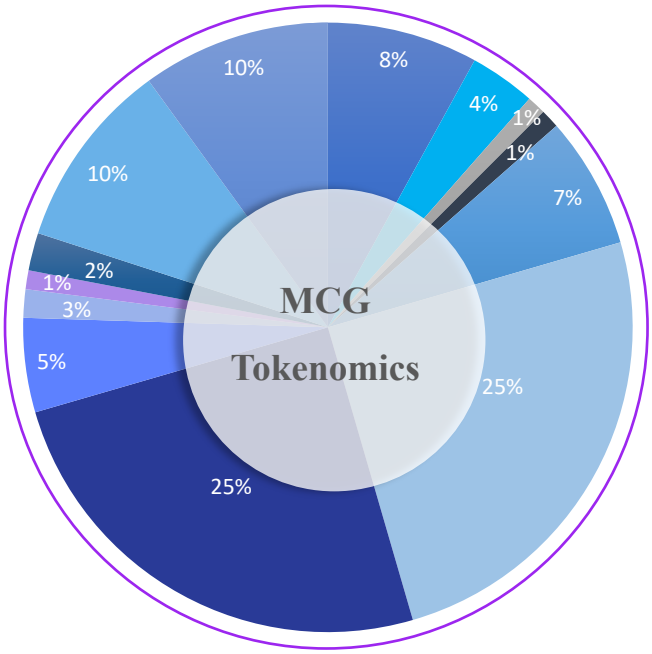
As shown in the table above, cBridge with high security cannot support non-EVM compatible chains due to its own design. However, Multichain which can support non-EVM compatible chains has frequent security incidents. There are also many cross-chain bridge projects that do not have the ability to store funds safely. Even if certain security approaches are used, such as private key fragmentation, these cross-chain projects were still attacked.

It can be said that the improvement of asset security and cross-chain incentives both leave much space for us to optimize in the cross-chain field. In the multi-chain era, there is and will be a complete cross-chain solution that can ensure assets safe & sound, support more non-EVM compatible chains and also provide cross-chain incentives, ultimately forming a token economy closed-loop product.

Tokenomics

Base on the current performance of hot tokens during the DeFi Summer time, pure governance tokens are hard to be recognized by the market. The MicroChains team deeply understand the importance of token issuance to a successful project, therefore the following token economic scenarios are designed:

- Seed Round （8%）
- Validators Incentive （3.5%）
- Public/LBP/IEO （1%）
- DEX Liquidity （1%）
- Marketing （7%）
- Cross-chain Mining （25%）
- Liquidity Mining （25%）
- Staking Incentive （5%）
- LP Reward （1.5%）
- AirDrop （1%）
- Liquidity Management （2%）
- Treasure （10%）
- Team & Advisors （10%）



Token Allocation

Investors: Seed round. 8% for early-stage team building, R&D, auditing, office and future operations and other expenses. It's unlocked over 18 months. 9.9% unlocked in the first month and the rest will vest equally every month in next 17 months;

Validator Incentives: 3.5%. 4-month cliff starting from 1st month, vesting 12% in the 5th month, then followed by a 11-month equal monthly vesting.

Public: 1%. 50%TGE, 50% 2nd month.

Liquidity: 1% for adding liquidity in DEX after token issuance. Fully liquid after the launch of cross-chain incentive (TBD).

Marketing: 7 % for marketing and publicity. It will be unlocked in 12 months, 28% unlocked in the first month, 8% unlocked per month in the next 7 months, and the rest unlocked over the last 4 months, 4% in each month.

Cross-chain Mining: 25 %. It is unlocked linearly over 25 months, 16% in the first month; halved in the 2nd to 4th months, 8% in each month; second halving in the 5th to 13th months, 4% in each month; and third halving in the 14th to 25th months, 2% in each month. The incentive may not be used up every month, and it may accumulate. It depends on if there is an incentive scenario. The actual usage situation will be regularly public in community.

Liquidity Mining: 25%. It is linearly unlocked over 25 months, and 4 % unlocked every month. The incentive may not be used up every month, and it may accumulate. It depends on if there is an incentive scenario. The actual usage situation will be regularly public in community.

Staking: 5%. Encouraging users to stake MCG and get incentives. The unlock plan is the same as Cross-chain Mining.

LP Rewards: 1.5%. Incentives for LPs of DEX. The unlock plan is the same as Cross-chain Mining.

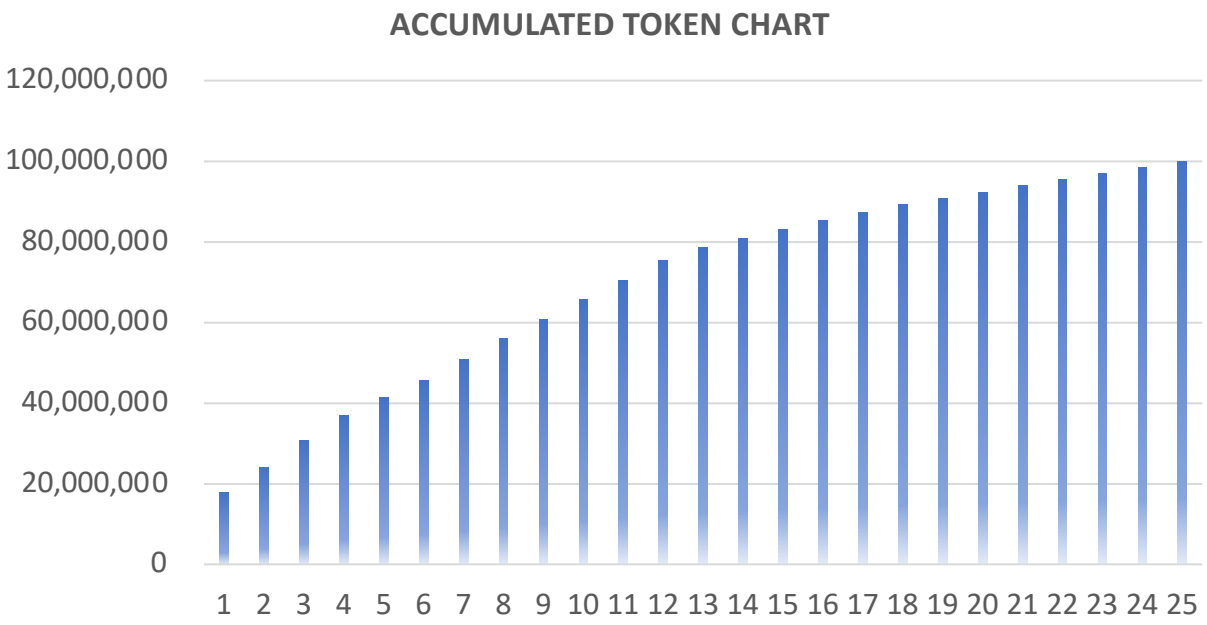
Airdrop: 1%. Airdrops for early adopters “Microers”. Fully liquid first month (TBD). Rules to be determined later.

Liquidity Management: 2%. Liquidity management on centralized exchanges. Fully liquid 1st month.

Treasure: 10% reservation for future ecological construction and project development needs. It is unlocked 12% in the first month and the rest is equally vested over 11 months.

Team & Advisors: 10%. 6-month cliff starting from 1st month, vesting 8% 7th month, followed by 19-month equal monthly vesting.

(The above token allocation is for reference only and may change in the future.)



Token Utilities

- Project launch.
- Early adopters incentives.
- Liquidity Incentive , providers (for both token cross-chain and Cross-chain lending) and encourage users to staking liquidity for cross-chain usage needs.
- Cross-chain Incentive, including Token Cross-chain, Cross-chain Swap, NFT Cross-chain, and Usage Scenario.
- Protocol governance, including modification of parameters, public chain support, token support, disposal of treasury funds and fee allocation.
- Revenue and fee Staking rebate (50%), team (30%), and treasury reserve (20%). Will be started in Q4 2022.
- Verifier incentives for KYC validators engaging in multi-node minting & burning verification.

Roadmap

2021 Q4

- Concept Creation
- Team Building
- Foundation Establishment
- CBTC Bridge Project Launch
- Project Financing
- Reached a Strategic Partnership with Huobi Trust
- Launched CBTC Bridge Official Website
- Cooperation with the University of Queensland

2022 Q1

- Seed Round Funding Completed;
- CBTC Bridge Went Online and Project Operation Began
- Completed Audit at Certik
- Initiated Brand Upgrade
- Reached an In-depth Cooperation with Cardano Ecological Projects including the Leading Order Book DEX & Swap
- Cooperated with Milkomeda, the Largest Cardano EVM Sidechain.
- Brand Upgrade Announcement

2022 Q2

- MircoChains Product Officially Launch
- Support Cardano and 2 EVM Compatible chains
- Recruit Seed Users and Community Volunteers
- Support 4 EVM Compatible Chains, 2 Emerging non-EVM Compatible Chains, and 10+ Mainstream Asset Currencies
- Introduce 2 Top Ecological Partners
- TGE, Start Airdrops, Trading Mining, and Single Currency Pledge
- Token Listing

2022 Q3

- Support 15 Main Chains including Various Emerging Public Chains
- Support 30+ Crypto Currencies
- Start the study of Cross-chain Swap

2022 Q4

- Support 20 Main Chains including Various Emerging Public Chains
- Support 50+ Crypto Currencies
- KYC Validator Program Launch, realizing decentralized verification
- Cross-chain Swap V1 launch, supporting swap between different currencies

2023

- Become the leading Cross-chain Application in Market Share
- Support all Mainstream Public Chains & A Majority of Emerging Public Chains
- Launch Cross-chain NFT Market Platform
- Cross-chain Swap Optimization
- Explore MCG Token Usage Scenarios
- Launch Cross-chain Oracle Server V1
- Launch NFT Cross-chain Bridge
- Launch Cross-chain Lending Product

Risk Statement

MCG Coin does not have the legal nature of securities or stocks. Therefore, MCG Coin does not grant any rights to dividends and profits. When the sale of MCG Coin is completed, no refund is possible. Since MCG Coin does not have the nature of shares, holding MCG Coin does not guarantee the right to attend Choice Foundation meeting. MCG Coin does not guarantee any specific rights or values outside the blockchain platform. Therefore, it is not possible to use MCG Coin for speculation or investment purposes. This white paper is not legally binding and does not constitute any contractual relationship.

Efforts are made to provide accurate information on the contents of this white paper, but the information posted is subject to change and no responsibility shall be taken for its accuracy and completeness. The investor shall make its own project investment decisions by conducting a thorough investigation into relevant information and regulations and shall be aware of the relevant laws of the jurisdiction.

MCG Coin acquisition and storage may include a variety of risks. The risks include Choice Foundation launching blockchain, failing to improve its technology or failing to provide the services mentioned above. Therefore, before acquiring MCG Coin, all users and investors should carefully consider the risks, prices, and benefits of acquiring MCG Coin. If necessary, the foundation asks investors to seek input from experts in this regard. It is recommended that buyers who do not understand or cannot accept these risks and the separate risks specified in the terms and conditions shall not purchase MCG Coin.

The white paper prepared by MicroChains Ltd is only intended to convey information regarding the proposed coin launch to potential buyers of MCG Coin (or token). The information in the white paper may not be complete and does not imply any element of the contractual relationship. The whole purpose of this white paper is to provide reasonable information to potential holders. Nothing in this white paper is in the form of proposals or investment concessions, nor does it include any form of solicitation or offer to buy securities within particular jurisdictions.

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