# OVERVIEW

Logarithmic Finance strives to become the next-generation Decentralized Finance and swapping protocol that would allow seamless connectivity and interaction between early-stage blockchain innovators and investors. The intuitive interface and web 3.0 as the underlying technology infrastructure would unwind the true potential of Decentralized Finance and empower the innovators to raise the funds and launch the product that would attract fast and easy attention from the top-notch investors on the platform.

The investors on the other side would be able to leverage the platform to cherry-pick the promising and propitious projects and capture the opportunities to yield impressive returns on investments. .

We at Logarithmic Finance have embarked on the journey to further strengthen and completely decentralize the liquidity auctions and fundraising by facilitating the cross-chain movement of tokens between heterogeneous blockchain networks and establishing interoperability.

While there are many token swapping protocols in existence, they do not have provisions or arrangements for the projects in the pre-listing phase and have limitations as far as the cross-chain movement of tokens is concerned.

*"However, within a secure, non-custodial, and cross-chain environment of the* **Logarithmic Finance** *protocol, the opportunities to raise funds on any blockchain network of the choice shall be provided to the innovators."*

Apart from Ethereum, the Logarithmic Finance platform plans to integrate with some of the biggest and most notable blockchains networks including but not limited to Binance Smart Chain, Polygon, Avalanche, Tezos, and Solana.

# OPPORTUNITY

An incredible market potential with its total value locked exceeding **$100 billion** at its peak in 2021, DeFi represents a fantastic opportunity for exponential growth in the coming years. With DeFi, new possibilities with real-life use cases have appeared, offering investment opportunities in a professional framework hedging against risk or unpredictable exchange swings and creating returns not solely based on pure speculation.
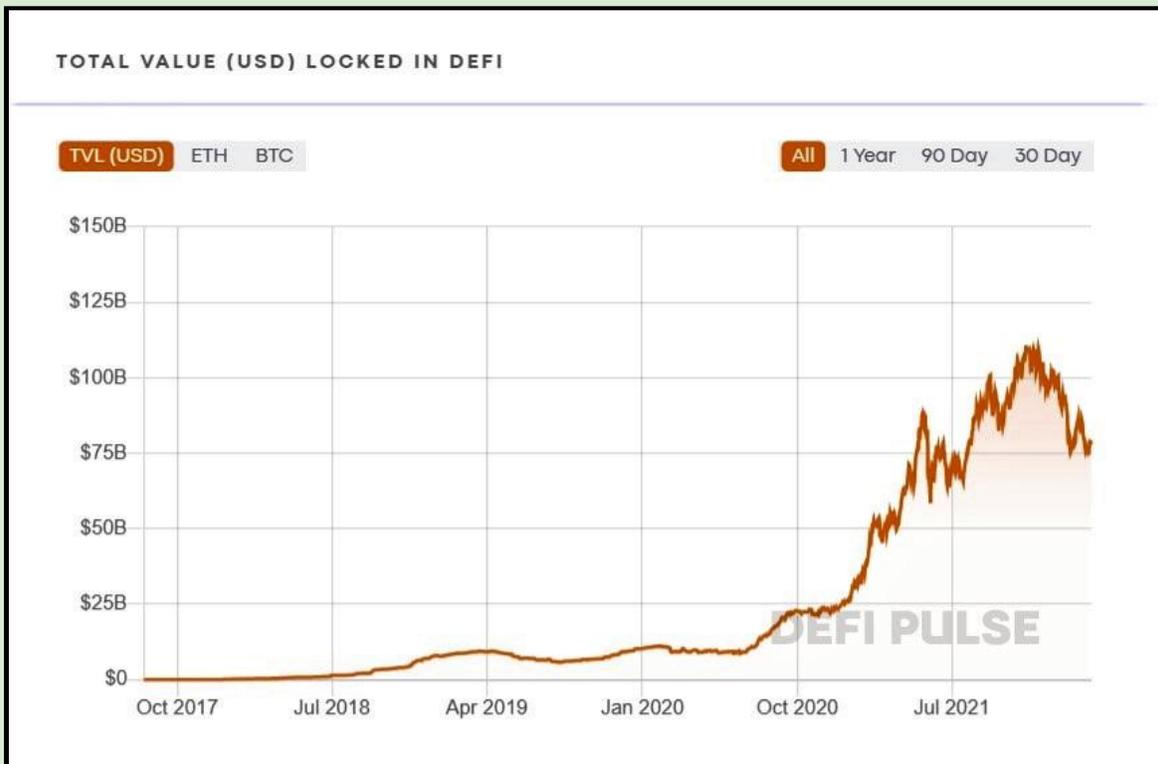


*Source: DeFi Pulse*

Contrary to the traditional financial ecosystem which is completely opaque, subject to market volatility, and operates on the top of a fractional reserve system, the DeFi innovation is completely transparent where the apps developed within this ecosystem appends to the following two rules:

✅ **Interoperable and Programmable**

✅ **Open and accessible to all**

DeFi protocols therefore introduce new decentralized tools and products such as Automated Market Makers, Liquid Staking, Protocol Tokens & Stablecoins, Vaults, Oracles, Launchpad, and much more.

However, despite this superlative and vast growth, the adoption of DeFi space is experiencing little turbulence. Maximum projects and decentralized applications have been built utilizing the Ethereum blockchain but its market capture in DeFi is slowly fading away. The reasons can be traced back to increasing transaction costs and scalability concerns that leave many projects seeking alternatives.

In this context, there is a rising demand for an ecosystem that would allow the project innovators to easily and securely execute pre-listing liquidity auctions over a blockchain network of their choice. For this purpose, our ecosystem will offer decentralized, integrated, cross-chain functionalities to the early-stage project innovators so that they can select from the different chains that best fulfill the financial requirements of the idea.

## *"This Builds a Long-Term Business Opportunity for Logarithmic Finance as a Layer-3 Swapping Protocol."*

Over and beyond, we understand and have carefully investigated two roadblocks preventing other swapping protocols in DeFi to go mainstream:

✅ **Lack of User-Friendly Interface**

✅ **Poorly-Written Smart Contracts**

The above two concerns do not render a protocol completely user friendly or secure. For this purpose, the engineering and UI/UX team at Logarithmic Finance aims to mitigate these issues by constructing a lightweight user interface, designing a compelling UX, and adding advanced functionalities for both innovators and liquidity providers. Furthermore, the technical team will be utilizing powerful testing frameworks throughout the development and quality assurance journey of Logarithmic Finance.

# ECOSYSTEM

With the popularity of DeFi protocols, the Decentralized exchanges have captured a lot of attention, but if compared to the centralized exchanges, the options are still limited in terms of the features. For example, only a handful of decentralized exchanges or protocols offer an ecosystem to help startups raise funds via Initial Decentralized Exchange (DO) offering.

While there are other popular models to raise funds in the decentralized world like ICO (Initial Coin Offering) and IEO (Initial Exchange Offering), they have been criticized for the following drawbacks:

✅ **Lack of funds security**

✅ **High listing costs**

✅ **Low-budget innovators**

These aforesaid problems have been making it difficult for the innovators to raise the capital and accumulate resources to seamlessly scale the business

This is where Logarithmic Finance fills the gap and stages the idea of the liquidity pool to the next level by providing liquidity pooling options to the **Project Innovators** that are in the need of funds and looking for initial market entry across open blockchain networks. With this understanding, let's have a look at the **Pool Types** and **Pool Status** we will have in our ecosystem.

## Pool Types

### Direct Access Pools (DAP)

Direct Access Pools shall not have any kind of vesting period. The investors will be able to access the tokens immediately after the fulfillment of the swap.

### Time Freeze Pools (TFP)

Time-freeze pools shall have a vesting period. The investors will not be able to claim the swapped tokens before the completion of lock-in duration. The smart contracts in the Logarithmic Finance will make it possible for the pool creators to configure custom lock-in periods where the swapped tokens will be released incrementally once the vesting is completed.

# Pool Status

At any given time, the pools in the ecosystem shall have one of the following statuses:

## Available

If a pool has an **Available** status, it will be made available but only for the users holding $LOG tokens.

## Open

If a pool has an **Open** status, it will be made available for all the users in the Logarithmic Finance ecosystem.

## Unbuyable

If a pool has an **Unbuyable** status, it would mean that the pre-defined supply of tokens offered for sale has been sold out, however, the duration of the pool has not been completed yet. If the pool type is Time Freeze Pools (TFP), then the tokens will stay locked for the remaining vesting period.

## Completed

If a pool has a **Completed** status, then it would mean that it has fulfilled its duration. For Direct Access Pools (DAP) and Time Freeze Pools (TFP), the unsold tokens shall be returned to the wallet of **Project Innovator**. On the other side, the **Investor** shall get the tokens swapped through Time Freeze Pools (TFP).

## Dissolved

If a pool has **Dissolved** status, then it would mean that it has been completed and the tokens have been distributed.

*"Based on the **Pool Type** and **Pool Status**, the Smart Contract in the Logarithmic Finance will Move the Auctioning and Liquidity Tokens to the Wallet of Recipients."*

# User Categories

The platform will observe the participation of two user categories in the ecosystem viz. **Project Innovators** and **Investors**. Before we proceed ahead and discuss what Logarithmic Finance has got for these two, please note the following information, that applies to both the user groups on the platform.

| Particular | Information |
| --- | --- |
| Supported Blockchains | Ethereum. In the future, we will observe multi-chain support for Binance Smart Chain, Polygon, Avalanche, Tezos, and Solana. |
| Supported Tokens | ERC20. In the future, we will observe the integration of the ERC721 standard for NFTs and multi-chain token standards. |
| Supported Wallets | MetaMask. In the future, we will observe the integration of Coinbase Wallet, Fortmatic, WalletConnect, and Portis. |

## Logarithmic Finance for Project Innovators

The Project Innovators will be able to use the Logarithmic Finance for creating the pool, specifying the auction parameters, and registering the pool on the blockchain of the choice in the following sequence:

### STAGE I: Developing Pool

The **Project Innovator** will be able to bring the liquidity for the project before it gets listed on a DEX. For now, the innovators can create the pools for ERC-20 tokens, but in the future, our ecosystem shall recognize multi-chain token standards. The innovator can start creating the pool by adding the basic details for the tokens (*total auctioned supply, accepted crypto for payments, etc.*) and defining the auction parameters, swapping ratio, and percentage discount for $LOG holders.

Once done, then the innovator will have to select the type of pool i.e. **Direct Access Pools** (DAP) or **Time Freeze Pools** (TFP), and specify the duration for the selected pool.

## STAGE II: Transactions

The Project Innovator will proceed to register the pool on a particular blockchain network. The innovator can select the blockchain network that best fulfills the requirements of the project and then connect a wallet from the provided options to initiate the following transactions:

✅ Transfer of the auctioning tokens supply specified while **Developing Pool** to an HTLC i.e. Hashed Timelock Contract for escrowing the tokens for the total duration of the pool to safeguard the funds.

✅ The Gas Fees to anchor the pool while updating the data on the selected blockchain network. We have designed our smart contracts in an advanced environment that allows the innovators to pay 80% reduced gas fees as compared to existing standards.

## STAGE III: Payment of Fees

For the development and maintenance of Logarithmic Finance, the project innovators will have to pay two categories of fees:

✅ **0.10%** of the total liquidity raised from the share of auctioning tokens that have been reserved for $LOG holders

✅ **0.15%** of the total liquidity raised from the share of auctioning tokens reserved for the others.


# Logarithmic Finance for Investors

The investors and liquidity providers will be able to use the Logarithmic Finance for making investments in the promising and propitious projects in the following sequence:

## STAGE I: Selecting Blockchain Network

The investor will have to select the blockchain network of the choice and connect the wallet. For now, we support MetaMask but in the future, we will observe integrations with other wallets.

## STAGE II: Selecting Pool

After selecting the blockchain network, the investor or liquidity provider will be redirected to another page to select from the diverse list of pools running on Logarithmic Finance while also viewing their Pool Status information.

## STAGE III: Participating in Selected Pool

After navigating the way through listed pools, the investors can select a particular pool and enter the amount of base or auctioning tokens that they want to purchase. The tokens will be released based on the Pool Type.

# TECHNOLOGY

With the contribution of ideas from our community, the team Logarithmic Finance will keep developing advanced functionality for both Project Innovators and Liquidity Providers so that they can immerse themselves with the true wonders of DeFi innovations in a safe, scalable, and cost-effective ecosystem. In this section, we have illustrated the technical highlights of the Logarithmic Finance platform.

## Fully Homomorphic Encryption (FHE)

We aim to provide robust and powerful security to the swapping mechanism available for the end-users via fully homomorphic encryption that eradicates the need for decrypting the data packets while the computing process plays behind the scenes. The potential of a fully homomorphic encryption scheme can be understood from the fact that it makes the arbitrary computation of encrypted data possible.

## On-Chain Data

Apart from implementing Waterfall project management, best DevOps practices, and fully homomorphic encryption, we at Logarithmic Finance also collect feedback from the on-chain data time-to-time. This is important for us as it helps the engineering and UI/UX designing team to make the necessary changes in the interface and other functionalities to render a seamless experience to the users on the platform.

## Cross-Chain and Multi-Chain Integrations

We want to evolve Logarithmic Finance as a fully-decentralized layer-3 swapping protocol and for this purpose, it is important for us to incorporate interoperability between heterogeneous blockchains and inter-chain communications. Since it is a complex execution, we will be observing these integrations in a multi-phase rollout followed by the replacement of the pseudo-centralized bridge with a completely-decentralized consensus mechanism.

The cross-chain integrations will foster multiple use cases to expand the scope of both innovators and investors on the platform. For example, the innovators will be able to auction their tokens on Ethereum to the NEO network for leveraging the low-cost transaction fees and scalability. Furthermore, the cross-chain integration will enable P2P transactions across different blockchains as well.

# Gas Fee Reduction

The highly-experienced development team at Logarithmic Finance has designed a robust code architecture for the platform by following a minimalistic approach involving the clean and modular code structure. Additionally, the platform also ensures the anchoring of only crucial data on the blockchain enabling optimization of deployed resources.

All these practices clubbed together have helped us to build balanced and reduced gas fees for all the transactions happening on the Logarithmic Finance.

Designing an architecture promoting reduced gas fee is important for us to ensure the fulfillment of the following goals:

✅ Efficient and adept scaling of the protocol

✅ Cost-effective experience for innovators and investors

# NFT Swap

We will introduce NFT auction functionality exclusively for the $LOG token holders on our platform. The project innovators will be able to accept the payments for their Non-Fungible Tokens in exchange for different cryptocurrencies or stablecoins. After the completion of the cross-chain integration roll-out, we will introduce more stablecoins and networks to further encourage NFT Swaps.

# TOKENOMICS

$LOG is the governance and utility ERC-20 token of the Logarithmic Finance and will be used for a wide range of use cases including but not limited to incentivizing our community, governance, development of the ecosystem, and much more. .

## Governance Rights

$LOG holders together will create a self-governance community and acquire governance voting rights by staking their $LOG holdings to the designated wallets. The community will be able to create and vote on the proposals for determining the new features of Logarithmic Finance. It is to be noted that the governance rights can be exercised only within the ecosystem of Logarithmic Finance and shall not extend to the internal operational and management affairs of the company.

The Governance Model is a self-sustaining virtual body that is defined by *"smart contracts that comprise the assets and it encodes the regulations of an entire organization"*. All financial rules, decisions, & transactions are enacted & stored on the blockchain to create a transparent & verifiable record. Initially, rules are outlined in smart contracts, and members interact under these goals & regulations of the organization.

## Staking Rewards

Staking will allow the users to stake an amount of $LOG tokens and earn rewards or passive income based on the amount of $LOG staked and APR of normal staking. Different lock periods shall provide different reward rates and users won't be able to unstake before the lock-in period ends. However, users will become eligible to claim the rewards linearly.

As an access token, $LOG would entitle users to certain exclusive privileges within the protocol. Depending upon the quantity of tokens staked, users would be classified into different tiers and granted a different set of privileges to utilize the protocol.

# Token Reserves

We will reserve a percentage of $LOG tokens and allocate them for the fulfillment of the following responsibilities:

✅ Future Initiatives

✅ Community Support

✅ Marketing

✅ Exchanges Fees

✅ Long-Term Liquidity.

# Token Burning

With the introduction of the burning mechanism, we have added a new element that will steadily decrease the circulating supply of $LOG. Burning refers to the act of permanently removing tokens from circulation to promote the value of the project's token. Through this process, $LOG will have a deflationary mechanism, increasing value in the long run and bringing profits to holders.

The first burning mechanism is at the protocol level. It will automatically burn a certain amount of staking rewards across the network. If for example a 5% burn rate is agreed upon, then 5% of all staking rewards will be removed permanently from circulation (i.e. not forwarded to stakers). The burning rate will be voted on regularly by $LOG holders, and thus adapt to the needs of the network, as well as the stakers.

# Premium Access

Logarithmic Finance values building a vibrant and strong community, and for this purpose, a new membership program shall be initiated to provide loyal community members holding $LOG tokens with additional perks and privileges apart from the existing $LOG incentives.

# Smart Contract Audit

We will get our smart contracts reviewed and audited from well-established security advising consultancy to ensure the safety of the funds received. The audit report shall be released and made public once concluded.

# LogDAO

Logarithmic Finance has been designed and built to emerge as a DAO protocol on top of Ethereum. As such, it will be at the discretion of the $LOG community members to drive the platform and operations in the forward direction. Although it is the internal team that would instigate the initial operations and product development, the governance will eventually move in the hands of the entire community collectively for a socially-conscious structure.

We believe that with the establishment of LogDAO, our mission to make Logarithmic Finance a fully decentralized protocol will be stimulated. A transparent and decentralized protocol governed and managed by the $LOG holders will allow the community to propose, vote, and execute the changes favoring the overall development of Logarithmic Finance. Some of the features on which the community is expected to vote and make changes or additions for the better are:

☑️ Fees Percentage

☑️ Blockchain Networks

☑️ Supported Wallets

☑️ Supported Token Standards

☑️ Any other Parameter

*"After the governance launch, there will be no individual or entity or any other active promoter or group that would manage, develop and maintain the ecosystem of Logarithmic Finance. Only the community will be the driver."*