

Litra Finance - Creating Sufficient NFT Liquidity With Advanced Bonding Curves and Vote-escrow Model

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Abstract

Litra Finance turns a non-fungible token (NFT) into a corresponding ERC-20 token, a wrapped NFT (wNFT with 18 decimals), to enhance trading precision and create liquidity pools. At the smart contract level, NFTs in a collection are wrapped into corresponding identical wNFTs to facilitate sufficient liquidity in each collection and liquidity pool. Litra also uses concentrated liquidity, customised bonding curves, and dynamic fees to offer low slippage for traders and significantly reduce the risk of impermanent loss and management costs for liquidity providers. Moreover, Litra has introduced the vote-escrow model to encourage NFT issuers, individual or institutional NFT liquidity providers, and other NFT stakeholders to establish sufficient liquidity, which will establish a robust and equitable pricing mechanism for the current NFT market and the future development of NFT derivatives.

1. Introduction

As an indispensable part of the crypto market, the NFT market has experienced a long-term downward trend in the past several months. The market capitalisation of the top-five PFP NFTs is about \$2.4 billion in total. However, the daily trading volume in the mainstream NFT marketplaces is less than \$10 million for these PFP NFTs, which means the daily turnover ratio is around 0.4%. In this case, we can expect a similar situation with other NFTs, including financial products, collectibles, digital media, etc. Although there is no rule of thumb for what the right daily turnover ratio should be for NFT collections, a low daily turnover ratio means a small number of trading activities and represents insufficient liquidity.

This insufficient NFT liquidity, which is mainly caused by the high threshold of trading, non-flexibility, low utilisation of funds, and inefficient pricing mechanism, encouraged excessive volatility, high levels of uncertainty, and exaggerated price movements in the NFT market. Meanwhile, the mainstream NFT marketplaces, with their non-transparent trading model, artificial liquidity, and privileges, brought irrational exuberance or panic to the market. The commonly used order-book trading system further reduces NFT liquidity and worsens pricing. Therefore, NFT AMMs have the potential to break through the current monopoly of the order-book trading system. Although there were some innovations, like Sudoswap, aiming to create an AMM-friendly ecosystem for NFTs, none of them were able to avoid relatively high slippage, and few of them could establish sufficient NFT liquidity with or without incentives.

As a result, borrowing against NFTs from NFT lendings becomes one of the most efficient and popular ways to cash out without selling them. But the risk of liquidation and bad debts becomes the sword of Damocles for both lenders and borrowers. Apart from that, financialising NFTs with fractionalisation tools is another popular way to cash out, which can improve NFT liquidity by turning one or a group of NFTs into fractions to make them more tradable, priceable, and risk-diversified. However, in the past, we could barely see NFTs in the fractionalisation market. The main reason would be the lack of motivation for the holders to fractionalise their NFTs, thereby providing liquidity, and for the buyers to buy.

2. Design of Litra Finance

According to the above review, forming liquidity pools with fractionalised NFTs and sustainable governance could be a comprehensive way to improve NFT liquidity and pricing. In this case, Litra Finance is developed to create sufficient NFT liquidity using advanced bonding curves and the vote-escrow model to provide NFT Liquidity as a Service (LaaS) and improve the pricing mechanism. Basically, Litra wraps an NFT into a fungible token named wNFT (ERC-20) to improve trading precision and form AMM liquidity pools. By using AMM with auto-concentrated liquidity and customised bonding curves, Litra provides traders with low slippage and reduces impermanent loss and administrative costs for liquidity providers. Besides, Litra Finance adopts the vote-escrow model to incentivise liquidity providers to form sufficient liquidity on Litra by offering sustainable governance and incentives to Litra DAO members and liquidity providers. As a result, the vote-escrow model aligns the long-term interests and directs the NFT liquidity provisions, in which not only is the cost of maintaining liquidity for NFT issuers reduced, but also the whole community can benefit from improved NFT pricing. A more transparent and robust NFT market ecosystem can be expected.

3. NFT Liquidity as a Service (LaaS)

Litra Finance serves as a wholesale and transit market for NFT liquidity, providing such an NFT LaaS in a decentralised, permissionless, scalable, and cost-effective way. Basically, the NFT LaaS on Litra Finance includes the aggregation, allocation, and administration of NFT liquidity, which are vital for NFT issuers. Litra helps NFT issuers establish NFT liquidity, which consists of wNFTs and their trading pairs, on established and secure DEXes so that wNFTs or NFTs are accessible to various mainstream crypto assets.

3.1. Aggregation, allocation, and administration of NFT liquidity

3.1.1. Comprehensive aggregation

Litra supports all kinds of NFTs in various token standards and can wrap all these NFTs into corresponding wNFTs. NFTs in one collection can be locked and wrapped into the same corresponding wNFTs. Conversely, users can redeem wNFTs for original NFTs from the Vaults at any time. The wNFTs can be paired with ETH, stablecoins, or other cryptocurrencies to establish liquidity pools. Litra has extended the capabilities of a liquidity pool to include NFTs, allowing the same process to be implemented on these assets. This integration enables NFTs to benefit from the same functionality and features in DeFi, providing NFT issuers with enhanced flexibility and efficiency to establish initial NFT liquidity. Users can trade wNFTs against the pools, which also turns NFTs into interest-bearing assets and attracts more liquidity continuously.

3.1.2. Flexible allocation

Sustained supplementation and commitment from such NFT liquidity providers are essential to ensuring that there is always sufficient liquidity to meet market demand. So, after liquidity is aggregated on Litra, NFT issuers can acquire NFT liquidity by participating in the Litra DAO governance and voting their NFT liquidity pools in the

Gauge. On Litra, the inflation is going to users who provide liquidity, which is measured with gauges. The Gauge measures how many dollars a user has provided in an NFT pool. Each NFT pool has its own liquidity gauge where users can stake liquidity provider tokens. Each liquidity gauge has a weight to represent how much of the inflation will be received. The Gauge systems allow the Litra DAO to direct the inflation, hence the NFT liquidity.

3.1.3. Convenient administration

For liquidity administration, NFT issuers have the option to easily organise their NFT liquidity through the Gauge system. Otherwise, they can manage bribery through bribery platforms. The Gauge system dashboard and external bribery platforms offer NFT issuers a wealth of liquidity aggregation and allocation information. This information enables NFT issuers to effectively plan their budget and acquisition behaviour and participate strategically in the market by making informed comparisons and decisions. In summary, these flexible approaches allow NFT issuers to acquire liquidity through a variety of methods that can be tailored to meet their specific needs and circumstances.

	Marketplaces	AMMs	Aggregators	Litra
Permissionless	No	Yes	Maybe	Yes
Transparency	No	Yes	No	Yes
Governance	No	Partial	Partial	Yes
Incentives	No	No	No	Yes
Admin fee	Partial	Yes	No	Yes
Composability	No	Partial	Partial	Yes
Security	No	No	No	Yes

Comparison of mainstream NFT liquidity solutions for NFT issuers

Litra offers a solution with a range of options for NFT issuers to establish NFT liquidity that best fits their specific needs and goals. The difficulty of establishing NFT liquidity can be reduced to the same level as that of fungible tokens.

3.2. Pricing mechanism and pricing power

With the introduction of the standardised asset wNFTs, it is now possible to establish NFT liquidity pools, which create effective bidding to improve the pricing mechanism and help Litra obtain pricing power. The NFT liquidity pools are suggested to be established at a floor price or market price. As a result, all the NFTs in one collection are treated the same, regardless of their rarity. Creating a single and unified NFT liquidity pool for each collection can effectively establish sufficient NFT liquidity. Therefore, using the floor price to create a liquidity pool for a specific NFT collection is a recommended practice, according to the research results. This approach has been

widely adopted on the market and has demonstrated its effectiveness in enhancing liquidity.

In addition, with concentrated liquidity, customised bonding curves, and dynamic fees, Litra achieves higher liquidity utilisation and a lower trading cost. Users can adjust the parameters of the liquidity pool to fit the specific trading patterns of the specific assets, thereby optimising the pool's performance. This design is to ensure liquidity depth by minimising slippage around the market price through customised bonding curves that can be applied to different types of NFTs, which can mitigate price manipulation in the NFT market. Meanwhile, the admin fees are dynamically adjusted in response to price fluctuations to deliver a more complete and refined user experience. After establishing NFT liquidity pools, the increase in trading frequency and volume is leading to a more accurate reflection of the NFT floor price on Litra. This improves NFT liquidity as well as helps Litra obtain NFT pricing power.

3.3. Admin fees

Litra charges NFT wrap and unwrap fees (x% in wNFTs) during minting and redemption. The *FeeManager* is tasked with recording and computing NFT wrap and unwrap fees across all NFT collections. This contract can be substituted at the discretion of the Litra DAO, thus allowing for various fee calculation models to be implemented. For instance, to mitigate the manipulation of wNFT prices and reduce the risk of impermanent loss for liquidity providers, a fee calculation model is designed as follows:

$$PriceFluctuation = (OraclePrice - LastPrice) / LastPrice * ImpactFactor$$

$$WrapFee = BaseFee * (1 - PriceFluctuation)$$

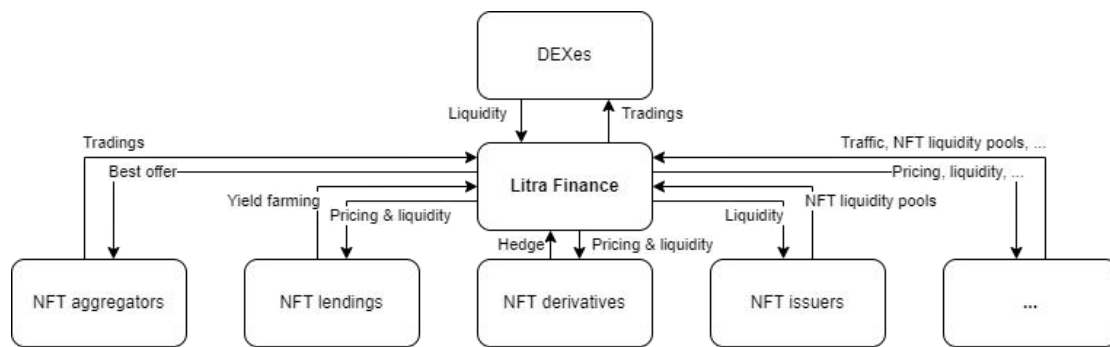
$$UnwrapFee = BaseFee * (1 + PriceFluctuation)$$

in which *PriceFluctuation* ranges between a maximum value of 1 and a minimum value of -1, *OraclePrice* is used to describe the price provided by the oracle, *LastPrice* represents the actual price after the most recent transaction in a specific wNFT pool, and *ImpactFactor* and *BaseFee* are set by Litra DAO for each NFT collection to adjust the admin fees based on pricing volatility. When the trend of rising or falling wNFT prices is more drastic, the impact of fee changes becomes more significant in suppressing such trends. In addition, the maximum wrap and unwrap fees are capped at 5%, which can be modified by the Litra DAO.

4. Scalability

Litra Finance benefits from creating NFT liquidity pools on existing DEXes, including Curve, Balancer, Uniswap, and SushiSwap, to meet any specific requirements from NFT issuers. In addition, Litra also extends its integration to other specialised areas, such as NFT aggregators.

NFT aggregators have the potential to streamline the purchasing and redemption processes of wNFT, offering a seamless buying experience to traders. NFT aggregators can always provide the best offer, which is provided by Litra. Meanwhile, NFT traders can trade NFTs on Litra through aggregators, who can offer the traditional trading process commonly used in mainstream NFT marketplaces. Besides, Litra Finance, in collaboration with DEX partners, is able to provide ample liquidity for NFT lendings and derivatives to mitigate attacks on the NFT floor price and liquidity.



Composability of Litra Finance

5. Conclusion

As a relatively comprehensive and standardised solution to the NFT liquidity issue, Litra Finance turns NFT into a standard asset to improve trading precision and pricing mechanism. In this case, Litra Finance is able to obtain pricing power in the NFT market with a decentralised approach. For the NFT market, the entry level is lowered, price manipulation can be mitigated, and the costs and risks of trading and holding NFTs are reduced for users at different levels. For NFT issuers and holders, they can establish NFT liquidity pools on Litra and turn NFTs into interest-bearing assets. In addition, NFT collectors can always purchase with the best offer from Litra Finance, with or without NFT aggregators.

To draw a conclusion, connecting to various existing infrastructures in DeFi and NFTFi helps Litra seamlessly bridge the very last mile of the NFT market. By improving NFT liquidity and pricing, Litra achieves better NFT composability, which creates a win-win-win situation for Litra, the vast number of DeFi and NFTFi protocols, and the NFT market. As can be seen from the Chicken Bond and new Token Standards, NFTs are evolving quickly. Tokenised financial products, consumables, or other assets are the future. The development of NFT will trigger a revolution in the crypto paradigm, and Litra is ready to scale fast.

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