# XSwap White Paper

## 1. Abstract:

In 2020, development in DeFi (decentralized finance) has begun in full swing. Until now, the TVL (total value locked) in the DeFi space has exceeded 30 billion USD. According to Dune Analytics, the monthly transaction volume of all decentralized exchanges (DEX) in January 2021 has exceeded 50 billion USD – setting a new all-time high. As the leading DeFi application, the DEX has entered a stage of rapid development.

XSwap is a decentralized exchange & DeFi service platform operated and managed by a global community. It supports circulation, management and application of digital assets from the ABEYCHAIN ecosystem. XSwap provides a wide range of potential digital asset application channels such as decentralized trading, liquidity mining and staking.   By utilizing the high-level of compatibility between multiple major blockchain ecosystems.

## 2. Project Introduction:

The constant congestion of the Ethereum network has led to a sharp increase in the cost of participation in DeFi. Whether it is mining or trading, lending, and financial management, using the ETH network can be very costly. At the same time, competition in the DeFi space is becoming increasingly fierce. Before ETH's layer 2 solution launches, the zero-sum competition of different Ethereum DeFi projects is likely to continue until a equilibrium is found by the market.

When Ethereum itself cannot keep up with the evolution of DeFi, it will spill over to other public chains. The rapid development of the Huobi Eco Chain (Heco) is proof that this is happening.

XSwap is a decentralized exchange & DeFi service platform built on the ABEYCHAIN. With the integration of automatic market making (AMM) mechanism and liquidity mining, this new token economic model aims to provides users with a more reliable trading platform.

### 2.1 Core Functions:

All functions of XSwap are performed on-chain. As of now, XSwap's core functions consists of three parts: AMM trading, liquidity mining, and staking.

XSwap is completely decentralized. Users can freely deposit tokens for exchange. The withdrawal process is also quick and flexible. The user's

counterparty is XSwap liquidity pools, rather than other traders in an orderbook. The trading price is calculated through the automatic market-making model. One of the key features of Xswap is its Automated Market Maker ("AMM") algorithm. It pools the users' liquidity together and automatically makes the market for each trading pair in a liquidity pool using an algorithmic process. It is essentially an algorithm-based automatic market making service that can pool unlimited liquidity and scale to handle large order volume.

## 2.2 AMM transaction

The AMM automatic market-making trading panel is one of the core panels on XSwap. It provides users with a low complexity, low gas fee, and decentralized digital asset exchange protocol that does not require off-chain input.

**Redistribution of trading fees:** The XSwap platform AMM transaction charges a fee of 0.3% per transaction, which will be entirely distributed to XT Holders.

## 2.3 Liquidity Mining

The XSwap team will continue to explore potential digital asset earning solutions for users.

The AMM trading panel is also linked to liquidity mining, and the XSwap governance token liquidity mining output is weighted differently in the two major trading panels: mainstream tokens and platform tokens.

## 3. Core Technology

## 3.1 Functional Concept:

AMM (Automatic Market Maker) is currently the most popular trading mechanism in the DeFi field. It is different from the order book matching model that centralized exchanges use. AMM uses the fixed product method to convert tokens in the trading pools. Transactions can be automatically executed to ensure normal flow of trading pairs.

The AMM mechanism has two participants – the trader and the liquidity provider (LP). LPs will first inject a certain amount of tokens into the liquidity pool to provide transaction liquidity, while earning transaction fees paid by traders. For liquidity providers, the action of earning income by providing liquidity is called liquidity mining. XSwap also distributes its governance token XSwap Token (XT) to LPs. The core functions/concepts in this process include:

## (a) Liquidity Pool:

A system account that stores collateral tokens and has no private key control. The account contains two parts: trading pairs of a variety of digital assets and XSwap Tokens. Liquidity providers receive a tokenized certificate of liquidity to represent the amount of liquidity provided to each of the protocol's smart contract liquidity pools. The protocol's AMM mechanism is used to determine the relative price of each respective tokens in a liquidity pool's trading pair.

## (b) Liquidity

Assets that can be exchanged in a smart contract enabled liquidity pool. Pledging these assets into the liquidity pool can be considered providing liquidity for the liquidity pool. When the pledged assets are retrieved, the user can automatically obtain trading fees collected during the exchange process relative to the size of their pledged liquidity.

## (c) Liquidity Provider

Any individual, organization, or institution that pledges tokens to the liquidity pool.

## (d) Automated Market-Making Algorithm

The constant product method is used as the market-making formula: $x * y = k$, x represents the number of x tokens, and y represents the number of y tokens. During the exchange process, the value of k remains unchanged, and will only change when the market maker increases/decreases liquidity.

## (4) Increase liquidity

In order to obtain the trading fees generated during the exchange process, market makers can pledge their tokens into the liquidity pool, which mainly includes two situations:

Create Liquidity Pool: If there is no liquidity pool for the token on the current chain, the market maker needs to pledge a fixed number of tokens and XSwap Tokens in proportion to the current market conditions. This step is equivalent to initializing the liquidity pool and pricing the tokens. If the market maker does not price the tokens according to the current market, then the arbitrageurs would find a price difference, and exchanges will occur until the price is closer to the current market price. In this process, the relative price of tokens is adjusted entirely by market demand.

Adding liquidity: If there is a liquidity pool for the token on the current chain, when the market maker pledges the tokens, they would need to pledge the

two tokens separately according to the exchange ratio of the current liquidity pool. We use the XSwap Token to calculate the amount of another token that needs to be pledged. If the ratio of pledged tokens does not meet the exchange ratio of the current liquidity pool, the transaction will fail. Therefore, it is possible for making liquidity providers to avoid impermanent loss due to the existence of arbitrageurs.

After the pledge is completed, the system will lock the pledged tokens and issue a liquidity certificate to the user's account. The liquidity certificate can also participate in trading transactions.

## (5) Exchange of Tokens

When there is a liquidity pool of a certain token, users can initiate exchange transactions according to their own needs. During the exchange process, an exchange fee will be deducted from the input tokens. There are two types of transaction situations:

Purchasing tokens: If a user purchases a fixed number of tokens, the system will calculate the amount of another token that the user needs to pay based on the number of tokens purchased and the current inventory of the liquidity pool.  If the user pays less than the value calculated by the system, the transaction will fail.

Selling tokens: If the user sells a fixed number of tokens, the system will calculate the amount of another token that the user receives based on the number of tokens sold and the current reserves in the liquidity pool. If the user pays more than the value calculated by the system, the transaction will fail.

In the above two cases, the system supports token to token exchange, this requires that both of these two tokens to have sufficient liquidity. The system will undergo two exchanges processes, Token1 --> XSwap token, XSwap token --> Token2.

## Withdrawing Liquidity:

After the liquidity provider has pledged tokens, they will receive a liquidity certificate of the pledged token(s).   They can later redeem the certificate for their pledged tokens. After the liquidity is withdrawn, the same amount of liquidity certificates will be burned from the user's account and the liquidity pool.

## (6) Advanced solutions

Two inherent problems have traditionally hindered the performance of AMM mechanisms:

### (a) Impermanent loss

The most important and common unknown risk faced by liquidity providers is impermanent loss (that is, over time, there is a value difference between directly depositing tokens in the AMM pool and merely holding tokens in users' wallets). As long as the market price of the tokens in the AMM pool deviates from either side, impermanent losses will occur.

Since the AMM pool cannot automatically adjust the exchange rate, arbitrageurs need to buy lower-priced assets or sell higher-priced assets until the price provided by AMM matches the external market price. The profits obtained by arbitrageurs are drawn from liquidity providers, which brings losses to them.

### (b) Low capital efficiency

AMM needs a lot of liquidity to reach a similar slippage level of an exchange based on the order book model. This is because most of the liquidity in AMM is only available when the pricing curve starts to turn to the exponential curve. Therefore, due to the high slippage, rational traders will not use most of the liquidity.

Since AMM liquidity providers are unable to determine the price offered to counterparties, this makes some people call AMM "lazy liquidity" because of its low utilization and often insufficient supply. On the other hand, market makers on order book exchanges can precisely control the price points at which they want to buy and sell tokens. This brings high capital efficiency. But at the same time, this requires active centralized management and supervision of the liquidity supply.

XSwap's new AMM mechanism solves most of the limitations of the first generation AMM:

### (c) AMM with High Capital Efficiency and Low Slippage:

As we mentioned in the core business section: due to the increase in capital utilization, liquidity providers can earn more fees (although the cost of each transaction is lower), but the arbitrageur can still benefit from the re-adjustment of the liquidity pool.

### (d) Decentralization:

In the process of the AMM transaction, users' funds are always stored in their

own wallets, and transactions are achieved through the interaction of contracts, rather than the traditional deposit and withdrawal process on a centralized exchange. This helps users avoid the risk of fraud and theft that often occurs on centralized exchanges.

## (7) Token and Governance Mechanism

### 7.1 XSwap Token (XT) – Protocol Governance:

XT is the only governance token of the XSwap platform. XSwap users can earn it through liquidity mining and staking. XT can be used to pay transaction fees and purchase other services that the XSwap ecosystem may offer in the future. The total supply of XT that will ever be minted is capped at 1.2 billion tokens.
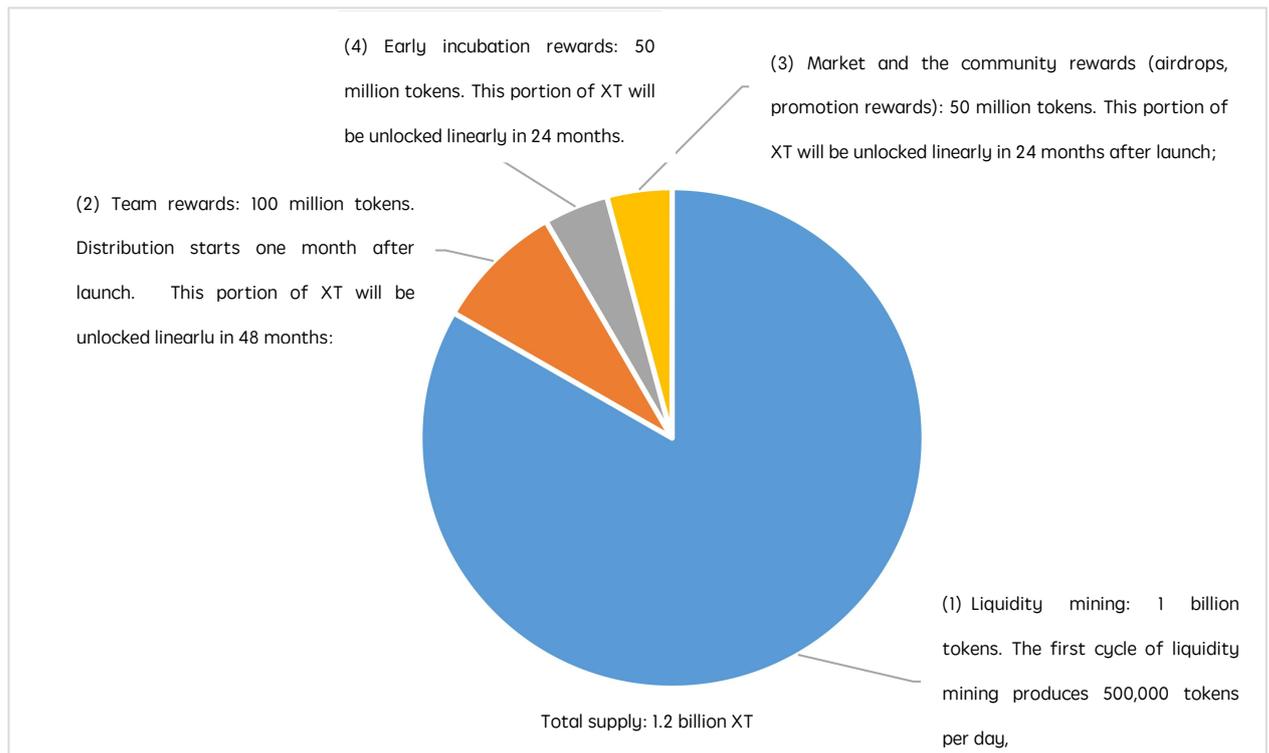
### 7.2 XT distribution:

(a) **Liquidity mining**: 1 billion tokens. The first cycle of liquidity mining produces 500,000 tokens per day, the weekly output is reduced by 3% on wards;

(b) **Team rewards**: 100 million tokens. Distribution starts one month after launch. This portion of XT will be unlocked linearly in 48 months;

(c) Market and the community rewards (airdrops, promotion rewards): 50 million tokens. This portion of XT will be unlocked linearly in 24 months after launch;

(d) **Early incubation rewards**: 50 million tokens. This portion of XT will be unlocked linearly in 24 months.

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(3) Market and the community rewards (airdrops, promotion rewards): 50 million tokens. This portion of XT will be unlocked linearly in 24 months after launch;

(2) Team rewards: 100 million tokens. Distribution starts one month after launch. This portion of XT will be unlocked linearlu in 48 months:

(1) Liquidity mining: 1 billion tokens. The first cycle of liquidity mining produces 500,000 tokens per day,

Total supply: 1.2 billion XT

XT can be obtained through airdrop rewards, liquidity mining, staking and exchanging for the tokens on XSwap.

## 7.3 Value and equity:

### (a)　Liquidity mining:

XT holders can participate in liquidity mining on XSwap. In the first mining cycle, the daily output is 500,000 XT per day.　The weekly output will reduce by 3%.

– The block generation speed is 5 seconds/block, and each block produces 29 XT as reward for miners.

– The weighting of the XT/ABEY trading pair is the heaviest among all trading pairs on XSwap.

### (b) AMM Transaction Fees:

The XSwap platform AMM transaction charges a fee of 0.3% per transaction, which will be entirely distributed to market makers in the first version of XSwap.

7.4 XSwap Token holder Income Module

Users can pledge ABEY in liquidity mining to earn XT.

● <u>Participate in Mainstream Token Trading</u>:

Users who participate in mainstream token trading pair transactions such as BTC/USDT, ETH/USDT, DOT/USDT, can earn XT rewards.

● <u>Participate in Native Token Trading</u>:

Users who provide liquidity to Xswap pools in the form of token pairs including one or more tokens native to the ABEYCHAIN, such as XT/ABEY, ABEY/USDT, and others offered on the protocol, whether now or in the future, can earn significantly higher XT rewards.

## (8) Conclusion

XSwap provides users with the ability to trade a variety of tokens highly innovative DeFi DEX protocol. It supports decentralized transactions between crypto wallets. XSwap provides users with an efficient, decentralized, encrypted exchange & DeFi service platform.