SwapAll

Lightning Puffs

One-stop Cryptocurrency Exchange

1. The Accelerator in the Development of DeFi

Since the end of 2018, the DeFi market has received more and more attention and has started explosive growth, but it has also brought many new problems such as the pseudo-decentralization of the contract control authority, expensive transaction fees and network congestion. SwapAll is aimed at building a Layer 2 solution based on all AMM (automatic market maker) DEXs (decentralized exchanges) and features the fundamental algorithms and ideas that are exactly the same as those of the speedup solutions like state channels and lightning network. SwapAll is benchmarked against the OTC "dark pool" brokerage model of the traditional financial industry and helps those high-frequency small-value traders reduce transaction fees and achieve external settlements. The system will support all public blockchain AMM swap platforms on the market with the fastest oracle algorithm called EIP1973, gradually migrate from a centralized off-chain solution to Layer 2 lightning transactions in two steps, provide a one-stop full-chain swap model and have its own swap buffer pool.

2. Existing Problems to be Solved in the DeFi/Swap Market

- **Low efficiency in product use**

The products require the users to spend a lot of time on product learning prior to use, resulting in a high threshold for use and a low level of user participation, and some products even experience repeated lagging.

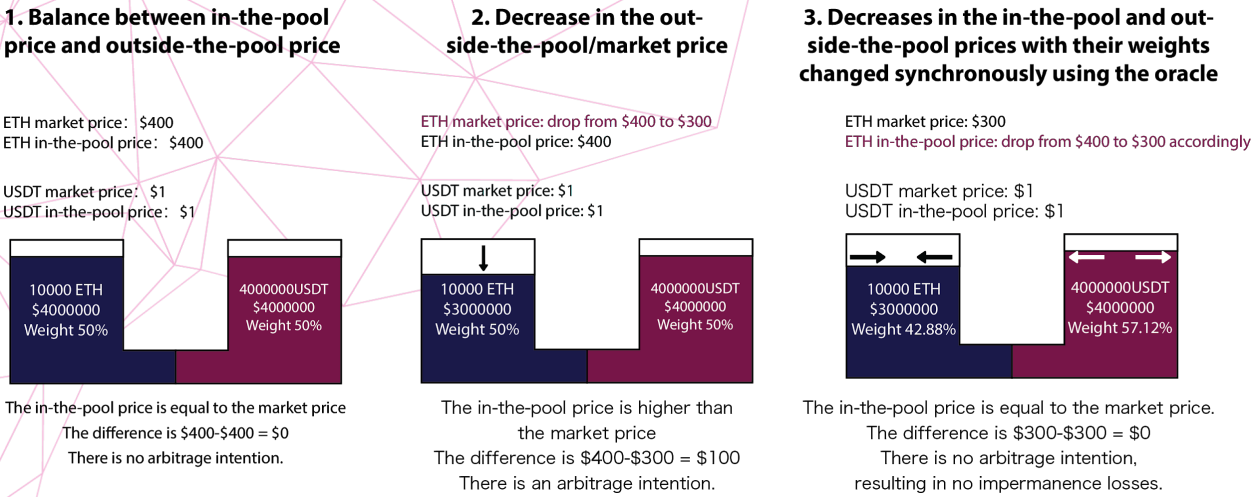
- **Network congestion and expensive transaction fees**

The Ethereum network is congested, causing transaction delays and packaging failures or delays. At present, the transaction fees of Ethereum has been up to $5-35, which greatly reduces the utilization rate of DEXs.

- **Impermanent loss**

Impermanent Loss is the difference in the in-the-pool price and the outside-the-pool/market price, namely, those arbitrageurs buy tokens in the pool at a low price and sell them outside the pool at a high price and these actions make the in-the-pool value drop below the initial in-the-pool value, thus causing value losses to those liquidity providers in the pool. For example, the static weight model of Uniswap, Balancer and other DEXs leads to impermanent losses caused by arbitrage opportunities due to failure to automatically get the market price change weight.

Such impermanence losses can be greatly reduced by introducing the outside-the-pool/market price via an oracle on a real-time basis and automatically changing the cryptocurrency weight.



- **Asset security risks**

To date, there have been several major DeFi product crashes resulting from the pseudo-decentralization of contract control authority. Since those crashed projects had not been subjected to prudent and elaborate testing and security audits before they went live, a great number of users paid for the mistakes of the project parties.

- **Automatic bonus hunting by vaults**

The existing vaults are a kind of harm to new projects and seriously damage the meaning of Pool 1 for airdrop of new DeFi projects. With the help of vaults, many automatic arbitrage smart contracts can automatically take away the tokens airdropped by DeFi Pool 1 that should have been used to attract new users. Therefore, the SwapAll platform will provide better algorithms.

3. SwapAll Makes Every Effort to Accelerate the Development of the DeFi Market

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3.1 Product features of SwapAll Exchange

3.1.1 Extremely fast off-chain transactions

As the fastest gas fee-free swap algorithm platform, the system will gradually migrate from a centralized off-chain solution to Layer 2 state channel transactions in two steps. The Ethereum oracle contract has been subjected to security audit by Solidified, an audit agency:

https://github.com/ethereum/EIPs/blob/master/EIPS/eip-1973.md

https://solidified.io/

3.1.2 Liquidity market-making upgrade program brought by the lightning puff algorithm

- Dynamic weighting algorithm - The oracle program EIP1973 provides a price feed for the puff dynamic weight algorithm.
- Liquidity leverage algorithm - Up to 20 times liquidity amplification can be achieved
- Liquidity dark pool algorithm - Similar to external dark pool trading in the financial market
- Allow the provision of liquidity of a single token
- Add the liquidity market-making lock-up period function

3.1.3 Easy to use, smooth product experience

SwapAll is the easiest-to-use DeFi platform and gives you smooth product operations, which allows newbie, senior and professional cryptocurrency investors to efficiently use the platform without difficulties.

3.1.4 One-stop investment function, direct access to financial giants on the blockchain

In conjunction with the advantages of IEO and swap liquidity mining in the blockchain industry SwapAll will create a new experience, achieve one-stop services by token airdropping via Pool 1, market making via Pool 2, voting via Pool 3 and integration of SwapAll transactions, and support multi-chain deposit and withdrawal.

3.2 Details of SwapAll product logic algorithm

Oracle dynamic weight Bancor algorithm

SwapAll introduces the external market price via the price oracle and thus changes the value weights of the pools of both cryptocurrencies in a trading pair, thereby avoiding value losses caused to the assets in the pools due to arbitrage opportunities.

After the external price is introduced via the oracle, the example of calculating the cryptocurrency weight change is as follows:

- $(x+\Delta x)^{W_x}(y-\Delta y)^{W_y} = x^{W_x}y^{W_y}$

$$x_{new} = (x+\Delta x)$$
$$y_{new} = y - y\left(1 - \frac{x}{x+\Delta x}^{\frac{W_x}{W_y}}\right)$$

Price taken from the oracle: $\frac{P_{y\ oracle}}{P_{x\ oracle}} = \frac{q}{p} = \frac{x_{new}}{y_{new}} = \frac{(x+\Delta x)\frac{W_y}{W_x}}{y-y\left(1-\frac{x}{x+\Delta x}^{\frac{W_x}{W_y}}\right)}$

$$=> \frac{q}{p} = \frac{x_{new}}{y_{new}} = \frac{(x+\Delta x)\frac{W_y}{W_x}}{y - y\left(1 - \frac{x}{x+\Delta x}^{\frac{W_x}{W_y}}\right)}$$

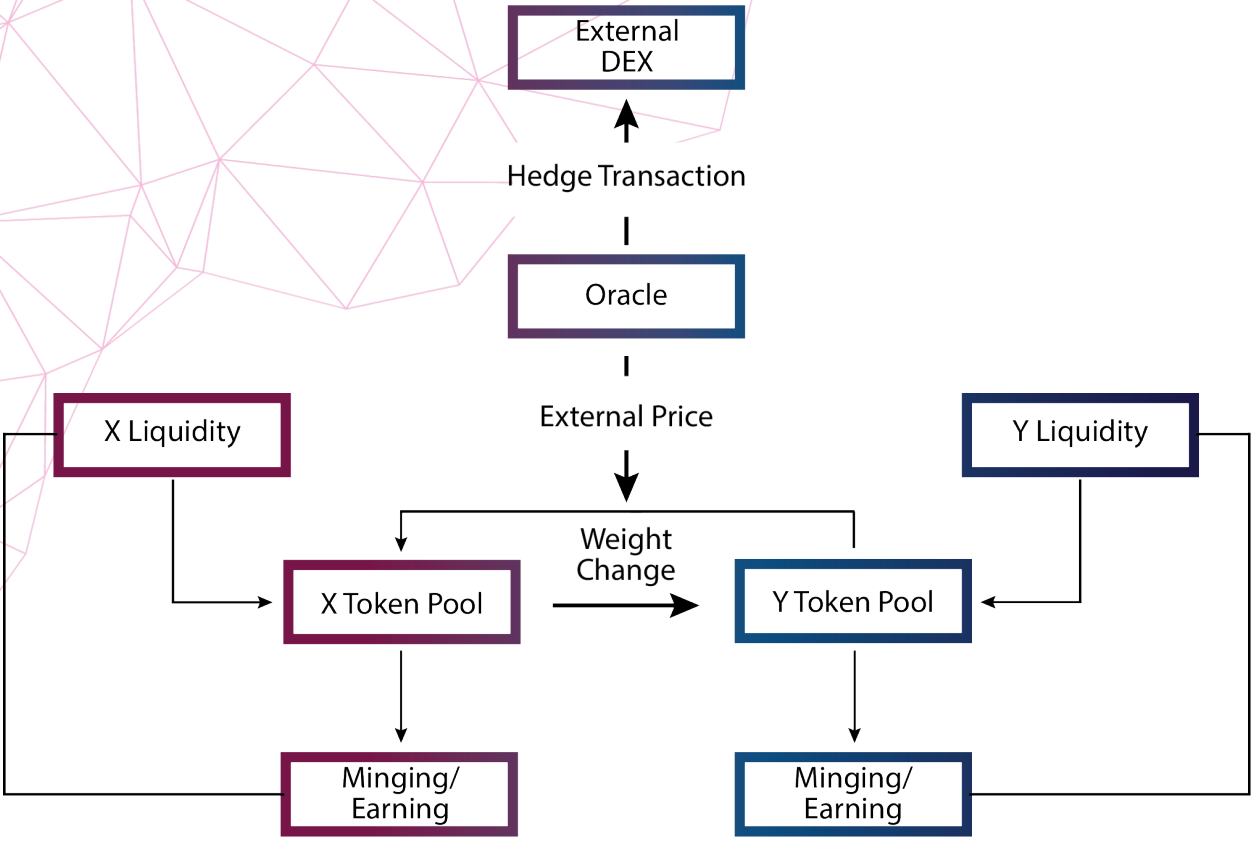
For simplicity: t=$\frac{W_x}{W_y}$

$$=> t = \frac{W(\frac{(x+\Delta x)p}{yq} \times log\ (\frac{x}{x+\Delta x}))}{log\ (\frac{x}{x+\Delta x})}, \text{W(r)}$$

In order to solve the values of W_x , W_y, assume their obtained values are in the format of t=$\frac{a}{b}$

Since t=$\frac{W_x}{W_y}$, $W_y = 1 - W_x$

$$W_x = \frac{t}{1+t} = \frac{a}{a+b}$$
$$W_y = \frac{1}{1+t} = \frac{b}{a+b}$$



4. Token Economic Model

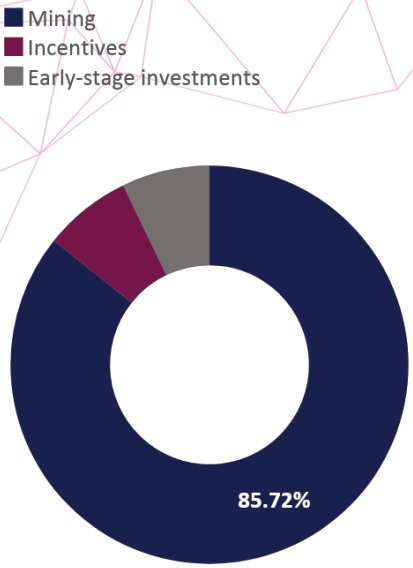
SAPs are the governance tokens in the SwapAll financial system, all of which are generated by mining. The tokens are issued at a quantity that is halved every 14 days and have a total supply of 21 million SAPs.

4.1 Token distribution

There are three ways to distribute SAPs: mining, referral and team, of which, mining distribution will occur in Pool 1 for airdrop and Pool 2 for liquidity.

Pool 1 for airdrop: In Pool 1 for airdrop, you can get the eligibility for participating in SAP token airdrop by staking your assets. For example, if user A deposits his/her ETH, USDT and other digital assets into Pool 1 for airdrop, then A will receive airdrop rewards to be settled in SAP for his/her staked digital assets that can be withdrawn at any time.
Pool 2 for liquidity: In Pool 2 for liquidity, a user can receive the liquidity mining SAP rewards for a trading pair if he/she provides the asset liquidity for the said trading pair. For example, if user

B deposits both digital assets, SAP and ETH, into the SAP/ETH transaction pair, then B will receive the rewards to be settled in SAP for the provision of trading liquidity. The staked assets can be withdrawn at any time.



Mining: The total quantity of minable token in Pool 1 for Airdrop is 8,000,000, while the total quantity of minable token in Pool 2 for Liquidity is 10,000,000. The total quantity of minable tokens in both pools is 18,000,000.

The amount of minable token in the pool will be halved every 14 days. When the actual minable token in the last week is less than the amount of minable after halved, the actual released amount will be calculated according to the actual minable token.

Referral: Approximately **1.5 million** referral tokens will be released at the Fibonacci sequence ladder price when the price is greater than $1.
For referral tokens, a total of 300,000 SAPs accounting for 20% of the referral portion will be released when the price exceeds $1 for three consecutive days after the official mining is launched, and 150,000 SAPs accounting for 10% of the referral portion will be released each time when the price reaches $2, $3, $5, $8, $13, $21, $34 and $55. When the final price reaches $55, the cumulative number of all released referral tokens will be fixed at 1.5 million SAPs and will not continue to increase.

For example, when the price is $1, the release quota of referral tokens is 300,000 SAPs; when the price rises to $2, the cumulative release quota of referral tokens is 450,000 SAPs; ...; when the price increases to $55, the cumulative release quota of referral tokens is 1.5 million SAPs, and this figure will remain fixed and will not continue to increase.

Team: About **1.5 million** team tokens will be released at the Fibonacci sequence ladder price when the price is greater than $1.

For instance, when the price is $1, the release quota of team tokens is 300,000 SAPs; when the price rises to $2, the cumulative release quota of team tokens is 450,000 SAPs; ...; when the price increases to $55, the cumulative release quota of team tokens is 1.5 million SAPs and this figure will remain fixed and will not continue to increase.

4.2 Calculation of Minable Token

Pool 1 for Airdrop

Total: 8,000,000
Already released during Beta: 1,237,958
To be released after official launch: 6,762,042

Week Number (Pool 1 for Airdrop)	Quantity of Minable Tokens in Current Two Weeks	Total of Minable Tokens
Week 1 – Week 2	4,000,000	4,000,000
Week 3 – Week 4	2,000,000	6,000,000
Week 5	500,000 (Quantity of minable tokens in week 5 – 6 should be 1,000,000 after halved, whereas the actual quantity of minable token in week 6 is less than 500,000)	6,500,000
Week 6	6,762,042-6,500,000=262,042	6,762,042

According to the halving every 14 days, the minable token to be released in week 5-6 is 1,000,000. Before the last day of release, 1,000,000/14=71,428.5714286 will be released every day.

Nth day in Week 6	Quantity of Minable Tokens in the Current Week	Total of Minable Tokens in Week 6
1st Day	71,428.5714286	71,428.5714286
2nd Day	71,428.5714286	142,857.142857
3rd Day	71,428.5714286	214,285.714286
4th Day	262,042-214,285.714286=47,756.285714	262,042

Pool 1 for Airdrop will be mined till 4th day of 6th week, the total days is 5*7+4=39.

Pool 2 for Liquidity

Total: 10,000,000
Already released during Beta: 193,495
To be released after official launch: 9,806,505

Week Number (Pool 2 for Liquidity)	Quantity of Minable Tokens in Current Two Weeks	Total of Minable Token
Week 1 – Week 2	5,000,000	5,000,000
Week 3 – Week 4	2,500,000	7,500,000
Week 5 – Week 6	1,250,000	8,750,000
Week 7 – Week 8	625,000	9,375,000
Week 9 – Week 10	312,500	9,687,500
Week 11	78,125 (Quantity of minable tokens in week 11 – 12 should be 156,250 after halved, whereas the actual quantity of minable token in week 12 is less than 78,125)	9,765,625
Week 12	9,806,505-9,765,625=40,880	9,806,50

According to the halving every 14 days, the minable token to be released in week 11-12 is 156,250. Before the last day of release, 156,250/14=11,160.7142857will be released every day.

Nth day in Week 12	Quantity of Minable Tokens in the Current Week	Total of Minable Tokens in Week 12
1st Day	11,160.7142857	11,160.7142857
2nd Day	11,160.7142857	22,321.4285714
3rd Day	11,160.7142857	33,482.1428571
4th Day	40,880-33,482.1428571=7,397.8571429	40,880

Pool 2 for Liquidity will be mined till 4th day of 12th week, the total days is 11*7+4=81.

4.3 Token application scenarios and uses

Profit sharing: Commissions, transaction fees and management fees in all products within the SwapAll open financial system will be shared with SAP stakers and contributors within the system for a long term.

State channel node: After the Layer 2 proposal is approved, SAPs can be used to create the initial state channel node.

New trading pair self-creation: SwapAll theoretically supports all trading pairs on Uniswap, but the first user needs to pay some SAPs as the initial creation fee and all operations can be completed by the user himself/herself.

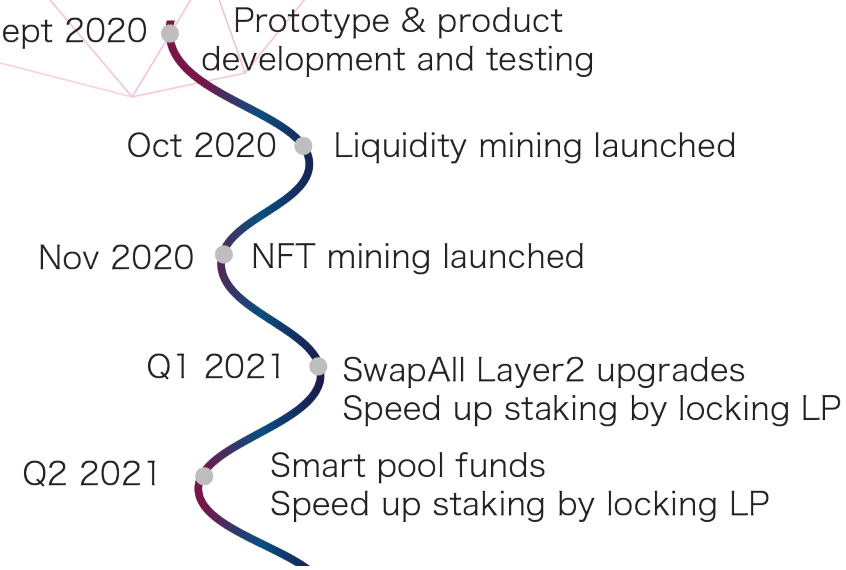
Liquidity mining: SAPs can participate in all liquidity mining of new cryptocurrencies issued in the SwapAll system.

Participation in governance: After all ll SAP be mined, the community voting governance will also be launched immediately. SwapAll is an efficient and open decentralized financial ecosystem that requires a huge volume of users to jointly participate in its building. Therefore, the token holders are required to jointly govern and determine the development of this system. The early-stage governance works include: 1. voting for new token issuing; and 2. voting for the trading pair whitelist. The mid- and late-stage governance works include the parameters for liquidity mining, improvement proposals, additional token issuance, and oracle voting, etc.

Lending financing income: The launched one-click aggregated lending services will expand the underlying assets used for lending and insurance and enhance the users' asset liquidity. Such services will aggregate the major and most popular DeFi lending platforms such as MakerDao and Compound and reduce the borrowing costs of users by changing the cryptocurrency weight and selecting the lowest interest rate in real time. In addition, the off-chain credit behaviors will be linked to the on-chain financial behaviors via the credit oracle. Users with good credit records can also participate in behavioral mining by using their "credit behavior" records, and SAPs will even have the property of mining weighting in the future.

Transaction fee repurchase: One half of a transaction fee generated from a transaction will be deposited in the transaction pool and returned to the transaction participants, and the other half of the transaction fee income will be repurchased or burned, which needs to be voted and decided by the community.

5. Product Roadmap



6. Competitive Product Analysis

	SwapAll	Uniswap	Binance	1Inch
Transaction Speed	Fast	Slow	Fast	Slow
Login Method	Email (2021 Support Layer 2 Private Key)	Open Source Wallet	Email/Phone	Open Source Wallet
Gas Fee	No	High	No	Very High
Rate of Return	High	High	Low	Mid
Transaction Fee	Low	High	Low	High
Availablity of exchange token mining	Yes	Yes	No	No
Availability of liquidity pools	Yes	Yes	Yes	No
Support of multi-chain token conversion	Yes	No	Yes	No