Revolutionizing Decentralized Finance: Providing a trustless algorithmic market making solution with SENSI

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Abstract

This whitepaper provides a comprehensive exploration of Decentralized Finance (*DeFi*), delving into its revolutionary impact on financial services. The document covers key features and benefits of DeFi, as well as the challenges it poses. A detailed examination of Automatic Liquidity Providers (*ALP*) in the DeFi ecosystem, with a focus on Pancakeswap V3 (*PCSv3*) and the evolution of the ALP Collective, is presented.

The paper then introduces the SENSI Ecosystem, detailing SENSI Tokenomics, a burning mechanism for supply dynamics, and the locking contract V3 with multi-vault locks (*MVL*). The SmartYield (*SY*) Ecosystem is explored, including the logic of automated liquidity management, SmartYield NFT V3 (*SYNFT v3*), and SY Tier Levels. Further insights cover rebalancing, farm allocation, dynamic price range adjustment, and smart contract interactions within the SENSI Ecosystem.

A comparison highlights the advantages of SENSI SY over traditional DeFi, with attention to marketplace dynamics, listing/auction systems, and a conclusion that envisions the future of DeFi liquidity management.

Keywords: SENSI whitepaper 2.1, automated DeFi, SENSI ALP, SmartYield, SY-NFT

List of Abbreviations

Abbreviation	Definition
DeFi	decentralized finance
ALP	automatic liquidity provider
PCSv3	Pancakeswap V3
MVL	multi-vault lock
SY	SmartYield
SYNFT v3	SmartYield non-fungible token v3
DEX	decentralized exchange
dApp	decentralized application
AMM	automated market making
BSC	Binance Smart Chain
LP	liquidity provider
CFMM	constant function market maker
NFT	non-fungible token
OTC	over-the-counter
SYM v3	SmartYield Manager v3
SYV	SmartYield Vault

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Introduction to Decentralized Finance

Decentralized Finance (DeFi) is a rapidly growing ecosystem that is disrupting traditional finance. It is built on top of blockchain technology, which enables the creation of decentralized applications (*dApps*) that can offer financial services without the need for intermediaries like banks and other financial institutions. DeFi aims to provide financial services to anyone with an internet connection, regardless of their location, financial status, or background. In this essay, we will provide an overview of DeFi and its key features, benefits, and challenges.

A Revolution in Financial Services

DeFi signifies a revolutionary suite of financial services and applications anchored on the robust framework of blockchain networks. It heralds a new era in finance by enabling users to seamlessly engage in activities such as lending, borrowing, trading, and investing in a diverse array of financial assets, all while bypassing traditional intermediaries such as banks and brokers.

At the heart of DeFi are smart contracts. These automated, trustless code protocols operate with a high degree of autonomy, executing transactions when predefined conditions are fulfilled, ensuring accuracy and integrity in financial dealings.

Drawing parallels between DeFi and conventional financial mechanisms reveals striking contrasts. Both domains offer a spectrum of services including loans, insurance, trading, and asset management. However, DeFi stands apart due to its core principles of decentralization, transparency, and inclusivity. Unlike the conventional pathways, which are often encumbered by bureaucratic constraints, DeFi platforms are universally accessible, providing even the underbanked populations with unparalleled access to comprehensive financial services.

In essence, DeFi democratizes finance by fostering an open and inclusive ecosystem that is not just an alternative, but a formidable enhancement to traditional financial systems, promising a more equitable and efficient financial landscape for all participants.

Key Features & Benefits

DeFi emerges with a slew of dynamic features that uniquely position it as a transformative force in the financial landscape. Below are the pivotal characteristics:

Key Features:

1. **Decentralization**: DeFi applications operate on a decentralized framework. They are not beholden to a singular authority or entity, but rather thrive on a synergistic network of computers, collaborating to uphold and maintain the network's integrity.
2. **Transparency**: DeFi stands as a beacon of transparency in financial operations. Each transaction is meticulously documented on a public ledger, granting visibility into essential details such as transaction amounts, timestamps, and participating entities.
3. **Interoperability**: In a realm marked by silos, DeFi shines with its interoperability. Applications within this ecosystem are adept at interfacing and exchanging data seamlessly, enhancing their functional prowess and user experience.
4. **Programmability**: The programmability of DeFi applications is a testament to their adaptability and precision. They can be tailored and automated to execute specific functionalities, amplifying their efficiency and utility.

Benefits:

1. **Financial Inclusion**: DeFi is an ambassador of financial inclusivity, enabling universal access to its services. Its doors are open to all, irrespective of geographical boundaries or financial stature, heralding a new epoch of inclusivity, especially for the underbanked and unbanked populations.
2. **Cost-Efficiency**: The DeFi model circumvents the conventional intermediaries, such as banks and brokers, fostering a more cost-efficient terrain where transactional costs and fees are minimized.
3. **Security**: Shielded by robust cryptographic defenses, DeFi networks exhibit resilience against potential vulnerabilities, hacks, and cyber threats, ensuring that users' assets and transactions are safeguarded.
4. **Enhanced Transparency**: The ingrained transparency of DeFi networks facilitates a clear view of transactional activities, ensuring that participants can operate with full knowledge and confidence in the integrity of their financial engagements.

Navigating Challenges

While the realm of Decentralized Finance is illuminated by numerous advantages, it is also shadowed by a set of formidable challenges that necessitate thoughtful consideration and strategic action. Here are some predominant challenges that punctuate the DeFi landscape:

Challenges:

1. **User Adoption:** DeFi, being in its nascent stages, is still unfurling its full spectrum of capabilities and potential. The novelty of the technology means that a substantial portion of potential users remains unacquainted with it, posing hurdles in the enhancement of user adoption and expansion of the ecosystem.
2. **Scalability:** The scalability of DeFi networks represents a crucial concern. As these networks burgeon, there's a propensity for congestion to manifest, potentially precipitating slower transaction velocities and escalating transaction costs, thereby impacting user experience and network performance.
3. **Regulatory Ambiguity:** Operating amidst a vista of limited regulation, DeFi encounters uncertainties stemming from a lack of clear regulatory directives. This absence of defined legal frameworks can cultivate a climate of unpredictability for both users and developers, affecting strategic planning and risk management.
4. **Smart Contract Vulnerabilities:** While smart contracts are pivotal in automating and securing transactions, they are not immune to risks. They may harbour bugs or vulnerabilities, rendering them susceptible to exploitation by malicious actors seeking to compromise network integrity and user assets.

In navigating these challenges, a strategic, multifaceted approach is requisite to bolster DeFi's resilience, optimize its performance and enhance its appeal to a broader user base, ensuring its sustainable evolution and maturation in the financial technology ecosystem.

Automatic Liquidity Providers[1]

An ALP stands as a transformative innovation in the DeFi landscape, acting as a vital conduit for liquidity within cryptocurrency exchanges and platforms. ALPs function through the deployment of smart contracts, autonomously facilitating liquidity provision to support seamless and stable trading of tokens and cryptocurrencies.

Operational Mechanics of ALPs

ALPs operate through an intrinsic mechanism known as liquidity provision, underpinned by Automated Market Making (*AMM*). At its core, an ALP nurtures a reservoir of tokens within a blockchain-based smart contract. This pool serves as a marketplace where users can trade tokens, with the ALP orchestrating the dynamics of buying and selling, ensuring market stability and consistent token availability.

The liquidity provision is orchestrated through a precise mathematical model, embodying AMM principles. It intricately balances supply and demand, adjusting token prices in real-time based on prevailing market conditions and the token reservoir's state, ensuring price stability and fostering a resilient trading environment.

The Significance of ALPs in the DeFi Ecosystem

1. **Enhancing DEX**: ALPs are pivotal in invigorating DEXs with essential liquidity. DEXs, which operate devoid of centralized authority, allow for direct peer-to-peer cryptocurrency transactions. ALPs mitigate challenges such as low liquidity, high transaction costs, and price slippage that often afflict DEXs, thereby bolstering their operational efficacy and user experience.
2. **Facilitating New Cryptocurrencies and Tokens**: ALPs play a crucial role in the inception phases of new cryptocurrencies or tokens, providing them with the requisite liquidity. This fosters a conducive environment for new tokens to be seamlessly traded, evaluated, and integrated into the market ecosystem.
3. **Safeguarding Against Market Manipulation**: ALPs fortify the market against manipulative tactics by decentralizing price determination processes. Prices within an ALP-driven environment are sculpted by genuine market forces of supply and demand, diminishing the vulnerability to manipulative strategies and ensuring a fair, transparent trading landscape.

[1] Uniswap Team. (2021). Uniswap V3. Retrieved from https://blog.uniswap.org/uniswap-v3.

In essence, ALPs emerge as instrumental architectures in the DeFi ecosystem, catalyzing liquidity, market resilience, and the authentic and balanced representation of asset values, thus nurturing a vibrant, secure, and equitable decentralized financial landscape.

Key Challenges with ALPs

ALPs have reshaped the DeFi ecosystem by injecting liquidity into markets, facilitating token trading, and promoting market stability. ALPs operate as autonomous agents that utilize smart contracts to create a responsive and adaptive trading environment. Despite their transformative potential, ALPs inhabit a challenging problem space that is marred by complexities and vulnerabilities. To navigate the innovative yet tumultuous terrain of ALPs, it is crucial to critically engage with and address these inherent challenges. The exploration of these issues is pivotal for the refinement, optimization, and sustainable growth of ALPs within the DeFi landscape.

Key Problems with ALPs[2]:

1. **Impermanent Loss**: Investors in ALPs may face impermanent loss, which occurs when the value of deposited tokens fluctuates following market price changes. This can lead to a discrepancy between the value of tokens in the liquidity pool and the current market prices, posing financial risks to liquidity providers.
2. **Slippage**: Despite ALPs aiming to mitigate slippage, it persists as a significant issue. In instances of large trades, the lack of sufficient liquidity can lead to price slippage, adversely affecting the execution of transactions and investor confidence.
3. **Security Vulnerabilities**: ALPs, governed by smart contracts, are susceptible to bugs, exploits, and hacks. Sophisticated attacks, such as flash loan attacks, can manipulate the price of tokens in a liquidity pool temporarily, causing substantial losses.
4. **Price Manipulation**: The automated pricing mechanisms of ALPs could be exploited for price manipulation. Savvy actors can engage in wash trading and other deceptive practices to artificially inflate or deflate prices, manipulating the market to their advantage.
5. **Regulatory Uncertainty**: Operating in a nascent and dynamically evolving field, ALPs face regulatory uncertainties. The lack of clear legal and regulatory

[2] Bancor Network Team - Nate Hindman . (2020). Beginner's Guide to Getting REKT by Impermanent Loss. Retrieved from https://blog.bancor.network/beginners-guide-to-getting-rekt-by-impermanent-loss-7c9510cb2f22.

frameworks can make compliance challenging and increase the susceptibility of ALPs to legal scrutiny and potential liabilities.

6. **User Experience and Complexity**: For many users, especially those new to the DeFi space, ALPs can seem complex and intimidating. The user experience often demands a steep learning curve, which may hinder wider adoption and participation in the ALP ecosystem.

In conclusion, while ALPs herald a promising and innovative realm within DeFi, navigating their multifaceted challenges is essential. Addressing these issues head-on will pave the way for a more resilient, secure, and user-friendly ALP ecosystem, conducive to sustainable growth and the flourishing of decentralized finance.

Pancakeswap V3 and ALP Evolution[3]

PCSv3, the advanced iteration of the renowned PCS DEX, blossoms on the robust infrastructure of the Binance Smart Chain (*BSC*). The adaptation to this high-caliber blockchain ensures swift, efficient, and economically optimized transactions. A defining characteristic of PCSv3 is the innovative introduction of the ALP Collective—a transformative liquidity provision framework ingrained with algorithmic precision and enhanced user-centric features.

The ALP Collective emerges as a consortium of liquidity providers, unified in their mission to bolster the liquidity landscape of PCSv3. Contributors amalgamate their tokens into a communal liquidity pool, establishing a fertile ground for seamless trading activities. This ecosystem operates under the guidance of algorithmic market-making strategies, ensuring dynamic and responsive token pricing that mirrors the real-time currents of supply and demand.

In its operational rhythm, the ALP Collective fosters a harmonized environment where liquidity providers reap returns commensurate with their pool contributions, aligning incentives and rewarding participation. A pioneering aspect of the ALP Collective is the introduction of 'Concentrated Liquidity.' This groundbreaking feature unfolds as a canvas for liquidity providers to sculpt and personalize their token price ranges and liquidity concentrations, culminating in a meticulously tailored liquidity provision experience.

Through the focused precision of Concentrated Liquidity, providers navigate the liquidity terrains with enhanced efficiency and strategic alignment, catalyzing an ecosystem characterized by optimized costs and reduced fees. In essence, PCSv3, with the instrumental ALP Collective heralds an era of liquidity provision that marries innovative finesse with user empowerment and operational excellence.

Algorithmic Brilliance in Market Making

The ALP Collective's heartbeat is its algorithmic acumen. With mathematically driven market-making formulas at its core, it fine-tunes token pricing with a graceful alignment to supply and demand nuances. The algorithm's strategic pricing

[3] PancakeSwap Finance Team. (2021). Introducing PancakeSwap V3: A More Efficient and User-Friendly DEX on BNB Chain and Ethereum. Retrieved from https://blog.pancakeswap.finance/articles/introducing-pancake-swap-v3-a-more-efficient-and-user-friendly-dex-on-bnb-chain-and-ethereum.

mechanisms embrace market volatilities and liquidity nuances, positioning the platform for adaptive and responsive functionality.

Pooling with Precision: The Liquidity Mathematics

The architecture of liquidity provision within the ALP Collective is a symphony of collective participation and mathematical elegance. Liquidity providers generously contribute tokens into a centralized pool, forging a nexus of assets that breathe life into the platform's trading vibrancy. Their contributions are meticulously tracked, laying the foundations for a reward structure that resonates with their pool share magnitude, orchestrating a fair and harmonious allocation of trading fee rewards.

Concentrated Liquidity: A Pioneering Feature[4]

One of the keystones of PCSv3's ALP Collective is the concept of 'Concentrated Liquidity'. This mechanism empowers liquidity providers with the autonomy to designate specific price corridors within which their liquidity is optimized and focused. The mathematical intelligence embedded within this feature allows for the strategic allocation of assets, heralding a realm where liquidity is not just provided but masterfully orchestrated to mirror the provider's market insights and strategies. Within this environment, liquidity providers cultivate a personal garden of price ranges, facilitating a targeted provision strategy that is both potent and efficient. The result is a finer control over asset involvement in various price segments, enabling providers to harvest optimized fee earnings and manage impermanent loss with heightened dexterity.

Continuous Evolution and Optimization

The ALP Collective is a living ecosystem, evolving with continuous recalibrations driven by algorithmic intelligence. It ensures that the liquidity landscape remains lush, responsive, and strategically aligned to market temperatures, fostering a harmonized synchrony between user needs and platform offerings. In summary, PCSv3's ALP Collective emerges as a sanctuary of algorithmic ingenuity and user-centric innovation, where the mathematics of liquidity provision are exquisitely crafted to resonate with the rhythm of market dynamics and user strategies.

[4] Van K., M. (2023). How Concentrated Liquidity Work in Crypto. Retrieved from https://medium.com/@MVank/how-concentrated-liquidity-work-in-crypto-284499eef90e.

Mathematics

To discuss the mathematics of liquidity provision in an AMM like PCSv3's ALP Collective, we need to delve into the concept of liquidity pools and pricing algorithms, particularly the concept of "Concentrated Liquidity."

Liquidity Pools

Liquidity pools are the heart of an AMM. Users, known as liquidity providers (*LPs*), deposit an equal value of two tokens in a pool to create a market. In return, LPs receive liquidity tokens representing their share in the pool.

$$LP\ tokens = \sqrt{TokenA\ x\ TokenB}$$

Constant Function Market Makers

Constant Function Market Makers (*CFMMs*) are a fundamental component in the functioning of DEXs, particularly those utilizing AMMs. CFMMs rely on mathematical functions to automatically determine the price of assets in a liquidity pool, facilitating the automated, permissionless, and trustless exchange of assets.

Basic Mechanics

The most common form of a CFMM is the "Constant Product Market Maker" popularized by Uniswap. Pancakeswap, like Uniswap, primarily uses the x * y = k model, where x and y represent the quantity of the two tokens in the liquidity pool, and k is a constant.

$$x \times y = k$$

where:

- x and y represent the quantities of two tokens in a liquidity pool.
- k is a constant value, meaning it doesn't change with trades.

Swapping Tokens:

For a swap, the pricing algorithm ensures that the product k remains constant. If someone buys token A, the amount of token A in the pool decreases, and the amount of token B increases, maintaining the constant k.

Fees and Rewards

LPs earn fees from traders who use the liquidity pool. A common fee is 0.3% per trade, distributed to LPs based on their share of the pool.

$$LP\ fees\ =\ Trade\ Volume\ \times\ 0.003\ \times \left(\frac{LP's\ share}{Total\ Pool}\right)$$

Concentrated Liquidity

LPs can specify price ranges where their liquidity is utilized, optimizing their capital efficiency.

- LPs specify a price range by setting ticks, which are the price levels at which the liquidity is active.
- For example, if the current price is 100, an LP might want to provide liquidity only when the price is between 90 and 110.

Price Determination

The price of tokens is determined by the relative quantities of tokens in the pool, ensuring that the product of their quantities remains constant. Prices automatically adjust based on the pool's balances and trade size to maintain the constant k.

Trading and Slippage

Trades shift the balance of tokens in the pool, automatically adjusting the price due to the constant product formula. Large trades relative to the pool size cause more significant price adjustments, a phenomenon known as "slippage."

Different Constant Functions

Various DEXs use different constant functions to determine asset prices:

- Linear CFMMs: Suitable for assets that should maintain a relative price, such as stablecoins.
- Hybrid CFMMs: Combine aspects of different functions to offer more flexible and optimized trading.

Benefits of CFMMs

- Automated Pricing: Prices are automatically set and adjusted, requiring no manual input.
- Liquidity Provision: Anyone can provide liquidity by adding assets to the pool, earning fees in return.
- Decentralization: Trading occurs directly between users and the contract, without intermediaries.

Challenges

- Impermanent Loss: Liquidity providers can experience temporary losses due to price fluctuations.
- Price Alignment: Prices in the DEX must regularly be arbitrated to align with external market prices.

Conclusion

CFMMs are central to the operation of DEXs, leveraging mathematical formulas to enable automated, decentralized trading, but they also come with inherent challenges like impermanent loss and the need for regular price arbitration. Different types of constant functions cater to various assets and market conditions, reflecting the diversity and innovation in the DeFi space. The mathematics of Uniswap/PCSv3 (like pricing, ticks, liquidity and price range calculations are explained in detail in their cookbook)[5].

[5] https://blog.uniswap.org/uniswap-v3-math-primer.

Enhanced Benefits

The ALP Collective brings a multitude of refined benefits to PCSv3, optimizing user experience, and liquidity provision. Here's a breakdown of its core advantages:

Optimized Liquidity

The ALP Collective amplifies the liquidity on the platform, ensuring seamless trading with reduced fees. It employs an algorithmic market-making formula which meticulously maintains token prices in the liquidity pool, ensuring robust stability, particularly amidst periods of substantial trading activity.

Concentrated Liquidity

A pivotal innovation by the ALP Collective is the introduction of Concentrated Liquidity. This feature empowers liquidity providers to tailor their liquidity provision across specific price ranges, fostering optimized capital utilization. Such precision not only diminishes costs but enhances capital efficiency, facilitating improved liquidity that benefits both the liquidity providers and the users by reducing trading fees and fortifying overall liquidity.

Mitigating Impermanent Loss

The ALP Collective also significantly mitigates the risk of impermanent loss—a prevalent risk that liquidity providers often grapple with when engaging in liquidity provision on DEXs. The impermanent loss essentially signifies the risk linked with the deviation in token prices within the liquidity pool compared to prices available on external platforms. The enhanced liquidity and strategic capital allocation fostered by the ALP Collective work synergistically to curtail this risk, safeguarding the interests of liquidity providers.

In essence, the ALP Collective stands as a paragon of strategic innovation in PCSv3, heralding a refined era of liquidity provision that is characterized by enhanced efficiency, reduced costs, and robust risk mitigation. Its algorithmic prowess and strategic optimizations collectively foster a more resilient and user-friendly trading ecosystem.

Advantages & Limitations

Advantages

- **Lower Trading Fees:** Through optimal liquidity provision and the utilization of algorithmic market-making formulas, PCSv3 ALP diminishes trading fees. It ensures enhanced liquidity, reduced trading costs, and improved trade executions.
- **Efficient Use of Capital**: Liquidity providers can concentrate liquidity within specific price ranges, promoting capital efficiency. This results in a cost-reduction benefiting both liquidity providers and platform users.
- **Improved Price Stability**: Employing algorithmic market-making formulas, PCSv3 ALP ensures stable token prices in the pool, maintaining consistent liquidity even during high trading volumes.

Limitations

- **Limited Liquidity:** Liquidity may be constrained due to the dependency on liquidity providers to contribute tokens. Limited liquidity could lead to increased fees and price slippage during high trading volumes.
- **Imperfect Market-Making**: The market-making formula may not be flawless, possibly causing price slippages during volatile periods, affecting trading fees and liquidity provider returns.
- **Risk of Impermanent Loss**: Liquidity providers face impermanent loss risks, emanating from pool price fluctuations relative to external markets, possibly affecting returns.
- **Dependence on BSC**: Being built on BSC, PCSv3 ALP inherits its limitations and risks, like network congestion and gas fees, indicative of broader blockchain technology risks.

SENSI Ecosystem

SENSI's business capability map (Figure 1) represents a holistic and forward-thinking approach to blockchain solutions, providing a diverse range of services within the BSC ecosystem. This multifaceted map showcases SENSI's commitment to addressing various user needs and creating a comprehensive platform. At the forefront, SENSI delves into the dynamic world of Non-Fungible Tokens (*NFTs*). Leveraging its innovative technology, SENSI facilitates seamless creation, trading, and ownership of NFTs, offering a user-friendly and secure environment for artists, collectors, and enthusiasts. Expanding its financial service offerings, SENSI integrates with Pancakeswap, a decentralized exchange on the BSC. This collaboration opens avenues for users to engage in efficient and low-cost token swapping, further enhancing liquidity and accessibility for the SENSI community.

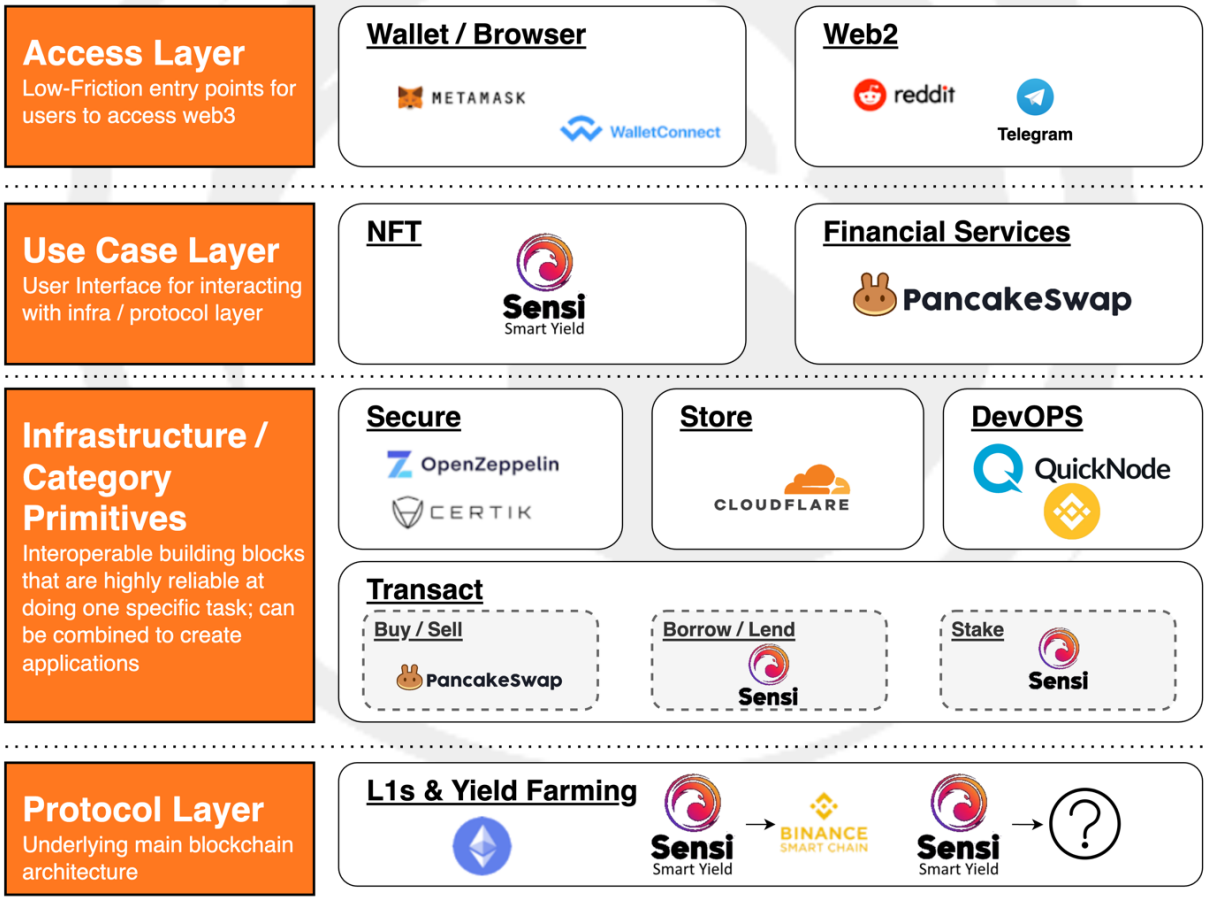

Figure 1: Business capability map

The platform also pioneers in the realm of DeFi, introducing a comprehensive suite of borrowing and lending services. Users can harness the power of their SENSI Token holdings to access capital or earn interest through lending, fostering a dynamic financial ecosystem within the BSC framework.

Staking becomes a cornerstone feature, empowering users to actively participate in network security and governance while earning rewards. SENSI Token's staking mechanism provides a reliable and rewarding avenue for users to contribute to the platform's integrity and growth.

One of the standout features in SENSI's capability map is the introduction of special Yield farming programs. Through innovative farming strategies, users can maximize their returns by strategically staking their tokens, contributing to liquidity, and participating in exclusive farming initiatives that add an extra layer of value to the SENSI ecosystem. In the following chapters, we will introduce you to more details.

In summary, SENSI's business capability map is a testament to its commitment to providing a diverse and robust ecosystem. From NFTs and financial services on Pancakeswap to staking, and specialized Yield farming, SENSI positions itself as a comprehensive solution provider within the BSC landscape, catering to the evolving needs of its user base.

Tokenomics

SENSI's robust tokenomics, anchored on the BSC, leverages cutting-edge features to fortify its ecosystem and empower users. The introduction of the Locking Contract V3, equipped with MVL, enhances security and flexibility. Token holders can strategically engage in long-term commitments, contributing to network security while earning rewards through this innovative mechanism.

The SY functionality further amplifies the utility of the SENSI Token. Participants can optimize their token holdings by staking them within the SY system, gaining additional rewards and actively participating in the growth of the ecosystem. This dual-purpose approach not only bolsters the network's integrity but also ensures that token holders are directly aligned with the long-term success of the platform.

In the realm of marketplace dynamics, SENSI introduces an inclusive and dynamic listing/auction system. Users can seamlessly list their assets or engage in auctions, fostering a vibrant marketplace environment. The over-the-counter (*OTC*) feature within the marketplace provides a peer-to-peer avenue for users to negotiate and execute off-exchange transactions, adding flexibility to token trading.

To address supply dynamics, SENSI Token implements a burning mechanism. A portion of transaction fees trigger the burning of tokens, contributing to a deflationary model. This strategic approach not only reduces the circulating supply but also adds an element of scarcity, potentially enhancing the value proposition for token holders.

In essence, SENSI's tokenomics on BSC integrates the Locking Contract V3, SY functionality, a dynamic marketplace, OTC capabilities, and a prudent burning mechanism. This comprehensive approach establishes a resilient foundation for sustained growth, ensuring a secure, rewarding, and dynamic ecosystem for all participants. The following pages will introduce you to more detailed descriptions about:

1. Tokens Burning Mechanism for Supply Dynamics
2. Locking Contract V3 with MVL
3. SY Functionality
4. Marketplace Dynamics - Listing/Auction System (incl. OTC Feature)

Burning Mechanism for Supply Dynamics

In addressing supply dynamics, SENSI token implements a strategic burning mechanism. A portion of transaction fees trigger the burning of tokens, contributing to a deflationary model. This approach not only actively manages the circulating supply (starting with a total supply of *244.812.308 SENSI*) but also introduces an element of scarcity. By gradually reducing the available token pool, SENSI Token enhances its value proposition for holders, potentially creating a positive impact on the overall token ecosystem. SENSI is also offering a buy-tax-free variant via an NFT to offer early-SENSI holders a small benefit. The current setup is as described in the pie diagrams (Figure 2 & 3):

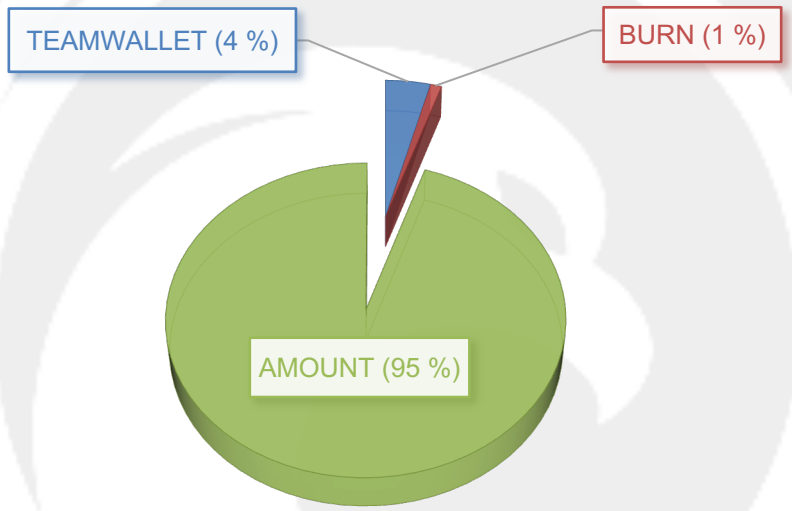

Figure 2: tax-split for the buy process

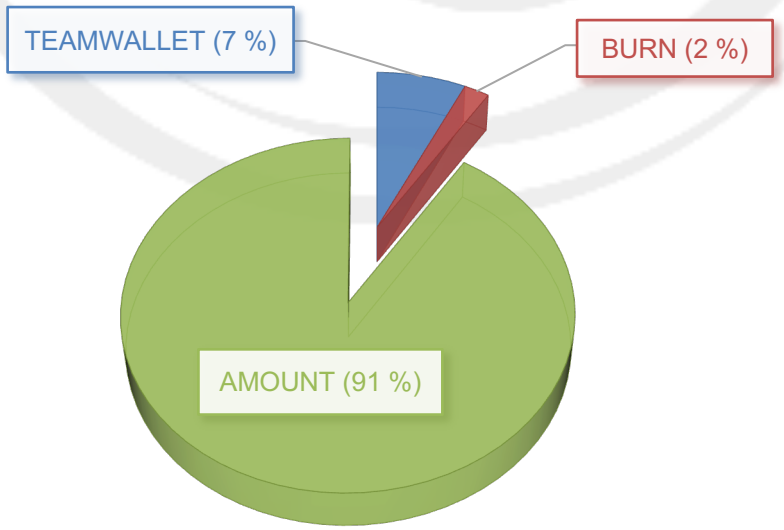

Figure 3: tax-split for the sell process

Locking Contract V3 with Multi-Vault Locks

SENSI's Locking Contract V3 stands at the forefront of security and flexibility. This advanced smart contract introduces MVL, allowing users to strategically engage in long-term commitments. By opting for extended lock-up periods, participants contribute significantly to the network's security while concurrently earning rewards.

1. Locking Mechanism

SENSI's Locking Contract is governed by a set of key parameters and functions designed to manage user lockups efficiently. Users can initiate locks by specifying the amount, lock type, and optional set a destination address to send the lock as a gift to someone else. The lock type determines the duration and reward multiplier associated with the lock, offering users flexibility in their engagement. The longer the lock is, the higher the reward will be (Figure 4).

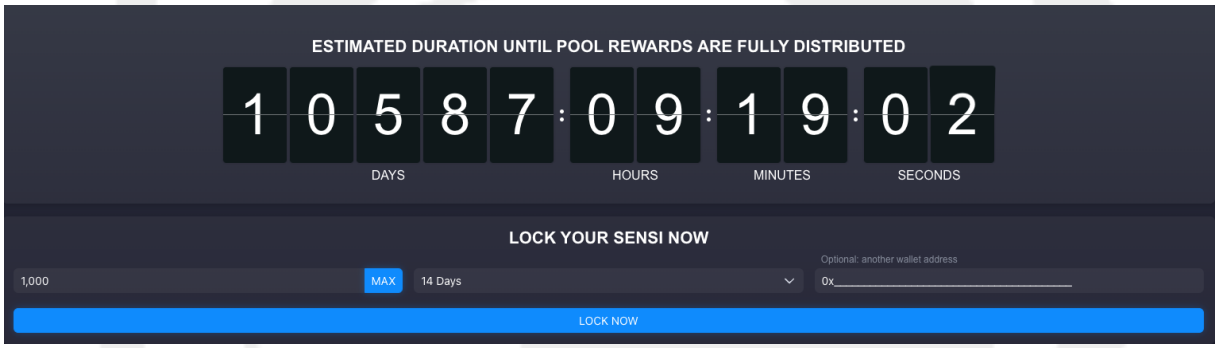

Figure 4: lock feature with gift option

2. Lock Types

The contract incorporates multiple lock types, each with distinct durations and reward multipliers. These lock types are manually added during contract initialization, allowing for a diverse range of locking options tailored to user preferences. Lock durations range from 14 to 360 days (may vary in future), with corresponding reward multipliers (Figure 5). Later on, new variants can be added and also be removed again.

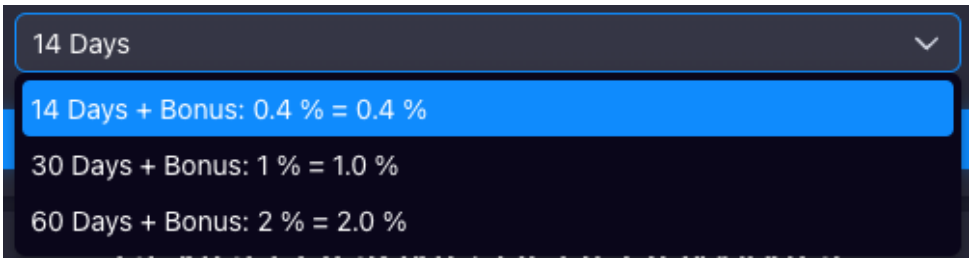

Figure 5: example of dynamic lock options

3. NFT Boost Integration

SENSI integrates NFT contracts to boost user rewards. Users holding specific NFTs receive bonus multipliers, enhancing their overall yield. NFTs, such as SENSI NFT - Gen 1 Rare and SENSI NFT – Gen 1 Legendary, contribute varying weights to the boost, creating an engaging synergy between NFT ownership and locking rewards. In future these weights can be extended by additional/other NFTs. The logic is:

- N be the number of NFT contracts,
- W_i be the weight of the i^{th} NFT contract,
- B_i be the balance of the owner for the i^{th} NFT contract,
- M be the calculated multiplier for the owner,
- FACTOR be a constant (e.g., 10000),
- MAX_MULTIPLIER be the maximum allowed multiplier (e.g., 15).

The SENSI NFT Boost function can be expressed as:

$$M = \sum_{i=1}^{N} \min\left(W_i \times \min(B_i, 1), FACTOR\right)$$

Where:

- The inner $\mathbf{min}(\boldsymbol{B_i}, \mathbf{1})$ term ensures that the balance is limited to a maximum value of 1,
- The outer $\mathbf{min}(\boldsymbol{W_i} \times \boldsymbol{min}(\boldsymbol{B_i}, \mathbf{1}), \boldsymbol{FACTOR})$term ensures that the contribution from each NFT contract is limited to the constant factor (e.g., 10000),
- The sum is taken over all **N** NFT contracts,
- The final multiplier **M** is limited to the maximum allowed multiplier (MAX_MULTIPLIER).

The function iterates through a list of NFT contracts, checks the owner's balance for each contract, and accumulates a multiplier based on the weight assigned to each NFT contract. The multiplier is limited to a maximum value of 15. The function is designed to be used internally.

4. Dynamic Pool Management

The contract manages a dynamic reward pool, influenced by user locks and NFT bonuses. Users deposit SENSI Tokens into locks, contributing to the overall pool. The following metrics are used to calculate a fair distribution based on the pool's size and various lock types, plus calculating the total available pool rewards per each Locking Vault at the end, which can be expressed mathematically as follows:

- **C** be the capital (amount locked by the user),
- **q** be the lock multiplier associated with the lock type,
- **d** be the lock duration in seconds,
- **B** be the bonus multiplier obtained from NFT ownership,
- **cP** be the current Pool with the current reward pool amount,
- **PTIR** be the Pool Total Interest Rate (known as locking vault total interest rate),
- **TIR** be the Total Interest Rate per Second of each investor's lock,
- **IRPS** be the Interest Rate per Second,
- **IRS** be the Interest Rate Share,
- **FACTOR** be a constant factor (e. g. 10^6).

Here, the _TIR function is used to calculate the Total Interest Rate of each Locking-Vault based on its current pool size (**cP**), its lock type multiplier (**q**), the bonus multiplier (**B**) for investor's NFTs, and the lock duration (**d**) of the vault itself.

$$\_TIR(cP, q, d) = \begin{cases} \dfrac{cP \times q \times d}{31104000 \times FACTOR}, if\ d\ \geq 86400\ and\ 0 < q\ \leq FACTOR \\ 0, \quad otherwise \end{cases}$$

The locking Vault total interest rate is then calculated based on the pre-calculated _TIR of the pool and the current Locking Vaults reward pool (cP), the multiplier associated with the specific lock type (q), and a bonus multiplier (B). The formula for PTIR is given by:

$$PTIR(C, B) = \frac{cP\ \times\ (q + B)}{\_TIR(cP, q + B, d)}$$

The formula for calculating the Total Interest Rate per Second (TIR) of each investor's Lock can be expressed as:

$$TIR = \frac{PTIR \times C}{totalLocked}$$

Where the helping functions for each investor's lock can be used resulting in the locks interest rate share (IRS) and the calculated interest rate per Second (IRPS):

$$IRS = \frac{FACTOR\ \times\ C}{totalLocked}$$

$$IRPS = \frac{TIR}{d}$$

All the calculated metrics are constantly be shown on the locking page via the SENSI locking vaults performance dashboard (Figure 6).

Figure 6: SENSI locking vaults performance dashboard

5. Withdrawal Mechanism

Users can withdraw their locked tokens based on specific conditions. The contract distinguishes between regular withdrawals, emergency withdrawals, and claim rewards. Regular withdrawals adhere to lock durations, while emergency withdrawals will just withdraw the initial lock amount and reject any not claimed rewards. Claim rewards will just withdraw the currently claimable amount of SENSI. The special capability of claiming rewards from the first SENSI every time further enhances the flexibility and options available to users, providing a seamless experience in managing their locked assets (Figure 7).

Figure 7: active locks investment dashboard

6. Security and Authorization

The contract incorporates robust security measures, including authorization checks for privileged functions. Authorized addresses, such as the contract owner and SY Manager, have specific roles and responsibilities.

SmartYield

SENSI SY is a novel solution for liquidity providers in the DeFi space. This platform allows liquidity providers to earn higher yields on their deposited assets while minimizing the risks associated with providing liquidity to DeFi protocols. In this chapter, we will explore the benefits of SENSI SY and how it provides a unique solution for DeFi liquidity providers. The SENSI SY platform is built on top of the BSC protocol, which is one of the most popular DeFi protocols. This ensures that the platform is secure and reliable, with a strong track record of performance and keeps the gas fees at a low level.

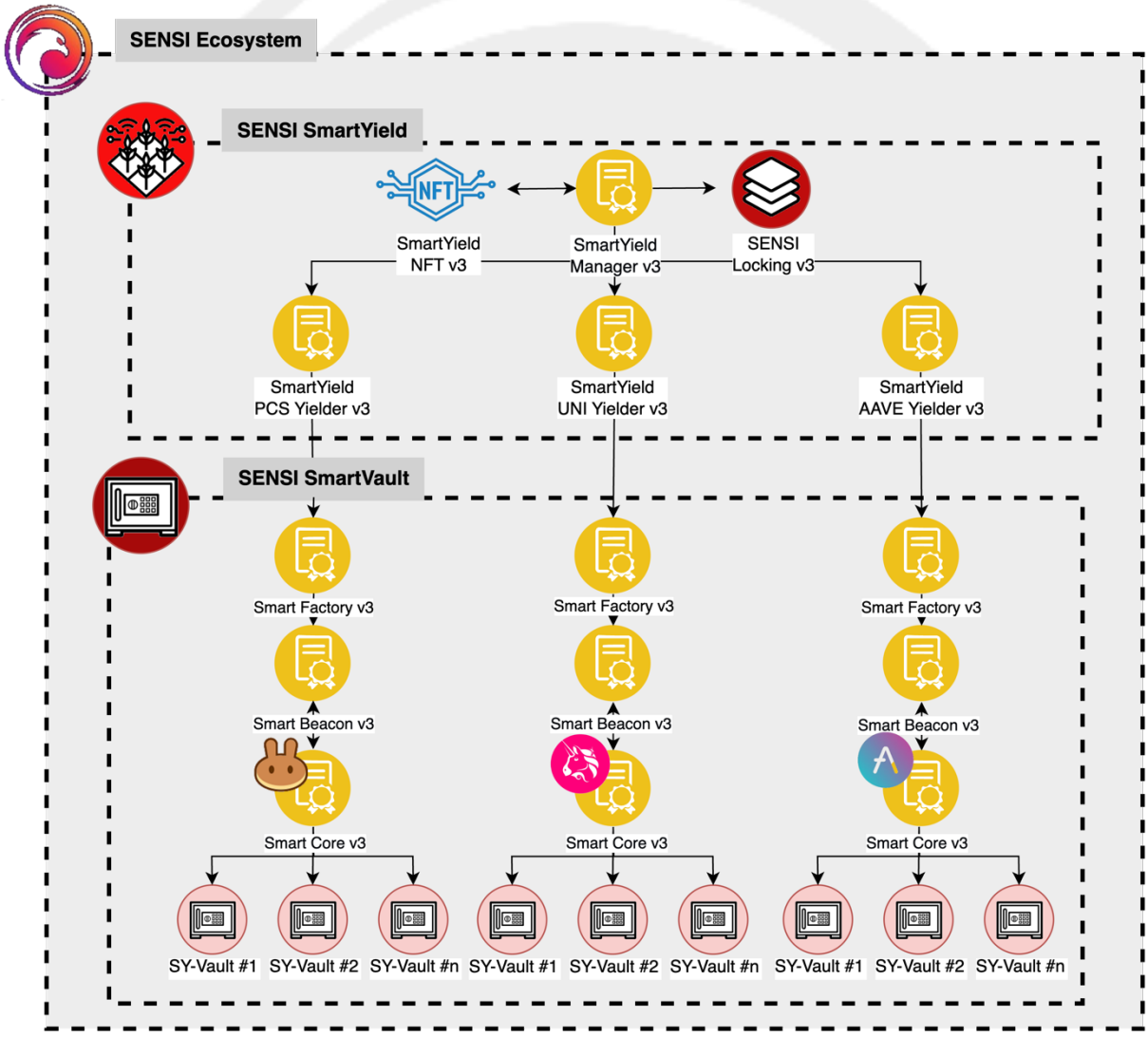

Figure 8: High-level architecture of SENSI ecosystem

The high-level architecture of the SENSI ecosystem delineates two distinct areas (Figure 8). The first pertains to the SY capabilities, comprising of several smart contracts. The principal contract, SmartYield Manager v3 (*SYM v3*), orchestrates

interactions with SYNFT v3, SENSI Locking v3, and SmartYield Yielder v3. Functioning as a coordinator/manager for these contracts, it interfaces with the foundational SENSI SmartVault system. Each Smart Yielder corresponds to a specific crypto chain, such as BSC, Ethereum, or Polygon, rendering the system highly modular for potential future chains and facilitating fund diversification.

The creation of new SY-vaults (*SYV*) involves the SYM v3 invoking the relevant Smart Yielder version (e.g., PCS Yielder v3), which in turn interfaces with the Smart Factory v3 contract. The Smart Factory v3 then calls the Smart Beacon v3, serving as an abstraction layer between the Smart Core v3 template and the Smart Factory v3. This architectural design ensures that the Smart Core v3 can be seamlessly upgraded in the future without necessitating the replacement of the Smart Factory v3 or its associated upper-level contracts.

When the Smart Factory is invoked to generate a new SYV, it communicates with Smart Beacon v3, utilizing Smart Core v3 as a template for creating the SYV on PCS. Additionally, Smart Factory v3 manages and monitors the SYVs, allowing for dynamic adjustments to their numbers over time. Subsequent sections provide a detailed exposition of each smart contract involved in this ecosystem.

Logic of Automated Liquidity Management

The automated liquidity management system (here: *SY*) within the SENSI ecosystem can be split into the following steps & operates through a systematic process designed to optimize liquidity provision (Figure 9 on the next page). This mechanism ensures efficient utilization of funds and adapts to market changes. The following steps elucidate how the automated liquidity management functions:

1. **Unified Investment:** The process commences with investors contributing a single coin, such as BNB, as a unified investment, from which a small deposit fee is deducted to cover infrastructure costs and team wallet expenses (currently, this fee comprises 2% for infrastructure and 1% for team expenses). This deposit fee can be set to zero in future.
2. **Distribution Across PCS Farms:** The unified investment is then allocated across a carefully selected array of PCS farms. This distribution aims to diversify and maximize yield opportunities.
3. **Smart Vault Interaction:** The invested amount undergoes distribution among SYVs, each with its specific strategy for managing liquidity.
4. **Token Pair Determination:** For each SYV, the system identifies the required token pairs (token0/token1) based on its strategy and is converted then.
5. **Rebalancing Cycle:** The ecosystem periodically undergoes a rebalancing cycle, where the total amount of token in each SYV is reassessed based on its strategy.
6. **PCS Farm Allocation:** During the rebalance, the total token pair amount in each SYV is assigned to the connected PCS farm in accordance with the SYV's strategy.
7. **Prechecking Existing Liquidity Positions:** Concurrently, existing liquidity positions in all PCS farms are prechecked to determine if the prices of token0 or token1 has changed.
8. **Dynamic Adjustments:** In the event of price changes, the liquidity is withdrawn from the existing position and strategically repositioned to align with the new market conditions. If no changes occur, the farm rewards are collected.
9. **Reward Distribution:** Collected farm rewards are then converted to SENSI tokens & distributed to the investors' SY-NFTs, with each NFT receiving a proportionate share based on multiple factors (more details in chapter “Reward Calculation”). From the total rewards collected, a small fee of 1% is allocated to the SENSI Locking v3 to increase its reward pool, while an additional 1% is earmarked for covering infrastructure costs, ensuring the seamless functioning of the Locking pool.

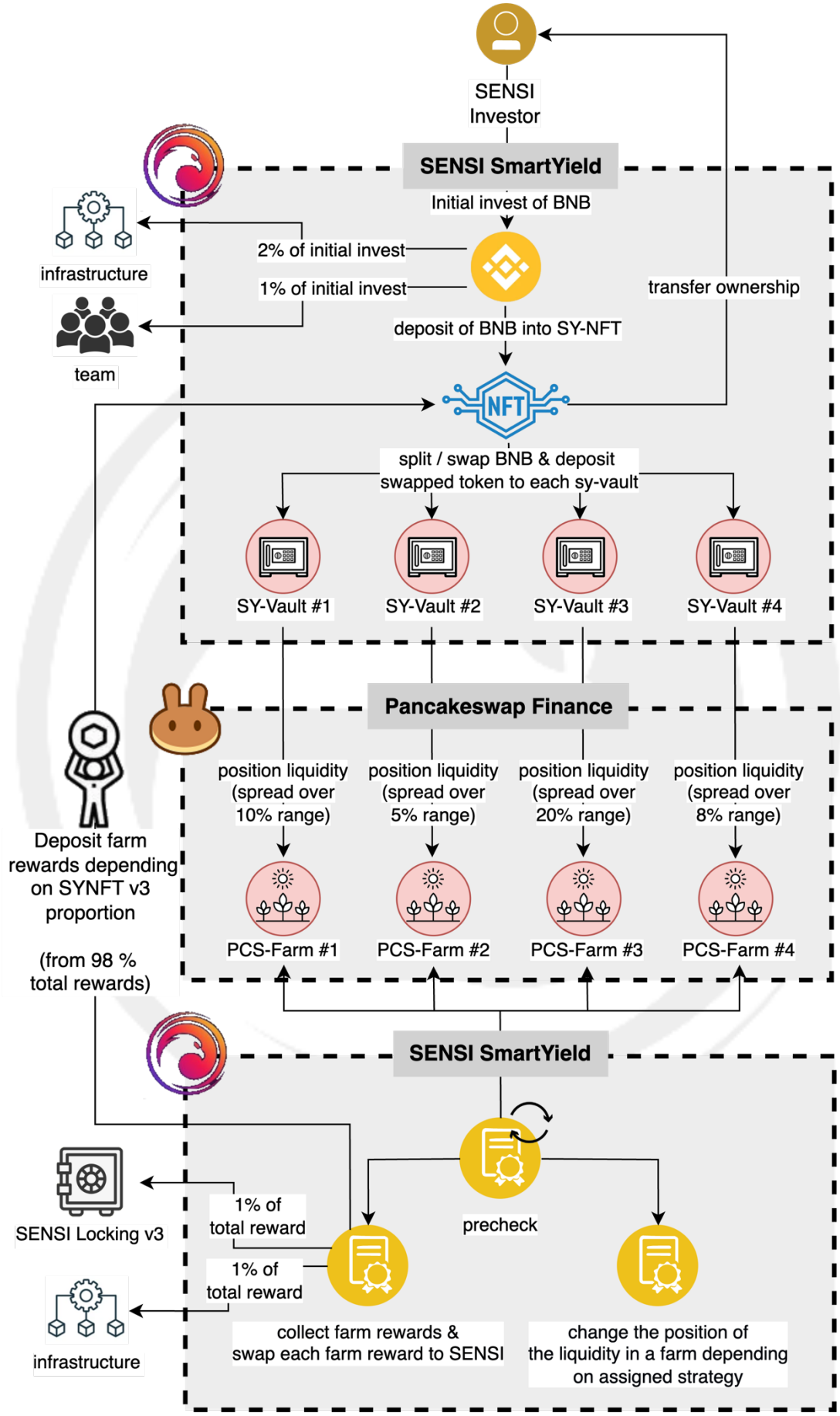

Figure 9: simplified process of SENSI SY on BSC & PCSv3

NFT v3

SYNFT v3 represents a pivotal element in the SENSI ecosystem, enhancing the DeFi experience. The contract follows the ERC-721 standard to create and manage NFTs.

Key Features

1. **NFT Minting:** The contract allows the SYM v3 to mint new NFTs associated with specific SY deposits. Each minted NFT is unique & contains metadata reflecting crucial deposit information (Figure 10).

Figure 10: SY-NFT v3

2. **NFT Burning:** SYM v3 has the authority to burn NFTs, providing a mechanism for handling SY deposit changes or closures. The burning process ensures seamless updates and management of the NFT ecosystem. The burning will be executed whenever the investor fully withdraws their initial investment. This also ensures the scarcity of the SY-NFTs and the SENSI token.
3. **Deposit Information Management:** The contract efficiently manages deposit information through a mapping structure, providing a transparent and accessible view of each deposit's status, rewards, and ownership. All this SY-NFT relevant information and metrics are saved within this NFT which makes it more tradeable and owner independent.
4. **Ownership & Marketing Level Updates:** SYM v3 can transfer ownership of NFTs and update marketing levels through dedicated functions. These features contribute to the adaptability and personalization of the SYNFT v3-ecosystem. This makes the SYNFT v3 asset tradeable on the SENSI marketplace.
5. **Governance Functions:** The contract introduces specific governance functions for administrators and owners to maintain control and adaptability.

Tier Levels, NFT Booster, & Referral Marketing Booster

Tier Levels

In the deposit phase, a tier level must be chosen. The tier level depends on the initial deposited SENSI and brings the investor a guaranteed percentage of rewards. Tiers based on the current SENSI token price & are paid in SENSI token. This function dynamically adjusts tier thresholds, providing flexibility and responsiveness to market changes. The current levels have the following multipliers / target price (Figure 11):

- bronze: 0 % approx. $25 USD (+/- 2%)
- silver: 2 % approx. $125 USD (+/- 2%)
- gold: 5 % approx. $250 USD (+/- 2%)
- platinum: 10 % approx. $1250 USD (+/- 2%)
- diamond: 15 % approx. $2500 USD (+/- 2%)

Figure 11: tier levels starting from bronze to diamond

NFT Booster

Think of it as adjusting the volume for each NFT channel, giving you control over your rewards. Each NFT adds a multiplier on top. The current multiplier levels are:

- SENSI RARE: 1 %
- SENSI LEGENDARY: 2 %
- Both NFTs: 3 %

Referral Marketing Booster

The Referral Marketing Level function empowers the contract owner to set referral marketing levels for specific SY-NFT owners. This allows personalized adjustments within the referral system, fostering engagement and rewards based on marketing levels (see two icons below). The basic Level gives a plus of 1% and the Expert Level adds up to 2% on the reward calculation.

Reward Calculation

SENSI SY introduces sophisticated features aimed at enhancing the yield farming experience for its users. The rebalance function initiates a comprehensive process within the PCS V3 SmartYielder contract, ensuring optimal performance in SYV and pools. This function orchestrates the distribution of rewards, handles dust reward tokens, and updates the status of associated SY-NFTs. Reward Calculation of farm rewards for each SY-NFT is a critical component of the rebalancing process. The distribution of reward shares for each SY-NFT involves the following components:

- **TP** be the total profit of reward shares for each SY-NFT,
- **gP** be the total rewards shares guaranteed for each SY-NFT (80%),
- **m** be the multiplier of the deposited tier level of the SY-NFT (0-15%),
- **B** be the multiplier of the owning SY-NFTs or future whitelisted NFTs (0-3%),
- **R** be the multiplier of the assigned marketing referral level (1-2 %),
- **tP** be the tier profit based on tier-level + NFT/marketing-Booster (0-20%),
- **uP** be the total amount of rewards for the SY-NFT,
- **d** be the dust rewards, which are reused for the locking pool (0-20%),
- **p** be the SYNFT v3 proportion to the overall invested BNB,

To understand the logic better the rebalance function can be expressed mathematically as follows:

$$TP = \frac{LPRewards \times p}{1 \times 10^{18}}$$

Define the guaranteed portion of rewards for each SY-NFT:

$$gP = \frac{TP \times 8000}{10000}$$

Define the reward applicable to the investor based on tier-level (bronze to diamond level - see variants on the next page), NFT-Booster (currently RARE & Legendary but in future others too) and Referral Marketing-Booster (basic & expert – see on the next page).

$$tP = \frac{TP \times 2000 \times (m + B + R)}{1000000}$$

At the end, the guaranteed portion of rewards are added to the calculated tier profits.

$$uP = gP + tP$$

To not lose any rewards to the crypto space the dust is also calculated (if not all levels are reached) and sent to the SENSI locking contract v3:

$$d = TP - uP$$

To get away from abstract mathematical functions an example Calculation will illustrate it better. We start with a hypothetical original reward of 10 BNB (= 1,321,905 SENSI) and parameters of owning a basic marketing level, having a diamond tier level and no SENSI NFT v2 (which is a plus of 16 %):

- **TP:** 1,321,905 SENSI
- **gP (80%):** 1,078,239 SENSI
- **tP (20%):** 230,069 SENSI
- **uP (100%)** 1,078,239 SENSI + 230,069 SENSI = 1,308,308 SENSI
- **d (0-20%):** 58,247.6 SENSI

SENSI Token Distribution swaps BNB to SENSI tokens (which increases its burn mechanism), updating reward balances for each SY-NFT. SENSI tokens obtained are deposited into the SENSI Locking Pool, reinforcing the ecosystem's stability.

Rebalancing & Dynamic Price Range Adjustment

SY facilitates the bootstrapping of liquidity for protocols, eliminating the need for liquidity mining or OTC deals such as bond sales. Instead, it actively engages in market making on decentralized exchanges like Uniswap V3, PCSv3, and others. SY strategically configures DEX positions to navigate in and out of base assets or governance tokens, aiming to establish equitable liquidity on both the buy and sell sides. Contrary to the conventional 50:50 ratio for liquidity provision between governance tokens and base assets, projects can initialize liquidity with any preferred ratio, for instance, 95:5. SY dynamically adjusts this ratio towards 50:50 over time. Upon accumulating a substantial base asset amount, the primary focus shifts towards maintaining sustainable and deep liquidity capable of supporting continuous trading volumes at the prevailing market price.

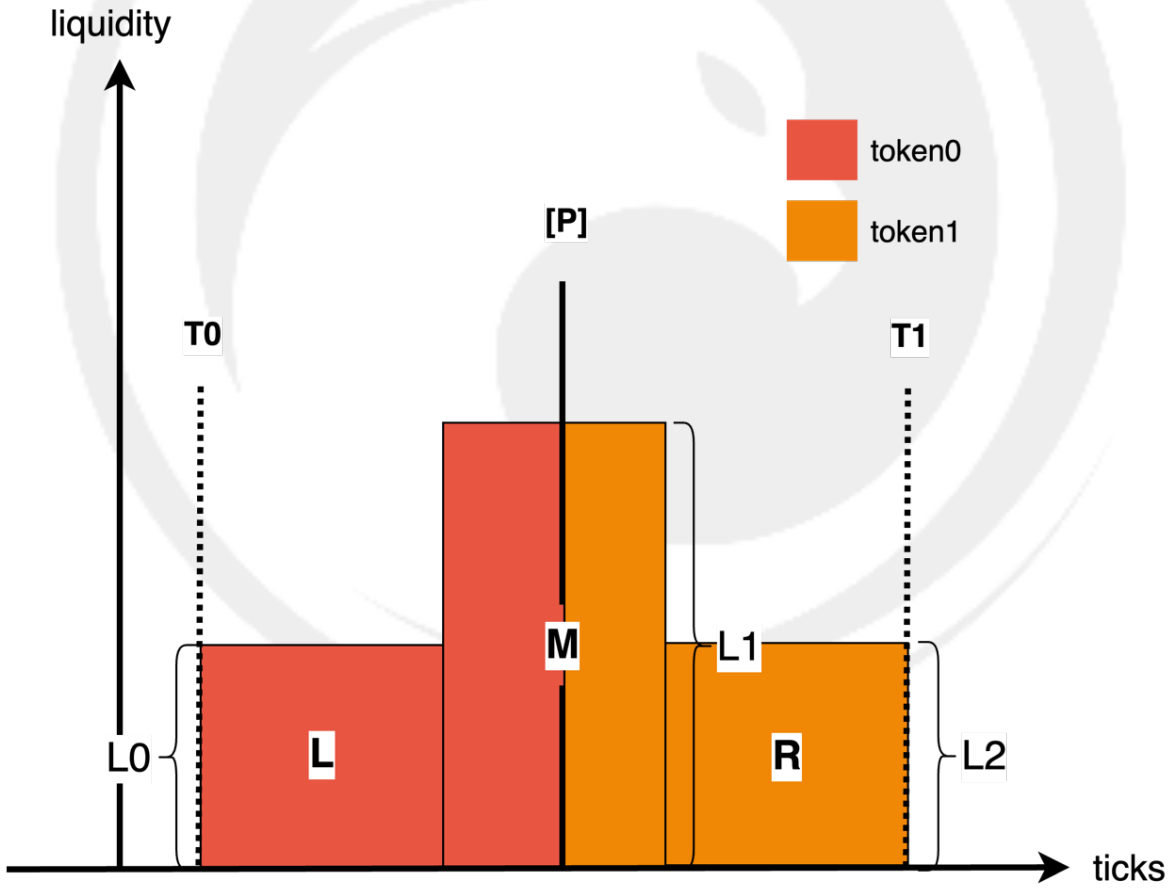

Figure 12: standard strategy type for rebalance with three positions

In scenarios where a protocol initially allocates **most of the** liquidity in its governance token, such as a 95:5 ratio between the governance token and the base asset, achieving balanced liquidity necessitates acquiring more of the base asset (Figure 12). Initially, a

3-range setup is established around the current price of the governance token **(here [P, L1])**. If the price (P) moves beyond the dotted line in the upward direction (R), SY removes the acquired base assets from the LP position, managing them within the Inventory Management. Subsequently, it adjusts all ranges along the price movement in a configuration **like** the original setup. Conversely, if the price (P) moves below the dotted line in the downward direction (L), the process is reversed. This strategic adjustment occurs in response to any price movement exceeding the predefined size, ensuring Smart Yield's proactive management of liquidity positions for optimal efficiency.

In the following, you will see an example of a PCS farm rebalancing following a pre-defined strategy with three positions of each "allocation" ([P, L]) of **[P0, L0] = [-4000, 25 %], [P1, L1] = [-2500, 50%] and [P2, L2] = [-1000, 25%],** the **rebalance threshold (T)** with first & last tick of the total range-size **T0: -5000** and **T1: 0** and last but not least the total range-size **(S) = 10** % which is **[T0, T1]** (Figure 13).

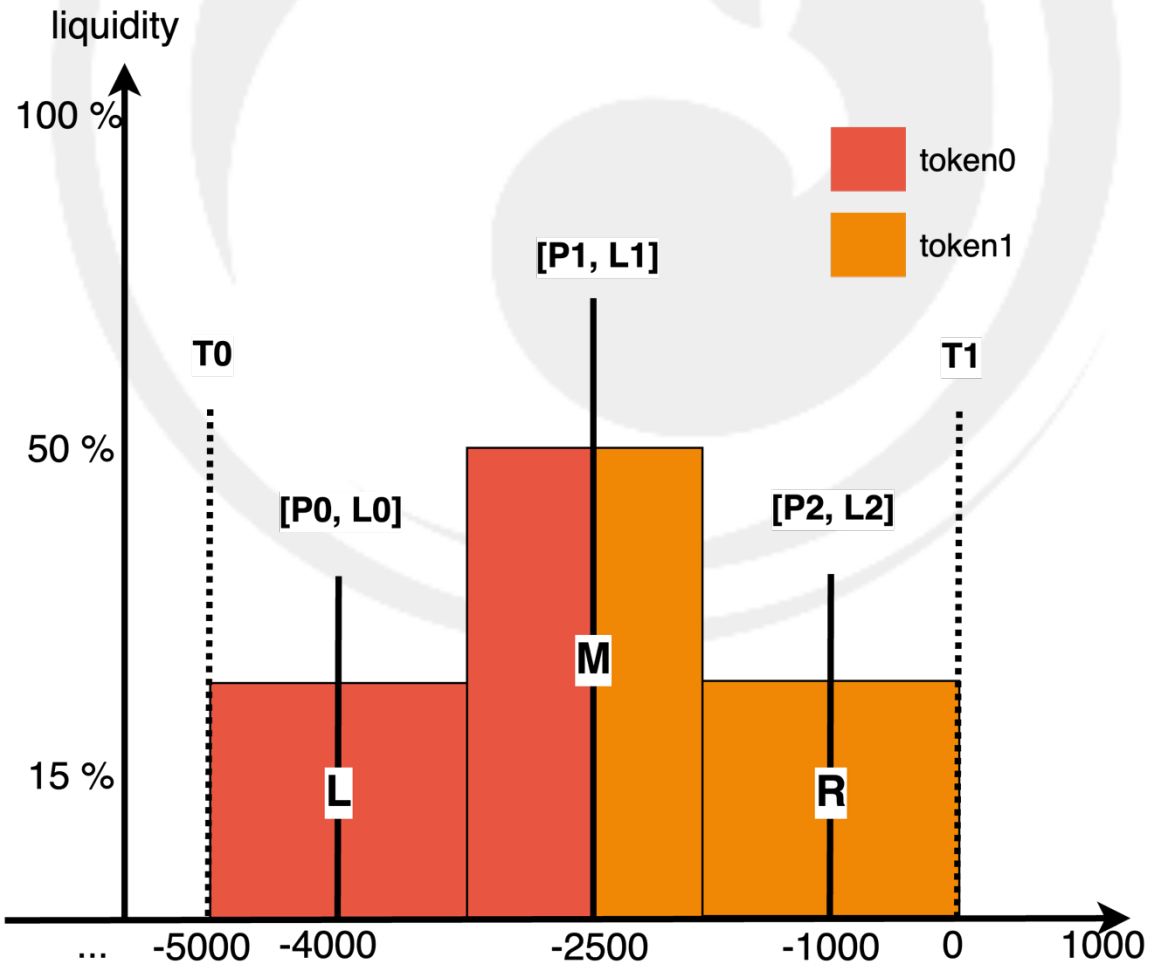

Figure 13: example of a 10% range, three liquidity position strategy

In figure 14, SY configures three positions, and the initial position of the price **(P)** is in the middle **(M)** -> **[P1, L1]**. Starting from the middle the two left positions are automatically calculated so that it returns the results **[P0] and [P1]** (L0 & L1 are already set because they are the liquidity). Initially, only a fraction of the overall liquidity is utilized, with the remainder being reserved in the SYV for future deployment.

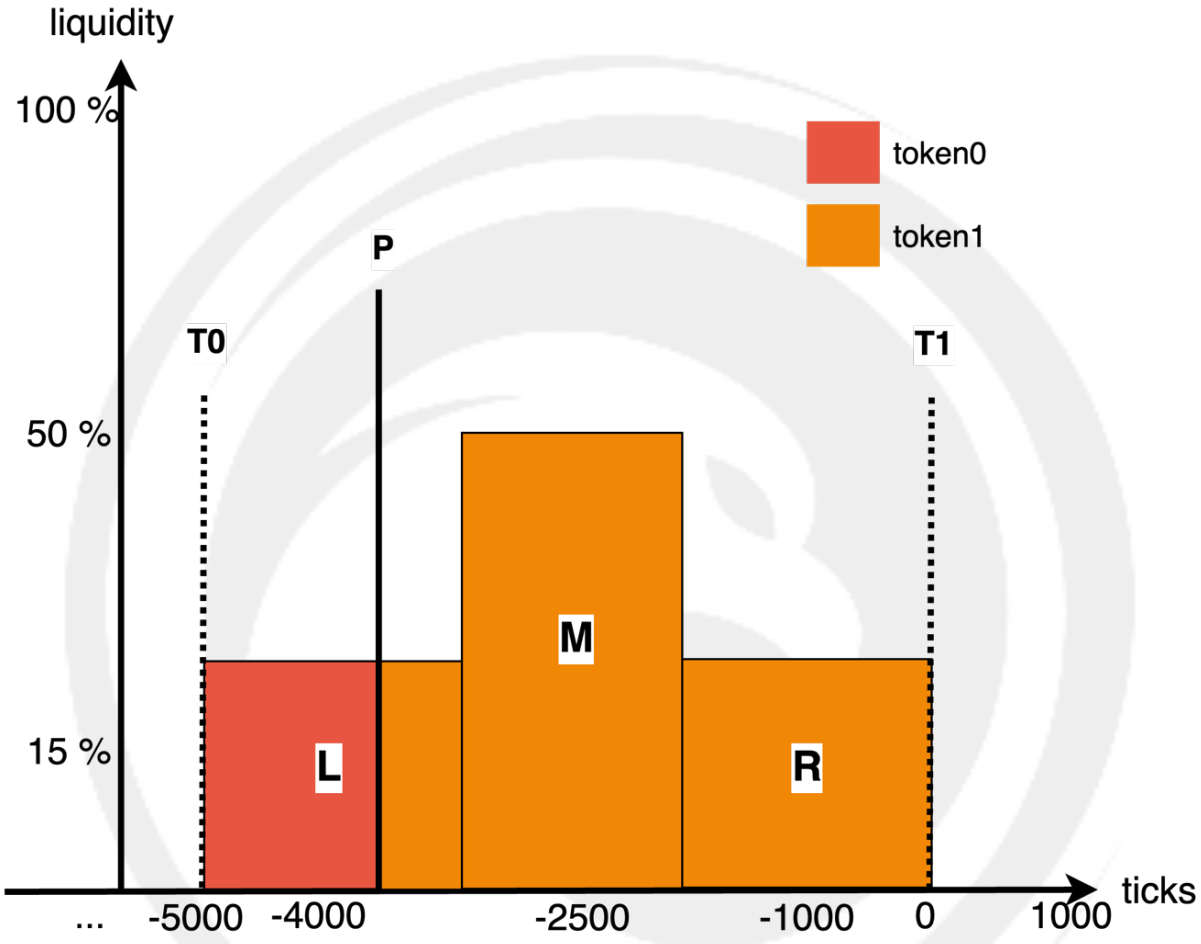

Figure 14: price change to the left but no effect

As time progresses, the price (P) has shifted and now resides in the left position (L), which remains within the initially configured range, thus maintaining its validity (subject to the strategy type). However, should (P) cross either the left threshold (T0) or the right threshold (R), triggering a rebalance becomes necessary.

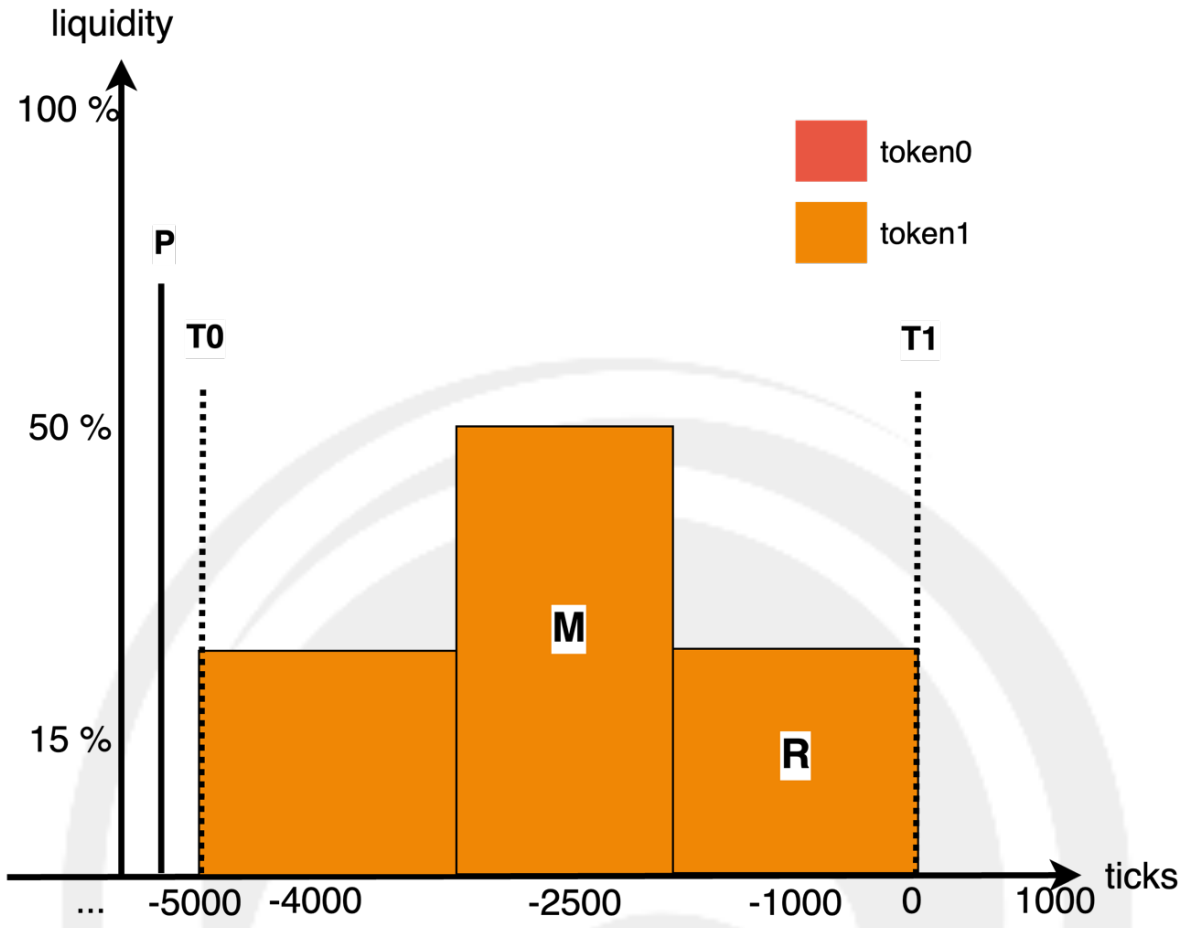

Figure 15: threshold was crossed in L

In the event of P crossing the threshold T0 and initiating a rebalance (Figure 15):

1. **L** transforms into the new middle position, **M1**. Consequently, both assets from inventory management are incorporated into M1 to ensure an identical allocation as M.
2. **M** transitions into the new right position, **R1**. This involves supplementing more governance token from inventory management into R1 to match the allocation of R.
3. A segment of the base asset equivalent to **L** from inventory management is utilized to establish a fresh left position, L1.
4. **R** is excluded and set aside under inventory management.

Following the rebalance, the reserve now contains nearly same ratio of base assets and governance tokens again (Figure 16).

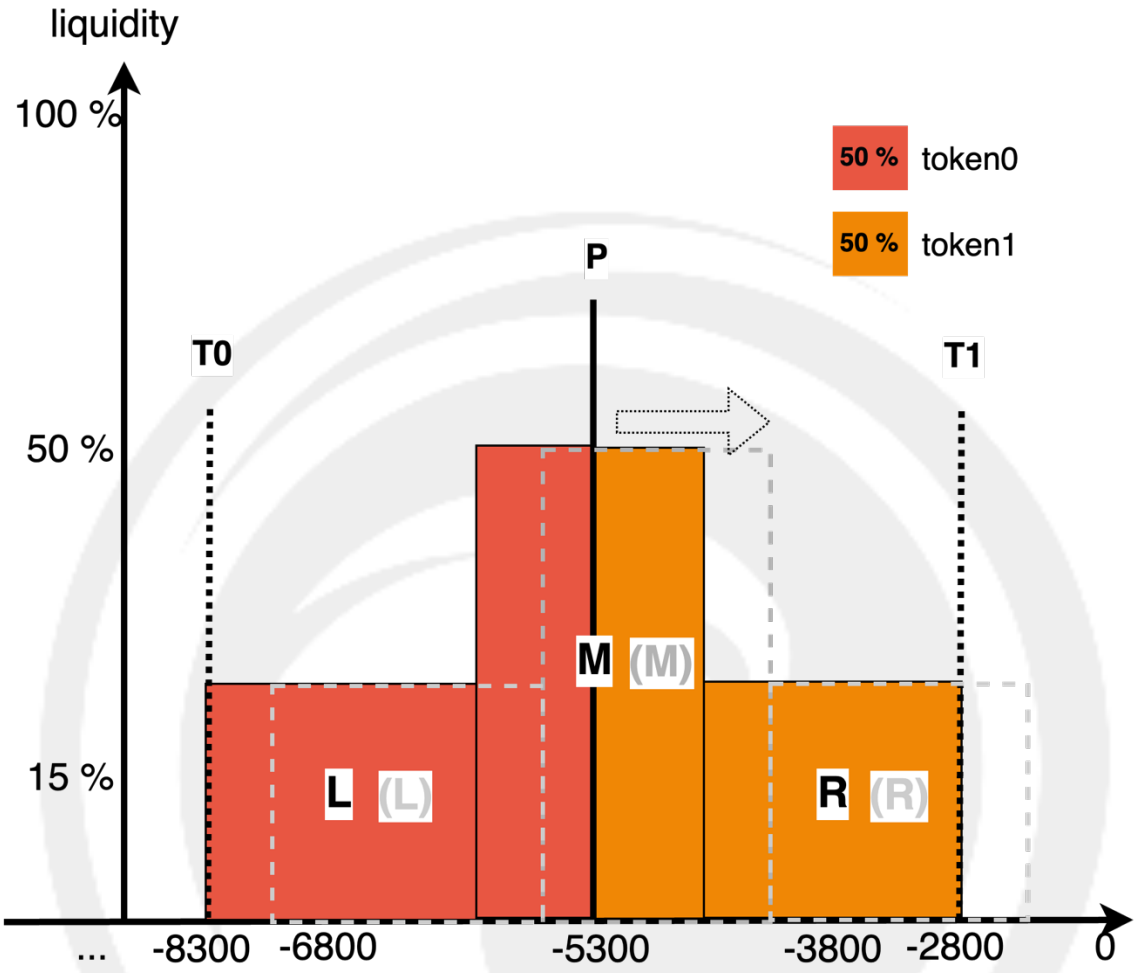

Figure 16: shift of the positions to the new price range

The same logic is valid for the opposite direction of the price movement. If the price crosses the T1 then a rebalance is needed again. Whenever the rebalance, routine detects such pattern, the positions are recalculated and repositioned to the new price range. This farm allocation and dynamic price adjustment ensures a constant reward flow to SENSI ecosystem.

Smart Contract Interaction

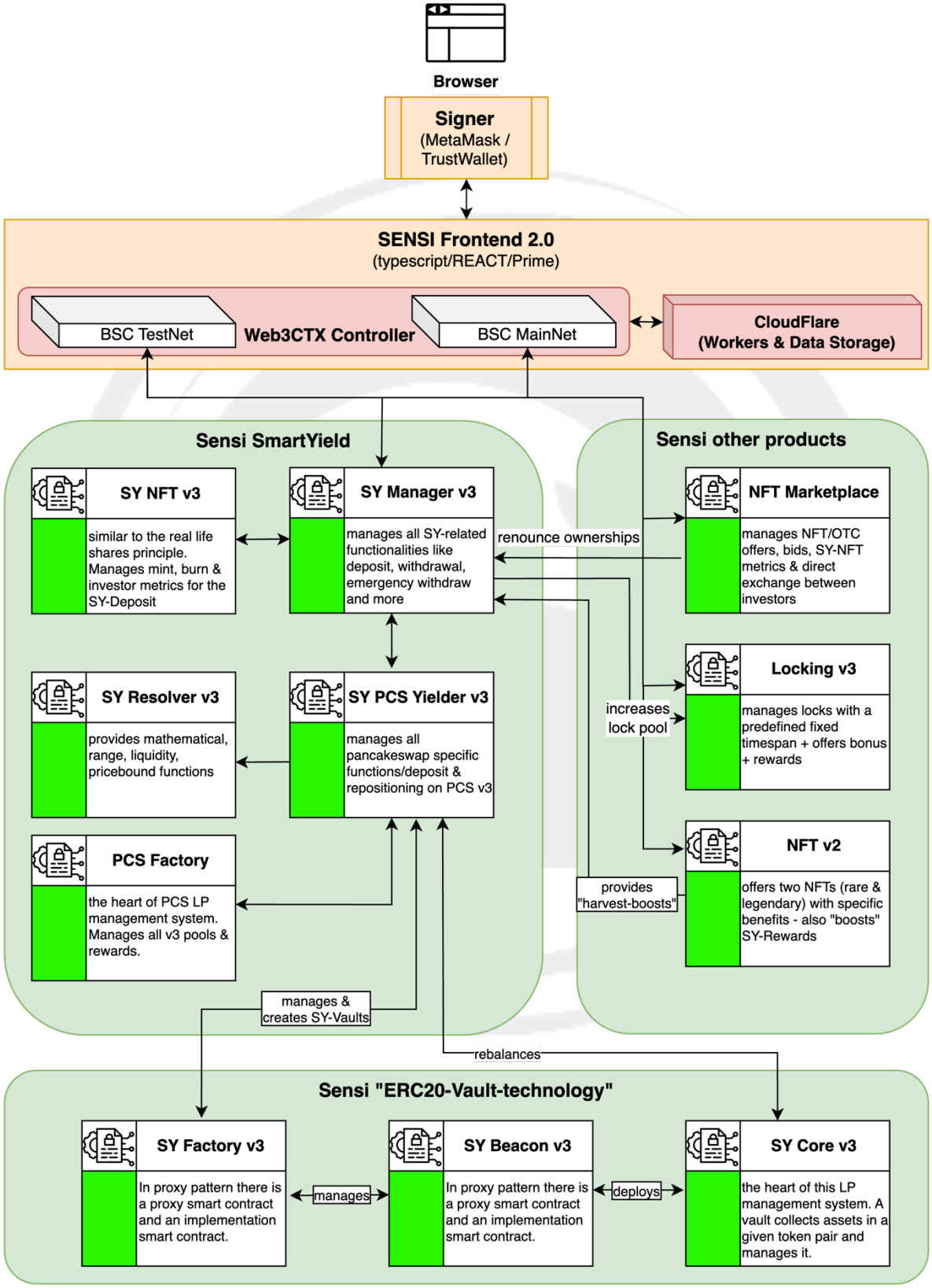

Figure 17: technical overview of all smart contracts

Advantages over Traditional DeFi

SENSI SY is a new and innovative platform that offers a range of benefits for DeFi liquidity providers. Compared to traditional DeFi liquidity providers, SENSI SY offers several advantages that make it an attractive option for those looking to earn higher yields while minimizing risks. In this article, we will explore the advantages of SENSI SY over traditional DeFi liquidity providers.

1. **Higher Yields:** One of the most significant advantages of SENSI SY over traditional DeFi liquidity providers is the ability to earn higher yields on deposited assets. SENSI SY achieves this by using a combination of low-risk assets and hedging strategies to minimize the risk of impermanent loss while still providing higher yields than traditional DeFi liquidity providers. This allows liquidity providers to earn higher returns on their investments, providing a significant advantage over traditional DeFi liquidity providers.
2. **Lower Risk:** Another advantage of SENSI SY is its ability to minimize the risks associated with providing liquidity to DeFi protocols. SENSI SY uses a conservative approach to liquidity provision, minimizing the risk of impermanent loss by using low-risk assets and hedging strategies. This provides liquidity providers with greater peace of mind and minimizes the risks associated with providing liquidity to DeFi protocols.
3. **Dynamic Yield Optimization:** SENSI SY also provides dynamic yield optimization, allowing liquidity providers to earn the highest possible yield on their deposited assets. The platform continuously monitors the yield of different liquidity pools and adjusts the allocation of assets accordingly to maximize yield. This ensures that liquidity providers are always earning the highest possible yield on their investments, providing a significant advantage over traditional DeFi liquidity providers.
4. **User-Friendly Interface:** SENSI SY provides a user-friendly interface that makes it easy to deposit assets and monitor their performance. The platform provides real-time analytics and reporting tools that allow liquidity providers to track their performance and make informed decisions about their investments. This provides liquidity providers with greater control and transparency over their investments, providing an advantage over traditional DeFi liquidity providers.
5. **Governance Participation:** SENSI SY provides liquidity providers with the opportunity to participate in governance and decision-making for the platform.

This allows liquidity providers to have a say in how the platform is run and how their assets are invested, providing them with a greater sense of ownership and control over their investments. This provides a significant advantage over traditional DeFi liquidity providers, where liquidity providers often have limited say in how their assets are managed.

6. **Passive Income Generation:** One of the primary use cases for SENSI SY is passive income generation. The platform allows liquidity providers to deposit their assets and earn high yields without having to actively manage their investments. This makes it an attractive option for those looking to earn passive income on their investments without having to spend a lot of time monitoring the market or managing their assets.
7. **Diversification:** Finally, SENSI SY allows liquidity providers to diversify their investments by providing access to a range of different liquidity pools. This makes it an attractive option for those looking to spread their investments across multiple assets and minimize their exposure to any one asset. This provides liquidity providers with a greater level of diversification and reduces their overall risk exposure, making it an attractive option for those looking for a more diversified approach to DeFi liquidity provision.

Marketplace Dynamics: Listing/Auction System

SENSI Token introduces a dynamic and inclusive marketplace experience. Users can seamlessly list their assets for sale or engage in auctions, fostering a vibrant environment for token exchange. The platform's marketplace dynamics are designed to be user-friendly and transparent, ensuring a seamless trading experience. The combination of listing and auction features provides users with diverse options for asset monetization, contributing to a thriving and diverse ecosystem. Within the marketplace, SENSI Token introduces OTC feature, offering users a peer-to-peer avenue for off-exchange transactions. This functionality provides a flexible and personalized environment for negotiation and execution, catering to the diverse needs of token traders. The OTC feature adds an extra layer of adaptability to the platform, allowing users to explore bespoke trading arrangements outside the conventional exchange setting.

1. **NFT Listing/Auction Management:**

   Users can list SENSI NFTs on the marketplace. These listings trigger various actions, such as changing ownership in the SENSI SYM v3 and transferring NFTs or tokens. All the listings/auctions will be paid in SENSI token. There is a small marketplace fee being displayed before the listing/auction will be created. Users can also create auctions for SENSI NFTs, specifying end times. The contract also includes mechanisms for cancelling auctions and resulting them, ensuring a fair and transparent process (Figure 18).

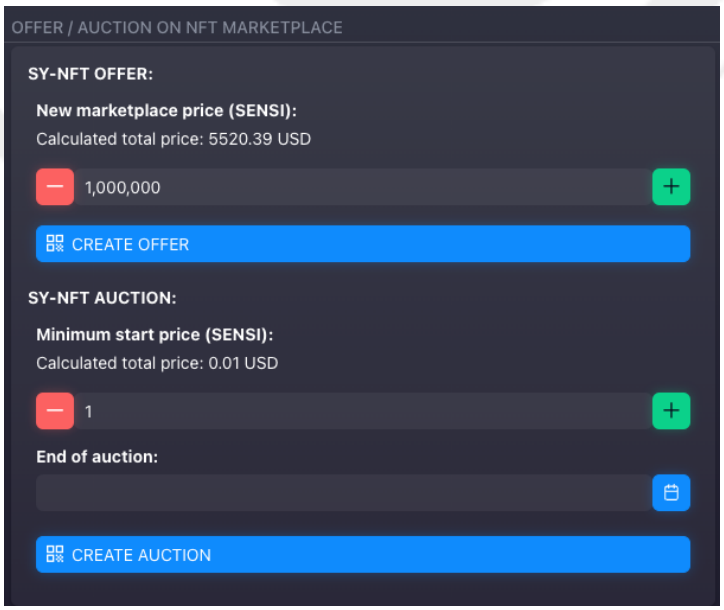

Figure 18: listing/auction feature of SY-NFTs

2. OTC ecosystem

In the dynamic landscape of blockchain and decentralized ecosystems, the SENSI NFT Marketplace extends its functionality with an OTC trading desk. This integral feature adds an extra layer of versatility & accessibility for users seeking a more personalized & direct trading experience within the SENSI ecosystem.

a. Listing Tokens on the OTC Desk:

SENSI NFT Marketplace introduces an OTC desk where users can list their tokens for sale outside the traditional marketplace. This decentralized approach empowers users with the freedom to set their prices and quantities, catering to diverse trading preferences (Figure 19). This ensures a trade of SENSI token without using DEX and additional slippage fees.

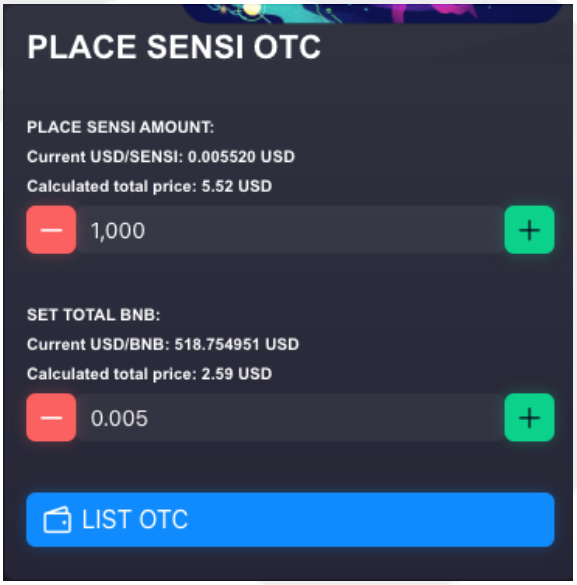

Figure 19: OTC listing via the marketplace page

b. Cancellation of OTC Listings:

Users have the flexibility to cancel their listed OTC desk items, ensuring control & adaptability over their assets. This feature enables users to make real-time decisions in response to market dynamics or changing circumstances (Figure 20).

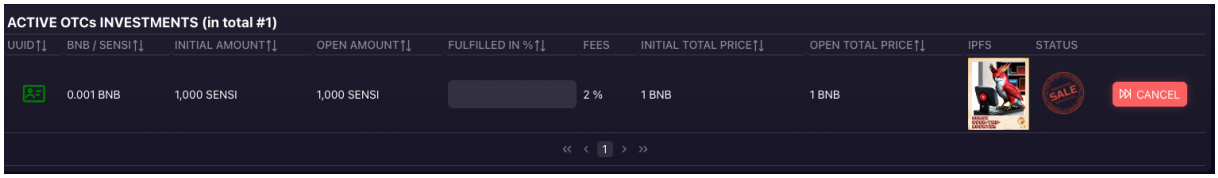

Figure 20: OTC dashboard on investment page with cancel option

c. **Purchase from the OTC Desk:**

The OTC desk facilitates the direct purchase of listed tokens, offering a seamless and efficient trading experience. Users can interact with the OTC desk to acquire tokens without navigating through the traditional marketplace, enhancing accessibility and user choice (Figure 21).

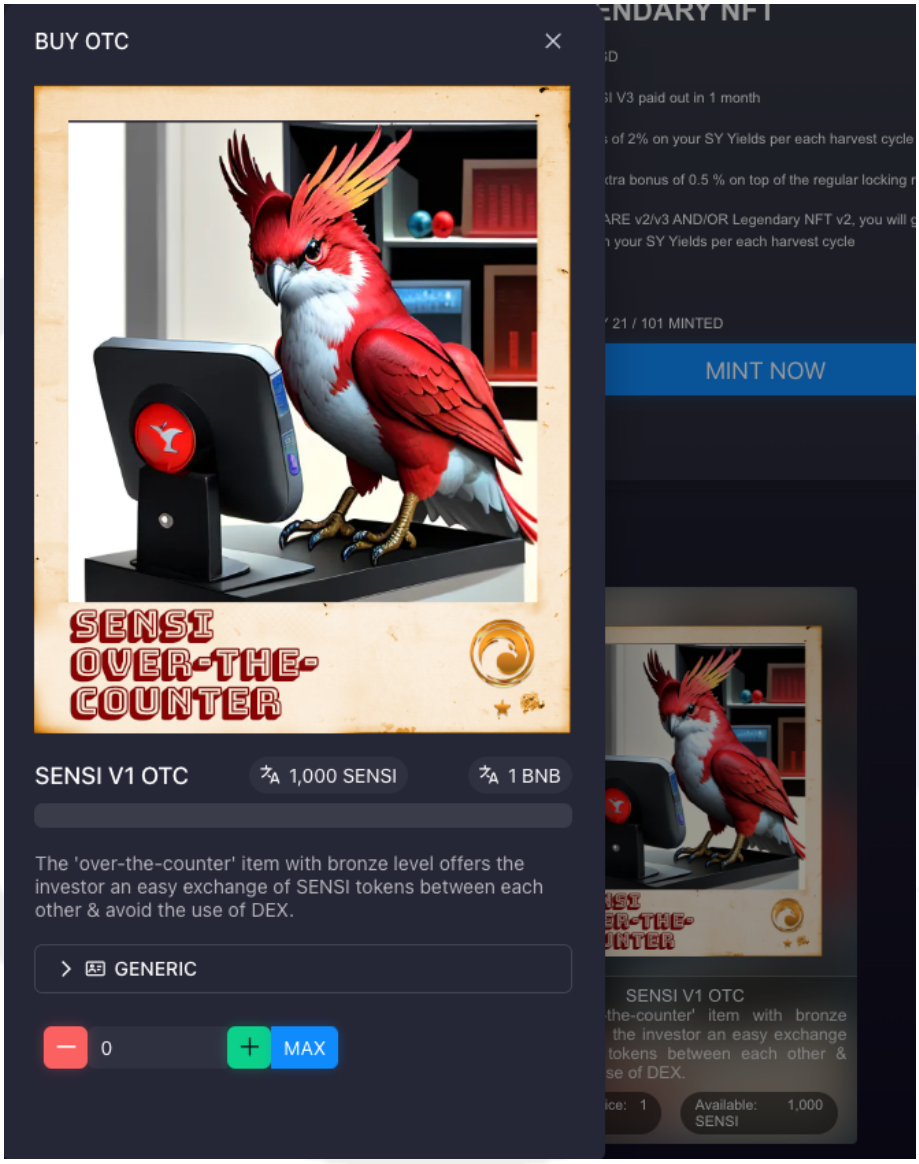

Figure 21: option to direct purchase SENSI token via marketplace

d. **Dynamic Pricing and Quantity Management:**

The OTC desk incorporates dynamic pricing mechanisms, allowing users to set prices for their tokens based on real-time market conditions. Additionally, users can manage the quantity of tokens available for sale, tailoring their OTC trading strategy to their unique preferences.

3. **Cancellation Mechanisms:**

Users have the ability to cancel their listed SENSI NFTs or OTC desk listings, providing flexibility and control over their assets (Figure 22).

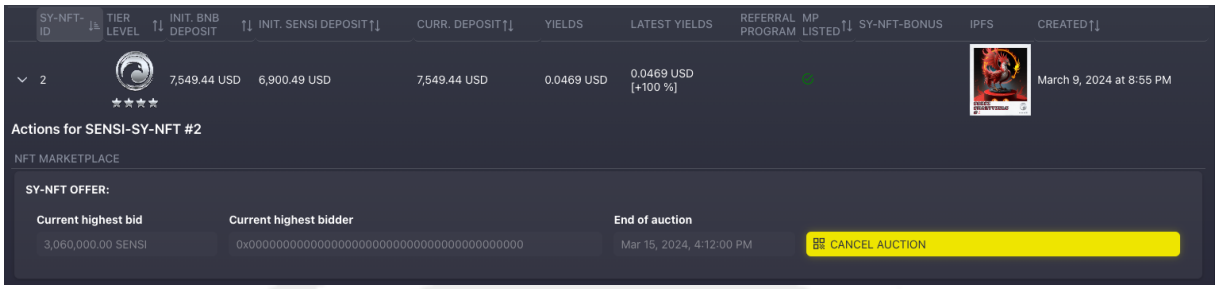

Figure 22: cancel option shown within the investment page

4. **Purchase and Bid Placement:**

The contract facilitates the purchase of listed SENSI NFTs and tokens from the OTC desk. Users can place bids on NFT auctions, with the highest bidder winning the auction. The previously mentioned marketplace fees are paid by the buyer. If the seller is cancelling the listing/auction, no fees will be considered. Also, the highest bidder is just shown on the marketplace item (Figure 23).

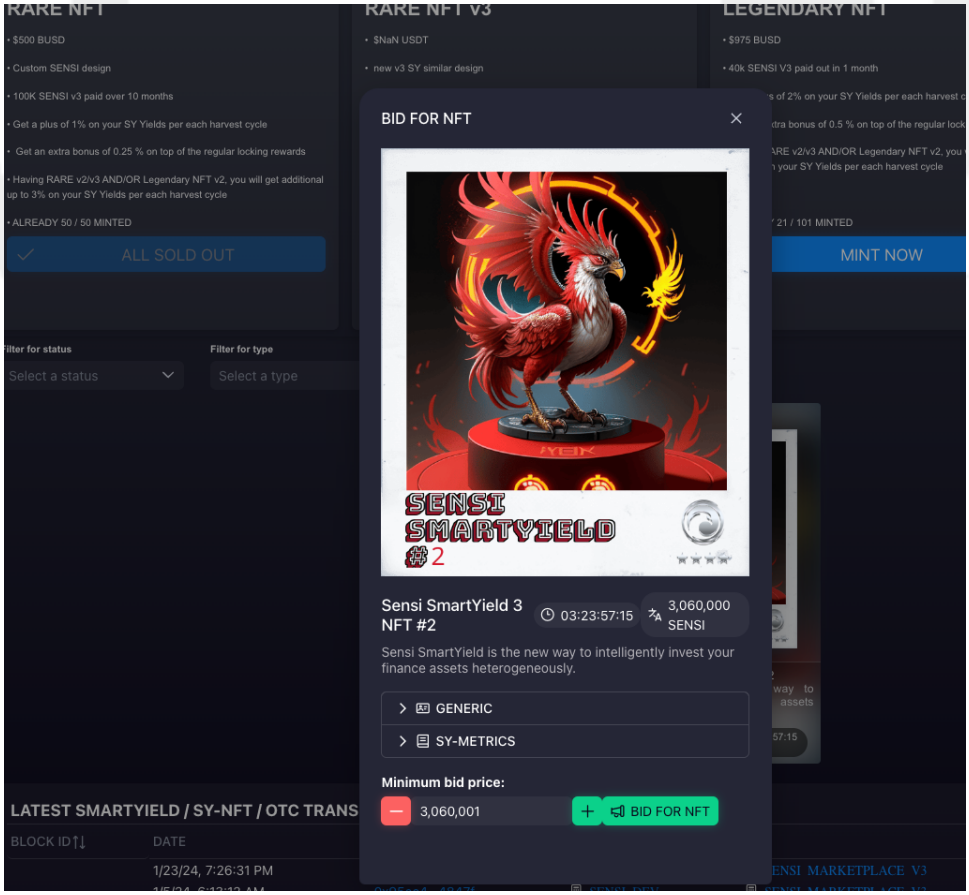

Figure 23: running auction on marketplace for SY-NFT

Conclusion: The Future of DeFi Liquidity Management

Decentralized Finance has not only disrupted but redefined the traditional financial landscape, offering a decentralized platform that empowers individuals to access financial services with unprecedented freedom. Central to the functioning of decentralized exchanges are Automatic Liquidity Providers, which serve as the backbone of liquidity provision, enabling seamless asset trading while maintaining market stability.

However, the inherent risks associated with ALPs, notably impermanent loss, have posed significant challenges for liquidity providers. In response to these challenges, SENSI SY emerges as a pioneering solution, designed to address, and mitigate the risks inherent in DeFi liquidity provision. Through innovative mechanisms, SENSI SY not only safeguards against impermanent loss but also enhances returns compared to underlying assets, ensuring a secure and rewarding experience for liquidity providers. Its intuitive interface further simplifies participation in DeFi, democratizing access to the benefits of decentralized finance.

Looking forward, the trajectory of DeFi liquidity provision appears promising, with SENSI SY at the forefront of driving innovation and resilience within the ecosystem. Moreover, as SENSI continues to expand its ecosystem with additional offerings such as the marketplace, OTC offers, and locking contract v3, the utility and demand for the SENSI token are expected to soar. By offering flexible options such as locking and utilizing SY capabilities, SENSI empowers investors to tailor their strategies to align with their objectives, fostering a dynamic and thriving DeFi ecosystem that embodies the principles of decentralization and financial inclusion. Investors have the own choice to decide which strategy fits best to their usage.

"Empowering Growth, Nurturing Yield:

SENSI, Where Smart Finance Meets Intelligent Investments!"

Legal and Regulatory Compliance

1. Legal Disclaimer: This document provides guidance for participants in the community-driven farming solution known as SENSI. It is not intended as legal, financial, or investment advice. Users are encouraged to seek independent legal counsel before actively engaging with the platform.

2. Community Terms and Conditions: Participants in the SENSI community acknowledge and collectively agree to abide by the terms and conditions specified in this whitepaper. These terms encompass the collaborative ethos of the platform, community governance structures, and transparent token interactions. The community reserves the right to update these terms through consensus mechanisms.

3. Regulatory Collaboration: SENSI actively collaborates with regulatory bodies and emphasizes adherence to local laws governing community-driven farming initiatives. Participants are urged to familiarize themselves with and adhere to applicable regulations within their respective jurisdictions.

4. Collective Risk Awareness: Members of the SENSI community share a collective responsibility to recognize and address potential risks associated with the farming solution. These risks include market dynamics, evolving regulatory landscapes, and technological considerations. Comprehensive risk factors are outlined to empower the community with informed decision-making.

5. Shared Intellectual Commons: All intellectual contributions within the SENSI community are considered part of a shared commons. Users are encouraged to contribute to and innovate within the community, respecting the intellectual property guidelines outlined collectively. Unauthorized use or distribution of intellectual property is discouraged.

6. Decentralized Identity Verification: SENSI may implement decentralized identity verification mechanisms to enhance trust and transparency within the community. Participants may voluntarily undergo identity verification processes, reinforcing the commitment to a decentralized and inclusive farming ecosystem.