concordex

LITEPAPER

INTRODUCTION

Mainstream crypto adoption can only happen with institutional involvement. However, faith in centralized crypto firms took a severe beating in 2022, with companies like FTX, Celsius, and Three Arrows Capital declaring bankruptcy.

While decentralized exchanges (DEXes), offer on-chain transparency and accountability, and stand as compelling alternatives to their centralized counterparts, they still need to be more sophisticated and utilitarian to service institutions.

At Concordex, we envision a more refined approach to decentralized finance. Our mission is to establish a potent DEX that upholds the foundational principles of democracy inherent in DeFi. By building on top of the Concordium blockchain, Concordex can leverage a built-in identity layer to create a regulator-friendly DEX.

Concordex represents a bold step forward in this journey, signifying our commitment to establishing an institution-friendly, robust, and transparent DEX built on the Concordium blockchain.

WHY CONCORDIUM?

We have chosen to build our decentralized exchange, Concordex, on Concordium for these reasons:

Regulatory Compliance

Concordium's built-in identification layer allows us to balance user privacy with the need for identification. This approach aligns with anti-money laundering regulation expectations, making it more likely for our exchange to gain acceptance from institutions and regulators. This is a significant departure from most layer-1 protocols and provides us with a unique value proposition.

User Accountability

The identification layer on Concordium also holds users accountable for their actions, making it difficult for malicious parties to commit fraud including fraudulent activities such as "rugpulls" - withdrawing their liquidity and disappearing. This adds an additional layer of security for our users and investors, and disincentives fraud.

High Performance

Concordium offers high throughput with fast finality. This means our users can expect quick, efficient transactions, an essential feature for effective decentralized exchange.

Low Costs

Concordium's low fixed transaction costs will allow us to pass on the savings to our users, making it more economical for them to trade and interact with the Concordex platform.

Smart Contract Functionality

Concordium's user-friendly RUST SDK makes it easier for us to develop complex, secure functionalities for our decentralized exchange. This feature will enable us to offer a sophisticated yet accessible platform for our users.

Permissionless Network

Being a permissionless network, Concordium allows anyone to join and participate. This inclusivity aligns with our vision for Concordex to be an open and accessible platform for all.

GDPR Compliance

Concordium's protocol is GDPR-compliant, ensuring that we respect and uphold the data privacy rights of our users in accordance with European Union regulations. This compliance bolsters our commitment to user privacy and trust.

Innovation and Potential

Concordium's unique architecture represents a new wave of innovation in the DeFi space. Building our exchange on such a platform gives us a solid foundation to grow and adapt to this rapidly evolving sector.

PROBLEMS WITH CURRENT DEXES

Problem #1. Liquidity provision issues

Originally, Automated Market Makers (AMMs) were developed to optimize on-chain processing compared to traditional Orderbook - style markets. The first generation of AMMs, based on the x*y=k formula, offered a commendable solution but yielded subpar returns for committed liquidity. Liquidity returns in these pools were directly proportional to the amount of liquidity committed. However, since liquidity was dispersed across a wide price range, it often translated to relatively diminished returns.

Second-generation DEXes introduced the concept of concentrated liquidity - as popularized by Uniswap V3. In this model, liquidity is allocated within a specified price range. This new approach allows users to choose the specific price range where they want their tokens to be allocated.

This approach offers several advantages:

1. **Efficient liquidity allocation:** Liquidity is allocated in a more optimal manner, enhancing overall effectiveness.
2. **Increased fees with fewer tokens:** Liquidity providers (LPs) can earn higher fees by depositing fewer tokens.
3. **Faster trade execution:** Concentrated liquidity enables a larger capital pool provided by fewer LPs, resulting in faster trade execution.

The CLMM model has emerged as the dominant methodology for DEXes globally, as it empowers liquidity providers with a significantly higher level of control, resembling the capital deployment approach of order book DEXes while maintaining the processing efficiency of AMM DEXes.

However, the CLMM model does have a drawback - increased complexity. CLMMs place a higher workload on liquidity providers, who must actively manage their liquidity provision ranges to ensure their offering aligns with the current swap rate and continues to generate fees. This heightened level of involvement has deterred many casual investors, as they were accustomed to a more passive role.

LPs must now undertake a series of decisions and actions, making the process more intricate compared to traditional passive liquidity provision. Actions such as:

- LPs must carefully select the pool in which they want to provide liquidity. This choice determines the market and asset they will be exposed to.
- Specify the position and width of the price range in which their liquidity will be concentrated. This decision directly impacts their exposure to price movements and potential impermanent losses.
- Continuously monitor and adjust their liquidity ranges to ensure their offering aligns with the current swap rate. Failing to do so may result in missed opportunities for fee generation or suboptimal returns.

The active management required in CLMM DEXes poses a challenge for non-professional market makers and retail traders. The open and decentralized nature of DeFi initially allowed anyone to become a market maker, providing liquidity and participating in the ecosystem. However, the increased complexity of CLMMs has created a barrier for casual investors who may not possess the necessary knowledge, time, or resources to actively monitor and adjust their liquidity positions. This has led to the alienation of a significant portion of potential liquidity providers and retail traders who are not accustomed to such active involvement.

To address this issue, the next generation of DEXes should strive to provide user-friendly tooling and interfaces that cater to casual investors. By simplifying the process of managing liquidity positions and providing intuitive controls and automation features, DEXes can make it more accessible for non-professional market makers to participate while still maintaining the desired high fee-to-committed liquidity ratio. Such advancements would contribute to a more inclusive and diverse DeFi ecosystem, attracting a wider range of participants and ultimately promoting the growth and adoption of decentralized finance.

Problem #2. The static fee levels

Most DEXes have adopted two approaches for fee rates: fixed fees at pool inception or multiple pools with specific fee levels. However, both approaches have inherent flaws.

1. **Fixed fee rate:** A fixed fee rate lacks adaptability and fails to optimize profit generation for liquidity providers (LPs).

2. **Multiple pools with fixed fee:** This fragments liquidity, leading to inefficiencies in LP participation.

The profitability of liquidity providers relies on the difference between the fees they earn and the impermanent loss incurred on their positions. Unfortunately, LPs have no control over impermanent losses; a static fee level only offers them limited control over their earned fees. This limitation hinders their ability to optimize and adjust their earnings based on market dynamics.

Addressing the fee issue is also crucial for the next generation of DEXes, as it balances the interests of both liquidity providers (LPs) and projects. Currently, LPs often seek additional revenue streams by receiving tokens at inflated rates to compensate for their contributions to the market.

However, this practice is unsustainable and fails to provide a fair and balanced compensation structure. LPs should be adequately rewarded for their market contributions, while projects should not bear an excessive payment burden that depletes their resources.

Problem #3. Lack of Liquidity

The liquidity problem in decentralized finance (DeFi) revolves around the concentration of liquidity and the challenges it poses for the ecosystem. Liquidity, which determines the ease of trading one asset for another, is a critical aspect of finance, and DeFi heavily relies on it. However, liquidity distribution in DeFi is not democratic.

Certain tokens naturally attract more liquidity than others, leading to a concentration of high liquidity within a smaller number of tokens. While this may seem logical, it creates a significant issue of illiquid tokens, often referred to as long-tail tokens. Illiquid tokens have a smaller pool of liquidity, making them susceptible to price manipulation by malicious actors, particularly whales. These actors can exploit the lack of liquidity by injecting or withdrawing a substantial amount of funds, causing significant price fluctuations and market distortions.

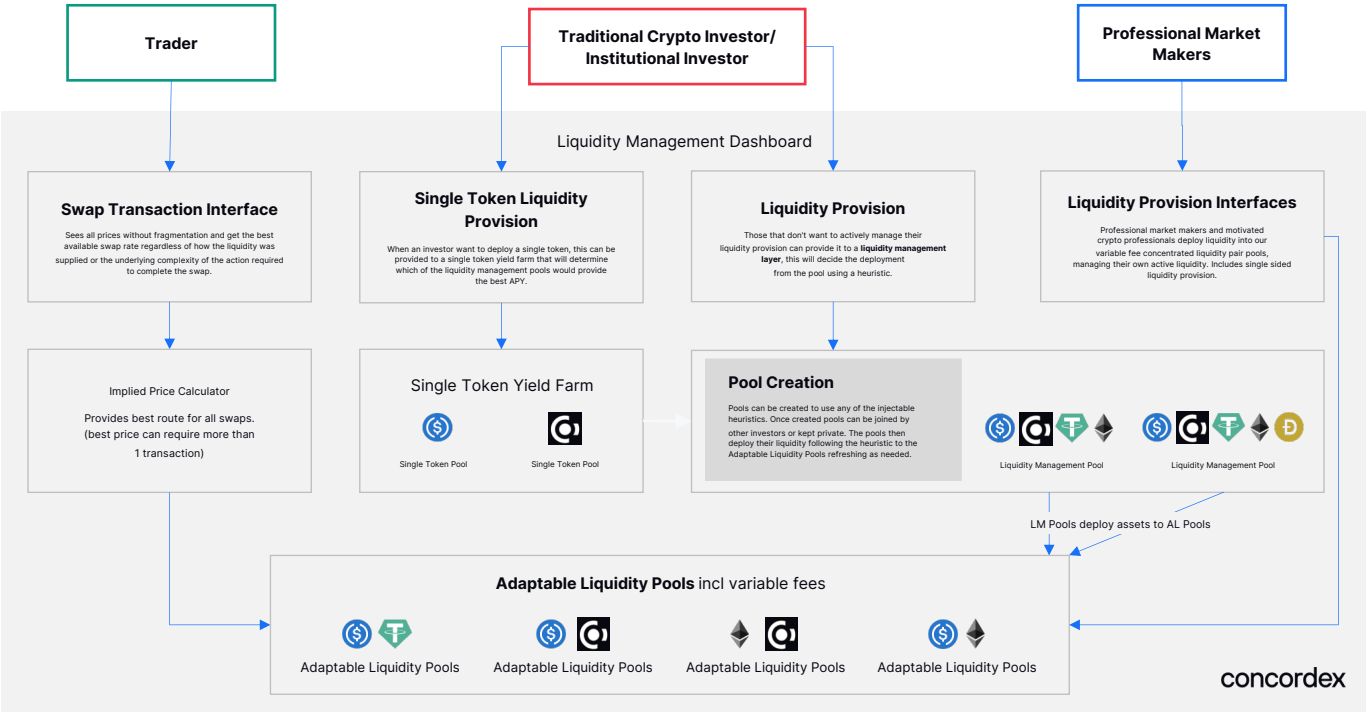
This concentration of liquidity is a well-known challenge in traditional financial markets, where liquidity tends to be concentrated in major futures or benchmark contracts, such as bonds or commodities like Frontline Brent Crude. However, traditional markets have mechanisms in place to enable price formation in illiquid markets without the inefficiencies and risks associated with 24/7 automated market makers (AMMs) in DeFi such as auctions.

Low liquidity in DeFi leads to two significant issues. First, the burden falls on the project to provide continuous liquidity for their token's AMMs, which can be a resource-intensive task. Second, in illiquid pools, the sudden injection or withdrawal of liquidity by a whale can cause drastic price fluctuations, creating an unstable and unpredictable trading environment.

To address the liquidity problem in DeFi, it is crucial to pursue fairer liquidity distribution mechanisms. By mitigating the concentration of liquidity and incentivizing participation from a wider pool of market participants, DeFi can enhance its stability, reduce the risk of manipulation, and foster a healthier and more inclusive financial environment.

THE CONCORDEX SOLUTION

Solution #1. Adaptable Exchange Pools



Concordex's innovative approach lies in its adaptable exchange pools, which revolutionize the structure of liquidity contribution in decentralized exchanges (DEXes). Unlike traditional DEXes where the mode of liquidity contribution is hardcoded at the smart contract creation stage, Concordex introduces flexibility by allowing the smart contract to operate on the chosen form of liquidity contribution supporting multiple types at the same time.

But what exactly is meant by "liquidity contribution" in this context? It encompasses various order contributions, such as ranged orders, single-sided liquidity, and even limit orders. Additionally, Concordex empowers liquidity providers (LPs) to set the fee for each individual contribution. This level of control significantly mitigates the impact of fee/volatility challenges faced by LPs in DEXes. LPs are rewarded suitably for their efforts and are empowered to negotiate better deals with projects, fostering a fairer and more beneficial ecosystem for all participants.

Concordex also sets out to tackle the challenge of operational complexity in decentralized finance (DeFi), particularly for non-professional investors. One of the key design goals of Concordex is to provide a solution that simplifies the user experience and automates redundant tasks, making DeFi more accessible to a wider range of participants.

To reduce operational complexity, Concordex will introduce a liquidity management pool, which serves as the DeFi equivalent of a "funds management layer" in traditional finance (TradFi). Liquidity providers (LPs) can submit their tokens into this pool, empowering the pool to perform various actions on their behalf. This automation eliminates the need for LPs to individually handle tasks such as choosing token pairs, selecting price ranges for orders, and determining applicable fees for their positions.

Concordex further enhances user experience by offering simple algorithms and heuristics that act as index trackers for the distribution of tokens within the liquidity management pool. These algorithms help optimize the allocation of assets into the adaptable exchange pools, ensuring efficient utilization of liquidity and facilitating a balanced distribution of tokens.

The liquidity management pool implemented by Concordex also includes a rebalancing mechanism. This mechanism compensates for changes in volatility or price by adjusting the range or distribution of tokens within the pool. By autonomously managing these adjustments, Concordex reduces the burden on non-professional investors, enabling them to actively participate in the DeFi market without needing constant monitoring and intervention.

Additionally, Concordex embraces community participation by allowing for the use of community-created heuristics in the operational simplification process. Mechanism creators are incentivized through a share in the accruals, fostering a collaborative environment and encouraging the development of innovative solutions that benefit the entire Concordex ecosystem.

These innovations introduced by Concordex aim to streamline the user experience, reduce operational complexity, and empower non-professional investors to confidently engage in DeFi activities. Concordex paves the way for broader adoption of DeFi while ensuring a more inclusive and user-friendly environment for all participants by automating redundant tasks, offering index tracking algorithms, and promoting community involvement.

Solution #2. Multiple Fee Levels

Concordex stands out in the decentralized exchange (DEX) landscape with its unique approach to multiple fee levels, providing significant benefits for liquidity providers, developers, traders, and institutions.

Traditionally, DEXes have employed a static fee model or utilized multiple pools with specific fee percentages. However, these approaches have limitations, as liquidity providers cannot consistently apply higher fee rates, and liquidity fragmentation across multiple pools can lead to inefficiencies.

Concordex takes a different path by implementing multiple fee levels within a single pool. Each pool on Concordex offers eight fee levels, ranging from 0.01% to 1.28%, providing a wide range of options for liquidity providers. This approach brings several advantages across various user segments.

For developers, Concordex's approach reduces transaction costs and processing power requirements. Unlike other DEXes that require separate smart contracts for each liquidity pair with multiple fees, Concordex streamlines the process, making it more efficient.

Traders benefit from Concordex's optimization of swaps. Liquidity is drawn from all fee tiers within the pool, ensuring optimal prices for every trade. Unlike platforms where arbitrage occasionally occurs across different fee tiers, Concordex's system facilitates arbitrage with every swap, resulting in superior trading prices.

Liquidity providers can maximize their profits through Concordex's implementation. Unlike other DEXes that experience fragmented liquidity and unequal trading volumes, Concordex disrupts this cycle, creating a more profitable environment. By allowing liquidity to flow freely within a single pool, Concordex enables liquidity providers to achieve better returns on their positions.

Institutions seeking to optimize their trading experience and maximize returns also benefit from Concordex's multiple fee levels. Whether actively trading or generating income through liquidity pools, institutions can leverage this innovative solution to enhance their overall performance.

It's important to note that fee levels on open positions within Concordex are immutable. Due to the specific token ratio within each position, users cannot change fee levels on existing positions. Instead, they would need to close the position and open a new one to adjust the fee level.

Solution #3. Auctions

Concordex introduces open auctions as a solution to address liquidity challenges and promote fairer liquidity distribution. These auctions alleviate the burden on projects to provide 24/7 liquidity to their automated market makers (AMMs).

The auction mechanism implemented by Concordex involves structured "one asset vs one stablecoin" auctions that can be periodically called upon for illiquid assets. Following the opening auction method, price discovery occurs before the market opens for trading. Market participants submit their bids and offers for the asset, and the price is determined based on the highest bid and lowest offer that can be matched.

Specifically in Concordex, at the time of the auction call, auction orders can be placed in a limit order fashion for the asset, denominated in stablecoins. Participants can place their orders up until the auction time. An indicative clearing price is provided, indicating where the auction will settle if executed. When the allotted time arrives, the auction processes and swaps are settled at the auction rate, allowing projects to obtain liquidity without significant contributions from a liquidity provider. Following the auction, Concordex enables "follow-on trading" where the assets can be traded at the auction rate.

Concordex's open auctions provide a mechanism for projects to access liquidity and address illiquid assets. By leveraging price discovery and facilitating trading at the auction rate, Concordex promotes a fairer and more efficient distribution of liquidity. This innovative approach helps ensure that projects can secure the liquidity they need while reducing the reliance on continuous liquidity provision, creating a more sustainable and balanced ecosystem.

GOVERNANCE IN CONCORDEX

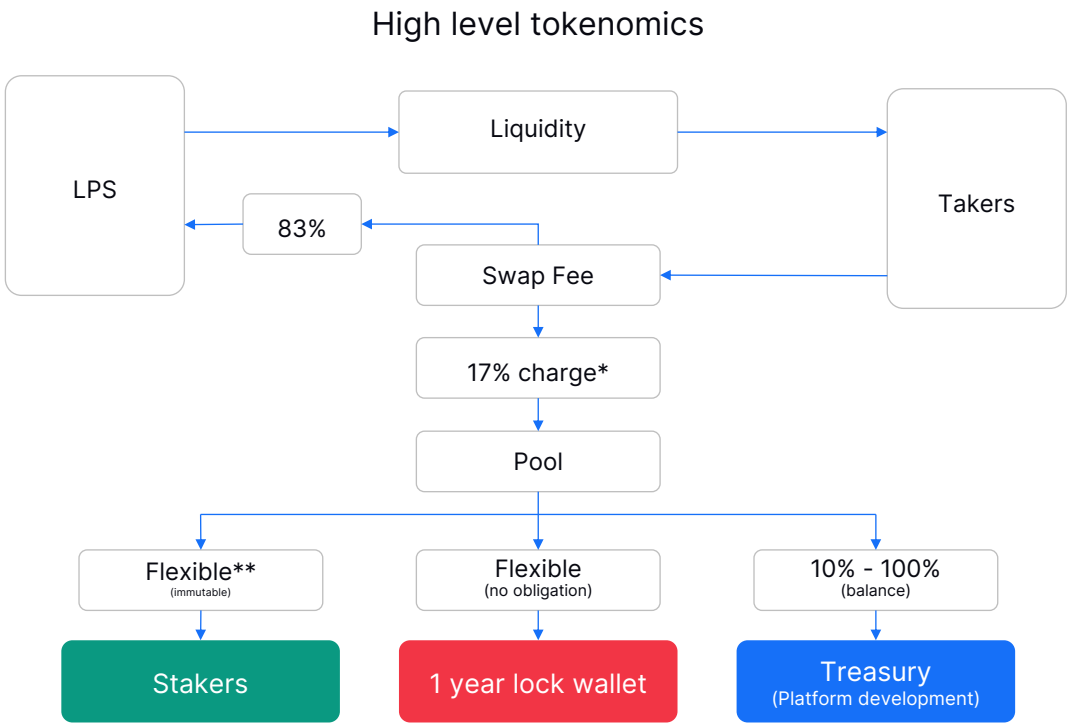
Concordex's development will be under the purview of an established board based in Switzerland. This entity will assume responsibility for driving the growth and advancement of the open-source DEX, its ecosystem, and the associated community. To ensure comprehensive oversight and governance, the board will appoint a dedicated committee consisting of two to five members. This committee will oversee the entire governance and decentralization process, tokenomics, and the fee structure of Concordex. The selection of the Governance Committee will be facilitated by the Concordex Foundation or AG board, ensuring alignment with Concordex's roadmap until the release of Concordex V4.

During the transitional phase towards full decentralization, $CCDX token stakers will play a crucial role in offering suggestions for the Concordex DEX through the Governance Committee. The board will uphold the principles of compliance-first and adhere to the Public Deed of the Concordex Foundation or AG. The Foundation or AG Board will maintain its role as the supreme governing body, even after achieving complete decentralization. Additionally, the governance committee will persist, with appointments to the committee being determined through voting by $CCDX token stakers.

While the establishment of the Concordex Foundation is in progress, Tacans AG will undertake responsibilities on behalf of the Foundation. This includes activities such as the sale of $CCDX tokens or any rights pertaining to future $CCDX token sales. The proceeds generated from these activities will be utilized for the ongoing development of the Concordex platform.

$CCDX TOKENOMICS

Let us now delve into the realm of tokenomics. Our fundamental tokenomics framework ensures equitable compensation for users who provide liquidity. When liquidity providers make contributions, they have the ability to set a specific rate. Subsequently, when users engage in any swap activity, the fees collected are redistributed among the relevant parties according to the following distribution ratio.



The fee distribution operates on a 45:45:10 split, allocating respective portions to the stakers, the lock wallet, and the treasury. In the interest of maintaining the stability of the token's value, we retain the prerogative to potentially burn tokens held in the lock wallet rather than reintroducing them into circulation. However, it is crucial to highlight that any such course of action will be subject to governance by the decentralized autonomous organization (DAO).

Through this carefully designed tokenomics structure, we aim to ensure fair compensation for liquidity providers while maintaining transparency and governance within our ecosystem.