

Unizen Trade: A Next-Generation DEX Aggregator with Unparalleled Efficiency and Returns

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Unizen Trade marks a transformative leap in Decentralized Exchange (DEX) aggregation, setting new standards with its industry-leading swap returns and seamless cross-chain capabilities. This whitepaper delves into the fundamental technologies underpinning Unizen Trade:

- **Unizen Liquidity Distribution Mechanism (ULDM v3):** Developed in collaboration with a PhD researcher at the University of the Balearic Islands, ULDMv3 represents a bespoke algorithm engineered by Unizen Labs. This mechanism revolutionizes trade execution by intelligently splitting and routing trades across an extensive network comprising hundreds of DEXs and thousands of diverse liquidity pools. By adopting this approach, Unizen Trade significantly enhances swap returns compared to conventional DEX aggregators.
- **Unizen Interoperability Protocol (UIP):** At the forefront of innovation, UIP streamlines the cross-chain swap process. Through meticulous analysis of various interoperability providers, UIP evaluates factors such as time, gas costs, fees, and post-trade token output. This analytical framework ensures users benefit from the most cost-effective and time-efficient cross-chain swap experience, all accomplished seamlessly without necessitating manual bridging.

ULDM | UIP

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1. Introduction

1.1 The Rise of Decentralized Finance (DeFi)

The financial landscape is undergoing a significant transformation with the emergence of Decentralized Finance (DeFi). DeFi protocols offer a compelling alternative to traditional, centralized financial institutions by leveraging blockchain technology to create peer-to-peer (P2P) financial services. This allows users to participate in a wide range of financial activities, including lending, borrowing, trading, and asset management, without relying on intermediaries.

1.2 Decentralized Exchanges (DEXs) and Their Limitations

A core component of the DeFi ecosystem is the Decentralized Exchange (DEX). DEXs facilitate the direct exchange of cryptocurrencies between users, eliminating the need for a central authority to hold or manage user funds. This fosters greater transparency, security, and censorship resistance compared to traditional, centralized exchanges (CEXs).

However, DEXs currently face limitations that hinder their widespread adoption:

- **Fragmented Liquidity:** DEX liquidity is often scattered across various protocols, leading to inefficient price discovery and potential slippage (the difference between the expected and actual price of a trade).
- **Complex User Experience:** Interacting with multiple DEXs to find the best rates can be a cumbersome process, requiring extensive knowledge of the DeFi landscape.
- **Limited Cross-Chain Functionality:** Swapping assets between different blockchains often requires manual bridging and interaction with various protocols, creating a complex and user-unfriendly experience.

1.3 The Role of DEX Aggregators

DEX aggregators play a crucial role in overcoming limitations inherent to decentralized exchanges (DEXs) through a triad of strategies. Firstly, Liquidity Aggregation consolidates liquidity from numerous DEXs, granting users access to a broader asset pool and improved swap rates. Secondly, Smart Routing employs advanced algorithms to discern optimal trade routes across various DEXs, effectively reducing slippage and enhancing returns. Finally, a Simplified User Experience is prioritized, offering an intuitive interface enabling users to execute token swaps seamlessly with just a few clicks, thus streamlining the DeFi trading experience.

1.4 Market Opportunity and Potential Disruption of CEXs

The DEX aggregation market is experiencing rapid growth as users increasingly seek alternatives to centralized exchanges. This growth is attributed to several factors:

- **Security Concerns:** Centralized exchanges have been susceptible to hacks and security breaches, leading to user fund losses. DEXs provide a more secure environment as user funds remain in their wallets throughout the trading process.
- **Regulatory Uncertainty:** Regulatory scrutiny surrounding centralized exchanges creates uncertainty for users. DEXs offer a permissionless and censorship-resistant alternative.

- Greater Choice and Control: DEXs offer users a wider range of assets and greater control over their funds compared to CEXs.

This confluence of factors suggests that DEX aggregators are well-positioned to capture significant market share from traditional centralized exchanges, with estimates suggesting the DeFi market could reach a valuation of trillions of dollars in the coming years.

2. Unizen Trade: A Next-Generation DEX Aggregator

Unizen Trade addresses the shortcomings of traditional DEX aggregators by introducing groundbreaking technologies:

- Unizen Liquidity Distribution Mechanism (ULDMv3)
- Unizen Interoperability Protocol (UIP)

2.1 Unizen Liquidity Distribution Mechanism (ULDMv3)

ULDMv3 stands as a proprietary algorithm meticulously crafted to enhance swap returns for its users, achieving this through several key mechanisms. Firstly, through Advanced Route Splitting, ULDMv3 intelligently divides substantial trades across numerous optimal paths spanning hundreds of decentralized exchanges (DEXs) and thousands of liquidity pools. This strategic fragmentation guarantees access to the most advantageous prices within the entire DeFi ecosystem. Secondly, employing Dynamic Pathfinding, ULDMv3 utilizes an adaptive algorithm to continually pinpoint the most efficient trade routes based on prevailing liquidity pool conditions in real-time. This dynamic approach ensures users consistently capitalize on the most favorable swap rates available. Finally, ULDMv3's High-Performance Execution is realized through a finely tuned execution engine, facilitating swift trade completion and minimizing potential slippage, thereby optimizing overall efficiency for users.

2.2 Unizen Interoperability Protocol (UIP)

The Unizen Interoperability Protocol (UIP) represents a pioneering solution designed to revolutionize cross-chain token swaps, offering unparalleled convenience and reliability while eliminating manual user intervention. At its core, UIP integrates seamlessly with a diverse array of third-party interoperability providers, ensuring users access a wide spectrum of options for executing cross-chain swaps. This integration not only facilitates access to cutting-edge bridging technologies but also fosters healthy competition among providers, potentially resulting in reduced fees and expedited transaction times.

UIP's robust operational framework is further fortified by its implementation of Cost-Effective Routing, where meticulous analysis of factors such as gas costs, fees, and transaction durations across various interoperability providers guarantees users always opt for the most economical path for their cross-chain swaps, thereby optimizing resource utilization. Additionally, UIP prioritizes user experience through its Seamless User Experience approach, automating the entire cross-chain

swap procedure and sparing users the need for manual asset bridging or engagement with diverse protocols.

Furthermore, UIP distinguishes itself with its inherent redundancy feature, which ensures continuity of operations even in the face of downtime or security breaches affecting individual interoperability providers. In such cases, UIP autonomously reroutes interoperability operations to alternative providers, mitigating risks and bolstering the reliability and security of cross-chain transactions facilitated by the protocol. In essence, UIP not only streamlines cross-chain token swaps but also sets new standards for resilience, accessibility, and user-centric design within the rapidly evolving landscape of decentralized finance (DeFi).

2.3 Benefits of Unizen Trade

Unizen Trade offers several advantages over traditional DEX aggregators:

- Industry-Leading Swap Returns: ULDMv3's advanced routing and execution engine ensure users consistently receive the best possible rates for their token swaps.
- Seamless Cross-Chain Swapping: UIP simplifies and streamlines cross-chain transactions, removing the complexities associated with manual bridging.
- Superior User Experience: Unizen Trade offers a user-friendly interface that allows users to easily navigate DeFi swaps, regardless of their technical expertise.
- Security and Transparency: Built on the principles of decentralization, Unizen Trade prioritizes user security and control. Users retain custody of their funds throughout the entire trading process.



Fig. 1. UI Image illustrating ULDM on ZCX.com

2.4 Real world performance and competitive landscape

Decentralized exchanges (DEXs) have gained immense popularity in recent years as an alternative to traditional centralized exchanges. With the rising interest in DEXs, the competition among DEX aggregators has also intensified.

1inch, and Paraswap are among the leading DEX aggregators, each offering distinct features and benefits to their users. In this article, we compare the performance of Unizen Trade, powered by its unique liquidity distribution mechanism ("ULDM"), against 1inch and Paraswap through a series of simulated trades.

Methodology: We conducted a comparison by writing a [script](#) that generated 37 random trades on 7 different blockchains, using an input amount of 10,000 USD. The trades were executed across all platforms, and the results were recorded to evaluate the performance of Unizen Trade, 1inch, and Paraswap.

Results: The results of the trades indicate a clear advantage for Unizen Trade, thanks to its in-house produced ULDM. In many instances, Unizen Trade outperformed its competitors by a significant margin, with better exchange rates and improved efficiency.

For a clearer and more comprehensive representation of the data, we calculated the percentage differences in the amount returned for each trade. These percentages highlight the extent to which trades executed using Unizen Trade's engine outperformed or underperform compared to those conducted on 1inch and Paraswap.

The formula used to calculate the difference in percentage can be seen below.

$$\left(\frac{UnizenOut - CompetitorOut}{CompetitorOut} \right) \times 100 \quad (1)$$

To avoid errors by zero division, one was used instead to represent the output whenever a zero output was returned. These occurrences are notable where the percentages are very excessive.

Trade	Unizen vs Paraswap	Unizen vs 1inch
1	81.64%	82.47%
2	3.12%	2.98%
3	-0.34%	-0.01%
4	8.18%	9.99%
5	357145200.00%	8.81%
6	395071100.00%	-2.59%
7	1.20%	1.20%
8	1505485.71%	20.66%
9	N/A	N/A
10	-0.27%	-1.62%
11	27.62%	52.27%
12	76.42%	110.11%
13	-0.96%	144.70%
14	20.83%	84.69%
15	0.37%	1.38%
16	-0.21%	-0.23%
17	20.76%	20.76%
18	19.51%	19.51%
19	-0.11%	-0.11%
20	-0.52%	-0.52%
21	0.00%	0.00%
22	24.25%	-37.18%
23	82.99%	2.13%
24	-0.42%	-0.42%
25	1.45%	1.45%
26	-0.78%	-0.78%
27	N/A	N/A
28	-0.21%	-0.07%
29	0.00%	4.31%
30	0.00%	4.29%
31	99.38%	64100.00%
32	79.41%	79.41%
33	78.32%	78.48%
34	-2.12%	-1.41%
35	99.22%	64150.00%
36	64200.00%	32050.00%
37	-0.10%	-0.10%

Conclusions: Unizen Trade, powered by ULDMv3 and UIP, represents a significant leap forward in DEX aggregation technology. By optimizing swap execution across diverse liquidity pools and automating efficient cross-chain swaps, Unizen Trade empowers users to maximize returns and experience a frictionless DeFi experience.

The analysis in section 2.4 showcases the efficacy of Unizen Trade's distinctive liquidity distribution mechanism (ULDM) in delivering a superior trading experience when compared to prominent DEX aggregators like 1inch and Paraswap. By optimally distributing trades across a diverse range of decentralized liquidity pools, Unizen Trade can offer more competitive rates and enhanced efficiency, rendering it an attractive option for traders seeking optimal outcomes for their transactions.

It is important to note that the trades evaluated in this study were randomly generated, and certain DEX aggregators may outperform others for specific trading pairs under different circumstances. Both 1inch and Paraswap are innovative solutions that offer additional benefits and serve thousands of DeFi traders worldwide. This study was conducted as a competitive analysis to provide deeper insights into ULDM's performance in real-world situations.

Supplementary Note 1: Future Developments

The Unizen development team is constantly working on further advancements in Unizen Trade. Future iterations includes:

- Integration with additional DEXs and liquidity pools for even greater liquidity access and potential for better swap rates.
- Advanced features for professional traders, such as limit orders and the inclusion of Market Maker liquidity, catering to a wider user base and deepening the liquidity.
- Continuous optimization of ULDMv3 and UIP for even higher efficiency, cost-effectiveness, and improved pathfinding capabilities.
- Further reductions in gas cost. Further undercutting competition.

Unizen Trade is poised to revolutionize the DeFi landscape by providing users with the most efficient and user-friendly platform for their crypto asset management needs. With its commitment to continuous innovation and a focus on user experience, Unizen Trade is well-positioned to play a leading role in the future of decentralized finance.