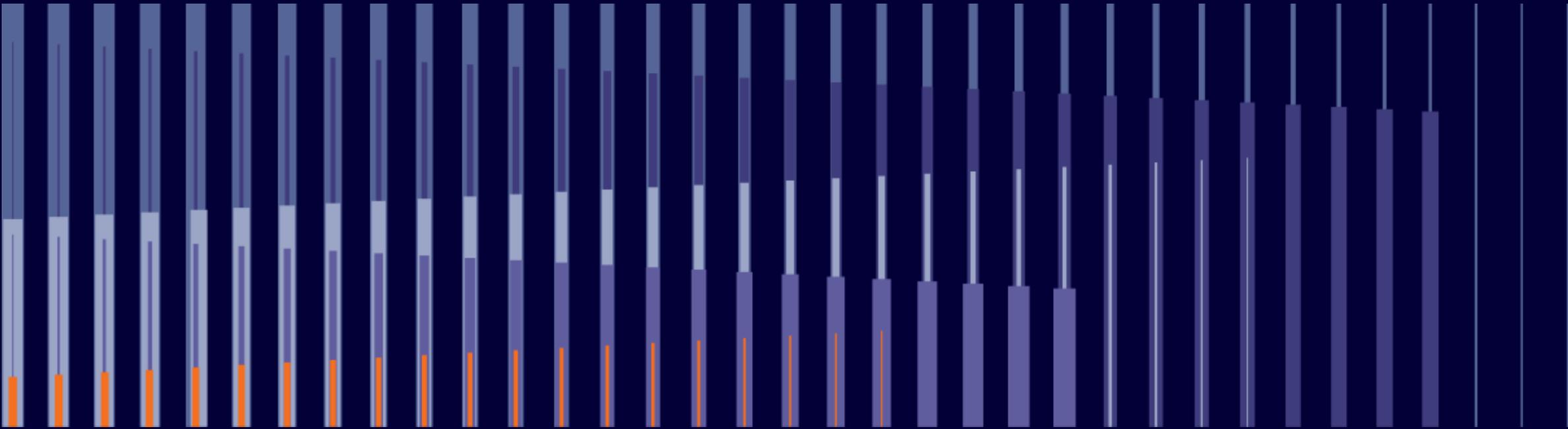


Official Report Immutable X



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HODL TEAM



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- Crypto Research Analyst & Trader since 2017
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This Hodl Research Report is written by our Research Analyst, Aron Pierre and our Content Marketeer, Tobias Datema.

ABSTRACT

With a continually expanding user base, Ethereum stands as one of the most prominent blockchain networks.

However, its current structure allows it to process approximately 15 to 20 transactions per second, leading to network congestion as the number of daily transactions soars. Consequently, users competing for prompt transaction processing have driven up the gas fees, resulting in significantly high transaction costs.

Immutable X, established in 2018, addresses the critical issue of high transaction costs in the NFT market. These costs can be difficult for users, especially in high-volume trading, and can curb the market's growth and accessibility. By partnering with StarkWare and leveraging their ZK-SNARK technology, Immutable X has developed a ZK Roll-up, a Layer-2 scaling solution on the Ethereum network. This innovation offers instant trading and significantly scales up transaction capacity to 9,000 transactions per second, eliminating gas fees for NFT minting and trading.

This approach not only makes NFT transactions more viable but also maintains Ethereum's robust security standards. With over 50 million NFTs minted, Immutable X stands out as a leading platform in the NFT and gaming sectors, fostering a more accessible and efficient market environment.

In July 2015, Ethereum was introduced as an open-source smart contract platform offering a structure for users to interact with the network and build solutions on top of it.

This has led to the development of a wide range of solutions such as Decentralized Applications (Dapps), Decentralized Finance (DeFi), and Non-Fungible Tokens (NFTs), with the latter gaining rapid popularity. NFTs on Ethereum are created to verify and transfer ownership of unique digital assets.

Being one of the most used blockchains, Ethereum experiences the benefits and drawbacks of its wide adoption. One of the biggest drawbacks is its current structure. The network is limited to a maximum of 15 to 20 transactions per second, causing the network to get congested at times of high transaction throughput.

When Ethereum experiences congestion, a chain reaction occurs where users start increasing their gas fees to prioritize their transactions. This, in turn, escalates the gas prices across the network, as more users continue to raise their fees to get prioritized.

At times, gas prices have even exceeded the value of the digital assets being transacted.

Immutable X, a Zk-Rollup that leverages ZK-STARK (Zero-Knowledge Scalable Transparent Argument of Knowledge) technology, addresses Ethereum's congestion issues by enhancing the scalability of the NFT marketplace. This approach enables users to mint, trade, and buy NFTs, while maintaining the network's decentralization and security.

By offering a gas-free environment for NFT transactions, Immutable X not only lowers transaction costs but also alleviates network congestion, leading to a smoother user experience. Additionally, the development of the ZK-EVM (Zero-Knowledge Ethereum Virtual Machine) by Immutable X represents a significant step in scaling the Ethereum ecosystem while preserving its robust security features.

PROBLEM STATEMENT

Average gas fees on Ethereum in U.S. Dollars



Source <https://etherscan.io/chart/avg-txfee-usd>

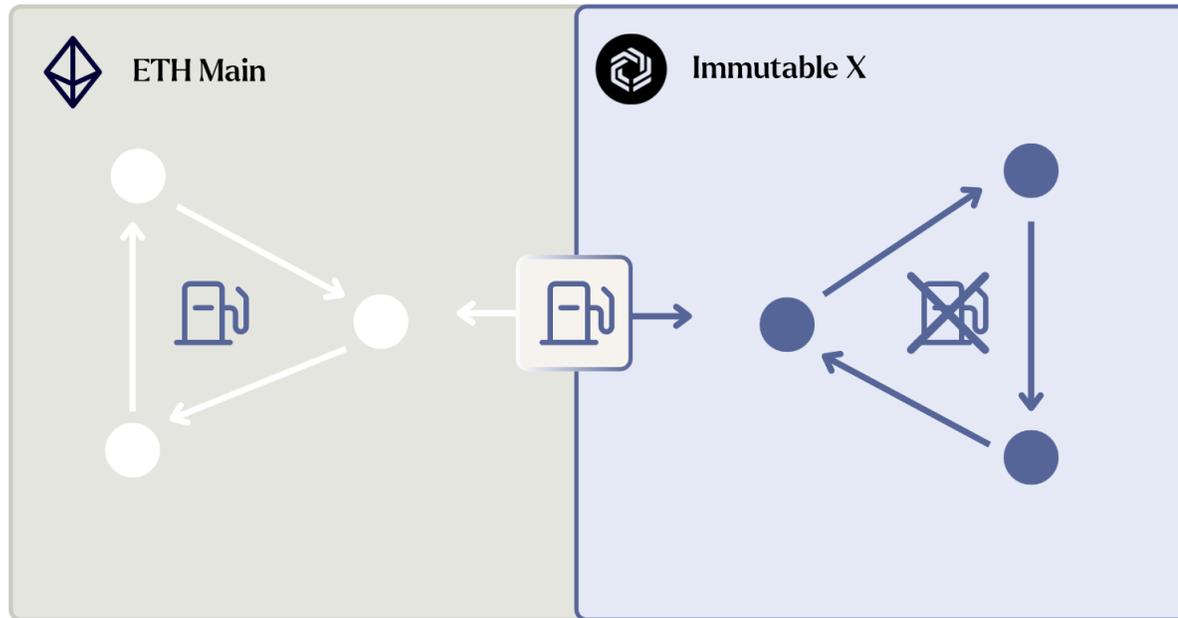
SOLUTION

Layer-2 solution Immutable X is designed to address the scalability dilemmas of Ethereum's NFT ecosystem.

Numerous variants of Layer-2 solutions exist, each with a unique approach to enhancing network scalability. In a collaborative venture with StarkWare, Immutable X has engineered their ZK-Rollup technology, leveraging ZK-STARK technology.

In ZK-Rollups, numerous transactions are executed in a batch on Layer 2. Following this, a summarized version of these transactions, along with a cryptographic proof confirming their validity, is sent to Ethereum. This process significantly increases throughput on Layer 2, as only the compact summary and proof need to be recorded on Ethereum.

By adopting this method, Immutable X allows users to interact with the NFT ecosystem more efficiently and cost-effectively while maintaining the high level of security inherent to Ethereum. Furthermore, the development of the ZK-EVM by Immutable X marks an important advancement in further enhancing these capabilities, offering even greater scalability while retaining Ethereum's trusted security framework.



Gas on Ethereum vs Immutable X

Source immutable.com

TECHNOLOGY – STARKWARE AND STARKEX

StarkWare is a blockchain company crafting ZK-STARK-based scaling solutions, with StarkEx being one of them.

StarkEx serves as a scaling engine facilitating the minting, trading, and transfers of both fungible (ERC20) and non-fungible tokens (ERC721), compatible with all chains aligning with the Ethereum Virtual Machine.

Immutable X employs the StarkEx engine, enabling a reduction in costs tied to NFT minting, trading, and transfers while simultaneously boosting the network's throughput. This engagement not only elevates transaction efficiency but also lowers the financial barrier to entry in the NFT space, promoting a more user-friendly ecosystem on Ethereum.

TECHNOLGY – ZK-STARK

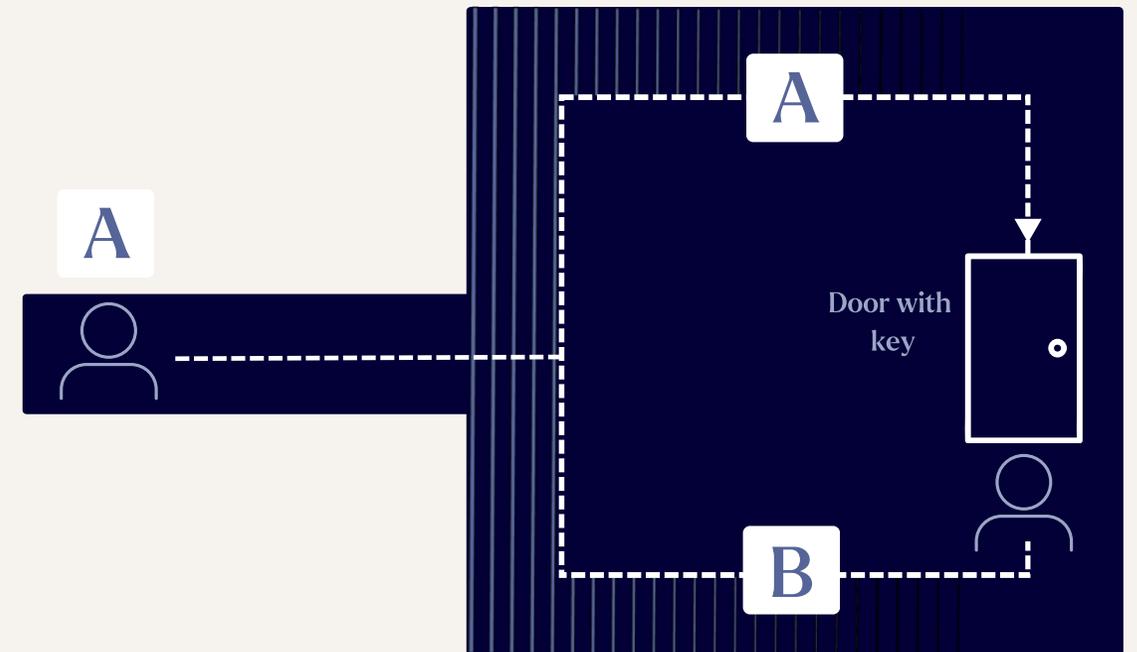
zk-STARKs play a pivotal role in Immutable X, enhancing both privacy and scalability in blockchain applications.

These cryptographic proofs enable the validation of transactions without revealing specific details, ensuring robust privacy and security in blockchain interactions.

What distinguishes ZK-STARKs is their scalability and absence of a trusted setup requirement, which enhances their transparency and security compared to other Zero-Knowledge Proofs like ZK-SNARKs. Within Immutable X, powered by StarkWare's StarkEx engine, ZK-STARKs are employed to batch multiple transactions and produce a validity proof for each batch. This proof verifies that all transactions comply with Ethereum blockchain rules while maintaining the confidentiality of individual transaction details.

This process is crucial as it significantly decreases the amount of data that needs to be processed and stored on the Ethereum blockchain, leading to reduced costs and increased transaction throughput. Such advancements are particularly advantageous for NFT-related activities on Immutable X, such as minting, trading, and transferring, as they facilitate faster and more cost-effective operations while upholding high security and privacy standards.

Zero *Knowledge*



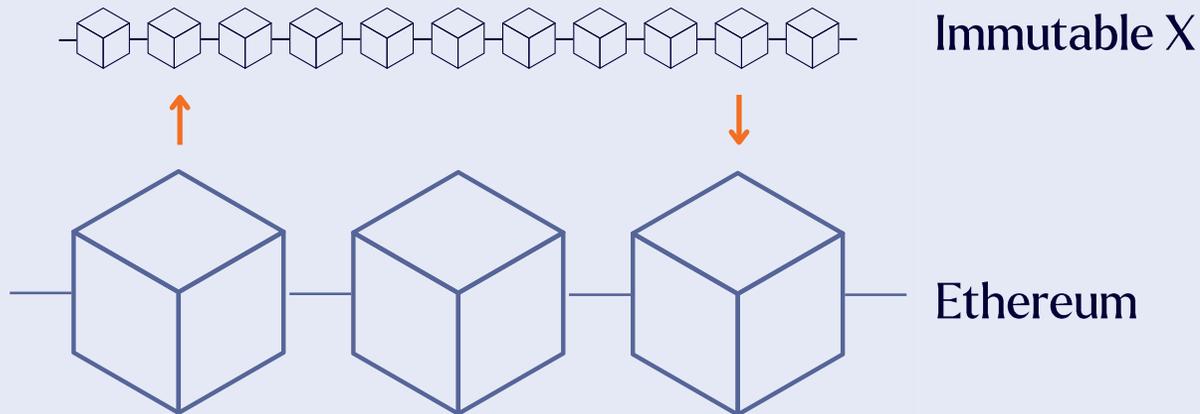
TECHNOLOGY – ZK-ROLLUP

ZK-Rollups are a transformative technology in blockchain, enhancing scalability and efficiency, especially for Ethereum-based platforms like Immutable X.

They work by moving computation and state storage off-chain while securing transactions through Ethereum's main chain. In Immutable X, users first lock assets into a Layer 1 smart contract on Ethereum. These assets are then transferred to Immutable X's Layer 2, allowing for faster and cheaper transactions.

StarkWare's StarkEx system, used by Immutable X, batches these Layer 2 transactions and generates a cryptographic 'Validity Proof' for each batch. This proof ensures all transactions comply with Ethereum's rules. The proof is then submitted to Ethereum's mainnet, effectively consolidating numerous transactions into a single transaction with its proof. Ethereum's network validates this proof, updating the on-chain status of assets accordingly.

The use of ZK-Rollups in Immutable X brings multiple advantages, such as significantly increased scalability by processing large batches of transactions off-chain and only submitting a single proof to Ethereum. This approach greatly reduces transaction costs, as most computations occur off-chain. Despite these operations being off-chain, the security level remains equivalent to Ethereum's mainnet. For users, this means faster transactions and lower fees, maintaining the security and decentralization Ethereum is known.



Facing the prospect of NFT projects scaling beyond minting billions of NFTs annually, managing fees is crucial. Although lower on Immutable than Ethereum, fees can accumulate. To address this, Immutable introduced Validium ZK-Proof, enhancing scalability at lower fees, but requiring consistent data availability. Therefore, various industry entities sign each batch to ensure data availability, maintaining it as long as any entity remains honest.

Immutable also introduced the Volition model, allowing users to choose between a ZK-Rollup and Validium ZK-proof for their assets on a transactional basis, tailoring the solution to individual needs while navigating the trade-offs between cost, security, and data availability

ECOSYSTEM

Immutable X has been taking significant steps across various sectors including Collectibles, Gaming, Marketplaces, and DeFi, establishing partnerships with some of the biggest names in the NFT and blockchain space.

Ubisoft

Their collaboration with Ubisoft, a large video game creator on November 9, 2023, remains robust. This collaboration aims to create new gaming experiences, further unlocking the potential of web3 technologies and emphasizing digital ownership for players. Ubisoft's exploration of decentralization in gaming complements Immutable's platform strengths

Immutable Ventures

In 2022, Immutable X received significant venture backing, notably launching Immutable Ventures. This \$500 million developer and venture investment fund is dedicated to fostering web3 projects and games on Ethereum's leading Layer 2 protocol, Immutable. This initiative highlights Immutable X's commitment to accelerating the development and success of innovative web3 applications.

Temasek

More recently, Immutable completed a Series D funding round, raising \$280 million and achieving a valuation of \$3.5 billion. This round was led by Temasek, a global investment company from Singapore. It also saw contributions from Animoca Brands, renowned for digital entertainment and blockchain, and Tencent, a major Chinese conglomerate in technology and entertainment.

COMMUNITY

Since its founding in 2018, the network has grown into a thriving ecosystem with thousands of users:

356.1K

X

Since 2020, IMX has amassed over 360K followers on social channel X

\$178m

Total Value Locked

Over \$170M of assets have been attracted to IMX's ecosystem, with inflow slowly picking up again

+20

NFT Marketplaces

Over 20 NFT marketplaces have been launched, slowly creating a thriving ecosystem with healthy competition

+150

Games

Over 150 games have been IMX to leverage its unique features such as cheap and fast transactions.

+1.8M

Unique NFT owners

Since the launch of its main network, over 1,8M unique wallets have NFTs

MEET THE TEAM



Robbie Ferguson

CO-FOUNDER & PRESIDENT

- Member YPO Sydney Pacific
- Thiel Fellow at Thiel Foundation
- Data Analytics / Blockchain at KPMG Australia



James Ferguson

CEO

- Co-Founder / CEO Shopyak
- Business Development manager at Nulux
- Lead frontend developer at Appliances online



Edward Burrowes

CHIEF OPERATING OFFICER (COO)

- Associate & consultant at Oliver Wyman
- Intern Analyst at Record Point

TOKENOMICS

The IMX token, built on the Ethereum blockchain, complies with the ERC-20 standard and is designed to reward pro-network activities such as trading, liquidity provision, and application development.

The token has a multifaceted role within the ecosystem, being utilized for transaction fees, staking, and governance

The reward system in place promotes network activities by offering IMX rewards. Each pro network activity collects a specific number of points for users. At the close of each day, a Daily Rewards Pool is distributed proportionately based on the accumulated points of each user.

Immutable serves as the service provider overseeing the development of the Immutable X protocol and the IMX token, under the management of the Foundation. It's notable that neither the directors nor employees of Immutable, nor the directors of the Foundation, are granted any tokens as compensation for their contributions to the project.

TOKENOMICS

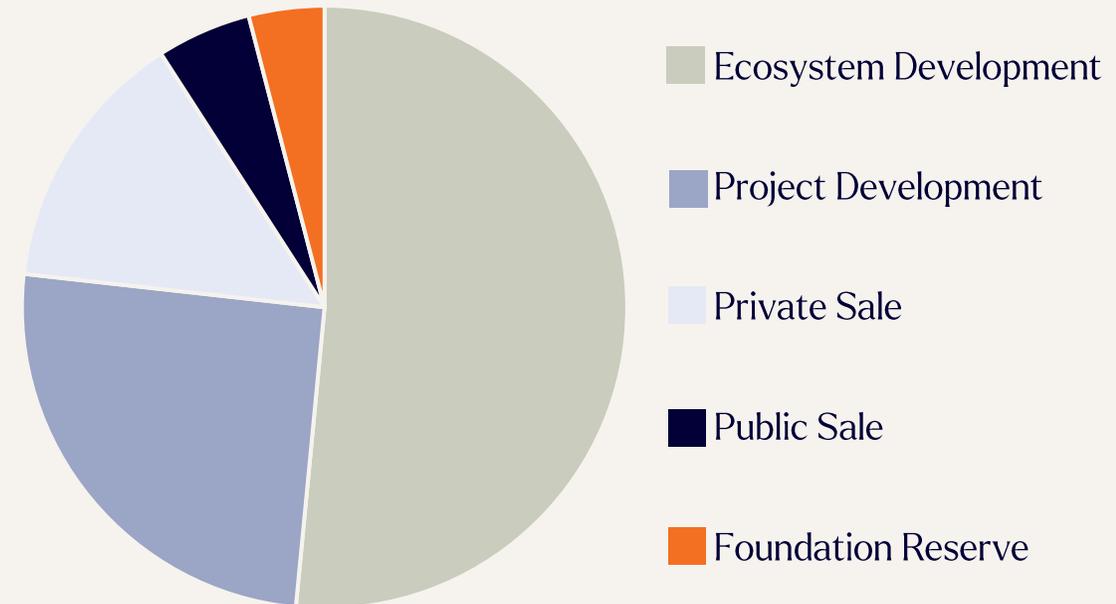
The allocation of tokens is designed to strategically support various aspects of Immutable X's development and ecosystem.

A significant portion, **51.74%**, is dedicated to Ecosystem Development, encompassing user rewards, developer grants, liquidity provision, and marketing activities. This allocation underscores the commitment to fostering a thriving and sustainable ecosystem.

Project Development is allocated **25%** of the tokens, emphasizing the ongoing development and maintenance of the Immutable X protocol. This allocation ensures a dedicated focus on the continuous improvement and evolution of the protocol. The Private Sale constitutes **14.26%** of the tokens, pre-allocated for investors in the private round, emphasizing strategic partnerships and early support for the project.

The Public Sale, occurring between September 8 and September 14, allocated **5%** of the tokens. Investors during this sale were presented with two price options: \$0.10 per token with a 6-month linear release (Option 1) or \$0.15 per token with a 3-month linear release (Option 2), providing flexibility based on investor preferences. To maintain liquidity on both centralized and decentralized exchanges, **4%** of the tokens are reserved under the Foundation Reserve. This allocation ensures that there is ample liquidity to support efficient trading activities, contributing to the overall success of Immutable X.

IMX *Token Distribution*



Source Whitepaper IMX

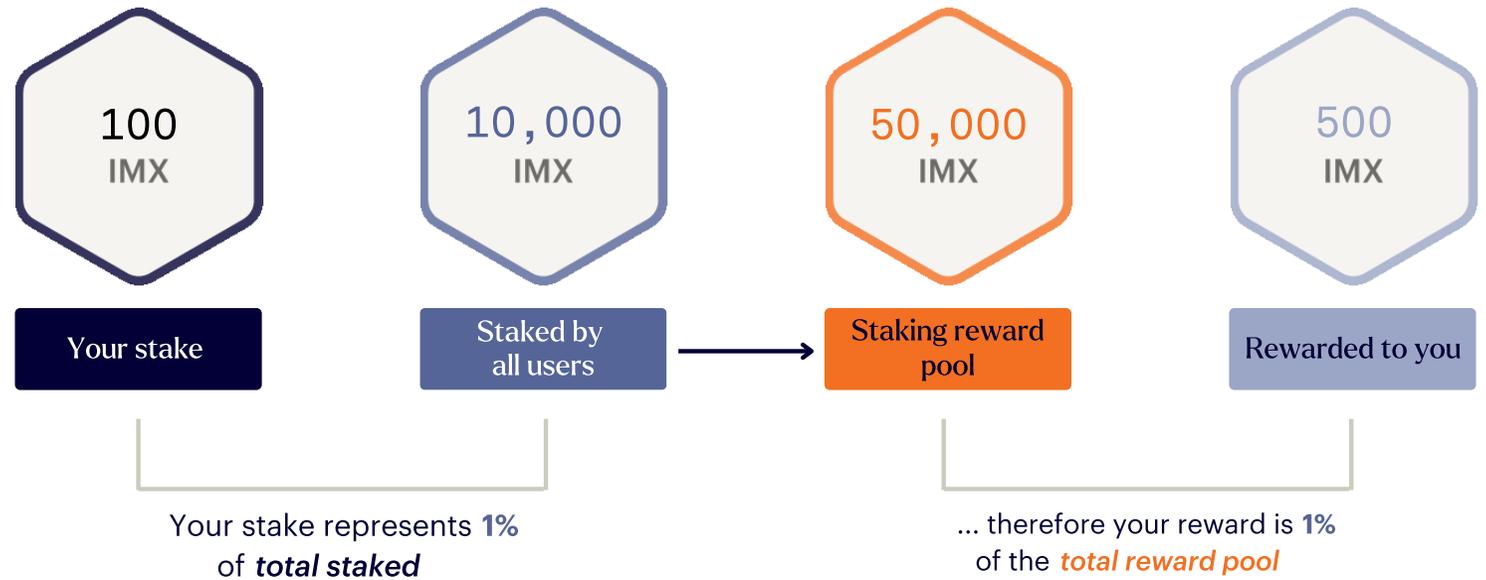
TOKENOMICS

The mechanism of IMX token flow within Immutable X is precisely designed.

20% of all transaction costs are covered in IMX. The IMX trading fees accumulated are directed into the Staking Reward Pool.

IMX token holders who stake their tokens are entitled to a certain percentage of interest in IMX tokens, depending on the amount of their staked tokens. The illustration on the right elucidates this process.

Staking Rewards IMX



Source Whitepaper IMX

TOKEN UTILITIES

The IMX token has five main utilities within its ecosystem:

Transaction Fees

IMX is utilized to pay transaction fees on the platform, facilitating a good trading experience.

Staking

Users can stake IMX tokens to earn rewards, enhancing liquidity and stability within the ecosystem.

Governance

IMX token holders have the privilege to participate in governance decisions, which include voting on various proposals related to the platform's development and operation.

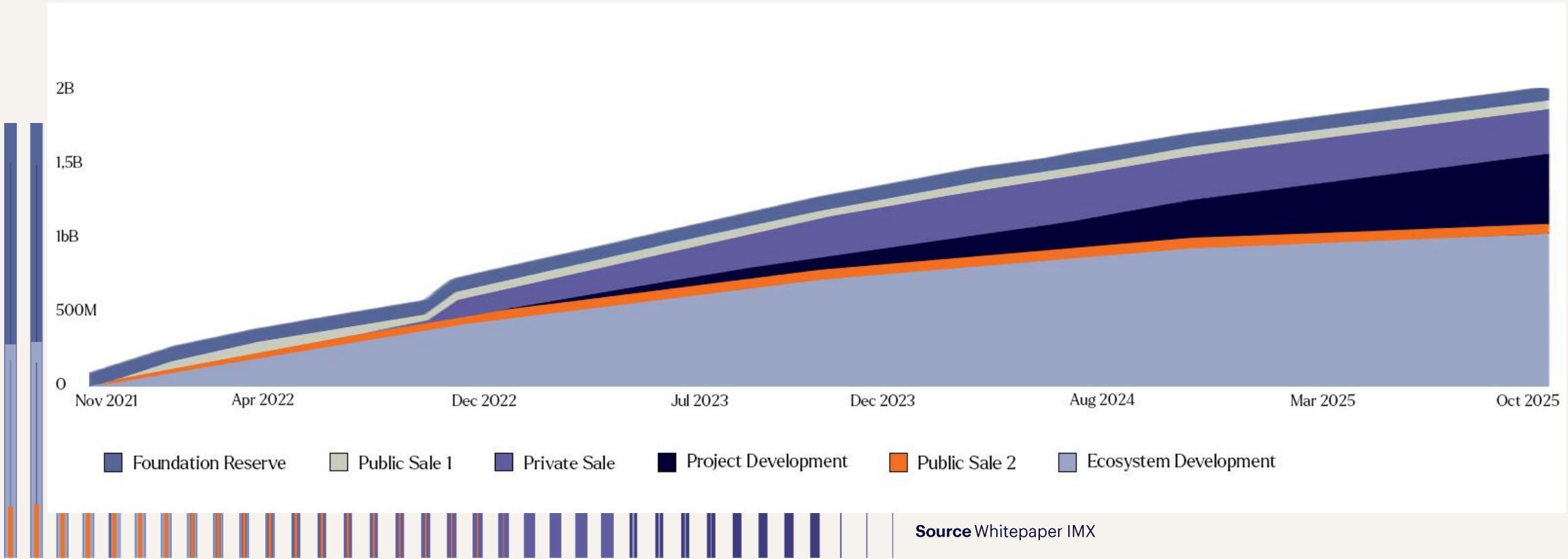
Rewards System

A unique rewards system is in place where users can earn IMX tokens by engaging in pro-network activities. A Daily Rewards Pool is allocated based on the points earned by users through their activities.

Development Incentives

The token also plays a crucial role in incentivizing developers, thereby stimulating innovation and growth within the Immutable ecosystem.

TOKEN RELEASE



"The Ethereum ecosystem is likely to be all-in on rollups as a scaling strategy for the near and mid-term future."

Vitalik Buterin, CO-Founder of Ethereum

COINMETRICS

Insights into *Immutable X*

- Token type: ERC-20
- Current circulating supply: \$839,996,8001

General

Total supply	2,000,000,000
Maximum supply	2,000,000,000
Market cap	\$2,728,076,919
Fully diluted market cap	\$4,127,229,213

ICO

Seed round	\$0.0185
Private round	\$0.100
Initial Coin Offering	\$0.100 - \$0.150

Pricing

Price in USD	2.06
All-time high in USD	9.52
All-time low in USD	0.3781
30-day Price range	1.80 - 2.56

On-chain data

Holders	70,545
Top 100 Holders	94.23%
Total Value Locked	\$188M

ROADMAP

Immutable X is progressing its platform through several significant roadmap updates, each with its unique contribution to the ecosystem:

The Orderbook & Marketplace Network is set to revolutionize asset distribution and demand. It will allow for seamless sharing of NFT orders. The addition of gas-free listing cancellations and ERC-1155 Orderbook support will further enhance the flexibility and accessibility of NFT transactions.

The transaction infrastructure will be bolstered by Immutable Checkout, an integrated payment solution that simplifies the addition of funds and asset transfers. The introduction of cross-wallet bridging for Passport & MetaMask and bulk buy features signifies a commitment to user-centric service improvements.

The upcoming launch of Immutable zkEVM within the Immutable Rollups suite underscores dedication to scalability and security. With its EVM compatibility, it's set to become the default blockchain for gaming applications, offering developers new avenues for growth and securing community interactions.

Lastly, the Immutable Passport will offer gamers an all-in-one tool for Web3 integration. This platform will feature a non-custodial wallet and gamer profile, providing a user-friendly gateway into the world of Web3 gaming, mirroring the convenience of services like Xbox Gamertag or Apple ID. This move is aimed at streamlining the onboarding process and fostering a more accessible and engaging community experience.



Instant wallet onboarding

- Passport Dashboard with activity feed and asset management functionality
- Enhanced confirmations that include a transparent breakdown of costs and fees



Maximize distribution and demand for your assets

- Gas free listing cancellation functionality
- Primary Sales APIs on Immutable X



All-in-one transaction infrastructure

- Cross-wallet bridging for Passport & MetaMask
- Bulk buy with Smart Checkout



Immutable zkEVM

- Immutable zkEVM Mainnet launching in Q1

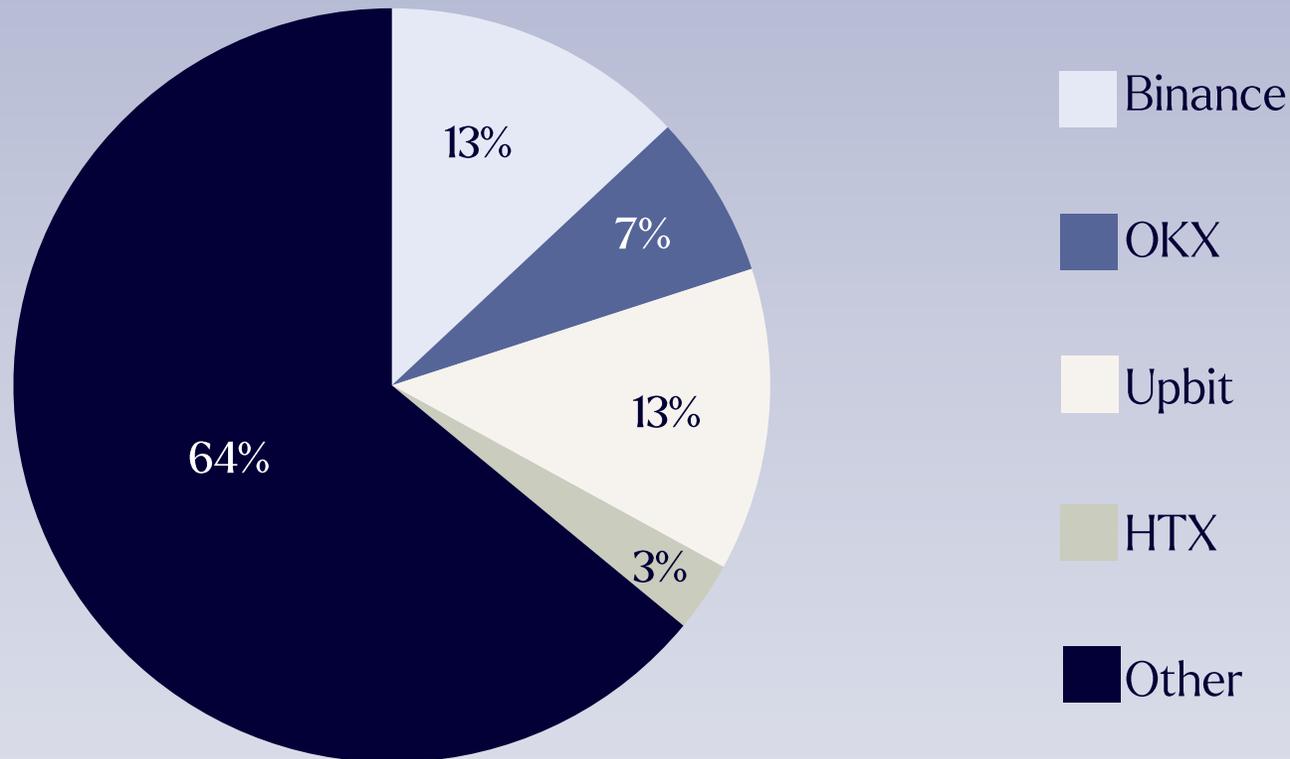
EXCHANGES

The IMX token has been listed on various established exchanges,

such as Binance, OKX, Upbit and Coinbase, on these exchanges, the majority of the total trading volume occurs. This may imply that the IMX token is currently used for speculation as its utility is outside the centralized environment. The first decentralized exchange in terms of transaction volume is Uniswap with a meager 0,9% of the trading volume.

As the token is available on almost all major exchanges, its reach is rather big, and users have easy access to the token. However, it may also be a disadvantage as the majority of users is already known with the asset and may see it as an older project

Volume share on *Exchanges*



Source <https://coinmarketcap.com/nl/currencies/immutable-x/>

FINAL CONCLUSION

General remarks

The project stands out for its robust approach to solving scalability and gas fee issues on the Ethereum network. Immutable X leverages layer-2 scaling solutions with ZK-rollups to provide high-throughput, low-cost transactions without compromising on security.

The focus on gaming and NFTs caters to a rapidly growing segment, and the Immutable Passport could significantly lower the entry barrier to Web3 for users. The strong venture backing, and strategic partnerships reflect confidence in its framework and future potential.

However, the real test will be the platform's adaptability to rapidly changing market demands and the seamless integration of its ambitious roadmap features. The data-driven success of Immutable X will depend on user adoption rates, the effectiveness of its technology in real-world applications, and the continued growth and engagement of its community.

Long-term investment

When considering Immutable X as a long-term investment, several compelling factors come into play. Firstly, the platform's ability to attract and retain a growing number of users is a pivotal metric. As the gaming sector continues to expand, Immutable X is well-positioned to capitalize on this growth. The strategic partnership with Ubisoft, a renowned company in the gaming industry, provides a strong bullish endorsement of its potential.

Furthermore, the resolution of significant token inflation signifies a more stable tokenomics environment, potentially making IMX a more attractive asset for investors. Additionally, Immutable X's commitment to technological excellence, exemplified by its use of zk-rollups, offers confidence in its ability to adapt to the evolving demands of the blockchain space.

In conclusion, while Immutable X addresses critical challenges in the Ethereum ecosystem, its investment allure for the long term is underscored by its growing user base, strategic partnerships, resolution of token inflation, and dedication to cutting-edge technology. These factors, combined with its focus on the booming gaming sector, position Immutable X as a compelling choice for investors looking ahead.

Risks and threats

Despite its groundbreaking approach to blockchain gaming and NFTs, Immutable X confronts several challenges and risks. As a relatively new entrant in the blockchain space, it faces the task of building a larger community and ecosystem to rival more established platforms.

Immutable X's limited recognition in the broader blockchain community could impact its growth and adoption rate. It's noteworthy that the Total Value Locked (TVL) on Immutable X has not seen a commensurate increase along with the rise in the price of the IMX token and the growth in the number of users. This discrepancy in TVL could potentially be a concern for investors and users.

In conclusion, while Immutable X proposes an innovative solution to scalability and user experience challenges in Ethereum-based gaming and NFTs, it is not without its own set of hurdles. Investors and users considering Immutable X must weigh its potential against the risks inherent in an evolving technological landscape, including the potential disparity between TVL and the number of users.

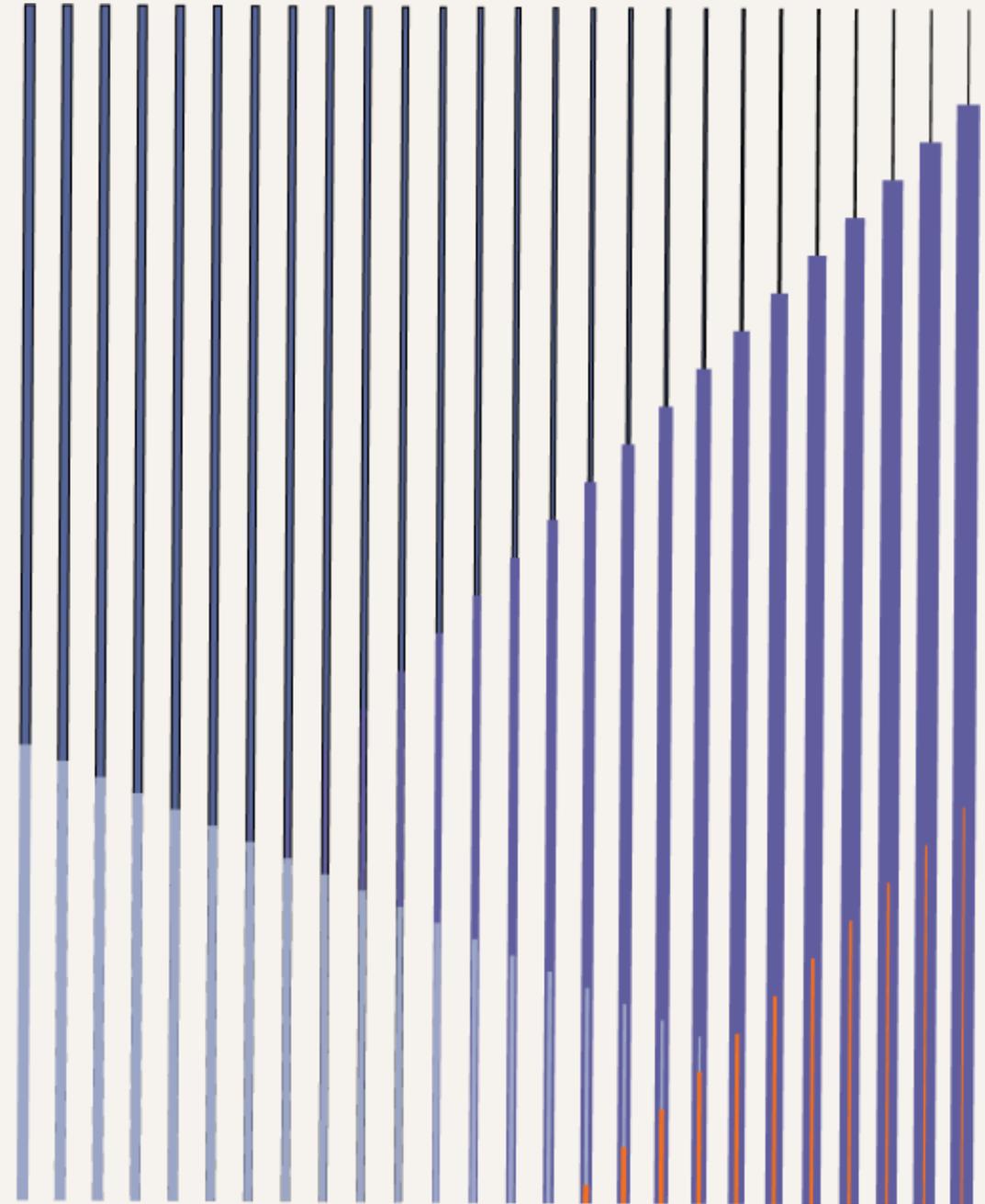
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