



Sniffing Trends...   
**TRADEDOG**

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# Crypto Outlook Report 2024

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# INTRODUCTION



**Ateeq Farooqui**  
Co-Founder, TradeDog

To the Esteemed Crypto Community: Traders, Investors, and Trend Enthusiasts,

As we introduce the TradeDog Research Team's Crypto Outlook Report for 2024, we extend our heartfelt gratitude to our supportive community of traders, investors, and crypto enthusiasts. Your engagement has been invaluable since our inception in 2019.

Reflecting on 2023, a year of market corrections, we observed startups aligning their valuations more realistically, contrasting the inflated figures of 2021. This adjustment period has set a stronger foundation for the industry. Importantly, this bear cycle demonstrated the crypto market's maturation, with growth in daily active users and increasing faith in blockchain technology's potential.

Our team has meticulously compiled this report to provide a comprehensive overview of the trends and statistics from 2023, offering valuable insights for the year ahead.

**Important Disclaimer:**

- The contents of this report are opinions and not investment advice. We emphasize 'Do Your Own Research' (DYOR) for all investment decisions.
- We strive to credit sources accurately. If any are missed, please inform us for correction.
- TradeDog, via its TDeFi arm, holds positions in various crypto assets, ensuring transparency and avoiding conflicts of interest.
- The data and analysis in this report are current as of November 2023.
- The viewpoints expressed by experts are reflective of their personal perspectives and do not necessarily represent the stance or views of their respective organizations.

We invite you to share this report with your network, enhancing our collective understanding of the evolving crypto landscape.

Thank you for your continued trust and engagement.

# KEY 2023 HIGHLIGHTS

## Q1

- Optimism and Arbitrum flipped Ethereum in combined transaction volume
- Venom Foundation launched **\$1 billion** fund for Web3 and blockchain
- Binance delved into decentralized Web3 storage with **BNB Greenfield**
- Polygon launched **decentralized ID** product powered by zk proofs
- The **collapse** of Silvergate Bank and Silicon Valley Bank

## Q2

- Ethereum's Shanghai Upgrade went live
- **Blur** introduced NFT perpetual lending protocol
- Bitcoin addresses holding 1 BTC or more reached **~1 million**
- Optimism successfully completed "**bedrock**" hard fork
- EU's new crypto law: **MiCA** aims to make Europe a digital asset hub
- MicroStrategy bought **\$347 million** worth of Bitcoin

## Q3

- Aave protocol launched stablecoin **GHO** on Ethereum mainnet
- Chainlink launched cross-chain protocol bridging blockchain to TradFi
- ARK Investment and 21Shares filed for **Ethereum Futures ETF**
- Binance announced winding down of its stablecoin **BUSD** due to regulatory concerns
- India, Nigeria, and Thailand topped **Global Crypto Adoption Index**
- Mixin Network lost **\$200 million** in a hack

## Q4

- SEC dismissed allegations against Ripple executives Brad and Chris
- SBF found guilty of all seven counts of fraud and conspiracy
- **Crypto market sentiment** reached highest point since BTC's \$69K all-time high
- BTC and ETH hit 52 week high as price surged to **\$42k** and **\$2.3k** respectively
- Binance CEO CZ steps down as part of **\$4 billion** settlement with US
- **Phoenix Group Plc** lists on Abu Dhabi Stock Exchange

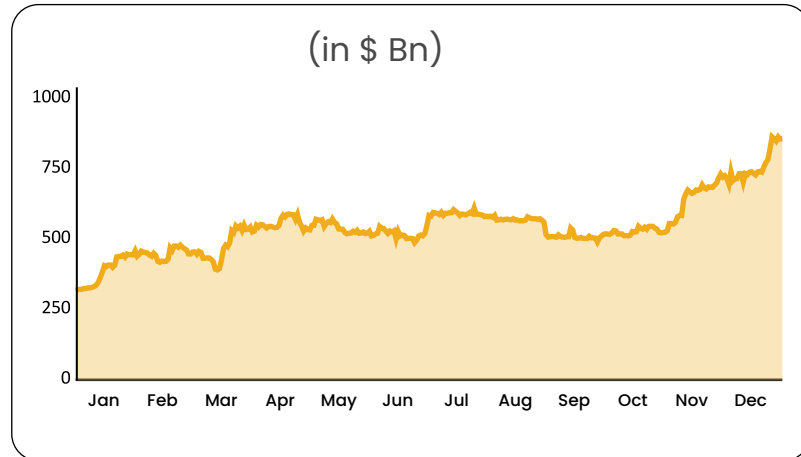
# STATE OF BITCOIN

The first half of the year saw major Bitcoin developments, including the launch of Ordinals, Inscriptions, and BRC-20 tokens, marking a new phase for Bitcoin. In late 2023, the market saw positive shifts as traditional companies like BlackRock, MicroStrategy, and Fidelity showed strong crypto commitment through actions like applying for Bitcoin ETFs, expanding BTC investments, and introducing blockchain initiatives.



# KEY STATISTICS

## Market Capitalization



The year-to-date performance of Bitcoin remained strong with a gain of **153%** starting from **~ \$16.5k** and reaching **~ \$42k** while the market capitalization surged from **~ \$318 billion** to **\$860 billion** (as of mid- December) driven by the anticipation around approval of the Bitcoin ETF and planned Bitcoin Halving in April '24.

**\$860 Bn**  
Mcap of BTC

**470.3**  
Hash Rate

## Cumulative number of transactions

There was a significant surge in network activity in H1 '23 due to the emergence of the Ordinals Protocol. The cumulative number of transactions surged to **~ 135 million**, with the 7 day moving average experiencing an exponential increase of **~ 131%** and increasing from **248k** to **573k**.

## Hash Rate & Mining Rewards

Amidst the price increase and network activity, the **hash rate** almost doubled from **253.2** to **470.3** that implies higher computing power is required to produce new blocks and validate transactions.

Subsequent to the rise in prices and excitement among the masses, Bitcoin mining rewards also soared to new highs crossing over **~ \$44 million** in Nov '23, surpassing the previous record of **\$41 million** in May '23, while the mining difficulty increased from **35.4** to **64**.

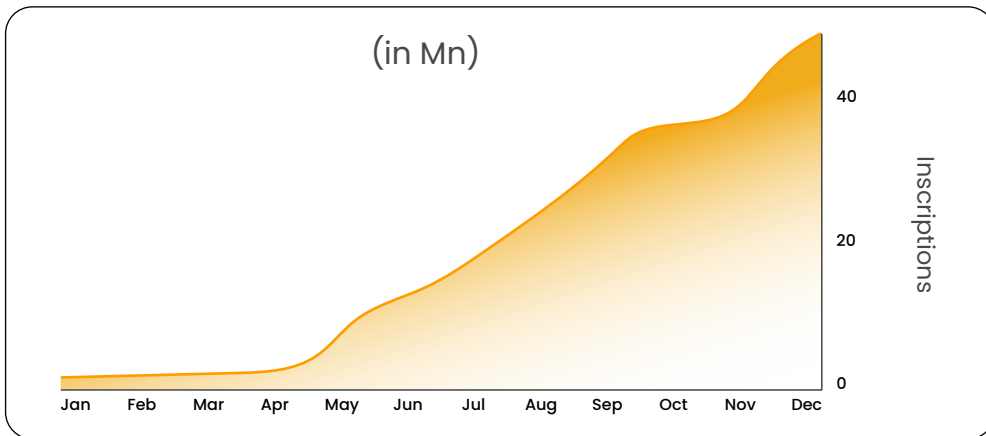
**53.5%**  
BTC Market Dominance

**64**  
Mining difficulty

# THE RISE OF ORDINALS

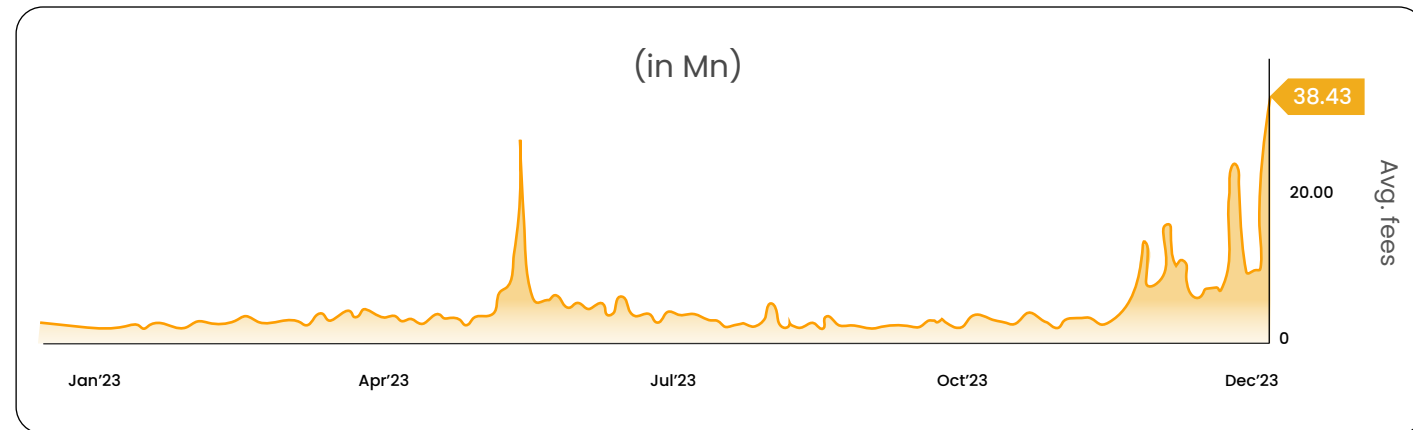
The most groundbreaking addition to the Bitcoin blockchain this year was the implementation of the Ordinals protocol, a Layer 1 protocol that allots a unique number to each satoshi minted and inscribes additional data in a satoshi in the form of text, video, images and more allowing developers to create NFTs and fungible tokens on top of the Bitcoin blockchain.

## Ordinals - Inscriptions



After the first inscription on December 14, 2022, it took over a month to reach 100 inscriptions. However, between February 2 and February 15, the number surged from 1,000 to 100,000 and there has been no looking back. As of mid-December, a staggering **47.5 million** inscriptions have been made generating a total fee exceeding **~3556 BTC**.

## Avg. Bitcoin transaction fee



In 2023, Bitcoin's daily transaction fees, driven by increased Ordinals-related activity, surpassed that of Ethereum. Bitcoin's average fee surged to **\$38.4** in mid-December, which reflects heightened market interest in Ordinals-inscribed assets. This surge in fee doesn't favour mass adoption of Bitcoin as a blockchain (a problem that yet needs to be solved).

**47.5 Mn**  
Ordinal Inscriptions

**\$38.4**  
BTC's peak average fee

# BITCOIN ETFs AND INSTITUTIONAL PARTICIPATION

Bitcoin's price saw an upward trajectory following the submission of a spot BTC ETF application by **BlackRock** (AUM ~ \$9.4 trillion) to the Securities and Exchange Commission in June '23. Subsequently, over a **dozen** major U.S. asset management firms, including **Fidelity** (AUM ~ \$4.5 trillion), and **Invesco Galaxy** (AUM ~ \$1.5 trillion) have filed similar proposals. While ongoing discussions between these firms and the SEC continue, a final decision has been deferred to January 2024.

Towards the end of 2023, BlackRock revised its ETF model by introducing an in-kind redemption "**prepay**" model to allow financial institutions to create new ETF shares using cash, rather than holding bitcoin directly and increase institutional participation. This move can pave the path for other firms and will boost institutional involvement in the sector.

Institutional firms increased their BTC holdings and participation in the ecosystem throughout 2023. For instance, **MicroStrategy** increased their BTC holdings to **174.5K** at an average price of ~ **\$30.3K**, which were at a ~ 32% profit as at the date of writing. **Nomura**, Japan's largest investment bank, launched a **Bitcoin Adoption Fund** targeting institutional investors and providing long exposure to Bitcoin.



*"Bitcoin continues to prove itself as a differentiated asset unlike anything else there is in the world, which is why we are seeing some of the world's most influential funds working very hard at bringing Bitcoin access to the masses via ETFs. I don't think it's a question of if, but when, an ETF(s) will get approved. The market cap of gold is currently just shy of \$14T, and the market cap of Bitcoin is just shy of \$1T, I think there's room to grow - and this isn't taking into consideration the possibility of Bitcoin becoming a legitimate protocol to build applications and new use cases. I think we will see many attempts here in 2024."*



**Jad Chahine**  
Founding Member, **Superscript**

**174.5K**

**BTC Holdings of MicroStrategy**

**12**

**No. of Spot Bitcoin ETF filings**



# FUTURE OUTLOOK

The fervor surrounding **Bitcoin ETFs** has played a pivotal role in shaping market sentiment. With the expectations of the SEC approving the first US Bitcoin ETF in the month of January '24, we can expect BTC to continue its upward trend.

With institutional firms like **MicroStrategy** holding considerable **BTC** holdings, institutions will infuse more capital. We can expect more startups working towards Crypto ETF investment, monitoring, and analysis tools.

The **bitcoin halving event**, a quadrennial event (once-every-four-years) that halves the reward earned by miners for adding a new block to the chain, is likely to take place in April '24.

Historically, past Bitcoin halving events were followed by a bull run. Prior to the 2020 halving, there was an ~ **83%** increase in BTC's price and post-halving, it experienced a ~ **46%** surge. However, with the markets maturing and becoming efficient, we believe that the current price should have already factored in the Halvening effect but we may still see some activity due to the historical analogies.



*"In 2024, there are several key events that could shape the future of the cryptocurrency industry. These events include the potential approval of a Bitcoin Exchange-Traded Fund (ETF) by the SEC, the Ethereum Cancun upgrade, potential interest rate cuts in the US, Circle's IPO, the Bitcoin halving, and regulatory clarity surrounding the FTX case. The approval of a Bitcoin ETF could attract more traditional investors to the market, while the Ethereum Cancun upgrade and increased token issuance could drive further growth. Potential interest rate cuts may make cryptocurrencies more attractive as alternative investments. The Bitcoin halving event, which occurs approximately every four years, is expected to increase the scarcity of Bitcoin and historically has led to price increases. Regulatory clarity is also important for investor confidence and market stability. Also, the equity markets have been on the bull run after covid-19 and investors are expected to book their profits freeing a lot of money which again is a positive for digital assets investments. Most of the factors are suggesting a sharp bull run for Bitcoin and more likely than not, it should break it's all-time high level."*



**Ankur Garg**  
Director, TDMM

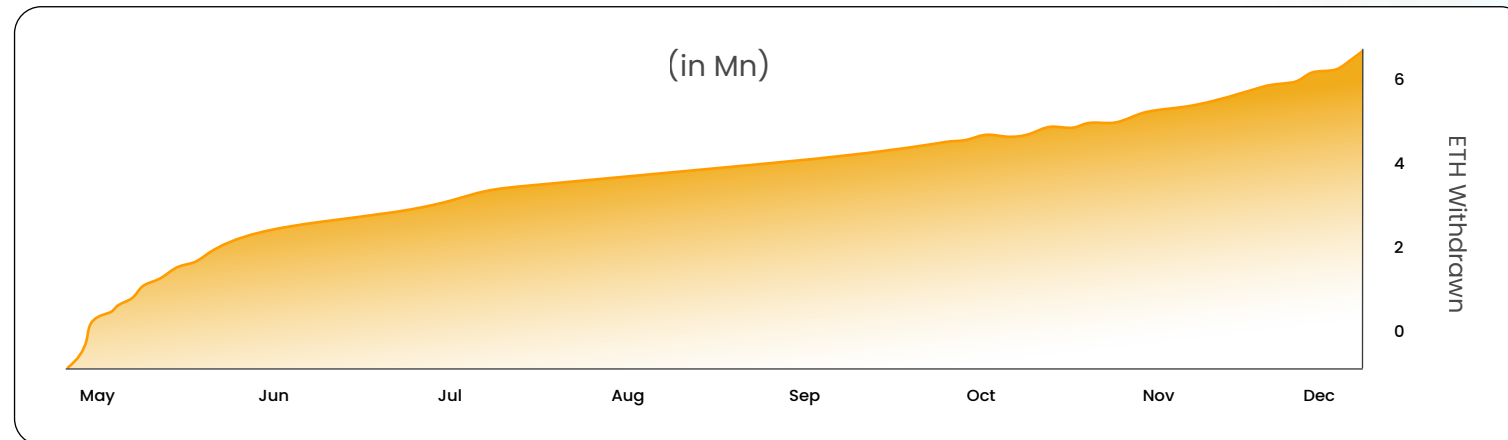
# STATE OF ETHEREUM

Ethereum continued to be the torchbearer in the Layer-1 segment. As at the date of writing, it held **~ 54.47%** of the overall DeFi market TVL, hosted **~ 4.4K** dApps and registered **~ \$55 billion** in NFT volumes. In 2023, the Shanghai upgrade was a major development in the Ethereum ecosystem, and the persisting challenge of high fees continued to be a constraint for seamless onboarding of the masses.

# ETHEREUM SHANGHAI UPGRADE

Ethereum Shanghai Upgrade empowered validators to withdraw their staked Ether (ETH) that was previously locked in the network (**EIP-4895**) to secure the network as Ethereum transitioned to PoS. This upgrade also introduced a "base fee" structure for transactions (EIP-1559) to address the long-standing issue of high fees, enhancing flexibility for users managing their staked ETH.

## Total ETH Withdrawn Over time



The upgrade went live on the Ethereum Mainnet on April 12 - at epoch 194048. At that time, the upgrade effectively unlocked **\$34.89 billion** to be withdrawn. However, within a month of upgrade, a total of **22.58 million ETH (\$40.64 billion)** were deposited into the staking contract. This shows the strong belief of the Crypto ecosystem in the future of Ethereum.

## Key Metrics

**146.38 Mn**  
Unique Active  
Wallets

**\$55 Bn**  
NFT trading  
volume

**294 Mn**  
Transactions  
during the year

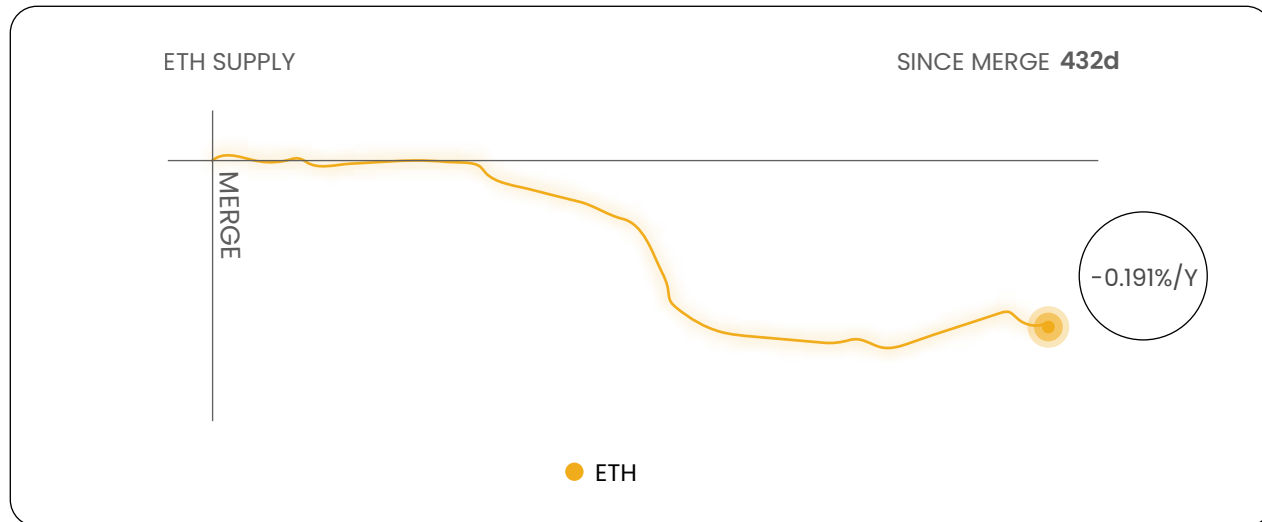
**4,373**  
dApps on  
Ethereum

**\$26.14 Bn**  
TVL in Ethereum

# ETHEREUM'S JOURNEY TOWARDS DEFLATION

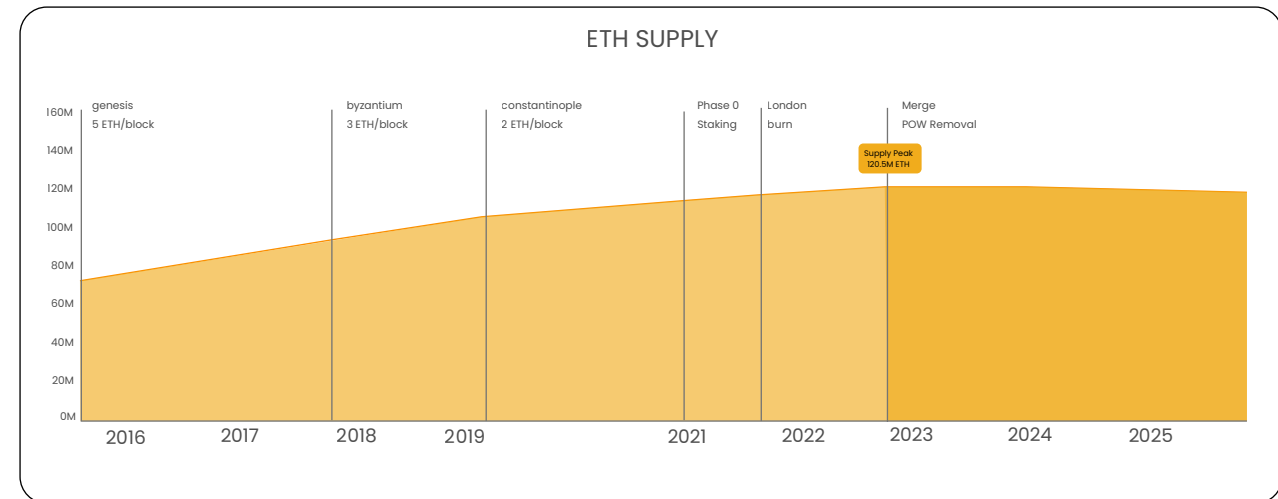
Following the introduction of **EIP-1559** with Ethereum London hard fork upgrade in August 2021, a pivotal shift was introduced wherein it introduced a "base fee" for transactions, which, ultimately, is burned, permanently reducing Ethereum's circulation. Increased transaction activity leads to more Ethereum being burned, gradually diminishing the total supply.

## ETH Supply



Since the Merge on September 15, 2022, a total of 1,108,891 ETH were burned, while 836,045 ETH were issued. This translates to a reduction of 0.19% (-272,849 ETH) in Ethereum's total supply over this period.

## ETH Supply Projection



Based on the current burning rate, projections suggest that by the end of 2025, Ethereum could further reduce its total supply to **117.70 million** ETH, reflecting a **2.32%** decrease from its peak. This deflationary trajectory strengthens ETH as an Ultrasound money.

**1.1 Mn ETH**

Burned Since  
The Merge

**836k ETH**

Issued Since  
The Merge

# FUTURE OUTLOOK

Following the successful completion of 'The Merge,' Ethereum is now set to embark on its next significant upgrade, '**The Surge**' which is designed to tackle the persistent issue of high gas fees.

The Surge concentrates on rollup-centric scaling, a strategy aimed at reducing gas fees by leveraging layer-two chains (L2) to process and bundle transactions onto Ethereum's primary blockchain (L1).

Further developments, such as **proto-Danksharding** and **Danksharding**, are planned to enhance scalability and efficiency. **Smart contract wallets** will be introduced in upcoming upgrades, simplifying onboarding processes, aiding account recovery, and facilitating cross-blockchain transfers.

Ethereum's roadmap places a strong emphasis on **privacy upgrades** for fund transfers, envisioning individual addresses per transaction to enhance privacy amid increased complexity. This aligns with Ethereum's global blockchain platform ambitions.

Financial institutions, including **BlackRock**, have filed for Ethereum Spot ETFs which are expected to be approved by January '24. This approval will provide regulated access and foster institutional trust in Ethereum as an investable asset class.



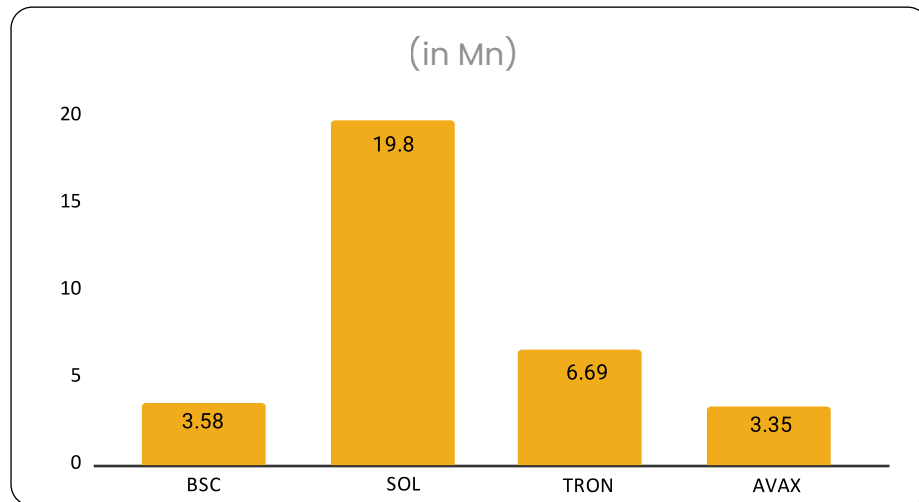
# STATE OF LAYER-1

In 2023, the landscape of Layer 1 continued to evolve, and showcased a dynamic interplay of established giants and promising newcomers, each shaping the ecosystem in unique and impactful ways. We witnessed a powerful resurgence of Solana and Tron, as they reaffirmed their pivotal positions in Layer 1. Meanwhile, this year was also marked by the emergence of new Layer 1s like SUI which promise exciting strides towards enhancing blockchain transaction efficiency.

*\*We have not featured Ethereum in this section since it has already been covered in detail in the preceding section*

# KEY STATISTICS

## Average Daily Transactions



Solana's remarkable achievement of **~19.8 million** average daily transactions in the current year underscores its leading position in Layer 1 solutions. The expansive ecosystem of dApps ranging from DeFi to NFT on Solana's network is instrumental in driving heightened transaction volumes. Tron closely followed it as the runner-up with **~6.69 million** average daily transactions, followed by BSC and AVAX.

## Total Value Locked

The TVL in L1s surged from **~\$33 billion** to **~\$39 billion** in 2023. Tron witnessed a remarkable surge of **~84%** in TVL, surpassing the BSC chain and reaching a staggering **\$7.54 billion**. Both BSC and Avalanche saw declines of **~36%** and **15%** in their TVL respectively. Meanwhile, Solana's TVL grew by **~207%**, and reached **\$645 million**.

## Cumulative Unique Addresses

In terms of cumulative unique addresses, BNB Chain emerged as the direct winner with **~402 million** addresses. Tron followed closely with **~199 million** addresses while Solana had **~145 million** addresses. Although AVAX lags behind the other chains in terms of Unique Active Addresses, transactions per address is the highest in AVAX, which demonstrates its active and organic user base.

**207%**  
Growth in  
Solana's TVL

**19.8 Mn**  
Solana's avg. daily  
transactions

**402 Mn**  
Cumulative unique  
addresses on BNB chain



# EMERGING LAYER 1 PROTOCOLS

The new Layer 1 blockchains aim to tackle pressing issues prevalent in established blockchains. They strive to overcome the limited transaction throughput witnessed in prominent blockchains like Bitcoin and Ethereum, aiming to alleviate congestion and high fees during peak network periods. Additionally, these new entrants are seeking to improve cross-chain communication by enhancing interoperability.

Few emerging Layer 1s to watch out for are as follows:



**Aptos**

It is a Layer 1 blockchain which employs the Block - STM algorithm and the BFT Consensus Mechanism allows for a **100%** up-time in contrast to Solana. Parallel processing of the Aptos network enables the execution of a large number of transactions concurrently, resulting in a network pace of upto **160K**.

**8.3 Mn**

Users on SUI

**100 Mn**

SEI's Testnet transactions

**\$298 Mn**

Funds raised by Aleo



**Sui**

It utilizes an object-centric model and harnesses parallel transaction execution driven by the Move programming language which enhances its throughput capabilities. It has garnered ~ **8.3 million** users within a short span of time.



**Sei**

It is a Cosmos-based layer-1 blockchain which through their Twin Turbo Consensus, powered by Cosmos SDK and Tendermint Core, aims to equip decentralized trading apps with unmatched speed, security, and capital efficiency for optimal performance. It is backed by the likes of Multicoon capital, Coinbase and more.



**Aleo**

It operates as a privacy-centric Layer 1 blockchain, leveraging zero-knowledge proofs (ZKPs) to facilitate confidential and secure transactions. It features SnarkVM which achieves scalability by offloading computations off-chain, requiring only proof of computation publication on-chain for enhanced efficiency. It is backed by SoftBank vision fund and Andreessen Horowitz.



# FUTURE OUTLOOK

2024 could be the year of **Emerging Layer 1s** such as SUI, Aleo, etc., which with their innovative architecture and robust data management capabilities are set to redefine **scalability**, **efficiency**, and **security** paradigms.

There could also be a surge in **customized blockchains** as enterprises seek bespoke solutions, spurring innovation and adaptability. For instance, Gaming-oriented blockchains like **Chiliz** and **Enjin** have done commendable work by fine-tuning their infrastructure to cater precisely to the intricate demands of the gaming industry.

Solana's imminent **iredancer upgrade**, slated for the first half of 2024, promises substantial advancements in throughput and reliability. Anticipated advancements in 2024 foretell the maturation of **sharding** implementations in Ethereum for improving its scalability. Concurrently, increased adoption of **Data Availability Sampling (DAS)** implementations is expected, further augmenting the efficiency of Layer 1 protocols.



*"2023 continued the trend from 2022 and proved to be an operationally challenging year for most companies in the cryptocurrency industry. However, the trend has reversed in the last quarter of 2023. Ecosystems which continued to innovate and develop regardless of the past years' difficult environment are well suited to capitalize on this reversal throughout 2024, particularly ecosystems focused on AI, gaming, and NFT digital assets"*



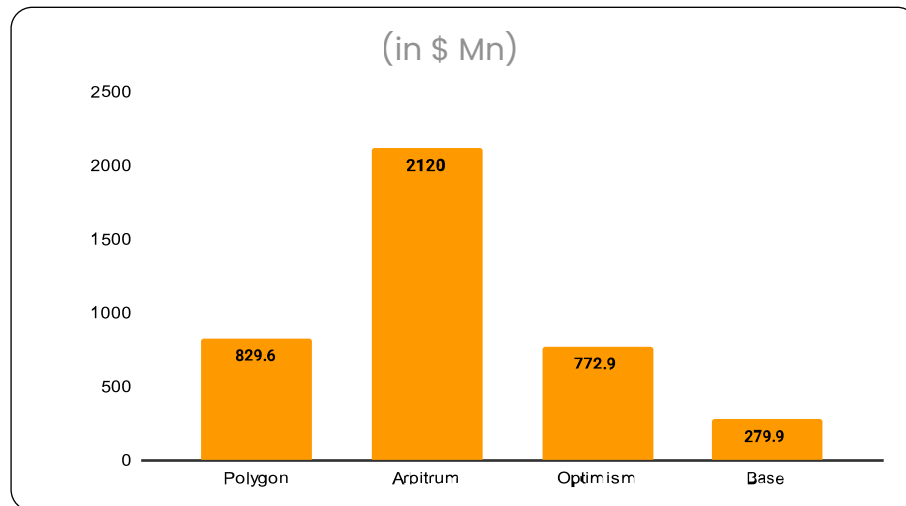
**Rene Stefancic**  
COO, Enjin

# STATE OF LAYER-2

Layer 2 solutions continued to grow in 2023 with their TVL reaching a staggering **\$14 billion** in 2023. Prominent protocols announced major updates, for instance, Polygon launched their own ZK EVM chain. Notably, Coinbase introduced Base, a technically Layer 2 blockchain constructed atop Ethereum, leveraging OP Stack software from the established Optimism network.

# KEY STATISTICS

## Total Value Locked



The TVL in layer 2 solutions surged from **\$4.4 billion** to a staggering **\$14 billion** at the time of writing. Arbitrum led the cartel with **\$2.1 billion** in TVL followed by Polygon with **\$829.6 million**, Optimism with **\$772.9 million** and Base with **\$279.9 million** in TVL respectively. Notably, the top 4 Layer-2 infrastructures also secured their spot in the list of Top 10 Chains by TVL.

## Average Daily Transactions

There were around **1.04 million** transactions on Ethereum on a daily basis since 2023. On the flip side, Polygon registered a whopping **2.61 million** daily transaction count on its chain. This clearly highlights the extent of the ecosystem that Polygon currently has on its chain. Arbitrum and Optimism had **722.4k** and **432.9k** average daily transactions respectively.

## Cumulative Unique Addresses

Polygon dominated with **~385.8 million** unique addresses on its chain, followed by Optimism with **62 million** and Base with **55.1 million**. Interestingly, despite Arbitrum's longer tenure since June 2021, it has accrued only **14.5 million** unique addresses as compared to Base, which, going live in June 2023, boasts over 55 million addresses.

**\$14 Bn**  
TVL in Layer 2

**385.8 Mn**  
Cumulative unique addresses on Polygon



# TRENDS AND FUTURE OUTLOOK

Layer-2s have made significant developments, garnering overwhelming support due to minimal fees and high TPS. 2023 witnessed groundbreaking efforts to optimize rollup technology, and it is expected that in 2024, L2s will draw significant activity on their infrastructure.



Arbitrum developed **Arbitrum One** for high-security use cases like DeFi, **Arbitrum Nova** to cater to games, NFTs, and social applications (with slightly lower decentralization) and **Arbitrum Orbit** to allow anyone to make their own blockchain (app chain/L3).

They have adopted a step-up approach for market penetration. While ranking lower on the Unique Addresses metric, the average Daily Transactions count (**722.4k**) signifies a higher activation rate of the community. In their endeavor to support developers to build on it, they have allocated resources and grants which surely will multiply the business potential of Arbitrum.

**\$2.1 Bn**

TVL in Arbitrum

**722.4K**

Avg. daily transactions on Arbitrum



Base incubated by Coinbase has access to Coinbase’s **110 million** verified users and the opportunity to leverage Coinbase’s brand with its vast network of investors, builders and connections. Base can be imagined as a decentralised layer that Coinbase could utilize to build a “trusted open financial system” as per its mission statement.

Having launched in June 2023, it has been able to grab ~ **\$300 million** TVL on its chain and 55.1 million cumulative addresses. Base as a chain could see multifold progress in 2024, however, as Coinbase share (COIN) is listed, it would make it difficult for Base to launch its token and they would not be able to leverage the token as a User Acquisition instrument.

**\$300 Mn**

TVL in Base

**373.2K**

Avg. daily transactions on Base



Optimism experienced growth in TVL and Addresses during the year. Base utilizing the OP stack is poised to attract other infrastructures in 2024. Base chain will share a percentage of the fees earned through transactions to the Optimism Collective to be a part of the Superchain. Hence, Optimism as an infrastructure would benefit from the shared user base that interacts with it.



Polygon has made leaps and bounds in terms of the tech stack they have developed over the bear market. They launched their ZK EVM chain, **Polygon 2.0** which is a network of ZK-powered L2 chains, unified via a novel cross-chain coordination protocol and a **Polygon ID** solution that allows users and dApps to interact through self sovereign identity maintaining privacy.

As Zero Knowledge Proofs gain widespread adoption, Polygon's pioneering implementation of this innovative technology positions it to capitalize on a first-mover advantage and witness immense traction.



*"I feel bullish on innovation progressing towards unifying liquidity and interoperability among blockchain networks. This will redefine UI, making seamless experiences for end-users and inching closer to make blockchain invisible. Expect synthesis of blockchain technology, identity and AI to uncover more viable use cases in 2024. It will be also interesting to watch how funding, adoption by institutional players and regulatory guidelines come along in 2024."*

 **Ravikant Agrawal**  
Director of Growth, Polygon

\* The views expressed are personal and do not reflect any future perspectives or official stance of Polygon.

**\$772.9 Mn**

TVL in Optimism

**432.9K**

Avg. daily transactions on Optimism

**\$829.6 Mn**

TVL in Polygon

**2.61 Mn**

Avg. daily transactions on Polygon

# STATE OF STABLECOINS

Stablecoins, a cornerstone in the cryptocurrency ecosystem's rapid evolution, played a pivotal role across sectors such as trading, lending, and asset management. With a market capitalization exceeding **\$129 billion**, they accounted for **8.7%** of the total cryptocurrency market capitalization, at the date of writing.

# MARKET OVERVIEW

In 2023, centralized and fiat-backed stablecoins dominated the market while newcomers like **crvUSD** and **GHO** spurred competition and innovation. However, interest in algorithmic stablecoins declined as countries, including the UK, focused mainly on regulating fiat-backed options. For instance, Frax Finance's community vote in Feb '23 led to a complete collateralization of FRX, eliminating its algorithmic nature, supported by a 98% voter majority opting for a 100% collateral ratio.

## USDT Reserves Component

Tether diversified its deposits across multiple banks increasing their US Treasury bills reserve to **76.44%** of Cash & Cash Equivalents (as reported in the audited report by BDO) during the year. This measure might have ignited trust within the USDT token holders which is replicated with a surge in its dominance.

**\$88 Bn**

Mcap of USDT

**76.44%**

USDT's share of Cash & Cash Equivalents

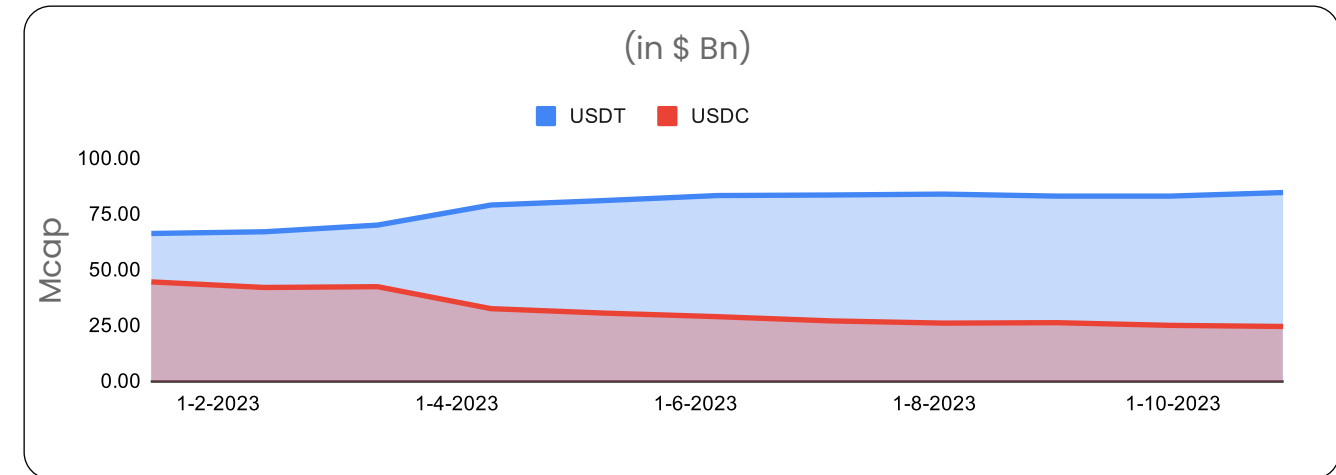
**71%**

USDT's market dominance

**609**

Depegging incidents in 2023

## Market Capitalization



Following USDC's de-peg, investors opted for USDT over USDC that resulted in Tether's dominance soaring from **47%** in Nov '22 to **71%** in Nov '23 and it reached a market cap of over **\$88 billion**.

Post-SVB's collapse, USDC's market cap nearly halved, depegging to below 85 cents around March 2023. This depegging also affected DAI since it is heavily reliant on USDC reserves, and it dropped to **\$0.85**. However, both stabilized after the Federal Reserve reassured bank support, returning to their peg levels.

# TRENDS

The **adoption of stablecoins** by banks and fintech firms gained significant traction, signifying a notable shift in the traditional financial sector. For instance, PayPal launched PYUSD, its stablecoin pegged to the US dollar, NAB Bank achieved a pioneering intra-bank cross-border transaction using its stablecoin on the public Ethereum blockchain.

The **migration** of stablecoins to Layer 2 solutions emerged as a standout trend in 2023, with over **\$1.87 billion** on Arbitrum, **\$569 million** on Optimism, and **\$102 million** on zkSync.

New categories of stablecoins:

- (a) Collateralized debt position (CDP) stablecoins - It refers to loan agreements based on smart contracts whereby users deposit assets (e.g. ETH) as collateral and receive a stablecoin-denominated loan in return. Recent launches include **crvUSD** by Curve Finance and **GHO** by Aave.
- (b) Stablecoins backed by liquid staking tokens (LSTs) - They are overcollateralized by liquid staking tokens and employ the same model as CDPs. For instance, Prisma's **mkUSD** and Lybra's **eUSD**

**\$1.87 Bn**

Arbitrum Stablecoins  
Market Cap

**\$569 Mn**

Optimism Stablecoins  
Market Cap

## Regulatory Updates

**MiCA Regulation:** These regulations targeting stablecoins will take effect in Europe starting June 30, 2024. Under MiCA, stablecoin issuers must maintain 1:1 reserves, ensuring full coverage for claims and redemption rights. EU exchanges are mandated to delist stablecoins from issuers lacking EU EMI licenses.

**Singapore Stablecoin Legislation:** In August '23, the Monetary Authority of Singapore (MAS) unveiled a regulatory framework for single-currency stablecoins (SCS), linked to the Singapore dollar and G10 currencies such as Belgium, Canada, and France under which issuers will be mandated to maintain ample reserves, ensure liquidity for redemptions, and comply with disclosure standards

**United Kingdom Stablecoin Legislation:** In 2024, the UK government intends to regulate fiat-backed stablecoins under the FCA's oversight within payment systems. Non-fiat-backed variants, including algorithmic ones, won't fall under regulated payment chains, akin to unbacked crypto assets. Overseas stablecoins must comply with UK standards, and the FCA is empowered to enforce reserve holdings in a statutory trust, as per the Financial Services and Markets Act.



## FUTURE OUTLOOK

**Dollar-based** stablecoins like USDC and USDT, with a combined market cap over \$100 million, will continue to dominate due to the US dollar's global FX market influence and users' preference in inflation-hit countries, despite the rise of alternatives like cEUR and cREAL.

The future of stablecoins seems entwined with regulatory scrutiny. Governments are likely to introduce **stricter regulations** mandating proper reserves auditing for stablecoin issuers in 2024 to fortify stability and safety of the investors' interest.

**Innovative stablecoin designs** like stablecoins backed by diversified asset baskets rather than singular fiat currencies could also be a major trend as it enhances stability and provides resilience against market fluctuations.

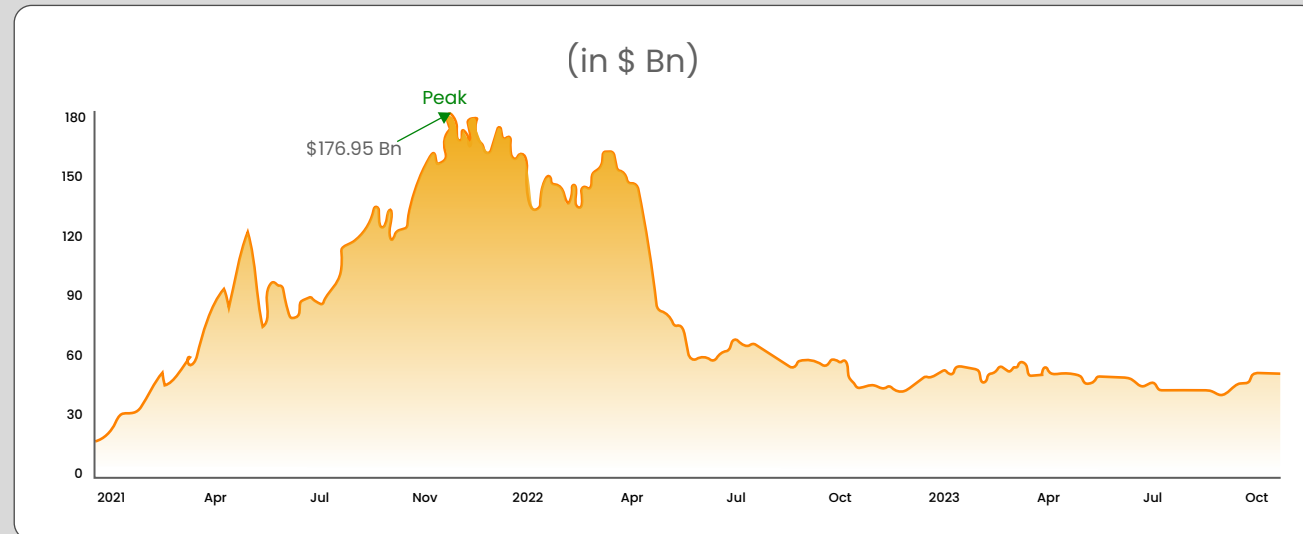
Lastly, institutions increasingly embracing stablecoins for various applications may serve to validate and propel the **institutional adoption** of stablecoins and such a trend could lead to more robust integration into financial systems.

# STATE OF DEFI

In 2023, DeFi experienced a transformative phase, rebounding from a previous downturn. Among the major developments, Liquid Staking Derivatives (LSDs) took center stage and their TVL reached **\$27 billion**. Real World Assets (RWAs) also emerged as a significant trend within DeFi with their TVL reaching **\$5.5 billion**.

*\*LSD and RWA's are covered in the [New Narratives](#) section*

## Total Value Locked



The Total Value Locked (TVL) within the DeFi sector hovered around **\$47 billion** at the time of writing. While this figure stands **~72%** lower than its historical peak, the TVL exhibited noteworthy resilience throughout 2023. With optimistic news, like Blackrock filing its ETF and the rise of narratives like LSDs, TVL in the protocols gradually recovered in H2 '23.

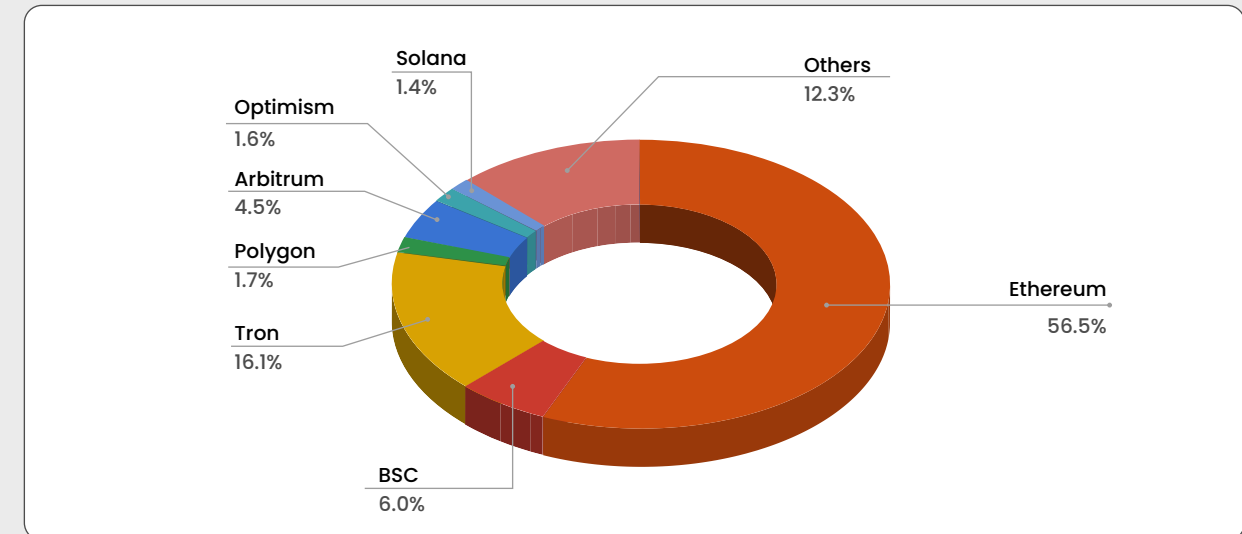
**\$47 Bn**

TVL in DeFi

**56.5%**

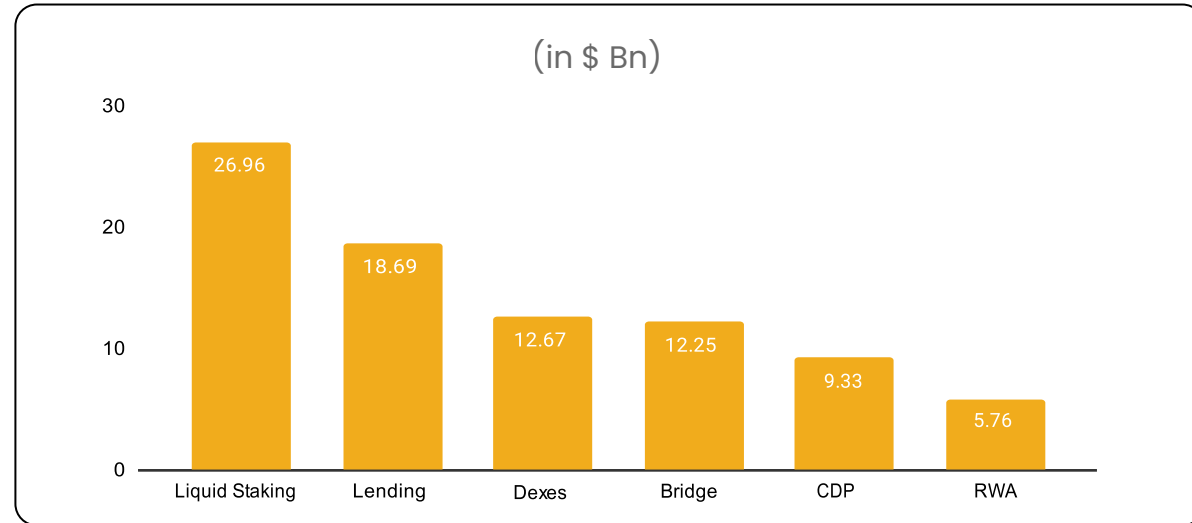
ETH's market share in TVL

## TVL per Chain



Ethereum maintained its leadership position with **~56.5%** share in TVL, hosting approximately **957** applications on its chain and showcasing its robust ecosystem for dApps. Close on its heels was Tron with **~16.1%** share in TVL across **26** protocols, followed by BNB chain with **~6%** share in TVL and **~667** applications. Additionally, both Arbitrum and Polygon emerged as prominent contenders, as they accommodated **491** dApps each, and a share of **~4.5%** and **~1.7%** in TVL respectively.

## Category Wise TVL



LSDs emerged as the dominant category in Total Value Locked (TVL), commanding a significant share of **\$27 billion** at the time of writing. Following closely were Lending protocols, contributing **\$18.7 billion**, and Decentralized Exchanges (DEXes) with **\$12.67 billion** in TVL. Additionally, 2023 witnessed the ascent of Real World Asset (RWA) protocols, accumulating a share of **\$5.76 billion**, marking their growing representation in the DeFi landscape.

**\$27 Bn**  
TVL in LSDs

**1091**  
Number of DEXes

## Number of DeFi Protocols

Dexes dominated the landscape with a vast count of 1,091 protocols, facilitating seamless token trading. Lending protocols amounted to **319**, highlighting the significance of borrowing and lending activities. Liquid Staking was represented by **129** protocols, emphasizing the growing importance of staking derivatives. CDP protocols amounted to **111**, while Bridge protocols totaled **48**, serving as vital connectors between disparate blockchains. RWA protocols stood at **32**, marking a rising trend of integrating tangible assets into DeFi.



*DeFi continues to redefine traditional finance paradigms. The fusion of blockchain and AI has led to innovative financial products and services, offering investors decentralized lending, automated trading, and yield farming opportunities. DeFi's momentum is set to persist in 2024, with increased adoption and integration of AI-driven algorithms.*



**Vadim Krekotin**  
Founding Partner, **Cryptomeria Capital**

## Lending Protocols

Lending protocols continued to act as a prominent player in the DeFi space with a TVL of **\$18.7 billion**. Few notable developments observed during the year are as follows:

- Aave launched **GHO** stablecoin backed by various digital assets including Ethereum and AAVE’s native token AAVE
- JustLend launched **“Staked TRX”** and **“Energy Rental”** to provide users with more flexible and streamlined options while reducing energy rental costs
- MakerDAO team built **Spark** to empower DAI ecosystem
- Venus protocol launched **Venus Prime** to elevate user engagement and propel the protocol's expansion
- Oasis.app rebranded to **Summer.fi** and extended their offerings to Base, Arbitrum and Optimism and registered a gigantic surge in TVL from **\$1.4 billion** to **\$3 billion** this year.

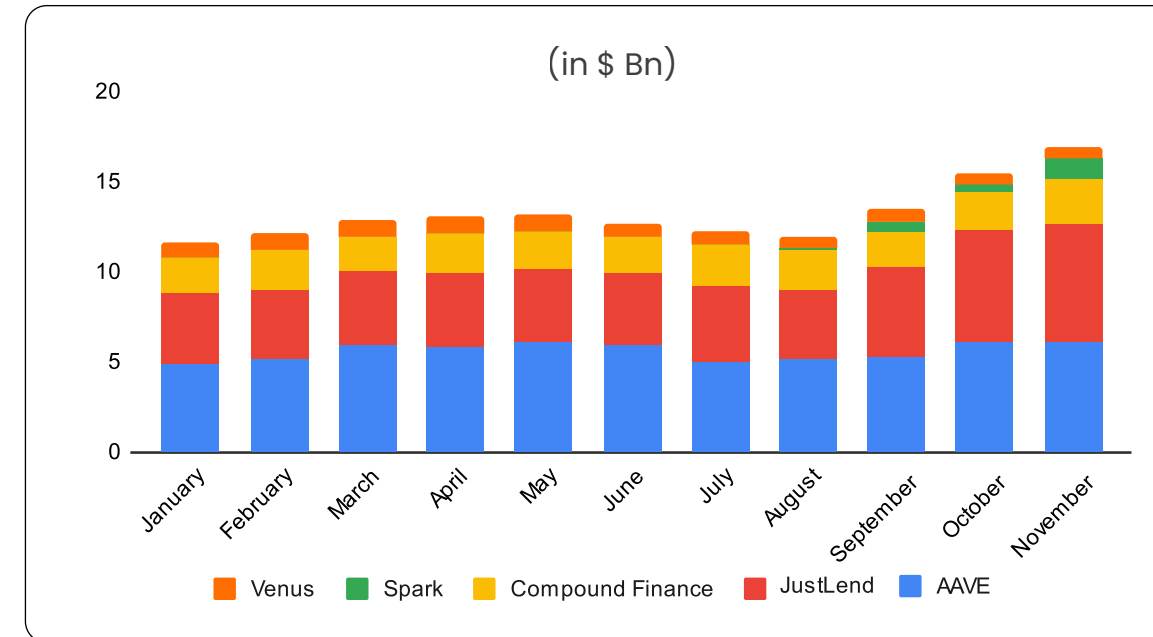
**\$18.7 Bn**

TVL in Lending protocols

**\$6 Bn**

TVL in JustLend

## Total Value Locked



Among the 319 lending protocols, AAVE held close to **\$5 billion** in TVL throughout the year, while JustLend registered an exponential increase to **\$6 billion**, a remarkable surge of **~68%** from the start of the year.

## Decentralized Exchanges

Decentralized Exchanges can be regarded as the backbone of DeFi as it is the go-to platform to swap assets on-chain. The sector witnessed significant developments like Uniswap came up with **Uniswap X** which emphasized on enhancing swapping efficiency by aggregating liquidity sources for better prices and offering gas-free transactions.

PancakeSwap launched **V3** on BNB Chain and Ethereum in April, with an aim to enhance capital efficiency and revamp its fee structure. Curve Finance fell victim to a **~ \$73 million** hack, the attackers' exploited a zero-day vulnerability in the Vyper compiler, a language fundamental to Curve Finance's contracts, which resulted in a substantial loss, out of which **~ \$54 million** was recovered by the team. Algebra Finance introduced the **'Integral'** update to address the issue of high gas costs, and DEX security. This update also enables seamless plugin integration without liquidity migration, ensuring core immutability for security and functionality.

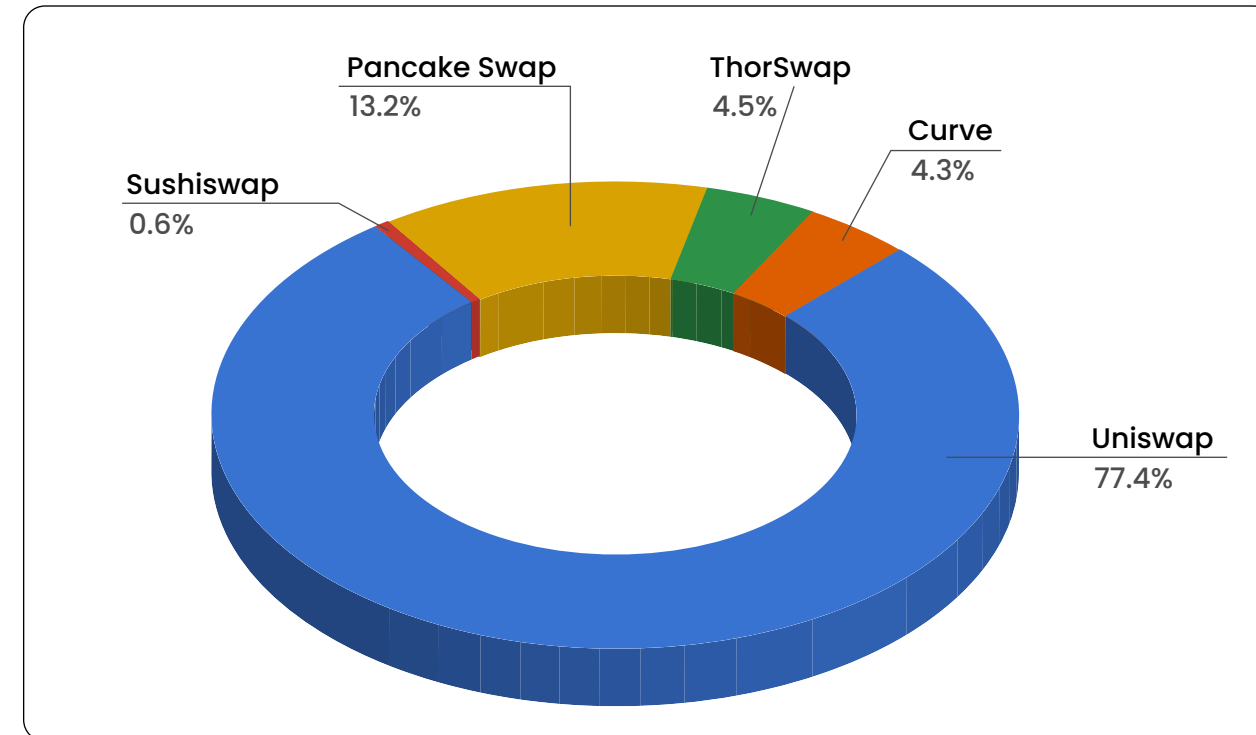
**77.4%**

Market share of Uniswap

**\$73 Mn**

Hacked from Curve Finance

## Market share by Trading Volume



Uniswap continued to dominate the DEX ecosystem commanding a staggering **~77%** share in trading volume. PancakeSwap emerged as the closest competitor to Uniswap during the year with **~13%** market share.

## Perpetuals

The perpetual sector garnered substantial attention in 2023, witnessing increased investor interest. dYdX and GMX continued their dominance in the derivatives market and witnessed some key updates during the year.

For instance, in February, **dYdX** announced **migration** of their token to the Cosmos chain from Ethereum to offer enhanced scalability, interoperability, and reduce transaction costs. **GMX** launched their **V2** in August which emphasized on protocol security and also launched isolated pools to manage high-risk assets. They also partnered with Chainlink to get reliable oracle feeds and reduce price attack risks.

With nearly 180 protocols, the TVL of all the protocols in this category stood at **~ \$1.44 billion**. GMX emerged as the market leader, boasting a TVL of **\$538 million**, surpassing dYdX which had a TVL of **\$354 million**.

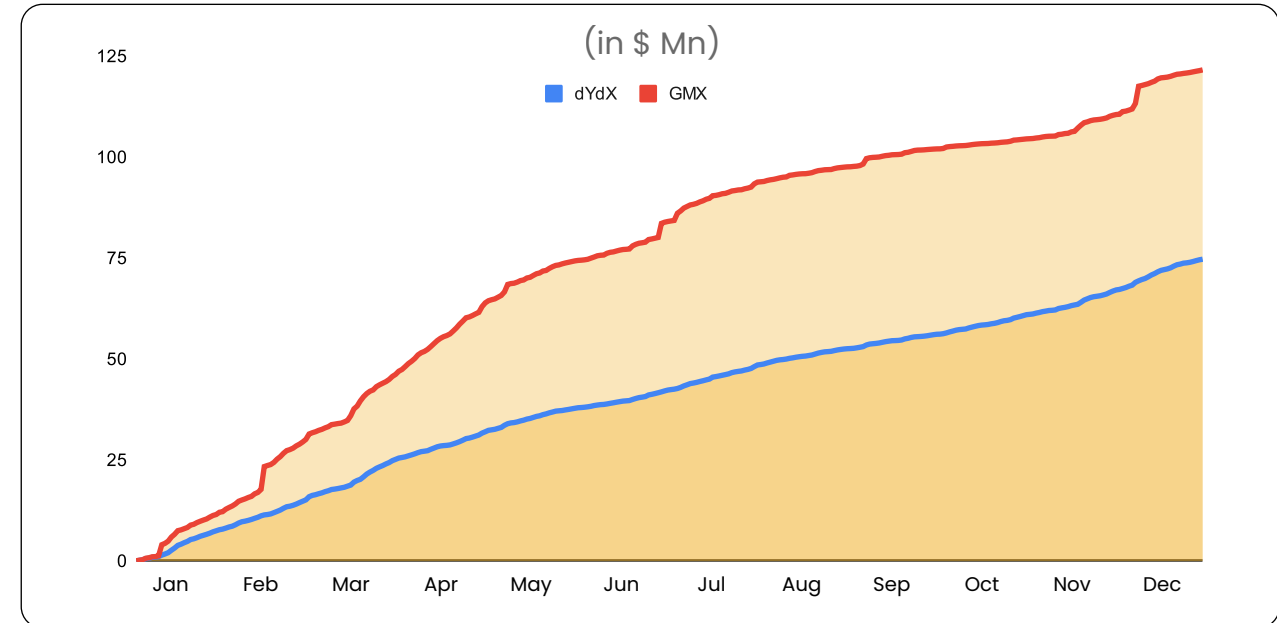
**\$354 Mn**

TVL in dYdX

**\$3 Bn**

Peak daily trading volume of dYdX

## Fees earned



Throughout the year, derivative trading volume notably surged across dYdX, GMX and perpetual protocols. In 2023, dYdX collected **~ \$74.9 Mn** in fees, while GMX collected a staggering **~ \$122 Mn** in fees.

**\$538 Mn**

TVL in GMX

**\$597 Mn**

Peak daily trading volume of GMX

# FUTURE OUTLOOK

While the industry still faces challenges such as regulatory uncertainty and security risks, the potential for DeFi to revolutionize finance is undeniable. The trends observed in 2023, such as **LSDs** and **RWAs**, are expected to garner widespread adoption. We can anticipate new projects to contribute to these trends and further solidify their presence in the sector.

Year 2023 has magnetized **institutional interest** for DeFi from leaders like **Blackrock, Fidelity** and others. With the industry leaders joining the forces, we anticipate other institutions to follow through and explore DeFi instruments for their capital deployment.

The **gaming industry** seems poised for DeFi integration. Leveraging DeFi protocols within gaming holds promise for monetizing gaming experiences, fostering decentralized in-game economies, and offering gamers fresh opportunities to earn within these virtual environments.

DEXs and derivative trading platforms are likely to focus on user-friendly interfaces, offering **tight spreads** through their robust liquidity to attract more institutional and retail capital.



*"2023 was not the best year for DeFi in a certain way. We have seen hacks, treasury raids and enforcement actions. But I think there has also been a lot of innovation in the space, more attention toward regulations, and improvements regarding the UI which I expect will bring in more users soon. Time and struggles bring more experience and we keep building with optimism. I like to think about the DeFi path as a love story: starting with a wow, experiencing difficulties and finally getting to the stable phase, where the crush transforms to a solid love."*



**Maria Magenes**  
Marketing Lead, **Summer.fi**

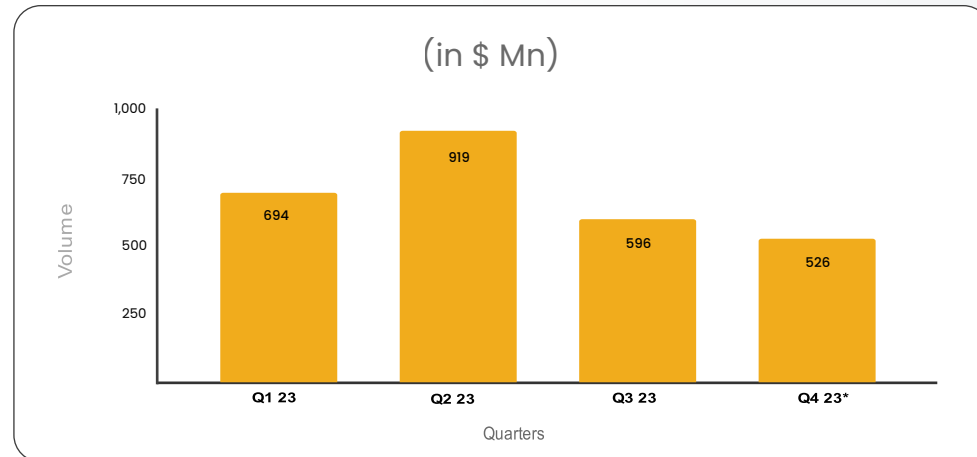


# STATE OF GAMEFI

Despite a general market slowdown post-2022, the Web3 gaming sector continues to show resilience and growth. In 2023, although the number of new Web3 games launched marked a reduction from the previous years, it still signifies a robust interest in the development of blockchain-based games. The number of newly developed games has increased by **19%** with **550+** games produced in 2023.

# KEY STATISTICS

## GameFi Volume



There has been a sharp decline in monthly volume, compared to the last year due to the extended crypto bear run and slowdown in the funding which halted many projects at their beta. The GameFi market volume saw a decline of **~66%** from a high in April to the lowest in August.

## Unique Active Wallets

There was a drop in the number of active wallets on a MoM basis, with the number of wallets dropping over **60%** from the previous high in March **~2.4 million** to **800k** in October. A QoQ decrease was also observed in the number of active wallets.

## Top Games (as per volume)

In 2023, Axie Infinity maintained dominance, commanding over **53%** of the market share with **830 million** transactions. Following closely were MOBOX and Sandbox in second and third positions, respectively. This also highlights the continued preference for casual games within the web3 gaming market.

## New Games Built Per Chain

BNB chain continued to remain a prominent choice with **132 games** built on the chain till Nov '23. However, an emerging trend toward Layer 2 and Layer 3 solutions was also evident as the industry is seeking scalability and efficiency and chains such as Polygon and ImmutableX registered over **25%** increase in number of games within a year.

# TRENDS

Most Web3 games today adopt the **Free-to-Play** model, aligning with broader industry trends. However, a notable 26% of games require players to hold specific NFTs for access, integrating blockchain technology into the core gameplay and monetization strategies. Further, new incentive models like Play-and-Earn (P&E), Play-to-Own (P2O) and Free-to-Own (F2O) also emerged in 2023

**Tokenomics** evolved, emphasizing two predominant models: the single-token and dual-token systems. The single-token approach utilizes one cryptocurrency for in-game transactions and external trading, while the dual-token system segregates in-game transactions and trading through distinct utility and governance tokens.

**STEPN** integrated **Apple** Pay into its platform for streamlining transactions and **Apple Music** for improving the user experience which emphasizes the growing **synergy** between conventional tech giants and the Web 3 world.

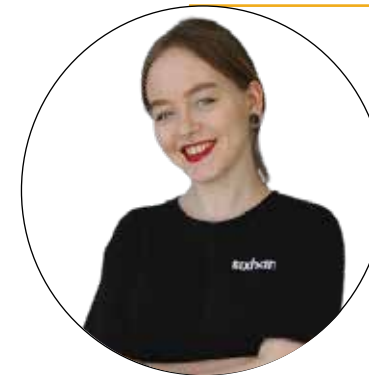
The year 2023 also saw **leading Web 2 players** like Ubisoft, Zynga and more making strides in transitioning towards Web 3 gaming. This move signifies that established giants have started to recognize the potential and opportunities within decentralized systems and blockchain technology.



*As an NFT founder, GameFi Studio CEO, and a Key Opinion Leader (KOL) in the NFT space, I can confidently say that 2023 was a year of significant growth and innovation in the GameFi vertical. We witnessed the integration of more sophisticated gaming mechanics and the expansion of player-driven economies, enhancing both player engagement and investment opportunities. The adoption of NFTs in mainstream gaming also gained momentum, attracting a broader audience to the GameFi ecosystem.*



**Matthew Ng**  
Founder, **Racerclub**



*The year presented obstacles amid a temporary lull post the monumental successes of projects like Axie Infinity and Thetan Arena, compounded by the heightened focus on AI endeavors in the market. Notably, a qualitative transformation is underway, transitioning from hype-centric projects to long-term ventures—a shift affirmed by the entry of industry giants like Epic Games, Wemade, and Netmarble into the web3 gaming landscape.*



**Ksenia Babochkina**  
CBDO, **Qubix**



*2023 has been a challenging year for the overall crypto space. However, despite market uncertainties, blockchain gaming proved its mettle, showcasing remarkable resilience amid adversities. Now that we are at the cliff of a 2-year-long bear run and the confidence in the markets is resurrecting, it is expected that as the bull run arrives, gamefi, especially Web3 casual and hypercasual gaming genre will be at the forefront in terms of user adoption from the Web 2 ecosystem to Web3 space.*



**Vasu Sharma**  
Co-Founder, **Ballers**

# FUTURE OUTLOOK

The GameFi market is projected to reach **\$2.8 billion** by 2028, growing at a **20.4%** CAGR from 2022 to 2028. In 2024, this sector is likely to exhibit a noteworthy shift from its earlier hype-driven growth towards a more **balanced distribution** on platforms such a mobile, browser, PC etc. and a diversified genre preference.

The entry of **established gaming giants** into the GameFi space like Ubisoft and collaborations between blockchain platforms and seasoned game developers is likely to attract other established gaming studios in Web 3.

The entry of **AAA games** in blockchain will drive higher quality games being onboarded and giving gamers an immersive experience which has been lacking previously. Furthermore, the focus on interoperability will fuel the development of cross-chain assets and games.

An intriguing prospect also lies in the **revival of classic games** in 2024. For instance, **ReadyGG** has partnered with 20 major Web2 publishers with over 2000 games for migration to Web 3.



*“As GameFi continues to mature, balancing fun, funding, and functionality will be crucial. The focus on user experience, attracting traditional gamers, and improving tokenomics will drive the evolution of blockchain gaming. The influx of talent from traditional gaming studios and ongoing development of innovative projects point towards a bright future for GameFi, as long as it prioritizes engaging gameplay over quick financial gains.”*



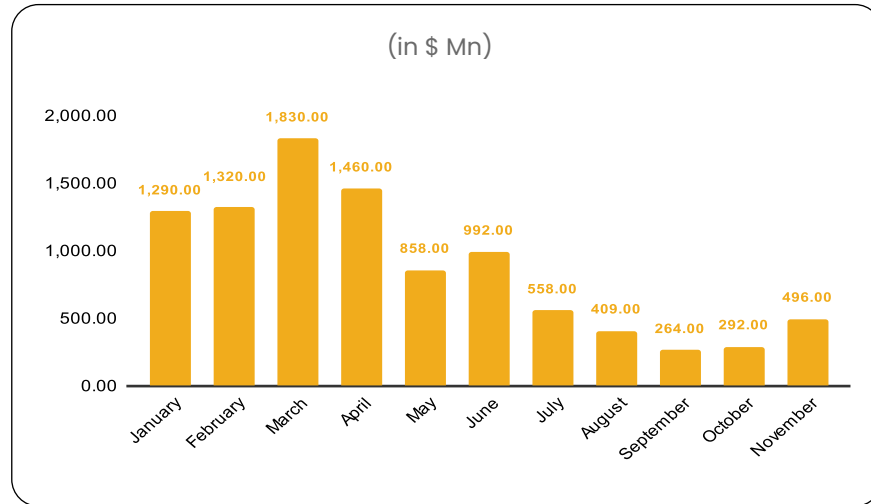
**Shiti Rastogi**  
COO, StepN

# STATE OF NFTS

In 2023, the NFT market experienced a sharp surge in trading volume, only to be followed by a decline in the later months. A whopping **~1.71 million** NFTs were sold amounting to a staggering **~\$3.5 billion**. Blur's incentives and airdrop largely influenced this roller-coaster trend. Despite a decrease in the number of active NFT traders, the overall number of holders grew by **~12.62%**, reaching around **~4.3 million**, suggesting a resilient interest and potential long-term confidence in the NFT space.

# KEY STATISTICS

## Monthly Volume



Volumes in the NFT market peaked in early 2022 but subsequently declined significantly. The first half of 2023 witnessed recovery from this decline with volumes reaching ~ **\$1.83 billion** in March, one of the reasons for this was the launch of Blur’s token airdrop campaign. However, it started to decline in the second half of 2023 and proved to be a tough time for the NFT ecosystem as trading activity on major marketplaces fell by more than 70%, plummeting floor prices for major blue chip NFTs.

## Market Share by Chain

Ethereum maintained its prominent position in the NFT market, commanding a significant share of ~ **61.8%** in terms of **number of projects launched**. Chains like Polygon, BNB Chain, and Solana emerged, albeit with lesser market shares.

## Marketplace Competition

Blur surpassed leading players like OpenSea and LooksRare owing to their zero fee policy and took the lead in trading volume in 2023, commanding a ~ **72.9%** of the market share with a ~ **\$640.7 million** trading volume. LooksRare had a trading volume of ~ **\$119.2 million** with a share of **13.6%**, while OpenSea witnessed a decline with a mere ~ **\$77 million** in trading volume and a ~ **8.8%** market share (including OpenSea Pro) in 2023.

**\$1.83 Bn**

Peak NFT Monthly trading volume

**\$119.2 Mn**

Annual trading volume on LooksRare



# TRENDS

- ◆ NFTs transcended digital images, expanding into **diverse sectors** including music, fashion, gaming, luxury goods, metaverse, supply chain, ticket sales, asset tokens, identity and credentials, as well as loans and financial instruments.
- ◆ All this development in the NFT infrastructure has allowed implementation of **interoperability** among different platforms, systems, and games, with NFTs playing a pivotal role. For instance, the emergence of **Wrapped CryptoPunks** and **Kitties**, the establishment of **cross-chain bridges**, and the implementation of **interoperable standards**.
- ◆ NFTs started to bridge the gap between the physical and digital realms. For instance, **Glenfiddich Rare Whisky**, **Nike CryptoKicks**, and **VeeFriends** showcased a trend where tangible assets were **tokenized** into digital representations, thereby establishing a link between real-world items and their virtual counterparts through blockchain-based NFTs.



*Key trends included increased integration of NFTs into mainstream digital platforms, growing emphasis on utility-driven NFTs, and a heightened focus on community and social engagement features.*



**Jimi Ibrahim**  
Co-Founder, **OasisX**

**\$640.7 Mn**

Annual Trading  
Volume of Blur

**\$610.8 Mn**

Mcap of BAYC

**61.8%**

Ethereum's share  
in launched NFTs  
in the market

**72.9%**

Blur's market  
share

# FUTURE OUTLOOK

The year 2024 holds significant promise for NFTs, marking a pivotal phase in their evolution and application. With the introduction of newer standards like ERC-998 and EIP-2309, the potential for NFTs to become more versatile and cost-effective has expanded. **ERC-998's** "composable" NFTs allow characters in virtual realms to own separate equipment or land as individual NFTs, while **EIP-2309** proposes minting numerous NFTs in a single transaction, potentially slashing gas costs.

The emerging use cases of NFTs, particularly utility-based ones representing digital assets like virtual real estate and personal identity, indicate a broader spectrum of applications beyond mere collectibles. As traditional industries show interest, exemplified by **Amazon's rumored NFT Marketplace** and the success of **NBA Top Shot**, NFTs are poised to transcend niche spaces and gain mainstream traction.

**BAYC's strategic moves** to venture into virtual reality, host events, and blockchain gaming underscore the dynamic potential for NFTs in diversifying experiences and engaging communities.

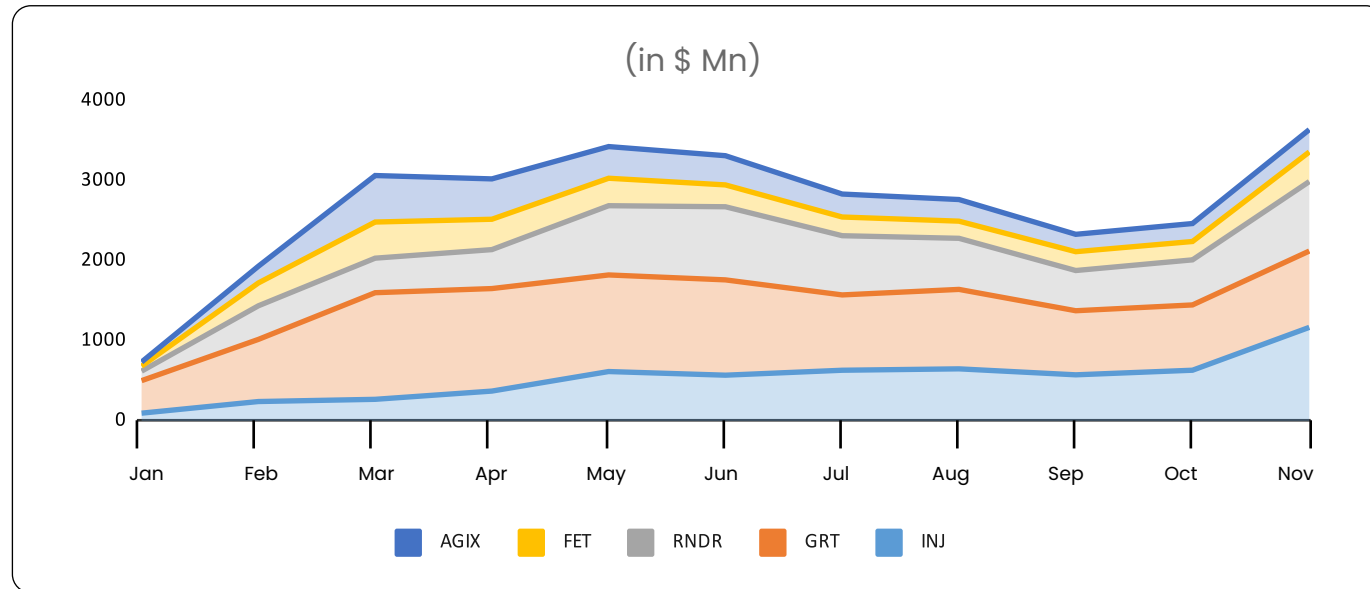
The shift towards **utility-based NFTs**, coupled with the integration into various sectors like gaming and decentralized finance, signifies a maturation phase for the NFT market, fueling optimism for sustained growth and innovation in the upcoming year.



# STATE OF AI

2023 could be described as the year of AI as its amalgamation with Web 3 took center stage, which sparked a wave of innovation, opening up a plethora of exciting possibilities and transforming the digital landscape across industries, with projects operating in this domain raising more than **~ \$520 million**. Worldcoin garnered significant attention as they announced a rollout of 1500 orbs in more than 20 countries to scan irises, create digital identities, and reward the users for sharing their data.

# AI MARKET OVERVIEW



The market capitalization of token based AI companies reached a staggering ~ **\$15 billion** in Nov '23. The tokens included above for analysis hold a combined share of ~ **20%** in the AI sector. The Graph token (GRT) emerged as the frontrunner and was closely pursued by Render (RNDR) and Injective token (INJ). The combined market capitalization of the Top 5 AI coins skyrocketed from around **\$746 million** at the start of 2023 to a whopping **\$3.7 billion** by November '23, marking an astounding ~ **400%** surge.

**\$15 Bn**  
Market  
Capitalization

**400%**  
Surge in Mcap of  
Top 5 AI coins

**2.5 Mn**  
Signups on  
Worldcoin

# KEY PROJECTS



## Fetch AI

It is an open-access decentralized machine learning blockchain network, established to foster the digital economy's evolution without human intervention by linking IoT devices and services. In 2023, it raised **\$50 million** for increasing their footprint across the globe and developing more automation and AI tools.



## Worldcoin

Founded by OpenAI's CEO Sam Altman, Worldcoin garnered significant attention as they announced a rollout of 1500 orbs in more than 20 countries to scan irises, create digital identities, and reward the users for sharing their data. They amassed ~ **2.5 million** users in 4 months. The founders aim to combat financial disparity by proposing the project as a universal basic income tool for distributing funds in exchange for iris scans.



## Render Network

It is a pioneer in decentralized GPU rendering. It uses a blockchain marketplace for idle GPU compute, offers artists cost-effective scalability and faster rendering speeds compared to centralized GPU clouds for next-generation projects. In 2023, they integrated AI into their operations to handle AI/ML workloads via the network's API.

# TRENDS

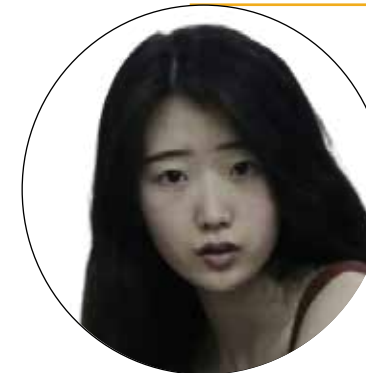
- ◆ **Decentralized AI** emerged as the biggest trend in 2023 and was embraced by leaders such as **Nvidia**. This trend has the potential to solve various traditional problems such as enhancing data privacy by distributing information across multiple nodes, managing vast datasets and complex tasks using distributed computing and much more.
- ◆ **AI driven smart contracts** emerged to elevated responsiveness. This integration enables contracts to dynamically adapt without manual code updates. AI-driven oracles empower smart contracts in dApps for executing tasks autonomously and adjusting terms based on real-time data.
- ◆ In the Web3 realm, companies embraced AI to **streamline daily life**, mirroring trends seen in Web 2. For instance, **Fetch.ai** introduced a bot that uses AI to automate tasks like flight reservations through a “digital twin”, which acts on behalf of users.
- ◆ Web3 projects increasingly utilized AI to craft **advanced analytics** tools. For instance, **Alchemy** introduced the GPT-4 plugin designed specifically for blockchain analysis. **Solana** unveiled a ChatGPT plugin, enabling users to purchase NFTs, transfer tokens, and analyze on-chain data.



“Education and training has remained a shining use case for metaverse. As we enter 2024, renewed optimism emerges and the EdTech resurgence is imminent, driven by AI.”



**Gautam Arjun**  
CEO, Edverse



“The convergence of AI and crypto, while too early to tell, could be in the area of mass adoption or user education. As AI brings in more users, the Web3 gaming sector, which is seen as a gateway to new Web3 users, is also poised for explosive growth.”



**Lesley Fung**  
Senior Researcher, Footprint Analytics



The evolving landscape of AI presents significant breakthroughs in security, enabling the detection of fraudulent financial transactions. Moreover, AI contributes to efficiency by optimizing calculations, reducing miner load, and subsequently minimizing network latency for faster transactions.



**Mona Tiesler**  
Investment Manager, Tokentus Investment AG

# FUTURE OUTLOOK

AI's role in enhancing **human creativity** is set to grow, benefiting a range of sectors from foundational work in the metaverse to building smart contracts and business process optimization.

The imperative to regain control over personal data in an era rife with privacy concerns will drive the adoption of **Web3's digital IDs** and we are likely to witness more projects in the domain of identity and data that overcome the issue of privacy and deep fakes. This shift toward decentralization will challenge the dominance of Big Tech giants, fostering trust and autonomy.

**Token based models** are likely to be used as rewards for refining AI models and gathering significant real-world data, intersecting with **DePIN** networks which are blockchain protocols that operate in a decentralized manner, constructing, maintaining, and managing physical-world infrastructure.

The integration of large language models (LLMs) with zero-knowledge proofs (ZKPs) - **ZKML** could be a major trend in 2024. Anticipated advancements in models such as GPT-5 and Llama3 are set to amplify LLM capabilities. ZKML could help to compact proofs and enable ethical AI and privacy-preserving verifications, reshaping decentralized systems.



*“The latest advancements in AI, particularly foundation models that use blockchain technology, are creating better ways to keep your data safe and reliable. As we move forward, these AI systems will focus more on data and even reward people for sharing their information. Adding 'Explainable AI' to the mix, which means making AI decisions easier to understand, is another key step in building trust between people and AI technology.”*



**Sujit Roy**  
Co-Founder, **BrainAlive**

# TOKEN ENGINEERING: REDEFINING VALUE AND OWNERSHIP IN A DIGITAL AGE

Over the past six years, my journey through the world of token engineering has offered me a front-row seat to the transformative power of blockchain in redefining value and ownership within our increasingly decentralised world. Working with hundreds of companies, I've seen firsthand how tokens are not just about transactions but about shifting from mere consumers to integral stakeholders in a platform's success.

Token engineering has emerged as the art and science of crafting these digital assets, going beyond simple currency to become tools that empower a decentralised economy. Integrating mathematics, psychology, economics, and more, this field is about creating functional but also equitable and sustainable tokens. The real power of token engineering lies in its ability to design incentives that align personal benefits with the overall health of the ecosystem. As Charlie Munger rightly said - "I've underestimated the power of incentives my entire life." In token economies, incentives aren't just a concept; they're the driving force."

Contrasting ICOs with IPOs, ICOs offer a non-dilutive, stake-based investment in a network's future, aligning stakeholder interests more effectively than traditional models. This reduces manipulation risks and prevents equity dilution.

My experience reveals that token economies transform participants into co-owners, deepening their commitment to the network's health and growth. Tokenization brings benefits like anti-dilution, aligned incentives, and democratized ownership.

Understanding token economies is critical. They require a comprehensive grasp of design aspects such as fungibility and supply mechanics. I've developed a four-step token design framework, encompassing business assessment, user interaction mapping, token evaluation, and incentive mechanism design.

Real-world examples include Ethereum's ETH and Uniswap's UNI token, demonstrating incentives in decentralized applications and governance. However, challenges like ensuring token utility and fair valuation remain, emphasizing the need for clear roles and economic viability in tokens to realize the potential of decentralized economies.



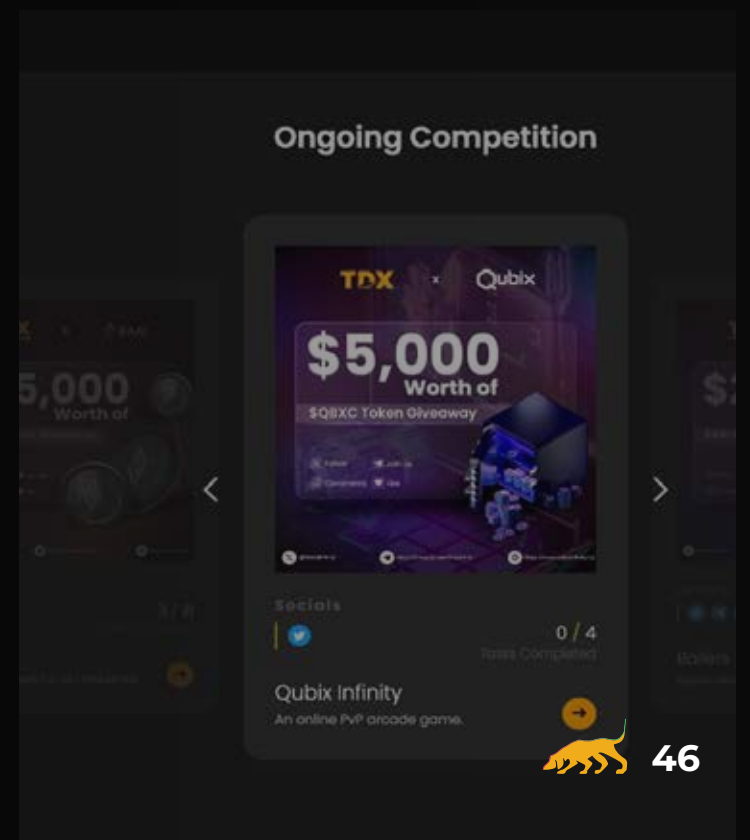
**Rishabh Gupta**

Director of Operations, TDeFi

*"In crafting the future of decentralized economies, remember: don't construct a business around a token; rather, sculpt a token to complement and enhance your business model."*



# NEW NARRATIVES

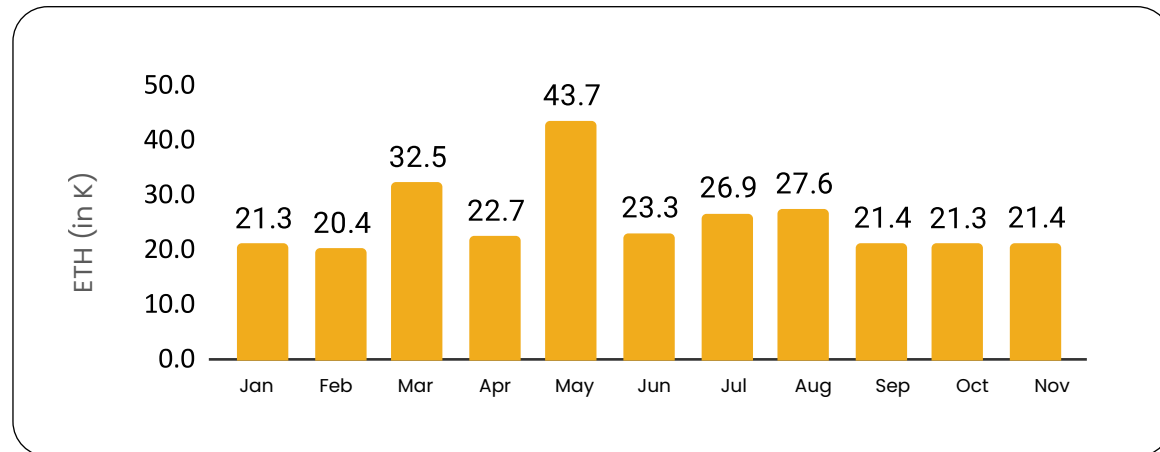


# MEV

MEV, which stands for “Maximal Extractable Value”, is the potential profit miners or validators gain by moving transactions in blockchain blocks. It involves various tactics which enable miners to extract value by controlling transaction order or content.

# MEV OVERVIEW

## ETH extracted by validators



A staggering **282.5K** ETH has been earned by validators or proposers in 2023 taking the total tally of ETH paid to **360.7K** ETH post the merge. The distribution of ETH payments remained consistent over the year, with a major spike observed in May' 23.

**282.5K ETH**

Extracted as MEV

**\$75 Mn**

Revenue from Arbitrage

## Arbitrage Value

In 2023, MEV validators earned a whopping **\$75 million** from arbitrage in revenue, which consisted of a **~\$68 million** revenue from Uniswap followed by Curve and Balancer with **\$26 million** and **\$22 million** in revenue respectively.

## FUTURE OUTLOOK

One of the major updates expected in 2024 is the release of **“The Simple Universal MEV Auction” (SUAVE)**. It is designed to tackle prevalent issues within the current MEV framework, striving to establish a more decentralized, transparent, and fair MEV system within the blockchain ecosystem.

SUAVE's concept revolves around a transparent auction mechanism, wherein users confidentially submit bids for their transactions, indicating the MEV they're willing to offer for inclusion in a block. This setup prompts miners/validators to compete in forming blocks comprising the highest-paying transactions, thereby ensuring an equitable distribution of MEV among all involved participants.

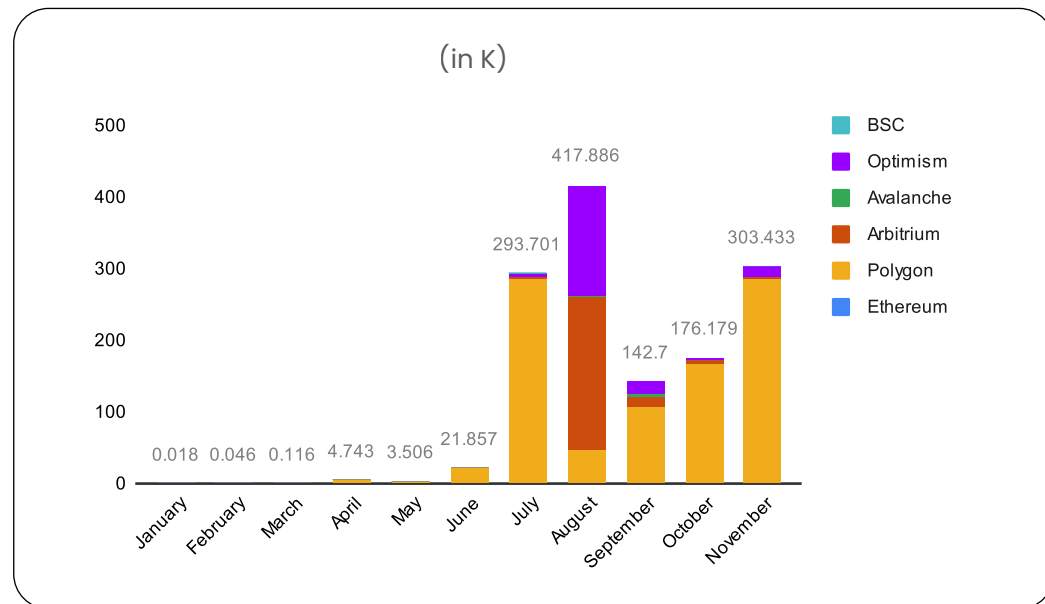


# ACCOUNT ABSTRACTION

Account abstraction empowers users in DApps by granting full fund control when engaging with smart contracts. It was introduced through EIP-4337 which offers a universal adoption without consensus modifications. Named ERC-4337, it employs the "EntryPoint" smart contract, acting as a user account proxy managing transactions and gas fees. The contract verifies gas reserves and, if insufficient, autonomously covers fees or seeks external contributions.

# KEY STATISTICS

## Monthly Active ERC-4337 smart contracts

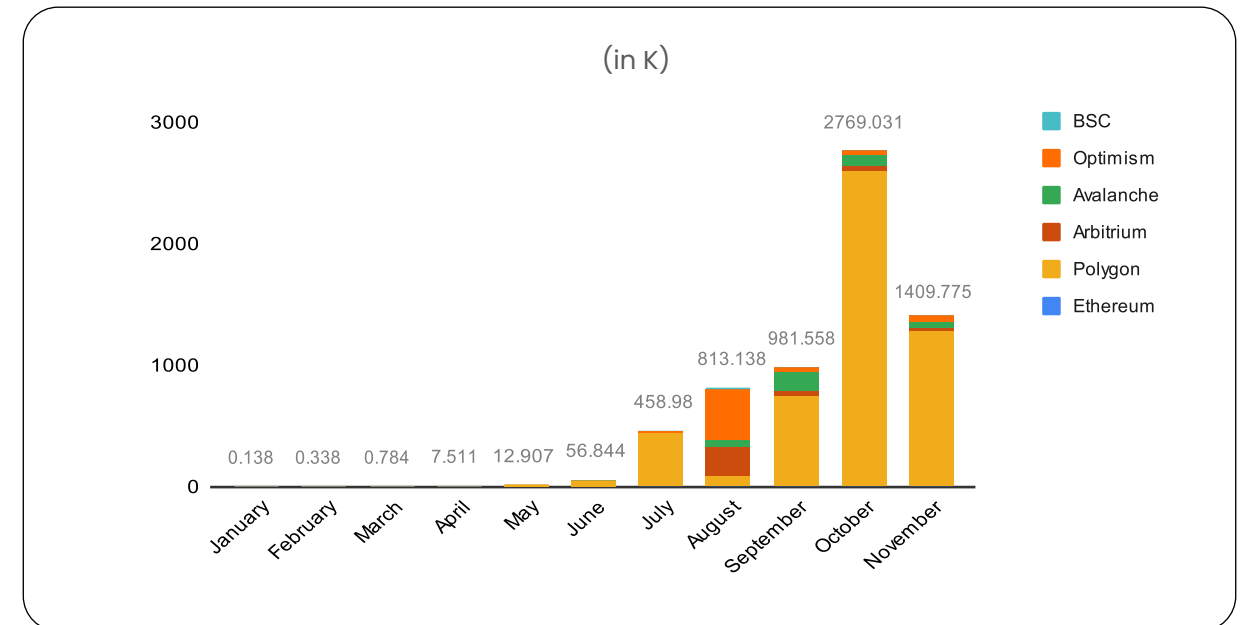


The ERC 4337 smart contracts witnessed an extraordinary quarterly growth rate of 11,837% between the first and second quarters of 2023, signifying an exceptional surge of over **27,000%** in user expansion within that interval. Furthermore, the cumulative quarterly growth rate for users throughout 2023 amounted to an impressive **1537%**.

**1537%**  
Quarterly cumulative user growth

**65.7%**  
Market share of Polygon

## Monthly Successful User Ops



User Operations, a concept involving "pseudo-transactions" executing actions on behalf of users, has seen remarkable dominance on the Polygon network, which is evident by the fact that it commands a **~65.7%** market share with a **~43.9%** user adoption rate.

## KEY PLAYERS

Polygon led the pack with about **850K** accounts and operations, significantly boosted in July '23 by CyberConnect's integration and ERC-4337 Account Abstraction. Biconomy and Pimlico were also instrumental in this growth. Optimism closely followed with **170K** accounts and **538K** operations, spurred by the Beam Wallet and enhanced by ZeroDev and StackUp's SDKs. Arbitrum hosted **233K** accounts and **338K** user operations, with contributions from Zerodev and Biconomy. Ethereum, while registering **743** accounts and **5,000** operations, saw most account abstraction activities shifting to Layer-2 networks like Polygon and Arbitrum, primarily due to high gas fees.

**5.2 Mn**

UserOps on  
Polygon

**538K**

UserOps on  
Optimism

**338K**

UserOps on  
Arbitrum

## FUTURE OUTLOOK

The account abstraction market, still in its infancy, hinges on the widespread adoption of **EIP-4337** within the ecosystem. Beyond seamless logins, account abstraction's true advantage lies in providing substantial benefits to decentralized applications (DApps) through intricate and tailored on-chain interactions.

Data from 2023 indicates a notable **increase in adoption**, driven by the strides made by prominent Layer 2 solutions that contribute to enhancing adoption and scaling Ethereum more extensively.

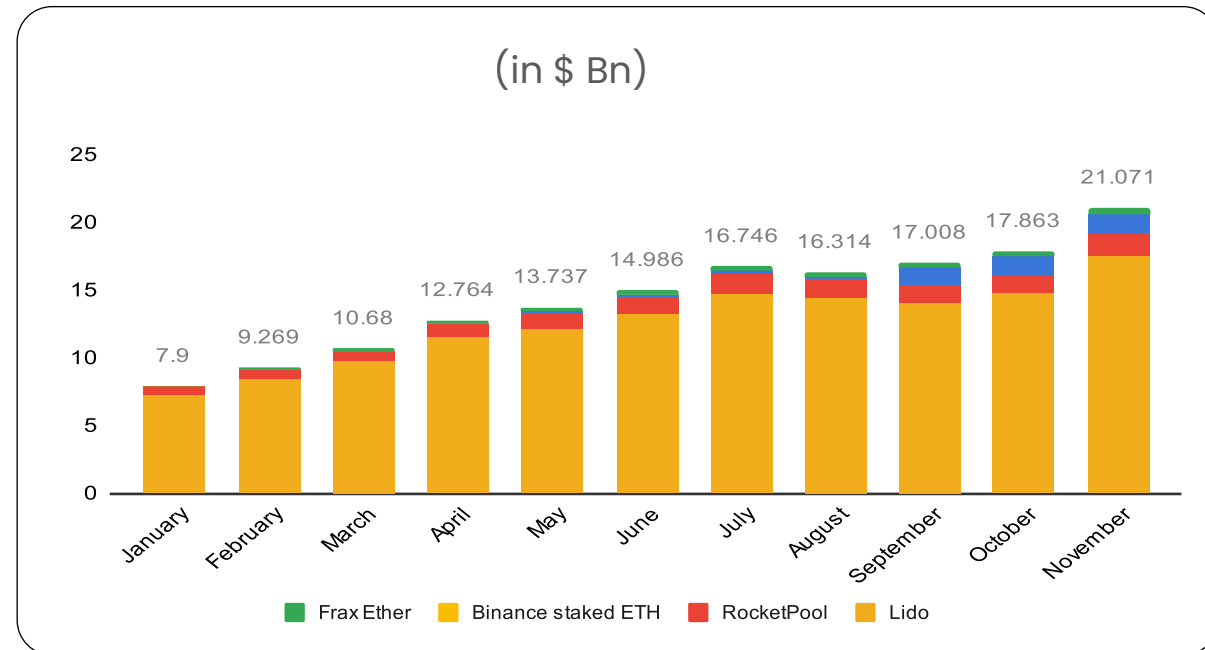
As account abstraction continues to advance, the focus shifts towards innovation in key areas, including permissionless modular infrastructure, integration with existing fiat and DeFi services, DApp SDKs, and the potential for independent account layers, are highly anticipated to be crucial in 2024.

# Liquid Staking Derivatives

The ETH staking landscape witnessed the rise of liquidity staking derivatives, enabling smaller validators to stake their ETH and generate profits. Anticipations surrounding the Shapella upgrade in April 2023 suggested a substantial outflow; however, contrary to expectations, there was a significant net inflow of **~ 179.5k ETH** within just four days, signaling heightened activity around the network's changes and potential investor movement. Post-update, the ability to withdraw ETH from the network was introduced.

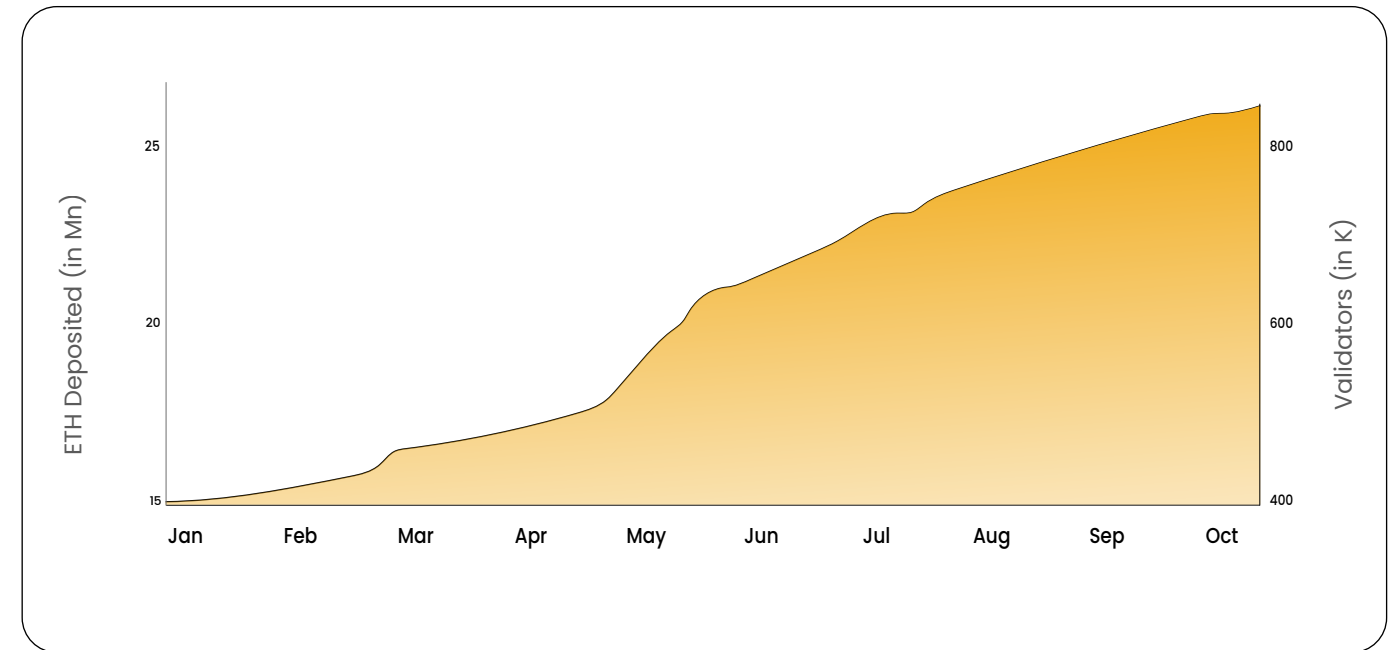
# Key Statistics

## Total Value Locked



The TVL across LSD protocols increased steadily in 2023 as a result of the Ethereum update and surged to an all-time high of **\$24 billion**. With **\$17.5 billion** locked in, Lido led the TVL space commanding a **~77%** market share. Next up was RocketPool, with a **~9%** market share amounting to **~\$2.05 billion** in TVL.

## ETH Staked and Validators



The total amount of staked ETH witnessed a remarkable surge from **~15.86 million** to a staggering **28.6 million**. While the number of validators also increased from **~495k** to **895k** in 2023, showcasing a monumental leap in Ethereum's validation ecosystem.

# Key Projects



**Lido:** Lido is the current leader within the Liquidity Staking Derivatives sector. Lido’s goal is to provide a seamless and secure participation in DeFi and there is no minimum staking requirement. With a ~ **77%** share in TVL, Lido has emerged as a leader in the LSD segment and has positioned itself as a pivotal platform for ETH holders seeking staking opportunities.



**RocketPool:** Rocket Pool enables low-entry staking with 0.01 ETH for rETH tokens and 16 ETH for node operation, leveraging a flat 15% commission rate for rewards. Its decentralized network rewards rETH holders as the network grows, attracting both individual users and institutions. Its network of global node operators and users have staked more than ~ **850k** Ethereum.



**Frax Ether:** Frax Ether is a liquid ETH staking derivative designed to uniquely leverage the Frax Finance ecosystem to maximize staking yield and smoothen the Ethereum staking process. Utilizing a dual-token system, frxETH acts as a loosely pegged stablecoin to ETH. Users deposit ETH to obtain frxETH, exchangeable for sfrxETH, earning staking rewards and redeemable back to frxETH or ETH. This innovative mechanism aims to streamline user participation, although it may initially present additional intricacies for new investors.

**77%**

Market share of Lido

**28.6 Mn**

Total Ethereum staked

**\$17.5 Bn**

TVL in LSD protocols

# Future Outlook

The growth of ETH staking is boosting Liquid Staking Derivatives (LSDs), and it is likely to surpass traditional staking methods in market share due to higher returns. Hashkey Capital predicts staked ETH could quadruple, potentially representing **45%** of the circulating supply, equating to hundreds of billions of dollars.

Looking into 2024, the focus will be on developing **secure yield aggregators and LSDFi reinvestment services**, enhancing safety, efficiency, and value for stakeholders. Implementing rigorous security measures will be critical to mitigate risks and maintain market stability.

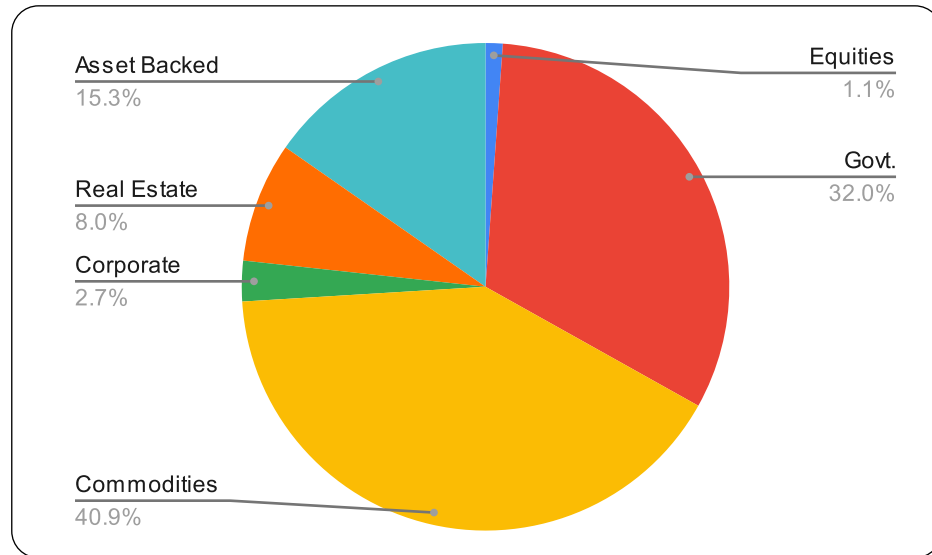
To mitigate malicious activities and systemic risks, implementing stringent security measures such as validator deposits, liquidity constraints, and self-guarantees will be crucial. These measures will bolster user confidence, ensuring market stability and reliability.

# Tokenization of RWAs

Tokenization emerged as a major trend in 2023. Tokenization of Real-World Assets (RWAs) involves converting physical assets, such as real estate, commodities, or other tangible assets, into digital tokens on a blockchain.

# KEY STATISTICS

## Category wise TVL of tokenized assets



Commodities dominate the RWA market landscape with a TVL of ~ **\$971 million** followed by government securities which have amassed a TVL of ~ **\$759 million**. Real Estate and Asset backed finance have also attracted significant TVL during the year amounting to **\$189.16 million** and **\$363.58 million** as at the date of writing.

## Total Value Locked

The total value locked in leading RWA protocols surged significantly in 2023 and reached a new peak in October '23. MakerRWA registered a record TVL of **\$3.12 billion** and also emerged as a leader in this category with a share of ~ **51.8%**, closely followed by StUSDT with a share of ~**42.4%**.

## Tokenized Government Securities by Protocols

In terms of tokenizing government securities like T-bills, Franklin templeton leads the pack with a huge market share of ~ **40.9%** followed by Ondo Finance which has a ~ **21.9%** market share.

**\$5.5 Bn**

TVL in RWA protocols

**\$971 Mn**

TVL in tokenized commodities

**40.9%**

Franklin Templeton's share in tokenized govt. securities



# Key RWA Projects



## Maker RWA

MakerDAO had been exploring the use of RWAs for several years, and in 2022, they began to actively invest in RWA-backed vaults. With a TVL of ~ **\$2.78 billion**, Maker secures a substantial 70-80% of its revenue from stability fees tied to Real-World Assets (RWAs). Its diverse RWA portfolio includes various assets like investment-grade bonds, Treasury bill ETFs, and business loans, bolstering the stability and income generation within the MakerDAO ecosystem.



## Ondo Finance

This platform has been gaining significant and consistent traction, supported by its TVL growth as shown below. As of writing, Ondo Finance's TVL is ~ **\$198 million**. Ondo Finance invests into the BlackRock iShares fund, enabling stablecoin holders to tap into earn yield on their assets. This works by exchanging users' stablecoins for USD, which is then used to purchase assets, and new fund tokens that reflect these investments are minted and deposited into the user's wallet.



## Matrix Dock

It is a digital assets platform offering institutional and accredited investors transparent access to tokenized RWAs, ensuring immutable ownership records, daily Proof-of-Reserve, and complete bankruptcy remoteness. The TVL in MatrixDock surged to ~ **\$113 million** during 2023. The Matrixdock **STBT** token represents the U.S. Treasury bills (T-bills), providing investors with secure access to the U.S. government's risk-free rates within their digital assets platform.

**50.9%**

Market share of MakerRWA

**\$198 Mn**

TVL in Ondo Finance

**\$113 Mn**

TVL in MatrixDock

Progress made in 2023 has paved the way for substantial on-chain advancements, primarily driven by major financial players entering the space. The involvement of TradFi giants like **Hamilton Lane** and **JP Morgan** in crafting tokenized funds is likely to attract more institutional capital in this sector.

This trend of tokenizing assets is likely to **transcend traditional boundaries** to include bonds, equities, and novel asset classes such as art, automobiles, commodities, and fine wines.

Notably, Asia stands as a beacon in this landscape, with governments in regions like Hong Kong and Thailand actively reshaping **regulations** to embrace the potential of tokenizing real-world assets. Their proactive stance not only supports innovation but also serves as a model for other governments seeking to foster growth and development through tokenization.

The emerging trajectory indicates an impending **multi-trillion dollar market** for asset tokenization by 2030, highlighting a significant shift towards digitalized financial products and governments playing pioneering roles in shaping this burgeoning landscape.

# FUTURE OUTLOOK

# SocialFi

SocialFi is a blend of social engagement and finance. It incentivizes users to complete tasks or micro-jobs with cryptocurrency rewards. This model is gaining traction due to its ability to engage users actively and reward them in a decentralized ecosystem.



TDX's **Social Shoutout** program helps businesses and brands to engage with their community through social media platforms, while discouraging bot activity through their KYC barrier. They have created more than **5 million** impressions through this program.

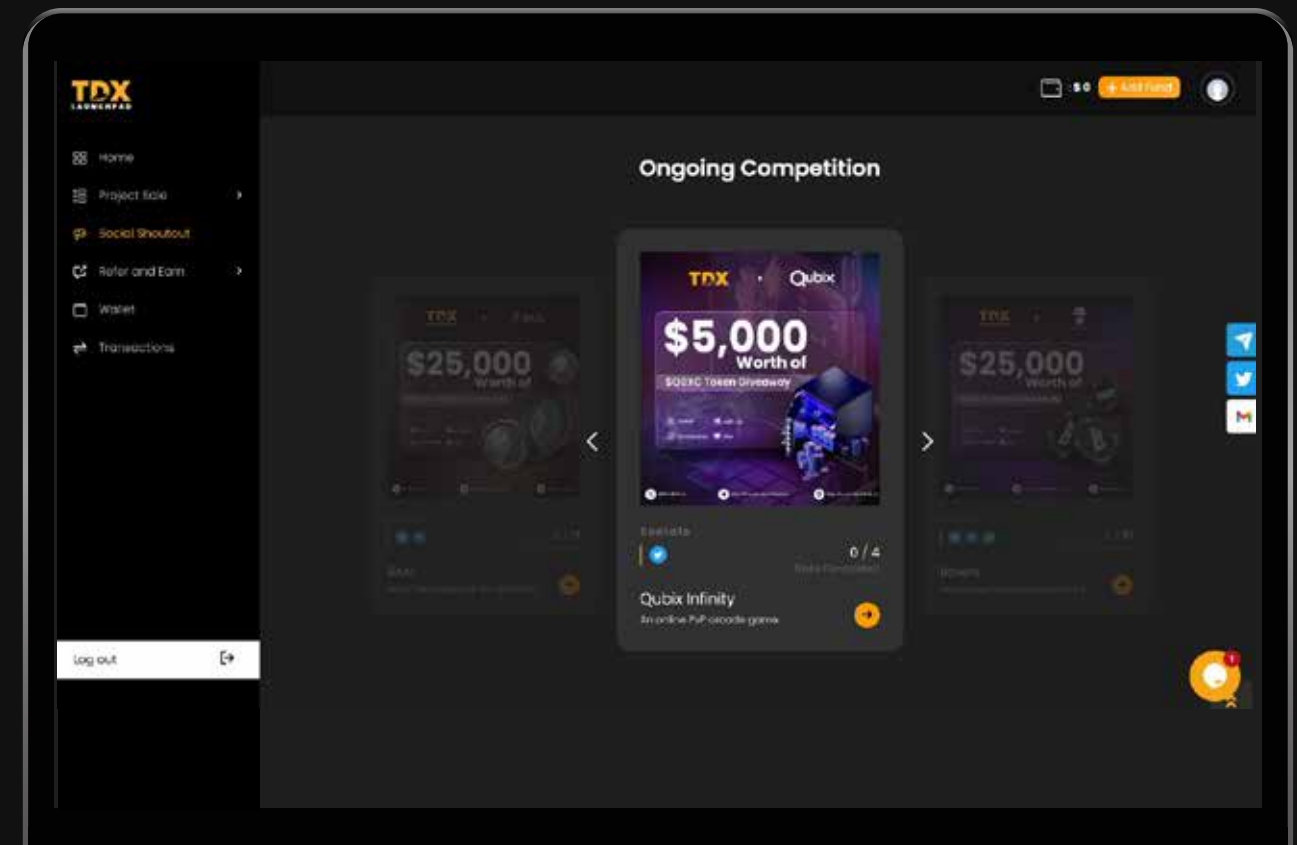


*"In 2024, the blockchain sector is expected to see a significant rise in TaskFi's influence on fundraising. Key trends include enhanced user engagement, the integration of AI technologies, and the emergence of SocialFi, which combines social media and finance. This shift is set to increase transparency, broaden global access, and introduce innovative fundraising methods in the industry."*

**TDX** **Niharika Gupta**  
Product Lead, TDX

# Future Outlook

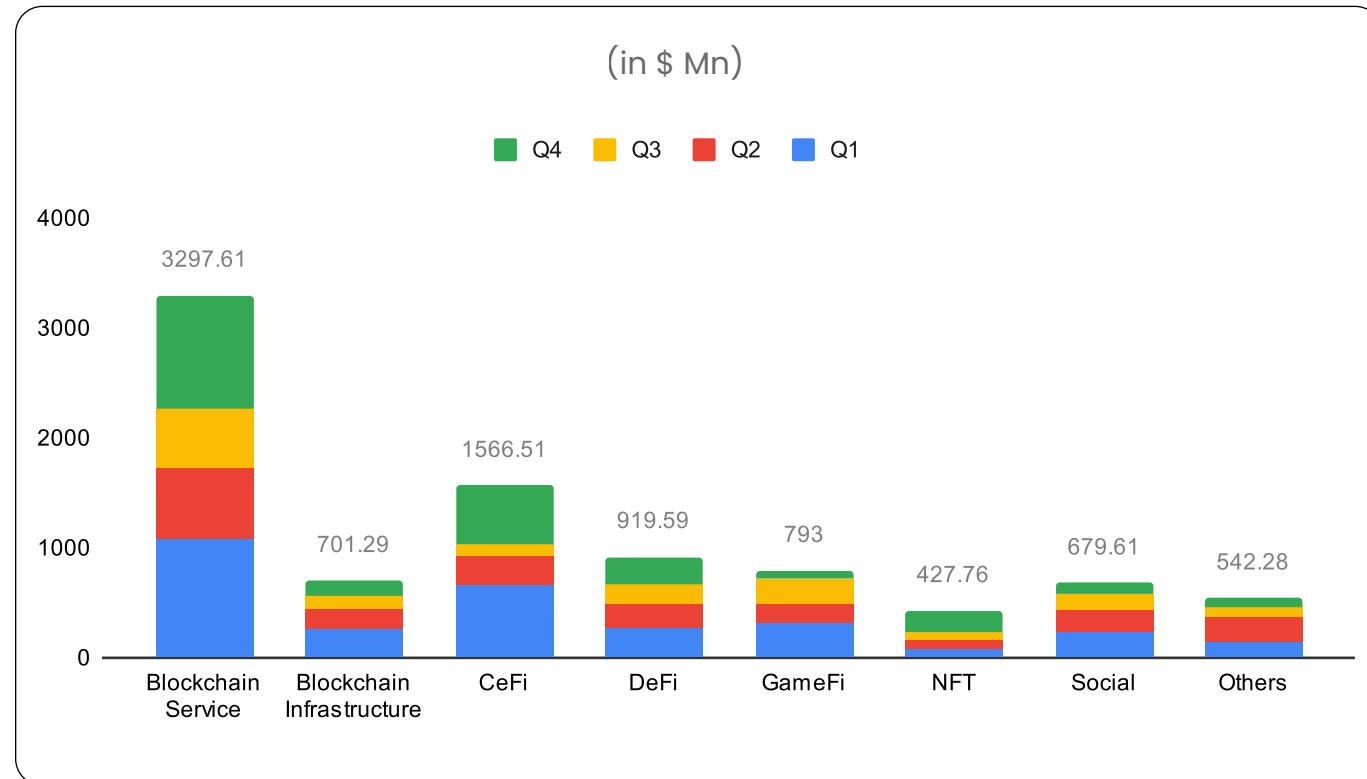
As traditional social media faces scrutiny over data practices, SocialFi's decentralized, user-centric model is set to rise in 2024. We can anticipate the emergence of decentralized social lending platforms, enabling direct peer-to-peer financial transactions without intermediaries. This shift promises greater empowerment and inclusivity, especially for those underserved by traditional financial institutions.



# FUNDRAISING ACTIVITY: 2023

In 2023, crypto investments hit a low with **\$8.95 billion** across 1200 deals. Q1 saw **\$3.06 billion** flown into trading, exchanges, and wallets. Q2 maintained focus on these areas and expanded into NFTs, and Metaverse. Q3 hit a low of **\$1.44 billion**, and Q4 showed signs of a rebound.

# FUNDRAISE OVERVIEW



- ◆ In Q1, **\$3.06 billion** flowed into 351 deals, primarily directed toward trading, exchange, investing, and lending, with wallets also garnering notable interest from VCs and Angels. Moving into Q2, **\$2 billion** was invested across 274 deals, maintaining focus on trading, exchange, investing, and lending, while also expanding into areas like NFTs, Gaming, DAOs, and the Metaverse.
- ◆ Further, Q3 marked a new low, witnessing investments of **\$1.44 billion** across 223 deals. It was the lowest since Q4 2020, with a consistent focus similar to Q2. Q4 saw **\$2.41 billion** being injected into over 276 deals. As seen in the chart above, Blockchain Services emerged to be the winner being the vertical that raised the highest amount of funding in every single quarter of the year.
- ◆ Regarding VC-launched funds, Q1 witnessed the highest number of new funds (14) and they cumulatively raised **\$2.2 billion**. 12 new funds were launched in Q2 raising **\$720 million** in investments, and **\$1 billion** was cumulatively raised by 15 funds in Q3.

**\$8.95 Bn**  
Raised in 2023

**\$3.3 Bn**  
Raised by Blockchain Services

**\$1.56 Bn**  
Raised by CeFi projects

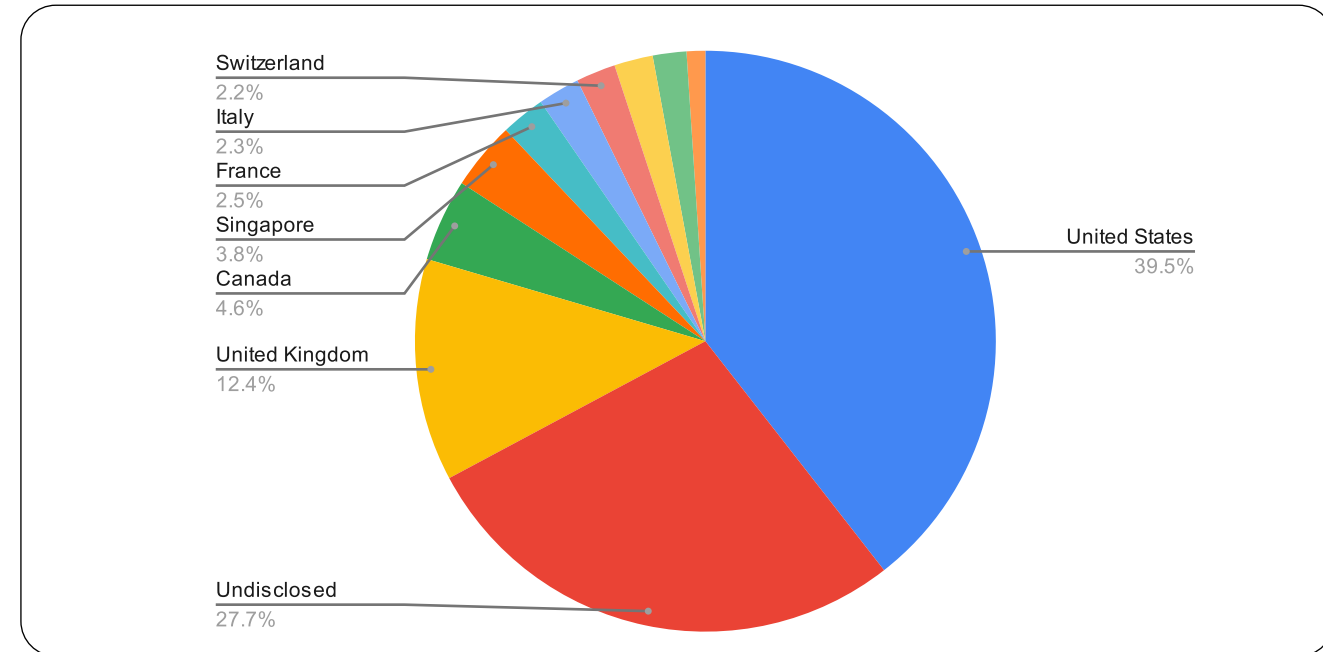
# TOP RAISES BY WEB3

Project	Category	Funds Raised	Notable Investors	About
Matter Labs	Infrastructure	\$458 Mn	Blockchain Capital	Matter Labs is the creator of zkSync, a scaling and privacy engine for Ethereum. Its current functionality scope includes low gas transfers of ETH and ERC20 tokens in the Ethereum network, atomic swaps & limit orders as well as native L2 NFT support.
Wormhole	Infrastructure	\$225 Mn	Brevan Howard, Coinbase Ventures, Multicooin Capital, Jump Trading, ParaFi, Dialectic, Borderless Capital, Arrington Capital	It is an interoperability platform empowering development and growth across blockchains. It has facilitated the transfer of over \$35 billion in value and processes over 2 million cross-chain messages across 30+ chains every day.
Islamic Coin	Crypto Asset	\$200 Mn	Alpha Blue Ocean's ABO Digital	It is a halal digital asset, designed to create value for the Muslim community. It is built on the native Haqq blockchain and strictly abides by Islamic Finance principles.
LayerZero	Infrastructure	\$120 Mn	Andreessen Horowitz, Sequoia Capital	It is an omni-chain interoperability protocol which enables dApps to build efficiently across multiple blockchains using on-chain Ultra Light Nodes, combining security and cost-effectiveness.
Worldcoin	Infrastructure	\$115 Mn	Blockchain Capital, a16z, Bain Capital Crypto, and Distributed Global	It is an open-source protocol which aims to create the world's largest identity and financial public network by collecting unique digital identity based on iris scans.

# MOST ACTIVE FUNDS

Rank	Fund Name	Lead Investments	Investments	Total Investments
1	Coinbase Ventures	5	34	39
2	Polygon Ventures	3	34	37
3	DWF Labs	5	31	36
4	HashKey Capital	4	32	36
5	Shima Capital	8	25	33
6	Big Brain Holdings	2	29	31
7	Animoca Brands	7	23	30
8	Binance Labs	5	25	30
9	Arbitrum Foundation	0	29	29
10	a16z	21	8	29

## Fundraise by Geography



Despite the ongoing regulatory challenges in the US, projects operating within US jurisdiction managed to raise funds through **261** funding rounds, accumulating a total of **\$2.77 billion**, followed by the United Kingdom, where projects raised a staggering **\$866 million** across **55** funding rounds. Interestingly, projects with undisclosed jurisdictions secured funding through 404 rounds, amassing a total of **\$1.94 billion** during the same period.

# THE CRYPTO WINTER ABOUT TO BE OVER?

Fundraising hit a three-year low in Q3 '23, but a notable resurgence in Q4 '23 was observed. October saw **112** deals amassing **\$430.56 million**, while the first half of November recorded **\$514.62 million** across 62 deals, indicating deployment of dry capital present with the funds.

Looking ahead, close attention will be on the growth trajectory of blockchain services, DeFi and AI projects in the coming year. Despite setbacks in GameFi and NFTs earlier, signs of a potential revival emerged in Q3, and the Q4 figures also indicate a resurgence, signalling their return to prominence in the market.



We're looking closely into AI, FHE, and GameFi space in the coming year. We focus on areas that can drive mass adoption, as well as where innovations sit.



**Chung Tsz Chung**  
Investment Director, **Arkstream Capital**



*Crypto's 2023 was a dumbbell: Big Q1, flat-to-negative Q2 and Q3, and big Q4. That pattern is a bit of a rarity in crypto. 2024 shouldn't be: We will see the typical run-up to the halving (~28/29 April, depending on where you live), a "buy on the rumor, sell on the news" decline for several months afterwards, and a bullish end to 2024. Then 2025 (like 2021, 2017 and 2013) will rip the doors off the car through acceleration! At least, that's what has happened three times in the past (the only data points we have). Because of much greater institutional involvement since the last cycle, all of those trends will be tempered: the run-up to the halving has already begun a bit early (perhaps due to court, regulatory (read: ETF) and other developments- but not exclusively). The continued price growth and the drop after the halving will probably be less and the "Great Bull Market of 2025" will probably start in 2024. Why? Because the whole world knows of the prior trends and most people, particularly institutions, will try to front-run it all!*

*The foregoing is all about Bitcoin, but with over 50% of the market (it actually hit 55% in early December), the rest of the market will surf in BTC's wake. Lots of projects will break out more, of course, but none of them will come close to the impact of BTC (and its ETF).*



**Timothy Enneking**  
Managing Partner, **Psalion VC**





*In 2023, crypto quietly achieved significant progress. Major institutions and brands began to adopt it, boosted by advancements in blockchain infrastructure like Layer 2 solutions, account abstraction, compressed NFTs, and Web3 phones. These developments and broader market influences, such as ETFs and halving events, shifted the sentiment from cautious skepticism to a more optimistic outlook.*

*At Caerus, we are witnessing a paradigm shift transforming the industries of culture - sports, music, entertainment and gaming - driven by evolving consumer behaviour and technology. The convergence of groundbreaking technologies such as Artificial Intelligence, blockchain, and spatial computing is playing a pivotal role in this evolution as they streamline processes, reduce operational costs, and open new avenues for value creation, thereby reshaping the dynamics of financing, production, distribution, and consumption within these industries.*

*Traditional value chains are being disrupted. From fan financing platforms unlocking capital to direct-to-consumer marketplace models redefining creator/intellectual property compensation. Or from AI tools democratising the production of premium quality content to VR hardware/software, turning passive consumption into active experiences. These platforms empower those who create culture while rewarding those who consume it with ownership and involvement, addressing consumer pain points with technological solutions and fostering transparent and equitable incentive structures.*



**José F. Pereira**  
Partner, **Caerus**



*2023 was one of the most turbulent years in terms of market events and price action. For many investors, the uncertainty in the markets meant a slowdown in deployment. For Eterna Capital, it has been a very active year.*

*The best time to start a company is when the market is down, and we came across some great founders who have been building during the downturn. Some of the key trends we saw this year included zk-proof technology, account abstraction, a modular blockchain approach, and AI.*

*2023 was a year where those who were investing focused on funding projects building important infrastructure technology that will enable more powerful applications to be built using blockchain technology. Market conditions are expected to improve next year, and we have seen positive market movements in the latter parts of 2023 - this is likely to bring more venture funding into the space, which will accelerate the rate of innovation over the next year. Advancements in zk-proof technology will continue and will have a host of applications across scalability, cross-chain functionality, and off-chain computation.*

*Account abstraction and cybersecurity are two important areas that will improve the user experience, and we see significant efforts being spent in these sectors, with a lot of interesting approaches coming to the market. As the market begins to pick up during 2024, the companies that have focused on building and positioning themselves well in the market will start to see the fruits of their labor.*



**Asim Ahmad**  
Founding Partner, **Eterna Capital**





*In 2023, the crypto investment landscape witnessed significant shifts, mainly following the fallout of industry giants FTX, Genesis etc. Investor sentiment went through a roller coaster within 18 months, from 3AC to the Binance settlement with the US DoJ. While VC funding fell from the 2021/22 peak, funding rounds still amounted to \$10+ billion for crypto and blockchain startups throughout the year. Interestingly, the lion's share of this capital flowed into funding early-stage infrastructure projects, suggesting a strategic focus on fortifying the foundational layers of the ecosystem. Companies embraced a more pronounced B2B approach, catering to developers, enterprises, and institutions, reflecting a maturing market and a shift towards companies going after larger average customer values for a business model.*

*As 2024 approaches, several key focus areas are poised to shape the investment landscape in the industry. One is with regulation globally and the increasing shift towards regulated and compliant platforms. Governments and regulatory bodies have increasingly recognized the importance of providing clear guidelines for the industry, fostering a more stable and secure environment for investors. This development is a crucial step for institutional capital to flow in the ecosystem, starting with the ETFs.*

*As most capital has been deployed in building a robust and efficient infrastructure, we believe the next focus should be on the middleware (CeDeFi) and applications to attract the next billion users. We'll be spending time on institutional DeFi, tokenization and management of RWA, Gaming, as well as exploring in more depth infrastructure and applications on the Bitcoin network – unlocking a \$800B untapped opportunity liquidity, which we view at the cusp of a major expansion post-ETF approvals.*



**Carla Puel**  
Investor, **LeadBlock Partners**



*2023 was a year of short term pain but long term opportunities. Our investment focus did not waiver. In fact, we ramped up investments for two reasons: Valuations were at all time lows and anyone building in such a bear market was here to play the long game.*

*Having a broad focus in AI, Blockchain and Metaverse enabled us to invest in quality teams in a variety of verticals. We invested in platforms bringing Hollywood household names to the NFT/Metaverse world, large Web2 enterprises business solutions in the metaverse, Web3 decentralized social as well as high-powered Web2 gaming veterans into the blockchain gaming space.*

*With the Bitcoin halvening fast approaching and several Spot ETFs ready to be unleashed, 2024 is gearing up to be more explosive than any previous bull market.*

*3 Sectors that I am excited about for 2024:*

*1. Bitcoin Protocol - Innovation within the Bitcoin ecosystem has reawakened. From DeFi to Ordinals, a significant amount of progress is taking place to leverage the most secure blockchain.*

*2. Web3 gaming - Many seasoned Web2 game developers have realized the true benefit of asset ownership for gamers. What was missing was a proper game experience. Developers central in the creation of games like Assassin's Creed, Warcraft, Call of Duty, etc are now building immersive experiences with blockchain powering asset ownership.*

*3. Creator Economy - Social media influencers, athletes, celebrities and artists will all have a much bigger say in the future. They will own their assets, be compensated and have a direct connection to their audience. Fan engagement and collaboration will be radically changed.*

*Investments will pour back into the space. VCs will lag into the market just as they lagged getting out of the market in the bear cycle. Fasten your seatbelt. We are just getting started.*



**Dr. Ankur Pathak**  
Principal, **London Real Ventures**



*Blockchain and crypto growth has optimistic potential but faces unpredictable swings in 2024. We foresee high volatility amid rising rates and US election uncertainty weighing on the sentiment.*

*FD CAPITAL is focused on driving institutional adoption of blockchain technology across key verticals such as L1/L2, DeFi, SocialFi, Metaverse, GameFi, and Digital Identity.*

*We expect financial institutions to gradually ramp up blockchain adoption during 2024 focused on areas like tokenized assets, custody, wallets and DeFi. We see Cybersecurity threats, regulation uncertainty, and mass adoption challenges remain. Patience and persistence will be the key.*

*NFT and Metaverse industries hold long-term potential, still they carry execution risk in 2024. Brands are jumping in but the ecosystem is still fragmented. However, NFT utility could expand through integration with social media and gaming.*

*Crypto regulation focus is expected to increase globally, impacting KYC/AML, consumer protection, taxation and licensing. This is critical for mainstream confidence, though prudent risk management will remain essential as the space evolves.*



**Dariia Vasylieva**  
Founder and CEO, FD Capital

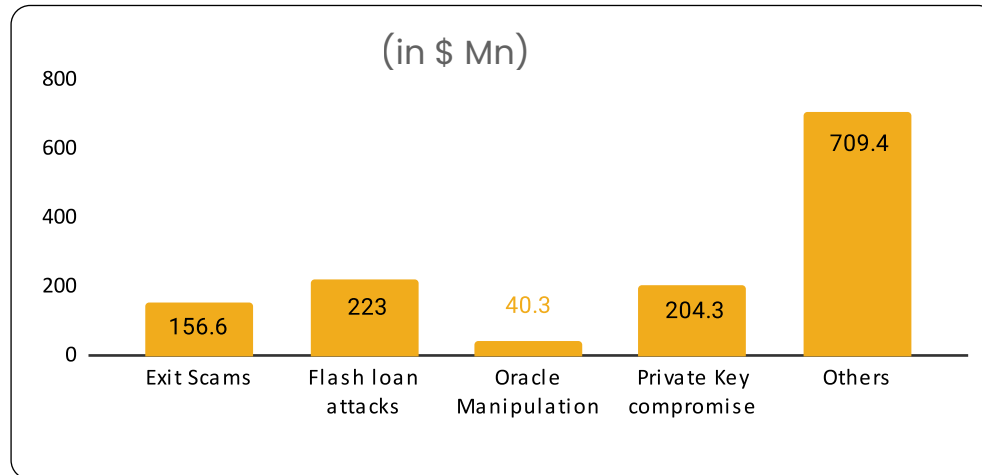


# HACKS AND EXPLOITS

The year 2023 witnessed a relentless onslaught of cyberattacks within the crypto landscape, painting a concerning picture of vulnerability across various protocols and platforms. A staggering **\$1.35 billion** was stolen till Q3, with **\$417 million** being pocketed from Ethereum. The Lazarus Group continued their reign of terror and accounted for hacks amounting to **~ \$292 million.**

# KEY STATISTICS

## Type of Hacks



Private key compromise and Flash loan attacks emerged as the most prominent types of hacks, resulting in gigantic losses of **\$204 million** and **\$223 million** respectively. Further, Exit scams accounted for **\$156.6 million** and oracle manipulation accounted for **\$40.3 million**.

## Number of Incidents and Funds stolen

A staggering **\$1.35 billion** was reported stolen in ~ 600 incidents from the Web 3 protocol until Q3'23. The months of March, July, and September saw the highest losses, highlighting the vulnerability of smart contracts to hacks and exploits.

## Hacks by Chains

Protocols built on Ethereum suffered significant losses, totaling **\$417 million**, followed by BNB at **\$110.8 million**, while Arbitrum experienced a loss of **\$24.1 million**. Other smaller chains and off-chain entities accounted for a substantial **\$667.4 million** in hacks, underscoring the diverse range of vulnerabilities across multiple chains and off-chain systems.



# TOP 3 HACKS

## Mixin Network

Mixin Network fell victim to cybercriminals in the month of September wherein **\$200 million** in crypto assets were stolen. The breach was linked to a compromise of a third-party cloud service provider's database. They offered a \$20 million **bug bounty** to incentivize return of funds, however there has been no confirmation of the progress.

## Euler Finance

In March, Euler Finance, a DeFi protocol running on Ethereum, encountered a flash loan attack resulting in the loss of more than **\$195 million** in digital assets. The attacker exploited a loophole in Euler Finance's smart contracts, permitting simultaneous borrowing and lending in a flash loan transaction. The platform offered a 10% bounty to the attacker, following which the entire amount was returned back to the network.

## Multichain

Multichain, a cross-chain bridge, suffered a substantial setback, losing around **\$126 million** in crypto assets in July. The exploit stemmed from "compromised administrator keys". Security experts and analysts leaned towards the notion that this exploit was an internal matter or a deliberate rug-pull, especially considering the challenges faced by Multichain. No amount was recovered from this exploit. Nonetheless, operations resumed after a **117-day** halt following the hack.

**\$1.35 Bn**

Looted till Q3

**\$195 Mn**

Looted from Euler Finance

**600**

Reported incidents of hacks

**\$126 Mn**

Stolen from Multichain

**\$200 Mn**

Stolen from Mixin Network

## FUTURE OUTLOOK

The events reported in 2023 necessitate a collective reevaluation of security protocols and strategic measures to fortify the resilience of crypto ecosystems against ever-evolving cyber risks. Efforts towards enhancing security infrastructure and regulatory frameworks are imperative to safeguard investor assets and bolster trust within the rapidly evolving crypto sphere.

In 2024, the crypto landscape is likely to witness enhanced security measures, regulatory adaptations, and technological innovations. We can also expect greater emphasis on user education, collaborative efforts, and advanced defense strategies to curb cyber threats.



*“While strides in technology might bolster bridges’ defenses, access control breaches remain a lucrative avenue for attackers. Centralized services remain alluring targets due to their substantial asset pools for Access control hacks. Moreover, rugpull incidents are likely to escalate, with decreasing costs and ease of execution. Education might mitigate some risks, but the lure of exploiting FOMO periods remains strong. Another emerging threat is the rise of profitable Front-End attacks targeting dApps, fueled by the neglect of website penetration testing by many services”*



**Igor Bershadsky**

Director of Partnerships, **Hacken**

# REGULATION AND ADOPTION

In 2023, global developments shaped the regulatory landscape. Japan enacted a stablecoin law, Dubai's Virtual Asset Regulatory Authority (VARA) established comprehensive regulations, and the UK passed the Financial Services and Markets Act 2023, solidifying crypto as a regulated activity. Many nations heightened scrutiny on cryptocurrencies, resulting in more robust regulations and increased oversight of cross-border crypto transactions.



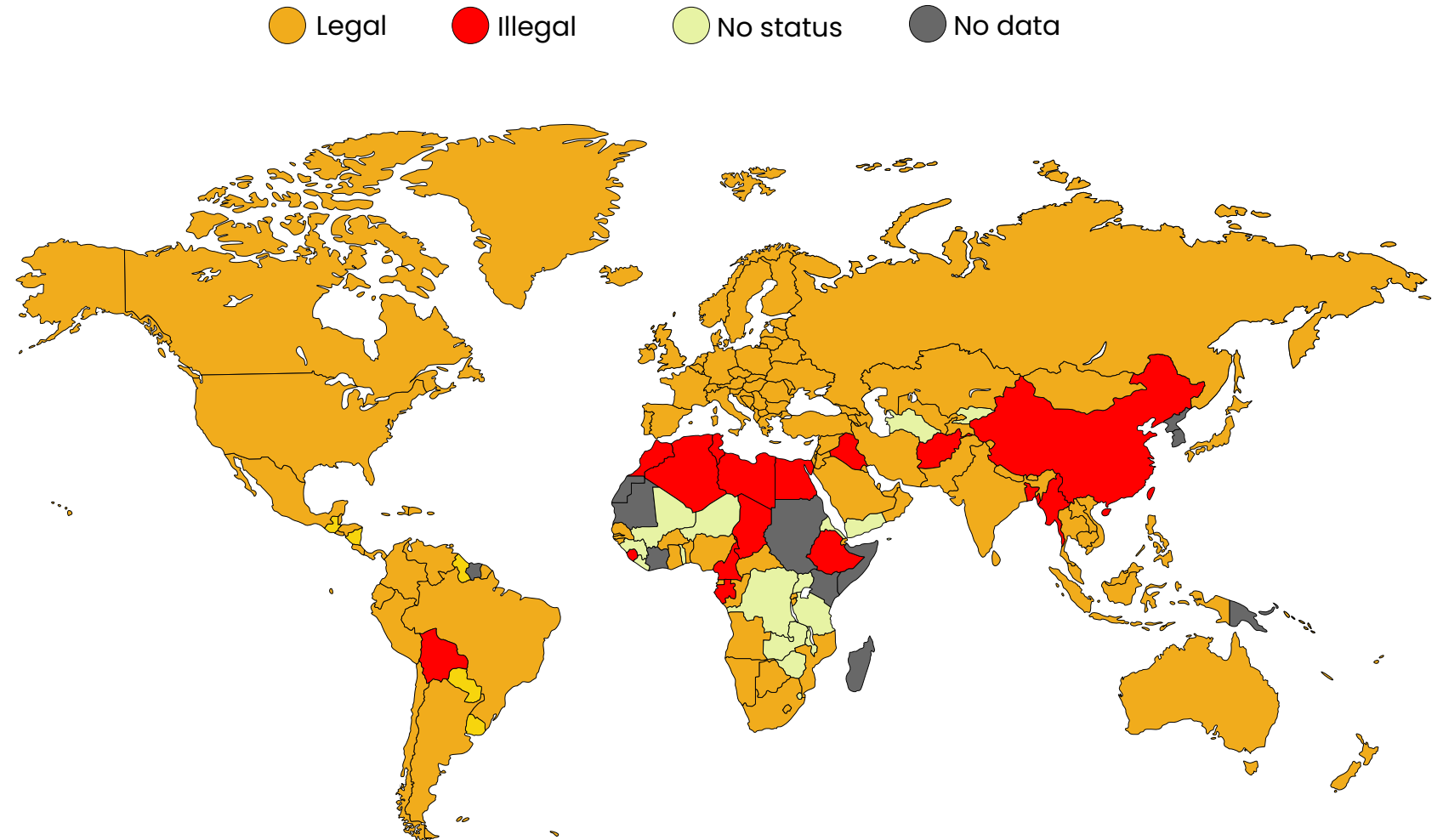
KEY INITIATIVES AROUND THE GLOBE



# LEGAL LANDSCAPE AND ADOPTION INDEX

**Europe** leads in recognizing the legitimacy of cryptocurrencies, with 95.1% of countries embracing it, except for North Macedonia. In the **Americas**, 24 out of 31 nations and in **Asia**, 35 out of 45 countries accept cryptocurrency as legal. However, only El Salvador and the Central African Republic have adopted it as legal tender, with El Salvador leading the way by passing the Bitcoin Law and the Digital Securities Law.

As per Chainalysis' 2023 **Global Crypto Adoption Index**, India emerged as the winner in terms of grassroots cryptocurrency adoption. Nigeria followed India closely behind in the index, showcasing significant adoption, while Vietnam, United States, and Ukraine also feature prominently in the list among the Top 5 countries. Conversely, 22 countries outrightly ban cryptocurrency use, notably including China.



# ECOSYSTEM ENABLERS: BUILDING BLOCKS OF THE CRYPTO WORLD

# TDeFi



TDeFi is a Web3 incubator and consulting firm dedicated to promoting the adoption of web3 technologies. With an aim to remove barriers hindering web3 adoption by offering access to renowned mentors, token engineering, token management, community growth assistance, exchange listings, investor connections, and growth hacking partnerships, TDeFi has successfully guided 60 companies through the token markets of which 3 have achieved a **\$1 billion** market cap.

Elevating awareness about blockchain and nurturing startups transitioning into robust entities within this domain, TDeFi has orchestrated impactful initiatives like the **Europe Roadshow** spanning Davos, Zurich, Lithuania, and Poland. This effort expanded further in Thailand, Dubai, and India, establishing the '**TDeFi Startup House**' and attracting key figures in the blockchain ecosystem. Collaborating strategically with DMCC, TDeFi executed two highly successful **Acceleration Program** Cohorts in Dubai, boasting substantial interest from numerous applicants and culminating in Demo Day participation from **27 venture capital funds** managing a combined \$1 billion in assets under management (AUM).

# DMCC



Dubai Multi Commodities Centre (DMCC) is Dubai's flagship free zone and commodity trading and enterprise authority. It clinched its 9th consecutive win, earning the title of '**Global Free Zone of the Year 2023**' by the Financial Times' FDI Magazine.

At the heart of crypto and blockchain innovation, the DMCC Crypto Centre forged a partnership with the Solana Foundation to cultivate a collaborative environment. This initiative aims at uniting tech partners, exchanges, government entities, investors, incubators, and service providers in advancing the crypto and blockchain landscape. Additionally, the DMCC Crypto Centre collaborated with Bybit and Moledao to host MENA's largest hackathon. The event culminated in a Demo Day in Dubai, where three winners emerged to win prizes worth **\$100,000**.

# CRYPTO OASIS



While global markets stumbled in 2023, the UAE's Crypto Oasis stood tall as a vibrant hub of blockchain innovation. Fueled by a government-backed vision outlined in the Dubai Economic Agenda D33.

Proactive regulations, from streamlined licensing to dedicated free zones like Ras Al Khaimah's Digital Assets Oasis, Dubai's AI & Web3 Campus and others nurtured a diverse ecosystem of blockchain businesses. The UAE's fertile ground attracted both established players like DFINITY, Ripple, Coinbase and IOATA as well as ambitious startups, culminating in local successes like Phoenix's landmark public listing on the Abu Dhabi exchange.

As the world grappled with uncertainty, the UAE's Crypto Oasis stood as a testament to the power of collaboration, clear vision, and embracing technological advancements. It served as a beacon of hope, not just for the blockchain industry, but for the future of innovation itself.



**Saqr Eriqat**  
Co-Founder, **Crypto Oasis**

# ANIMOCA BRANDS



Based in Hong Kong, Animoca Brands is a prominent player in game software and venture capital, distinguishing itself as a leading investor in Web3. Its expansive portfolio boasts over 400 investments in the Web3 sphere, spanning influential names such as Yuga Labs, Axie Infinity, Polygon, Consensys, and Fireblocks. The company, through Animoca Ventures, has been a proactive force, investing vigorously in the development of Web3 technologies.

To materialize its vision of a blockchain-driven "metaverse" and harness the potential of NFTs, Animoca Brands launched an impressive **\$800 million** metaverse fund. In parallel, Animoca Brands secured **\$20 million** for its Mocaverse project, a Web3 platform intertwining blockchain, NFTs, and AI technologies across gaming, culture, and entertainment sectors. AWS and Polygon Labs entered into a strategic collaboration with Animoca Brands to run MoonRealm Express Accelerator to empower builders worldwide to advance development in decentralized identity, SocialFi, and GameFi, and encourage builders to develop new ideas and solutions on Mocaverse. Animoca Brands has been expanding in East Asia by partnering with Tiger Research to lead Web3 collaboration in Korea and with Honda to provide Web3 fan engagement in Japan.

# TradeDog Group in Action

## Crypto Outlook By TradeDog

TDeFi EU Roadshow



Wealth Today Summit



Global Blockchain Congress, AGORA



TDeFi Startup House @ Yacht- FI Abu Dhabi



TDMM Meetup @ Yacht- FI Abu Dhabi



TDeFi Startup House



TDMM x Crypto Mondays



VNTR Investor Yacht Breakfast Hosted by TDeFi



TDeFi Startup House- Bharat Chapter



TDeFi Startup House @ Phuket




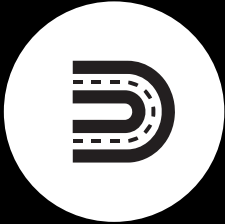
TDX @ TOKEN 2049





# A Glance at TDeFi Portfolio


## Infrastructure/Utility


BICONOMY 

DRIFE 

BITAY 

EDVERSE 

MONEYBRIDGE 

UNOFARM 

## Metaverse

VULCAN FORGED 

METAMAZONIA 

MEGAVRSE 

PALMSWAP 

KLINK FINANCE 

FLUIDEFI 

## DeFi

PERSISTENCE 

COTI 

ROUTER 

BTC PROXY 

FAITH TRIBE 

MYTH 

OASIS X 

NFJ LABS 

## NFT

CHINGARI 

AIMEDIS 

GOONS OF BALATROON 

RACERCLUB 

QUBIX 

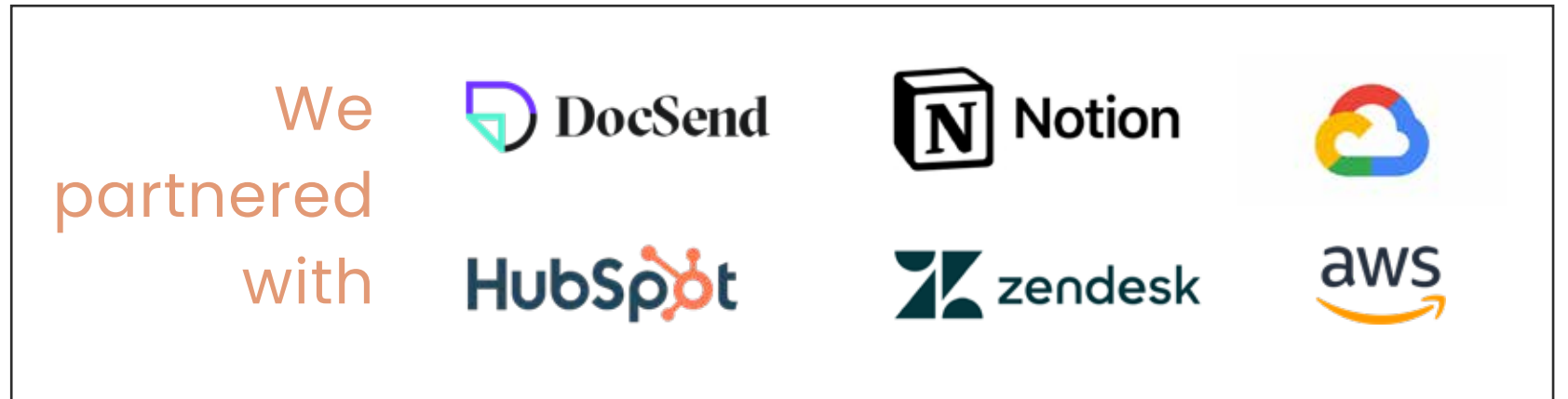
## Gaming



# 'EXPLORING WEB3 ACCELERATION PROGRAM' IN COLLABORATION WITH DMCC

After meticulously evaluating a staggering **300+** applications, TDeFi picked the best of the best **35** startups spanning DeFi, AI, RWA, and more - for the Cohort 1 & 2 of the 'Exploring Web3 Acceleration Program' that they hosted in collaboration with DMCC.

The program reached its pinnacle during Demo Day, where over 30 projects showcased their innovations through compelling pitches. A distinguished audience of **35** venture capitalists, collectively managing an astounding **\$1.5 billion** in Assets Under Management (AUM), eagerly listened to these groundbreaking presentations.



## Our Mentors



**30+**

Startups selected

**40+**

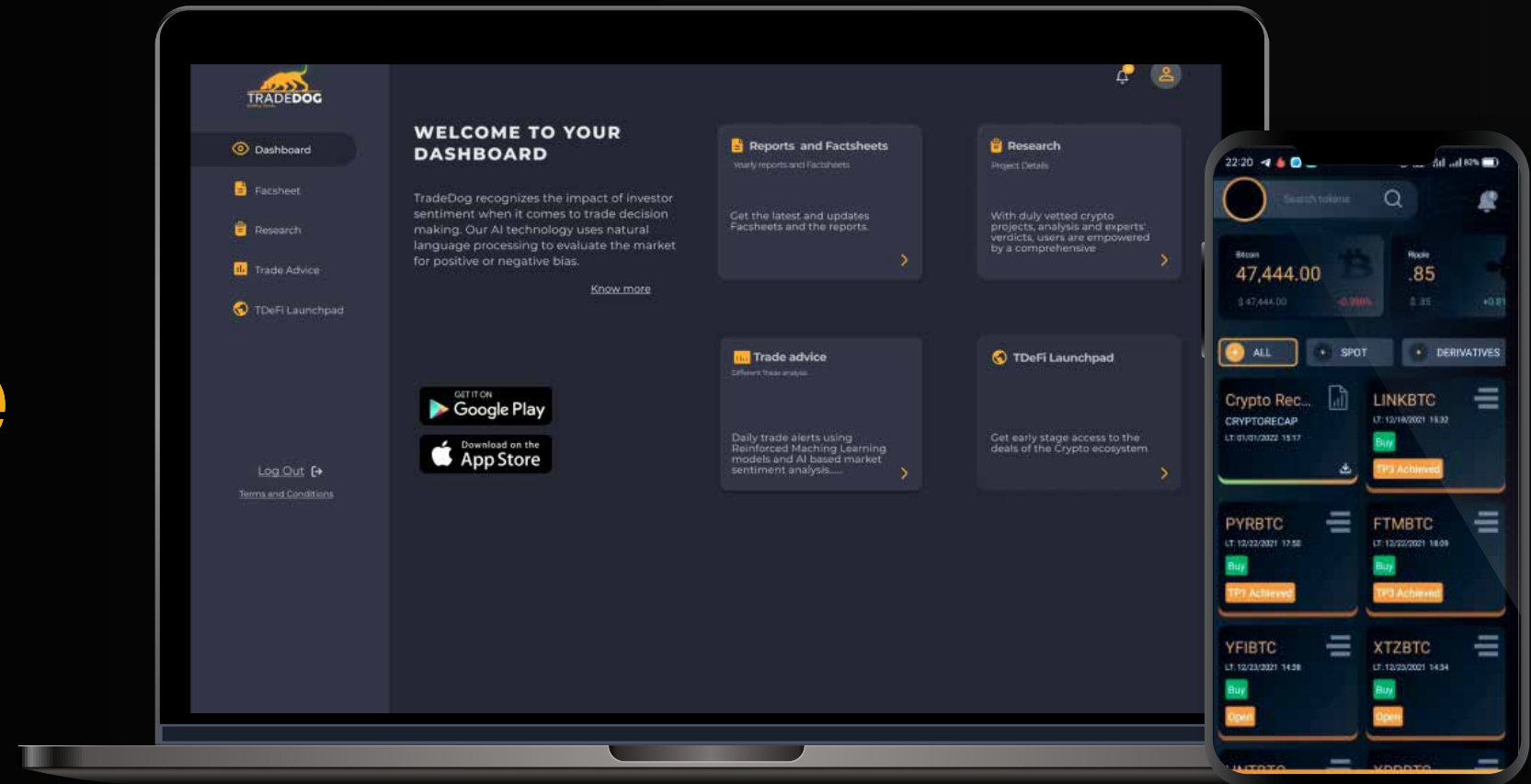
Mentor sessions

**35+**

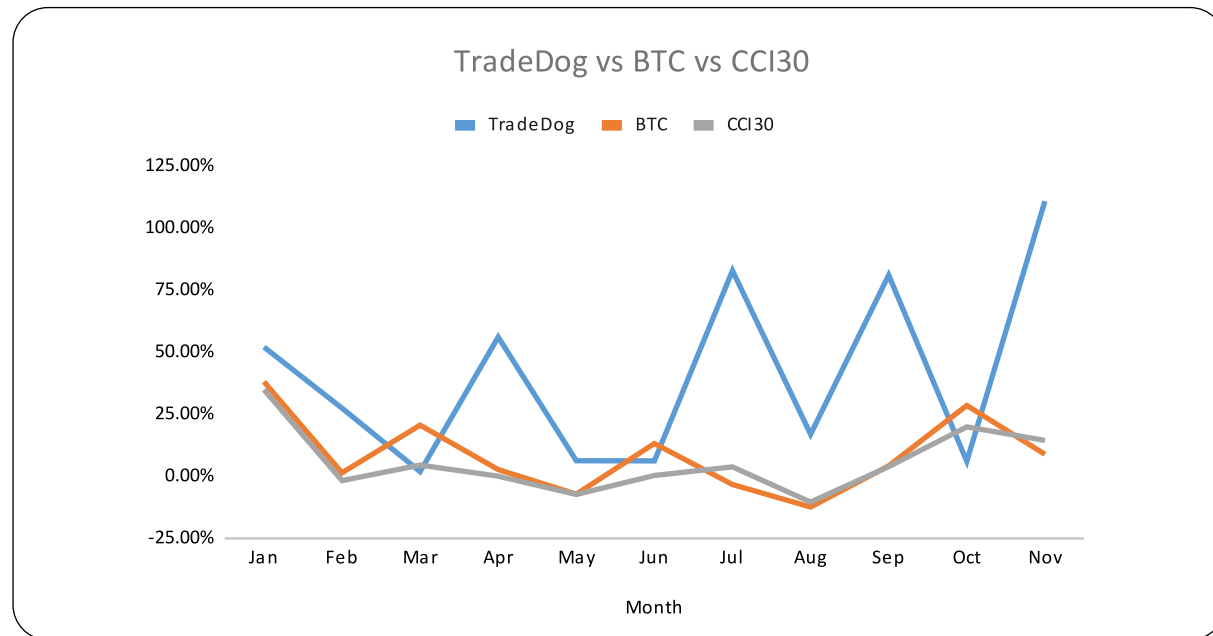
VCs/Family offices participated in demo day



# TradeDog Performance

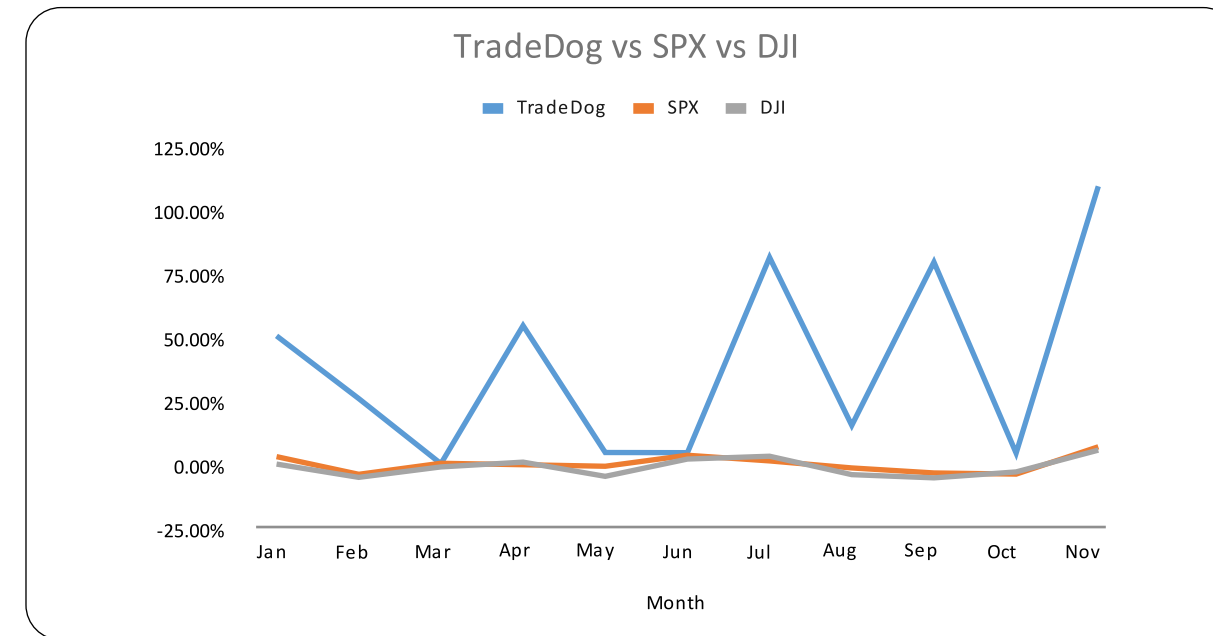


## TradeDog Vs Crypto Assets



- ◆ TradeDog outperformed BTC in 9 out of 11 months, and provided a cumulative profit of **447.59%** till Nov' 23, whereas BTC had a cumulative profit of **94.7%**
- ◆ Only in March and October, BTC generated higher returns than TradeDog

## TradeDog Vs Traditional Assets



- ◆ TradeDog generated more returns than SPX in 10 out of 11 months, while it was able to beat DJI throughout the year
- ◆ The cumulative return generated by SPX was **19.55%**, while DJI generated a return of **6.39%**

# ROI COMPARISON

If you had invested \$100 at the beginning of the year:

**1013%**

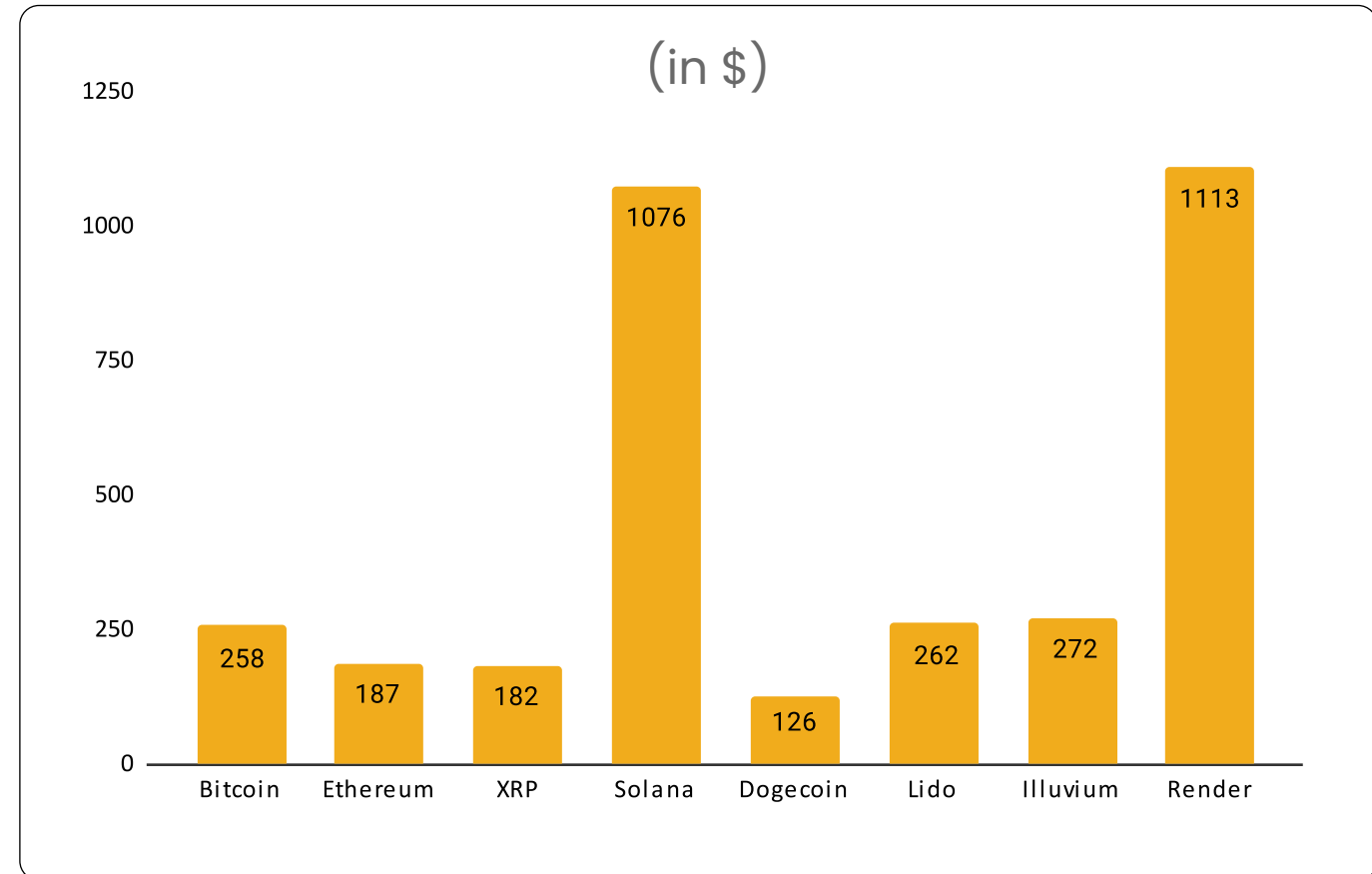
Surge in  
RNDR

**976%**

Surge in  
SOL

**172%**

Surge in  
ILV



# THANKS TO THE EXPERTS FOR THEIR OPINION



**Ravikant Agrawal**  
Polygon



**Shiti Rastogi**  
StepN



**Gaurav Dubey**  
TDeFi



**Asim Ahmad**  
Eterna Capital



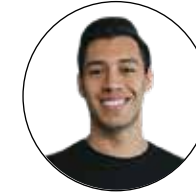
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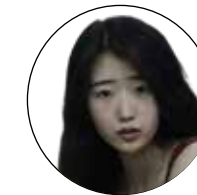
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