REVELO INTEL

ANNUAL INTEL

OUR VIEW ON TRENDS & NARRATIVES

2023 - 2024

Revelo Intel

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The Daily Bolt

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For the better part of 2023, Revelo Intel has been dedicated to guiding DeFi enthusiasts and serious investors through the complex and often unpredictable world of crypto. We understand that this industry is filled with uncertainty and volatility, making informed decision-making crucial for success.

Our approach is to provide you with data-driven insights and objective overviews of the most relevant projects and news in the crypto space. We go beyond simply summarizing whitepapers; our focus is on deep analysis and understanding of the underlying mechanisms. As well, we do our best to offer timely analysis to help you anticipate market trends and understand potential catalysts, providing actionable insights that allow you to tailor strategies to your investment goals.

Driven by the core ethos of correcting information fragmentation, we dive into the nuances of each project, examine the team behind it, analyze how token distribution impacts various stakeholders, and assess how teams respond to challenges in real time. Understanding the different tokenomic models and how they create value for token holders is a key aspect of our research.

Our obligation is to our users and protocol partners alike. As such, we strive to be the most comprehensive repository of all things crypto. We understand the diverse constituency of our user base, from those new to DeFi to educated users and institutional investors, and therefore we continuously refine our research process, with a strong emphasis on risk evaluation and comprehensive analysis.

The growth and success of crypto depend on ongoing education and the presence of positive, informed voices. Despite the ups and downs of the industry, our confidence in the potential and resilience of this industry remains strong. We view the market's cycles, though sometimes painful, as essential phases that pave the way for its progress and adoption, allowing true believers and innovative builders to emerge and thrive.

Annual Intel is an extension of the work that we do. It attempts to both educate and contextualize important trends and narratives for the past year and offers a look forward into the next (and beyond). We offer you our thoughts, and some predictions along the way. Like our comprehensive reports, whether you choose to read them in its entirety or in parts is your prerogative, but in its totality, it will give you a great understanding of the industry as it stands.

OUR INSPIRATION

Drawing inspiration from Erik Vorhees' speech at permissionless, we've also asked ourselves, why are we here? So far, the path to mass adoption has been full of obstacles, making it hard to see the light at the end of the tunnel.

2023 has been a pivotal year in crypto, marked by significant challenges and advancements. Amidst the turmoil of market collapses, frauds, hacks, and failed ventures, it's crucial to reflect on why we endure this journey. Crypto is more than just a blend of money and technology; it's a platform for innovation, challenging traditional business models and offering new possibilities.

Crypto's appeal lies in its potential to remove friction and simplify our lives. It's a journey towards redefining digital rights and ownership, where blockchain technology empowers individuals with control over their digital assets. This shift has the potential to transform various industries, from art and music to gaming and social media, enabling creators to connect directly with their audience and monetize their work without intermediaries.

It's not an overstatement to say that it has the power to change the world as we know it. The industry's growth is evident in the widespread adoption of cryptocurrencies, with a significant number of people globally now owning or trading them. However, the market remains volatile, and challenges like the $USDC depeg highlight the need for ongoing development and stabilization.

Looking ahead to 2024, the potential approval of spot ETFs for Bitcoin and Ethereum is a major milestone. Yet, this bull market may differ from previous ones, as it seems driven more by external capital entering through traditional financial channels rather than internal innovations. This shift raises questions about whether the industry will see the same level of innovation and excitement that characterized previous bull markets.

In such a dynamic market, agility is key. Narratives and trends in crypto are constantly evolving, and staying informed is crucial for success. The concept of thought arbitrage applies here, where early adopters and savvy investors capitalize on emerging narratives before they

become mainstream. As these narratives evolve and more participants join, the opportunities for significant gains diminish, prompting smart capital to seek new emerging opportunities.

Image: Nick Drakon on Financial Literacy

Source: Nick Drakon (Twitter)

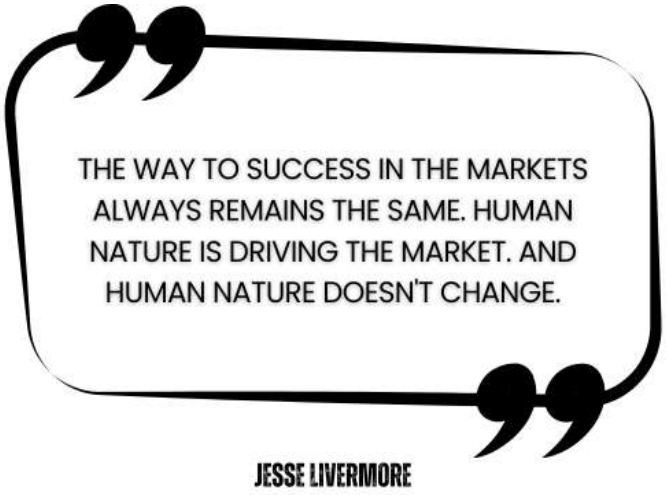
The crypto industry is at a crossroads, balancing innovation, regulation, and mainstream adoption. The journey ahead is filled with both challenges and opportunities, and it's essential to navigate this landscape with an open mind and a willingness to adapt to the ever-changing crypto environment.

We, at Revelo Intel, will stand at these crossroads, face these challenges head-on, and embrace these opportunities right alongside you.

A YEAR OF UPS AND DOWNS

Section 1

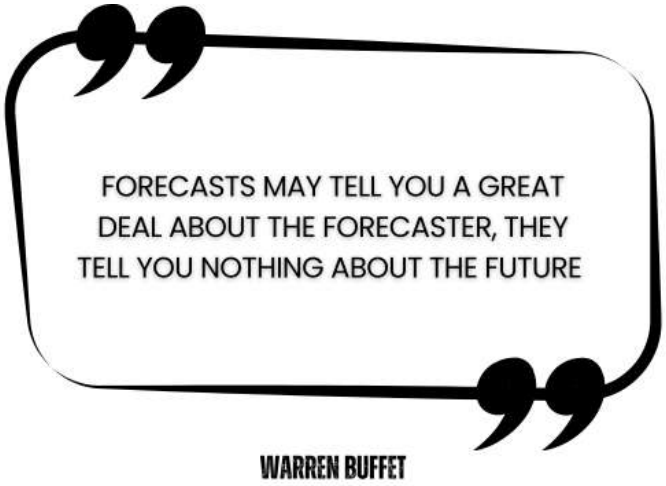
A YEAR OF UPS AND DOWNS



2023 has been a great year for crypto, leaving behind past challenges and witnessing institutional demand. With FTX, LUNA, 3AC, and Celsius out of the way, being in crypto has become cool again.

Slowly but surely we are seeing more regulatory clarity, and institutional demand has driven the development of more professional services across many domains, from custody to research. As the level of maturity of these markets increases, the liquidity conditions will improve as well, attracting more demand and reinforcing a positive feedback loop.

Headlines of the Year



2023 was a year that witnessed significant shifts, not just in the global macroeconomic landscape but also within the world of crypto. Amidst a backdrop of soaring inflation rates, aggressive quantitative tightening policies, bank defaults, and geopolitical tensions, the industry carved out its own space in the headlines, capturing the attention of investors, regulators, and DeFi enthusiasts.

From technological advancements to regulatory milestones, and from market lows to new highs, the crypto world was full of activity and developments. For that reason, we have considered starting out by highlighting the five most significant headlines of the year. These headlines, presented in no particular order, not only shaped the industry's trajectory over the past twelve months but also laid the groundwork for its future direction.

The Depeg of $USDC

On March 10th, $USDC fell significantly below its peg, marking a low point in the bear market as confidence in stablecoins waned. Before this event, $USDC was perceived to be the safest option among stablecoins, with the only real mark against it being the fact that it was centralized.

However, it was widely accepted on-chain by DeFi protocols, while $USDT dominated trading activity on CEXs. This unexpected depeg caused by a failure of the traditional financial system created an uncertain environment for on-chain investors seeking safety. This long weekend was the most profitable trade of the year for many whales, while it also hindered the progress of those who panicked and sold at a loss.

Image: Will Coinbase Resume USDC Redemptions?

Source: Polymarket (Twitter)

This event, largely triggered by the collapse of Silicon Valley Bank (SVB), one of the entities responsible for processing $USDC redemptions, resulted in a depegging as large as 13%. Following a reported $1.8B loss on its long-dated bond portfolio, SVB's stock plummeted which triggered a loss of depositor confidence and led to a rapid and large-scale withdrawal of funds.

Circle, the issuer of $USDC, had $3.3B (approximately 8% of its reserves) with SVB, and without government intervention, the firm could have faced significant losses, potentially impacting $USDC's stability and peg to 1 USD.

To have a ‘safe-haven’ asset like $USDC drop this far below peg shows us that there is still an inherent lack of confidence in current stablecoin options. $USDC hit a low of $0.87 on March 11 and managed to return to $0.99 on March 13, 2023. The recovery happened when the US government announced a bailout for the banks, ensuring Circle's assets were safe.

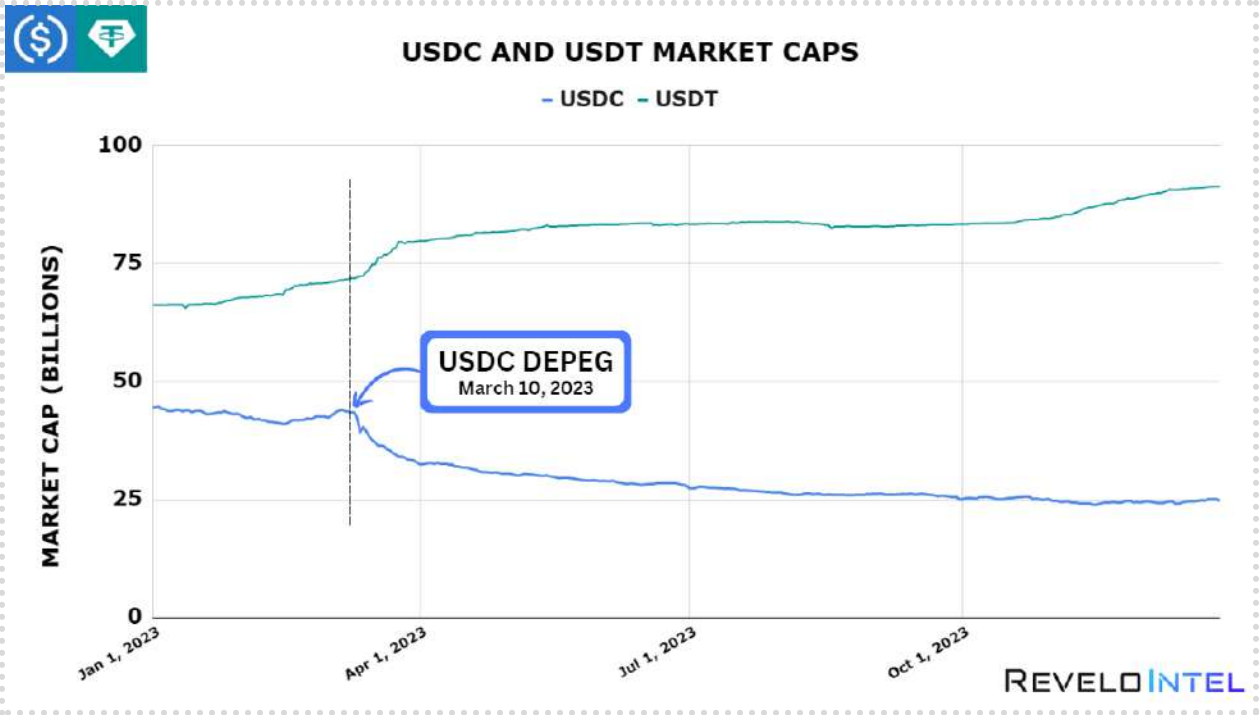
Image: Headline - A Bank Goes Kaput!

Source: Money Control

As much of a stain as this event could have left on crypto, it’s worth noting that a lot of people made a lot of money buying this depeg. Of course, a lot of people also lost a lot of money in panic selling. This is a true reflection that as much progress as the industry has made, we still very much live in a PvP environment.

Despite its valiant repeg, $USDC’s market cap has only been in decline since the event. Meanwhile, $USDT has been the benefactor of much of that market share.

Image: $USDC Market Cap Down Only Since Depeg



Raw Data: CoinGecko

With that said, we believe that events like this can lead to a stronger, more resilient landscape particularly as it sparked interest in creating more decentralized stablecoin alternatives. It must be noted that during this banking crisis, many people ran to Bitcoin as a safe haven.

BlackRock Announces Filing for a Bitcoin ETF

BlackRock's ETF announcement stands as one of the most impactful headlines of the year, with the narrative picking up steam heading into next year's halving. $BTC's price surged in response to this news, reacting swiftly to updates and new information. Even erroneous information, i.e., fake news significantly influenced the price, as a false tweet from Cointelegraph claiming that BlackRock's $BTC ETF had been approved sent the price soaring.

The initial filing for BlackRock's ETF was disclosed back in June 15, 2023, with $BTC trading at $25,586 at the time. This prompted other institutions to amend their filings in line with any guidance provided by the SEC. These Bitcoin ETFs symbolize a shift in institutional sentiment towards crypto.

Image: Cointelegraph's Fake News

Source: Cointelegraph

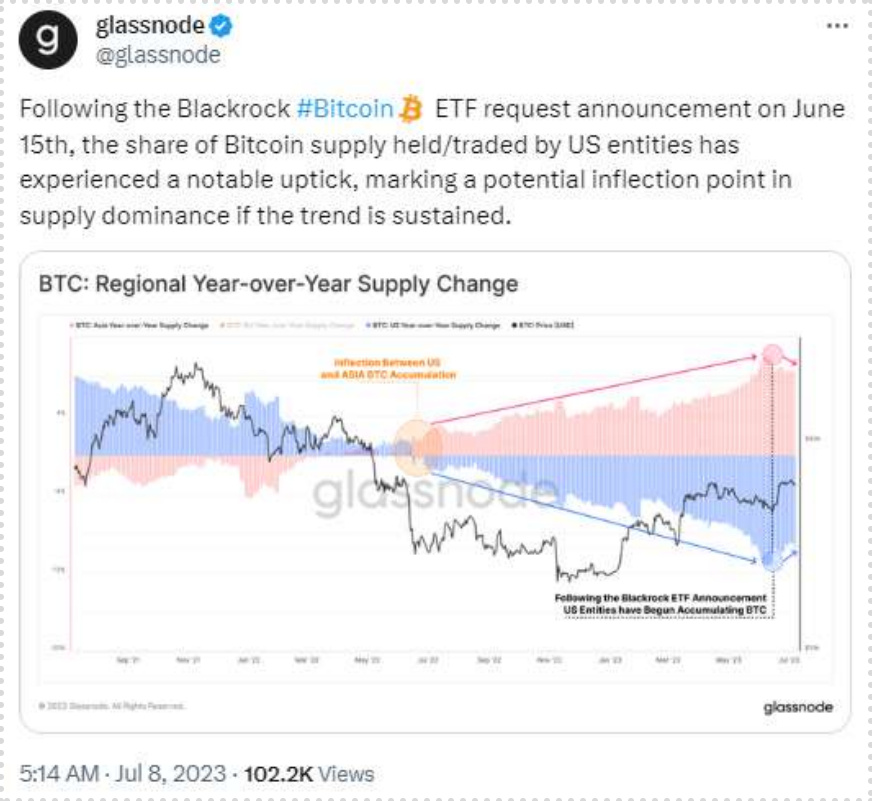
As we approach 2024, $BTC is trading above $40k, 100%+ YoY, reflecting the market's positive response. The Spot Bitcoin ETF, in particular, helps institutions buy $BTC more easily, marking a significant milestone in boosting institutional adoption.

While an ETF may not be the ultimate instrument for facilitating Bitcoin adoption, it's undoubtedly a significant step forward and a superior instrument compared to a Futures ETF. The adoption of Bitcoin and crypto hinges on two factors: the supply of crypto products and the demand for them.

On the supply side, considerable progress has been made to simplify the acquisition and use of crypto, including the growth of CEXs and the improvement of DEXs user experience.

On the demand side, the new generations are more open to investing in crypto, possibly due to their greater tech-savviness and the economic pressures of inflation, which necessitate higher returns on investments.

Image: Bitcoin Supply Held/Traded Post BlackRock Announcement



Source: Glassnode (Twitter)

Even in all of these developments, Bitcoin remains the simplest cryptocurrency to acquire. The cohort of people who may purchase Bitcoin through an ETF likely have little interest in self-custody or decentralized wallets. An ETF provides these individuals with a means to speculate on the asset's price without the need to create a wallet or sign up for a CEX.

It should also be noted that BlackRock has filed for a spot Ethereum ETF on November 16, 2023, further showing its desire to expand its cryptocurrency offerings.

Binance: CZ Steps Down

The recent resolution of legal issues surrounding Binance and its CEO, CZ, marks a significant moment for the crypto industry. Binance faced charges related to money laundering, operating an unlicensed money-transmitting business, and breaching US sanctions. However, it's important to note that the charges did not involve misappropriation of user funds or market manipulation.

CZ's guilty plea and the subsequent fine, which turned out to be less severe than anticipated, indicate that Binance is likely to maintain its position as a leading exchange in the foreseeable future. This development could be a catalyst for the broader industry, encouraging other exchanges to strengthen their compliance measures and participate in surveillance-sharing agreements.

Image: Nick Drakon on CZ's Announcement

Source: Nick Drakon (Twitter)

This shift towards regulatory compliance in the crypto industry could bolster institutional adoption of Bitcoin and potentially increase the likelihood of a spot Bitcoin ETF being approved in the US. The industry is likely to see a transition from unregulated platforms primarily serving retail investors to more regulated venues catering to institutional clients.

However, this move towards compliance could also lead to enforcement actions that might negatively impact DeFi protocols and US-based teams. Binance has played a significant role in introducing many users to the crypto space, particularly those who may have been underserved by traditional financial institutions. Moving forward, the challenge for platforms

like Binance is to navigate the complexities of regulatory compliance while continuing to serve their diverse user base and promote financial inclusion.

Image: JP Morgan on Binance's Settlement

Source: The Block (Twitter)

Ultimately, the settlement with Binance underscores the growing regulatory attention on the crypto industry as it matures and expands, highlighting the need for a balance between innovation and regulatory compliance. This makes the industry more antifragile; the bearish event is over, and investors feel safer without the uncertainty over their heads.

Ripple Court Victory Against The SEC

In 2020, the U.S. Securities and Exchange Commission (SEC) filed a lawsuit against Ripple, alleging that $XRP, Ripple's digital currency, was an unregistered security. The case covered various elements, including Ripple's sales of $XRP to institutions and retail investors, payments to employees, and sales by the founders.

On July 13, 2023, the U.S. District Court for the Southern District of New York delivered a mixed ruling. It determined that Ripple's sales of XRP to institutions were securities transactions, but it did not classify other aspects of the case, such as retail sales and employee payments, in the same way.

Image: Headline - SEC Cannot Appeal Ripple Labs Decision

Source: Reuters

This ruling led to a significant increase in $XRP's value, nearly doubling it, and resulted in $XRP being relisted on several exchanges. Most importantly, the court ruling has significant implications for the industry as a whole.

The court ruled that XRP, as a digital token, is not inherently a security. Instead, whether XRP is considered a security depends on the circumstances of its sale and distribution. This case marks the SEC's first loss regarding the classification of a cryptocurrency as a security. It sets a precedent and may affect ongoing and future SEC actions against crypto issuers and exchanges.

The court also denied the SEC's request for an interlocutory appeal regarding the decision on secondary trading platform transactions. This part of the ruling suggests that purchases or

sales of digital assets on secondary trading platforms may not necessarily be considered securities transactions.

On October 19, 2023, the SEC withdrew its claims against Ripple CEO Brad Garlinghouse and co-founder Chris Larsen, marking a significant development in the case. However, the summary judgment set by this case is non-binding, meaning it doesn't establish a definitive legal precedent. It does, however, raise questions about the application of the Howey test, traditionally used for direct sales, to transactions on secondary markets.

Image: Katherine Kirkpatrick Bos on SEC Dismissal of Case

Source: Katherine Kirkpatrick Bos (Twitter)

The Ripple case's outcome has significant implications for the cryptocurrency industry, particularly concerning fundraising and investment strategies. The way digital asset sales are treated in secondary markets could vary depending on the final results of any appeals in this case. This situation highlights the ongoing challenges and complexities in applying traditional securities laws to the evolving world of digital assets.

Sam Bankman-Fried Found Guilty of Fraud

In November 2022, FTX, a major crypto exchange, faced a severe liquidity crisis triggered by a CoinDesk report exposing questionable financial practices at Alameda Research, closely associated with FTX. This revelation led to a massive wave of customer withdrawals, fueled by concerns about FTX's financial health and its ties to Alameda Research. Efforts to rescue FTX, including a potential buyout by Binance, fell through, resulting in FTX declaring bankruptcy.

Image: Cartoon of SBF in Court

Source: Reuters

The U.S. government subsequently charged FTX founder Sam Bankman-Fried (SBF) and other top executives with civil and criminal offenses, accusing them of misusing over $8B in customer funds. Bankman-Fried was arrested in The Bahamas and extradited to the U.S. to

face these charges. In October 2023, his trial commenced, and by November 2023, he was found guilty of all fraud and conspiracy charges.

The trial uncovered that Bankman-Fried diverted funds from FTX to Alameda Research for various purposes, including political donations. Despite his claims of innocence, testimonies from former colleagues implicated him in these illegal activities. Bankman-Fried now faces a lengthy prison sentence, with his sentencing scheduled for March 28, 2024. He has been in custody since August, following the revocation of his bail due to suspected witness tampering.

Image: The FTX Storm

Source: The Crypto Times

To repay its customers, FTX received court approval to sell its crypto assets. Initially, FTX can sell up to $50M in digital assets weekly, potentially increasing to $100M and then to $200M with further court approval.

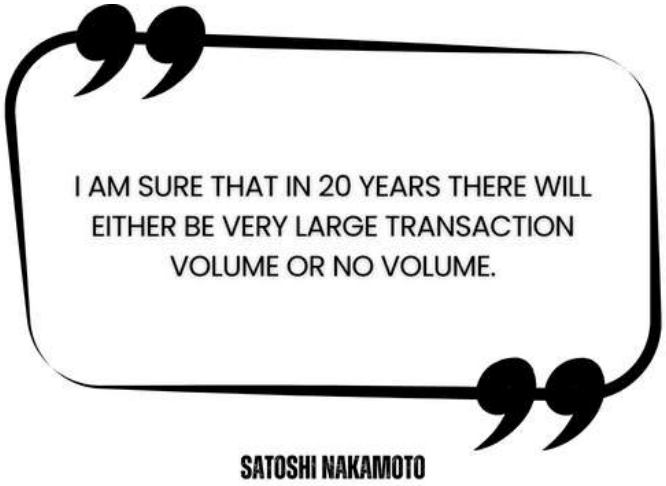
Galaxy Digital, led by Mike Novogratz, is managing the liquidation process. The structured liquidation approach aims to minimize market disruptions. As of November 15, 2023, FTX's

portfolio includes approximately $2.6B in Solana and Bitcoin, plus $1.7B in other cryptocurrencies.

FTX is allowed to stake its assets but must seek additional court permission to sell its native token, $FTT. The company is required to submit regular reports on its sales and staking yields.

The downfall of FTX and the legal actions against Bankman-Fried have significantly impacted the crypto industry. This event has highlighted the sector's vulnerabilities and regulatory shortcomings, leading to intensified scrutiny and demands for enhanced regulatory oversight.

Influential People of the Year



In a lot of ways, despite bearish conditions, 2023 was a landmark year for the industry, marked by groundbreaking advancements and pivotal moments. These developments were driven by the collective ingenuity and thought leadership of key figures in the space.

The people mentioned below, presented in no particular order, not only shaped the industry's trajectory over the past twelve months but also laid the groundwork for its future direction. Hence, it will be worth keeping an eye on them during 2024.

Vivek Ramaswamy

Vivek Ramaswamy, made a splash this year, announcing his presidential bid in February, bringing a fresh perspective to the political arena. He has engaged with influencers and appeared on several crypto podcasts, including Bankless and Unchained's The Chopping Block, to discuss his views on the crypto industry.

Vivek has been critical of the enforcement actions against crypto exchanges, arguing that such measures stifle American innovation and have failed to prevent incidents like the FTX collapse.

Image: Bankless - Vivek Has a Pro-Crypto Policy

Source: Bankless (Twitter)

Vivek is part of a growing number of politicians, including Republicans Ron Desantis and Ted Cruz, who are vocal supporters of cryptocurrency. He has vowed to rescind most federal cryptocurrency regulations and drastically reduce headcount at the SEC. He has also expressed support for the 'code is law' principle, suggesting that protocols should operate without legal hindrances.

Image: Vivek in Action

Source: Fox News

While his chances of winning the presidency are uncertain, Vivek's candid approach and advocacy for innovation and regulatory relaxation resonate with the crypto community. His campaign highlights key issues relevant to the future of cryptocurrency and its integration into the broader economic and political landscape.

Changpeng Zhao (CZ)

CZ's resignation as CEO of Binance is widely viewed as a pivotal moment. While some may see him as a criminal, many see this action as a sacrificial moment in the history of crypto.

To some, his decision to step down and his subsequent deal with US authorities mark the end of a major phase of scrutiny and criticism that the crypto market faced. This follows other notable events, such as the legal actions against SBF and Do Kwon.

In June, the SEC sued Binance, accusing it of dealing in unregistered securities, a claim CZ initially contested. However, in November, CZ agreed to a $4.3B settlement with the U.S. government, a move that some believe could lift a significant burden off the crypto industry.

Image: CZ on Stepping Down as CEO of Binance (Shortened)

Source: CZ (Twitter)

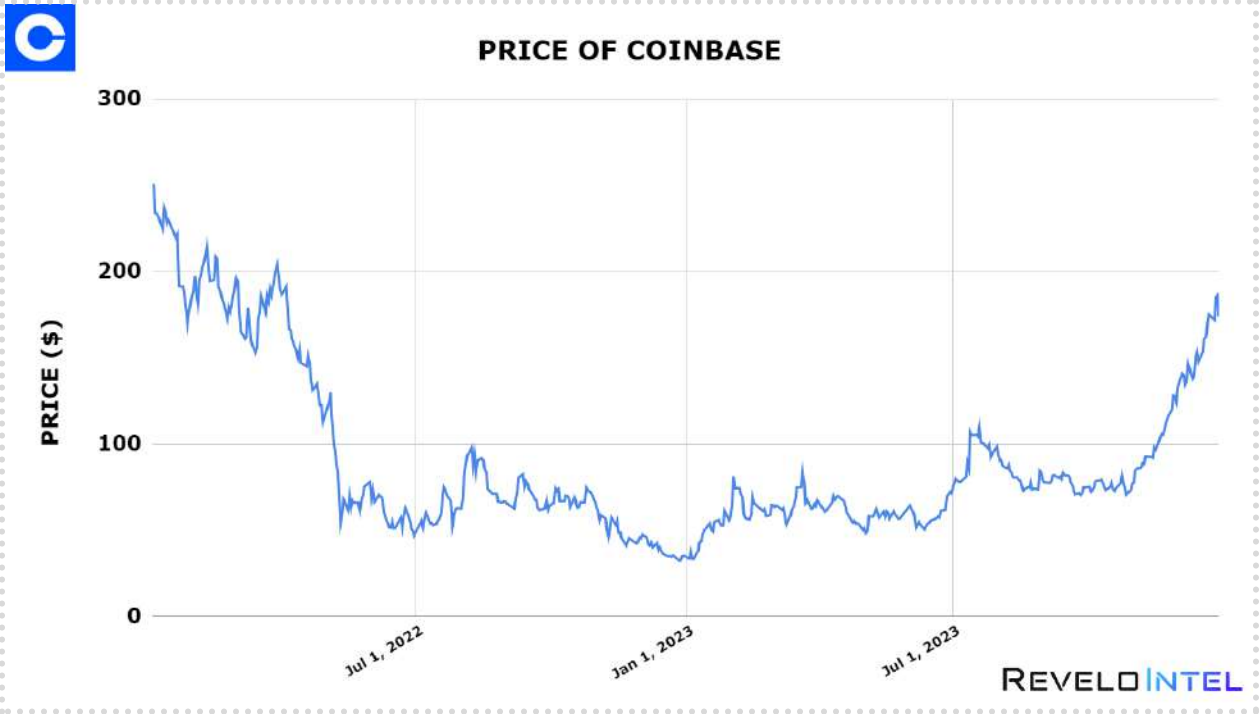
CZ's situation draws parallels to Arthur Hayes, the Co-Founder of BitMEX, who faced similar legal challenges in 2020. Hayes was charged with violating the Bank Secrecy Act and failing to implement adequate KYC/AML measures. Despite his legal battles, the crypto markets rallied, leading some to speculate that CZ's resolution with the authorities could similarly precede a positive turn in crypto market trends.

Brian Armstrong

Brian Armstrong, the CEO of Coinbase, stands to gain the most from CZ's departure from Binance. While Binance gained market share in recent years by providing new ways to trade and being more lenient with what funds they accepted, Coinbase has focused on compliance, positioning itself as a more regulated and secure option.

Despite this compliance-focused approach, Brian has been vocal in his opposition to the SEC, positioning himself as a leading advocate for crypto in the U.S., which has a substantial retail market with potential for significant crypto investment.

Image: $COIN Rebounding



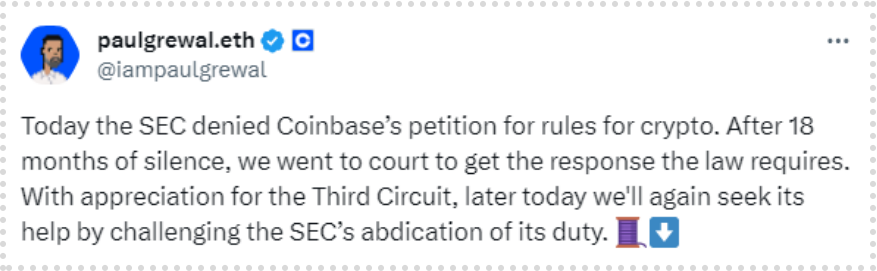
Raw Data: MarketWatch

All the while fighting in the U.S., Coinbase announced plans in May to offer derivatives trading services to customers outside the U.S. This move is strategic, considering that derivatives accounted for 75% of total trading volume in the crypto market in 2022.

With the decline of FTX and the uncertain future of Binance, Coinbase is well-positioned to capitalize on a revitalized U.S. crypto market, especially with the potential boost from the Bitcoin ETF, and to expand its presence internationally.

Despite other exchanges like Upbit and HTX (former Huobi) holding more market share, Brian Armstrong's prominent and vocal presence in the crypto space gives him a unique influence. He has the ability to impact institutions, market participants, and regulators, all while attracting new users.

Image: Paul Grewal on SEC's Denial of Coinbase's Petition



Source: [Paul Grewal (Twitter)]

Coinbase's recent marketing efforts adopt a populist approach, aiming to make crypto more relatable and accessible to the public. This strategy is particularly relevant in the context of rising inflation in America, which is significantly affecting the lower and middle classes, making it harder for them to afford homes and other major investments.

With an international expansion, staying local with the core business in the event of a spot ETF, a growing staking business, and even its own Layer 2, the future looks promising for $COIN.

Sam Altman

It's become abundantly clear that Artificial Intelligence (AI) will soon have a significant impact on many aspects of our lives, including the cryptocurrency sector. The rapid development of AI, highlighted by OpenAI's user-friendly ChatGPT, has brought renewed focus and investment to the AI industry. This surge in interest is reflected in the rise of AI tokens, which now have a combined market capitalization of approximately $7.8B.

AI's influence extends to unexpected areas within the crypto world. For instance, the potential integration of AI agents in online gaming has prompted some crypto projects to shift their focus in this direction. Additionally, the growing need to train AI models has increased the demand for computational power, benefiting decentralized computing projects like Render and Akash.

Image: Sam Altman is Back as CEO!

Source: OpenAI (Twitter)

Sam Altman has been at the center of this evolution. His conflict with the OpenAI board only heightened public interest in AI, underscoring his contributions to both the technological

advancement of AI and its accessibility to the general public. As the European Union introduces new AI regulations that could hinder progress in the region, the United States is poised to play a pivotal role in AI development, with Altman emerging as a leading figure in this field.

Image: AI Coins

Source: CoinGecko

Altman's influence is evident across technology and finance, with the crypto industry situated at the crossroads of these sectors. From generating Twitter threads using ChatGPT to inspiring a new category of crypto tokens, Altman's impact over the past year has been significant, shaping the trajectory of AI and its intersection with the crypto world.

Anatoly Yakovenko

Solana's journey through 2023 was a testament to resilience and innovation, largely driven by the leadership of Anatoly Yakovenko. The year began with challenges, especially following the FTX collapse, which shook confidence in Solana's DeFi ecosystem and affected associated tokens like $SRM, $OXY, and $MAPS.

However, as the year progressed, Solana made a remarkable recovery, and its rise from the ashes became one of the most discussed narratives toward the end of the year. Anatoly's role in this resurgence was pivotal.

His active engagement with the community, through podcasts and support for Solana-based projects, played a crucial part in reinvigorating the ecosystem. His leadership and advocacy were instrumental in restoring faith and interest in Solana, highlighting the blockchain's robust development activity and potential.

Image: Anatoly Yakovenko Advocating for Helium

Source: Anatoly Yakovenko (Twitter)

The importance of a charismatic and dedicated leader in the crypto space can't be overstated. Anatoly's role as the face of Solana, especially during its challenging times, was akin to the impact of figures like Emin Gun Sirer of Avalanche and Vitalik Buterin of Ethereum. His commitment to Solana, even when its future seemed uncertain, was a beacon for the community and developers.

Despite initial skepticism and the departure of some projects to other chains, Anatoly's unwavering support and continuous improvements to the network fostered a resurgence of

innovative projects and teams. New and promising projects like MarginFi, Jito, Kamino, Meteora, and Drift Protocol emerged, capitalizing on Solana's strengths in UX and incentives, and aiming to bring more users into DeFi.

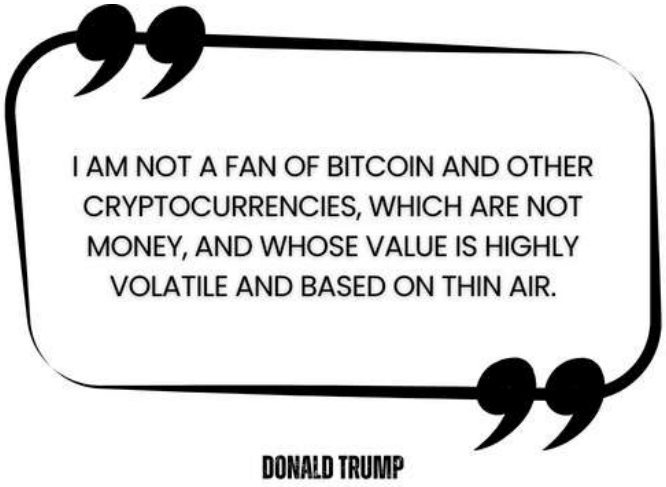
Anatoly's leadership was complemented by emerging figures like Mert Mumtaz of Helius, Meow of Jupiter, and Edgar Pavlovski of MarginFi. These leaders and their projects gained traction over the year, marking a significant turnaround from the earlier exodus of key DeFi and NFT projects.

Anatoly's consistent presence and advocacy throughout the year were key in steering Solana through its rebirth, proving his influence as one of the most impactful figures in the crypto space for 2023.

THE WORLD OUTSIDE CRYPTO

Section 2

THE WORLD OUTSIDE CRYPTO



The interplay between macroeconomics and crypto is multifaceted and significant. Macroeconomic factors such as inflation rates, economic growth, and central bank policies have a direct impact on investor sentiment and market stability.

Central banks' monetary policies, especially in major economies like the US, also play a crucial role. Policies such as lowering interest rates or quantitative easing can make cryptocurrencies more attractive to investors seeking higher returns while tightening monetary policies might lead to a reduced appetite for riskier assets like crypto.

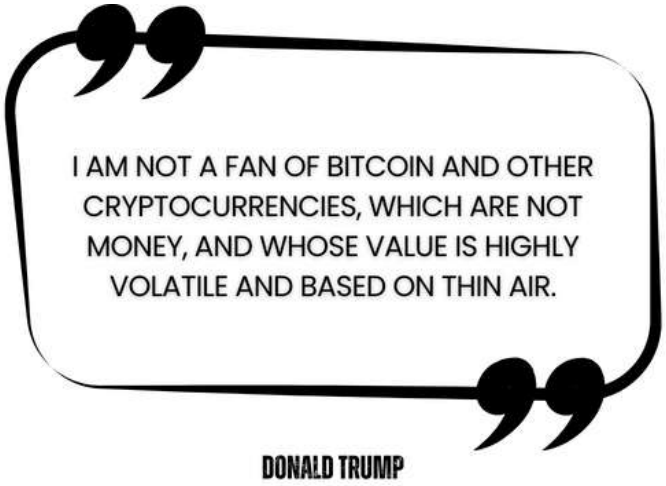
Regulatory clarity and compliance are also critical factors influencing the crypto market. Clear regulations help in legitimizing cryptocurrencies, thereby attracting more institutional investors and fostering mainstream adoption. A well-defined regulatory framework can also encourage innovation and growth within the crypto space, leading to the development of new technologies and use cases.

However, a lack of regulatory clarity or adverse regulatory actions can create market uncertainty, diminish investor confidence, and potentially lower market valuations. The regulatory landscape also affects market liquidity and access, as it determines who can legally engage in crypto transactions.

Enabling financial institutions to hold cryptocurrencies can significantly increase market liquidity, while restrictive regulations can lead to decreased participation and market stagnation.

For the time being, Bitcoin and other cryptocurrencies are considered to be speculative assets and are highly correlated to traditional markets, and trade with higher beta. Therefore, understanding both the macroeconomic landscape and the regulatory environment are key to success.

Uncertain Macroeconomics



In recent years, the crypto market has shown a strong correlation with broader economic trends, particularly in response to changes in interest rates. This correlation underscores the fact that, despite its promise and value proposition, crypto continues to be influenced by traditional economic forces.

Particularly, interest rates and asset valuations, especially for riskier assets like cryptocurrencies, often have an inverse relationship. As central banks, notably the Federal Reserve, adjust interest rates to manage economic conditions, these changes have had a ripple effect on the crypto market.

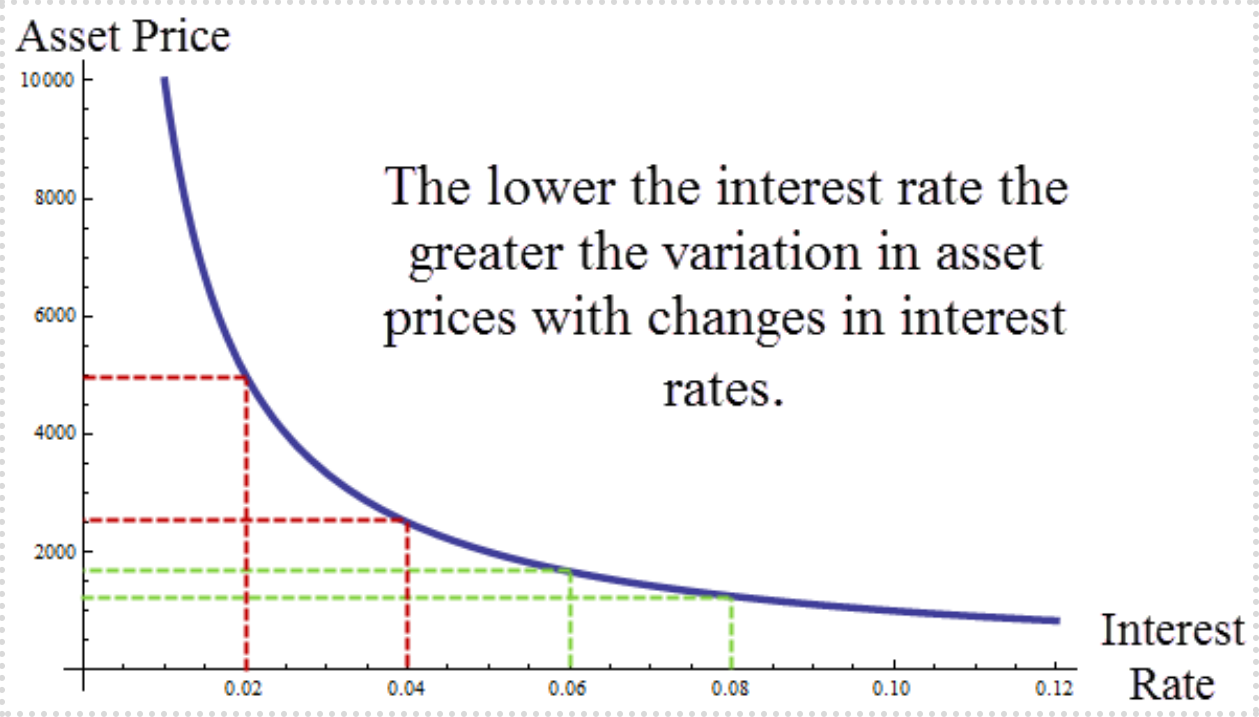
When interest rates rise, the yield on risk-free assets such as government bonds becomes more attractive. This shift often leads investors to gravitate towards these safer, more stable returns, especially in times of economic uncertainty. Consequently, riskier assets, including tech stocks and cryptocurrencies, may lose their appeal as investors reassess their risk tolerance and investment strategies.

Likewise, in times of geopolitical uncertainty, investors tend to flee to safety, away from riskier assets. As such, in the context of crypto, it's always prudent to consider the state of the economy, factors that feed into it, and where it might be going.

2023 was wrought with uncertainty. But contrary to initial apprehensions, the global economy, led by the United States, showed resilience and managed to sidestep a recession. What we actually saw with steady growth, low unemployment rates, and a gradual decline in inflation.

This economic stability, however, was juxtaposed against a backdrop of persistent uncertainties. Key among these were the repercussions of higher interest rates, ongoing global conflicts, and the increasing frequency of climate-related disasters. These factors contribute to a cautious economic outlook for the next five years.

Image: Inverse Relationship Between Interest Rates and Asset Prices



Source: Marginal Revolution (Blog)

Inflation in the U.S. showed signs of easing, but remained above pre-pandemic levels, fueled by higher wages and consumer spending. This posed complex challenges for policymakers, balancing the need to control inflation without triggering a significant economic slowdown.

The Federal Reserve's policy in 2023, maintaining steady interest rates with potential cuts in 2024, reflects a cautiously optimistic approach. However, reaching a stable 2% inflation rate could be a lengthy and unpredictable process.

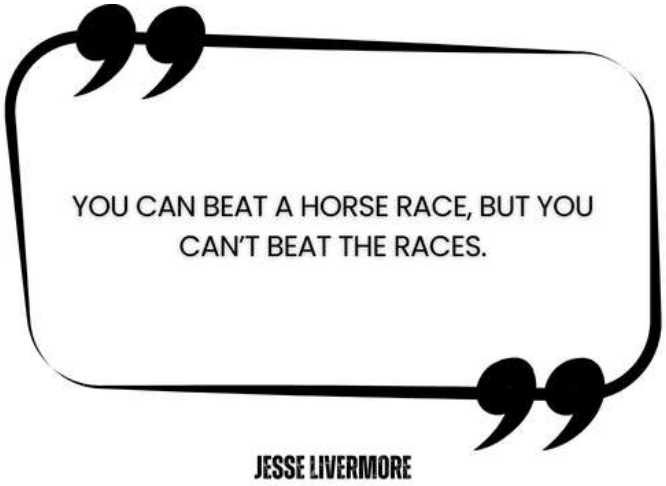
The labor market in the U.S. remained robust, with high employment rates and a significant reduction in part-time employment. Despite a slight cooling, indicated by a decrease in new hires and job openings, the overall employment scenario remained one of the strongest in recent history. This labor market resilience was a critical factor in sustaining consumer spending and overall economic stability.

Looking to 2024, the global economic outlook is more subdued, with a slowdown expected due to the lingering effects of high interest rates. The Organisation for Economic Co-operation and Development (OECD) predicts a slowdown in global output, with growth expected to pick up in 2025 if leading central banks cut rates aggressively.

For the crypto industry, these macroeconomic trends are crucial. The industry's performance is closely linked to investor sentiment, inflation rates, and monetary policy. The resilience of the global economy in 2023, despite numerous challenges, provided a somewhat stable backdrop for crypto markets.

However, the uncertain outlook for 2024, with potential economic slowdowns and policy changes, suggests a more complex environment for cryptocurrencies. As resilient as the global economy proved to be in 2023, we think that crypto investors and industry participants would be wise to navigate these macroeconomic currents carefully, balancing the inherent volatility of crypto assets with the broader economic trends that shape market dynamics.

The Art of Regulation



The regulatory landscape for cryptocurrencies is evolving as governments and financial authorities worldwide develop frameworks to govern digital assets. These regulations aim to balance consumer protection, anti-money laundering, and counter-terrorism financing while fostering innovation.

In the U.S., crypto regulation has become a partisan issue, with Republicans advocating for a looser framework and Democrats pushing for more oversight. The U.S. needs to maintain its leadership in technological innovation to drive economic growth and stay competitive globally.

However, the launch of FedNow, the U.S. central bank's instant payment system, has been underwhelming, raising concerns about the potential implications of a Central Bank Digital Currency (CBDC).

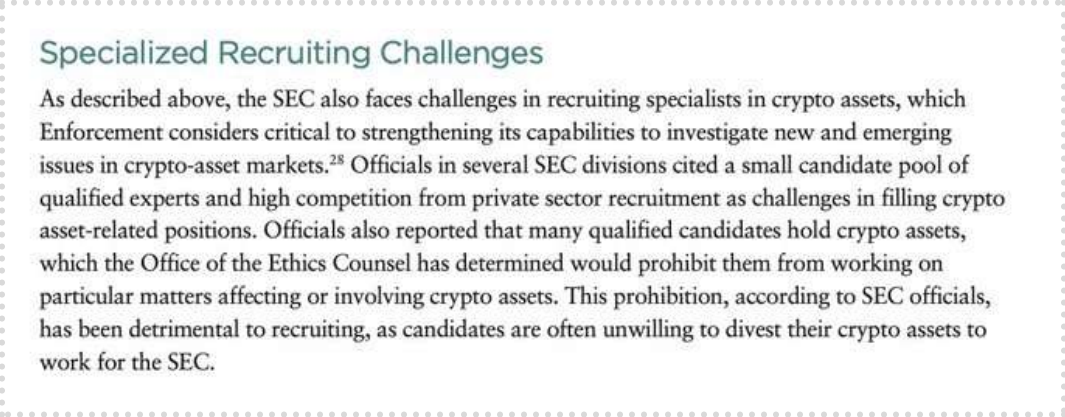
There is bipartisan support for regulating U.S. custodial stablecoins, but the classification of cryptocurrencies as commodities or securities remains unresolved. Overregulation can stifle innovation, while lax regulations can expose consumers to risks and fraud.

Effective regulation is crucial for consumer protection. It ensures that consumers are not exposed to unnecessary risks or fraudulent activities. However, to regulate effectively, regulators must understand how these technologies work and where potential risks lie; you cannot regulate what you don't understand.

For instance, when the SEC releases a report describing the adverse impact of recruiting crypto-knowledgeable talent, we can't help but shake our heads in disagreement.

The U.S. faces competition from other countries actively working on crypto regulation, such as the European Union, the UK, Hong Kong, Japan, and Singapore. The Biden administration has shown some hostility toward the crypto industry, but Congress and the court system have exhibited more nuanced sentiment.

Image: SEC on Hiring Specialists in Crypto Assets



Specialized Recruiting Challenges

As described above, the SEC also faces challenges in recruiting specialists in crypto assets, which Enforcement considers critical to strengthening its capabilities to investigate new and emerging issues in crypto-asset markets.[28] Officials in several SEC divisions cited a small candidate pool of qualified experts and high competition from private sector recruitment as challenges in filling crypto asset-related positions. Officials also reported that many qualified candidates hold crypto assets, which the Office of the Ethics Counsel has determined would prohibit them from working on particular matters affecting or involving crypto assets. This prohibition, according to SEC officials, has been detrimental to recruiting, as candidates are often unwilling to divest their crypto assets to work for the SEC.

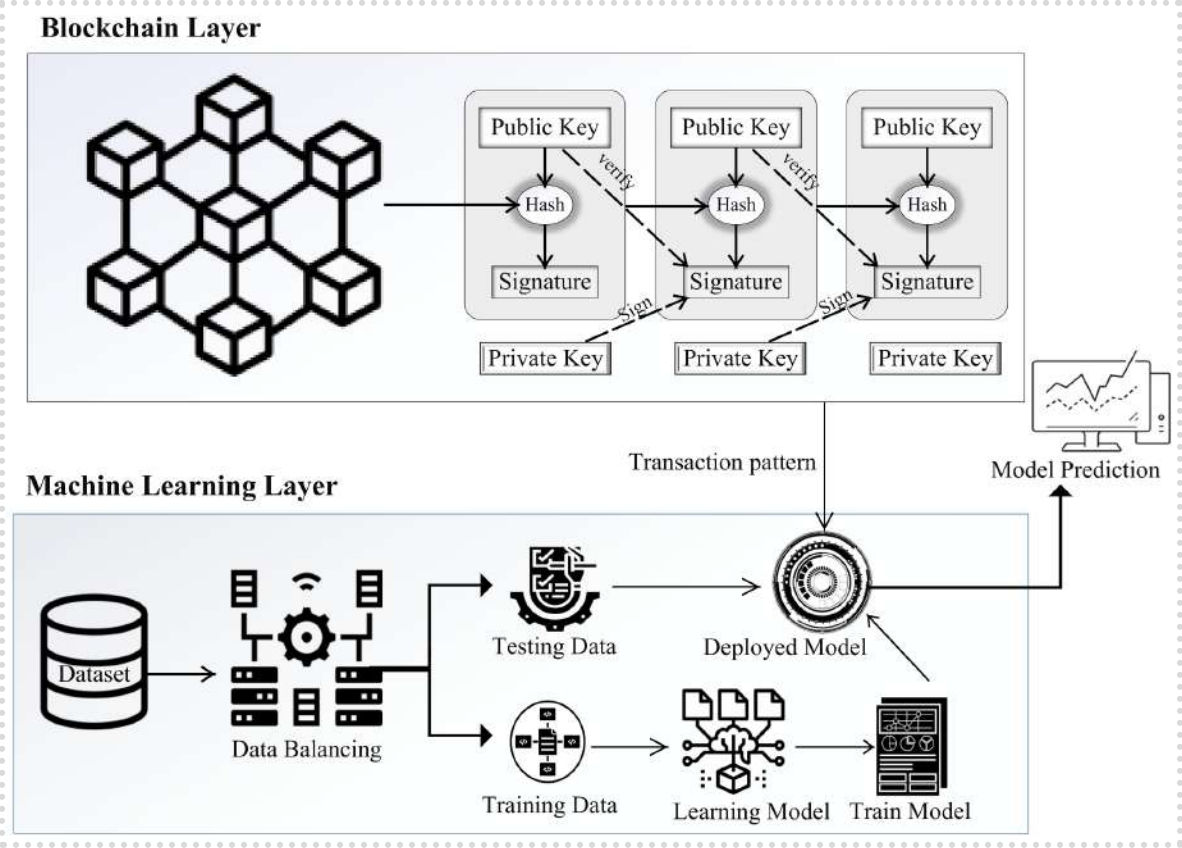
Source: SEC - Inspector General's Statement

We believe that CEXs should comply with government policy frameworks and invest in technology to detect user attacks, improve customer service, and enhance user interfaces. Addressing traditional fraud is crucial for widespread crypto adoption. A workable regulatory framework for CEXs in the U.S. could help keep bad actors offshore and focus on policing CEXs interacting with U.S. users.

Blockchain technology can be leveraged to detect accounting fraud and improve internal controls through triple-entry accounting. This could revolutionize various financial services, necessitating regulatory changes in areas such as custody of assets, interoperability, tokenization, accounting, exchange, and more.

Those who don't get ahead of these measures will lag behind competitors and eventually lose market share. As exemplified by CZ's plea, this is not a good-to-have, but rather a must-have.

Image: Blockchain Layers and Machine Learning Layers



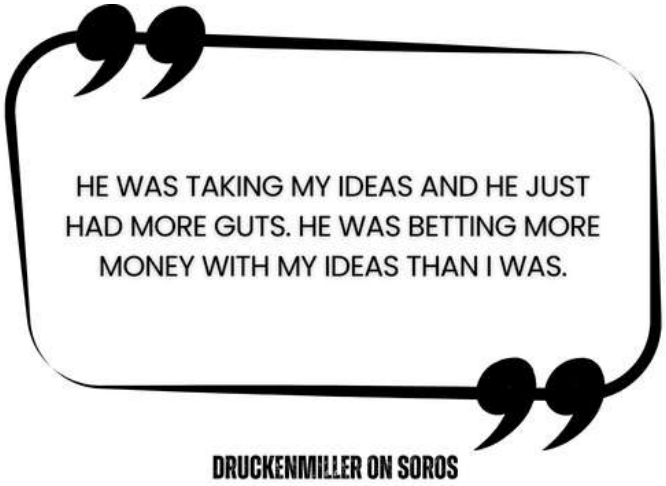
Source: MPDI

We believe that digital assets have no borders. They are a global phenomenon and regulatory decisions made in one jurisdiction can have ripple effects worldwide. In other words, bad decisions can put specific countries and economies at a significant competitive disadvantage and the U.S. should take caution to regulate from an educated standpoint.

A SPOT $ETH ETF WILL NOT BE APPROVED IMMEDIATELY AFTER THE APPROVAL OF A $BTC ETF AS SMART CONTRACTS INVOLVE MORE RISK AND REDEMPTION TIMES. THIS WILL FURTHER DELAY THE APPROVAL OF THIS INSTRUMENT.

REVELO PREDICTION

Surviving the Crypto Market



These markets are complex and continue to develop in an ever-evolving landscape, often characterized by speculative bubbles and rapid shifts in market trends. Crypto is an attention game, and narratives are chess pieces. As it stands, crypto is little more than 'tokenized attention'.

Historically, top-performing narratives in crypto typically see a decline within two months after reaching peak popularity. Similarly, new trends usually have a lifespan of 3 to 5 weeks, making timing and patience crucial for investors.

To optimize returns, we have seen time and time again how important it is to take profits when a trend starts losing momentum, usually after about five weeks. Focusing on the most promising 20% of narratives and prioritizing the risk-reward ratio over the win rate is key. Take Telegram bots as an example – after being the best-performing narrative in Q2 they were consistently the worst narrative in Q3.

Market Participants' brains are wired to perceive cheaper prices as better deals, but this mentality doesn't always apply in financial markets. Just because a cryptocurrency is down significantly doesn't necessarily make it a good buy, as there may be valid reasons for the decline. In crypto, price increases should not be perceived as making an asset "more expensive."

Instead, they indicate high demand for the asset. It's essential to shift away from the traditional notion of "cheap" and "expensive". Remember that you are trading the market, not your opinion about the market. In the world of crypto, survivability is truly the name of the game.

Early-stage narratives might not always be worth pursuing, but it's important to keep an eye on the initiators of these trends, as they often continue to lead. At the same time, narratives with strong technology and market fit, such as alternative Layer 1s and Layer 2s, rarely become top performers.

Image: Thoughts on Market Irrationality

Source: A-Z Quotes

Like any other market crypto is driven by a combination of rational decisions and irrational exuberance. Speculative bubbles often form when investors collectively detach from reality, influenced by new technologies, financial innovations, or geopolitical changes. Understanding the psychology of speculators is vital in this environment.

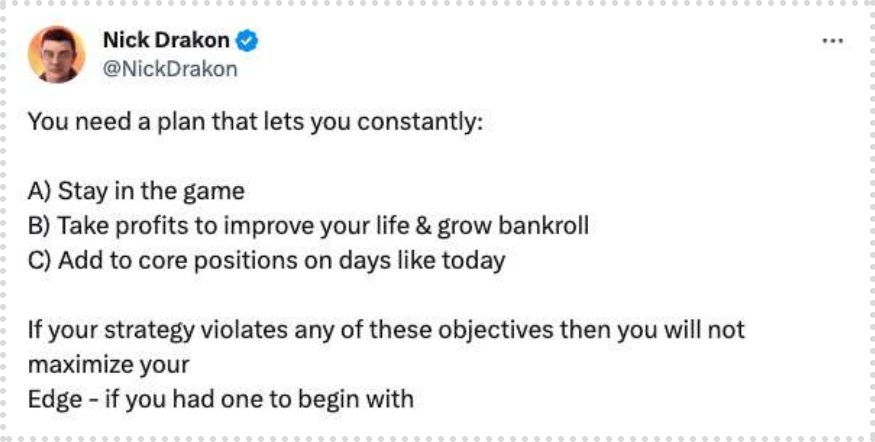
Market prices are influenced more by the expectations and behavior of market participants than by fundamental values. Coined by George Soros, the Theory of Reflexivity states that investors base their decisions on their perceptions of reality, rather than on reality itself, i.e., prices move based on expectations, regardless of their basis in reality.

Feedback loops in the market lead to boom and bust cycles, detaching prices from reality. Investment outcomes are influenced by the psychology of market participants, making market predictions challenging and emphasizing the importance of risk-taking and contrarian strategies.

Historically, many financial crises were preceded by lax financial controls and unchecked speculation, such as the Tulip Mania (1630s), the South Sea Bubble (1720s), the Great Crash of 1929, the Japanese Asset Bubble (1980s), and the Dot-com bubble (2000s). These examples highlight the importance of investor education, market transparency, and prudent regulation to prevent future financial disasters.

Especially in crypto, where the information asymmetry is so large between market participants, we find ourselves in a playground where you can make money by being smarter than other people. Just like poker, there is an element of applied strategy, risk management, and a money component that adds an edge to the game.

Image: Nick Drakon on Trade Strategy



Source: Nick Drakon (Twitter)

On the one hand, excessive leverage often leads to financial disasters. This principle underlines the importance of measured betting in investment strategies to avoid eventual ruin. On the other hand, we cannot underestimate the importance of conviction and risk-taking when the opportunity presents itself. Understanding one's unique advantage in the market is crucial, and sometimes, the best investments are those not made.

As the horns of the bull start showing on the horizon, you will probably start feeling a surge of adrenaline. Billy Walters has a line in his autobiography, *The Gambler,* about how the best feeling in life is gambling and winning, and the second best feeling is gambling and losing. The adrenaline of this industry is an overwhelmingly powerful drug, and you can go from being at the top to hitting rock bottom in the blink of an eye.

While some may have a long-side bias because of their actual conviction in the crypto space, many others simply entered the market when being long was rewarded. They may be biased towards the long side simply because their first few trades were longs or spot purchases. This makes sense as almost all new market entrants experience their first few trades during bullish periods when there is simply more attention and capital circulating.

Whether these market participants see paper profits, lose money immediately, or generate substantial profits, they are often biased towards buying, holding spot positions, or going long. Even if this proves to be a losing strategy.

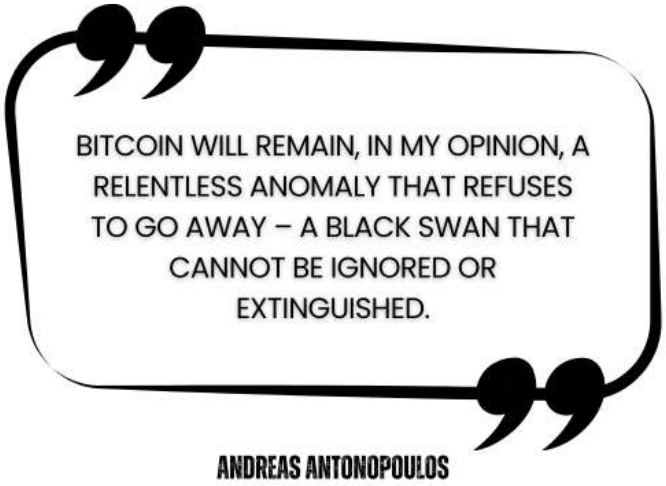
In theory, an asset's price can only go down 100%. On the flip side, it could go up 100%, 1,000%, 10,000%, or more. It's become common to see people use sites like 'marketcapof.com' to speculate on how many multiples an asset's price could appreciate if it were valued similarly to a comparable token of higher value.

This rarely happens the other way around, with people speculating on how much an asset's price could depreciate if it were valued similarly to a comparable token of lower value. This goes to show that market participants in crypto tend to lean bullish, for better or worse.

THE INDUSTRY'S SURVIVAL

Section 3

THE INDUSTRY'S SURVIVAL



Over the past few years, the industry has evolved significantly, leading to the emergence of new market sectors that were not achievable years ago. The advent of Layer 2s, ZK technology, and the overall infrastructure layer has enabled use cases such as on-chain derivatives, dePIN, RWAs, DeSci, etc.

Diversifying a crypto portfolio has become more crucial than ever as the industry evolves and new market sectors emerge. More and more tokens from new market sectors will be launched and enter the market. At the same time, some tokens might experience repricing, from DEX and bridge tokens to Layer 1 and Layer 2 tokens, while the market attempts to find a fair value.

Different sectors and narratives gain prominence at different times, impacting the performance of assets within those sectors. Having exposure to multiple narratives can help mitigate the emotional challenges that come with sector rotation and ensure a more balanced and diversified portfolio.

As a protocol, being an early entrant as a narrative emerges can be a double-edged sword. While it offers the advantage of establishing a unique position or 'moat' in the market, it also comes with the responsibility of educating investors about your vision. This educational aspect can be both an opportunity and a challenge, depending on how well the concept is communicated and received.

Surviving in the volatile crypto market, especially when many peers will fail, is a noteworthy accomplishment. For many, adopting a strategy of minimal spending is key to ensuring longevity.

However, the crypto market is often driven by narratives that can influence investment decisions. And we often get caught up in the story and forget which came first, the narrative or the price action.

These narratives can be captivating, but they can also create a disconnect between the hype and the reality of building sustainable projects. Founders and investors might be tempted to chase emerging themes for quick returns, but the process of building and scaling ventures is a long-term endeavor.

Image: GCR on “Giving Up”

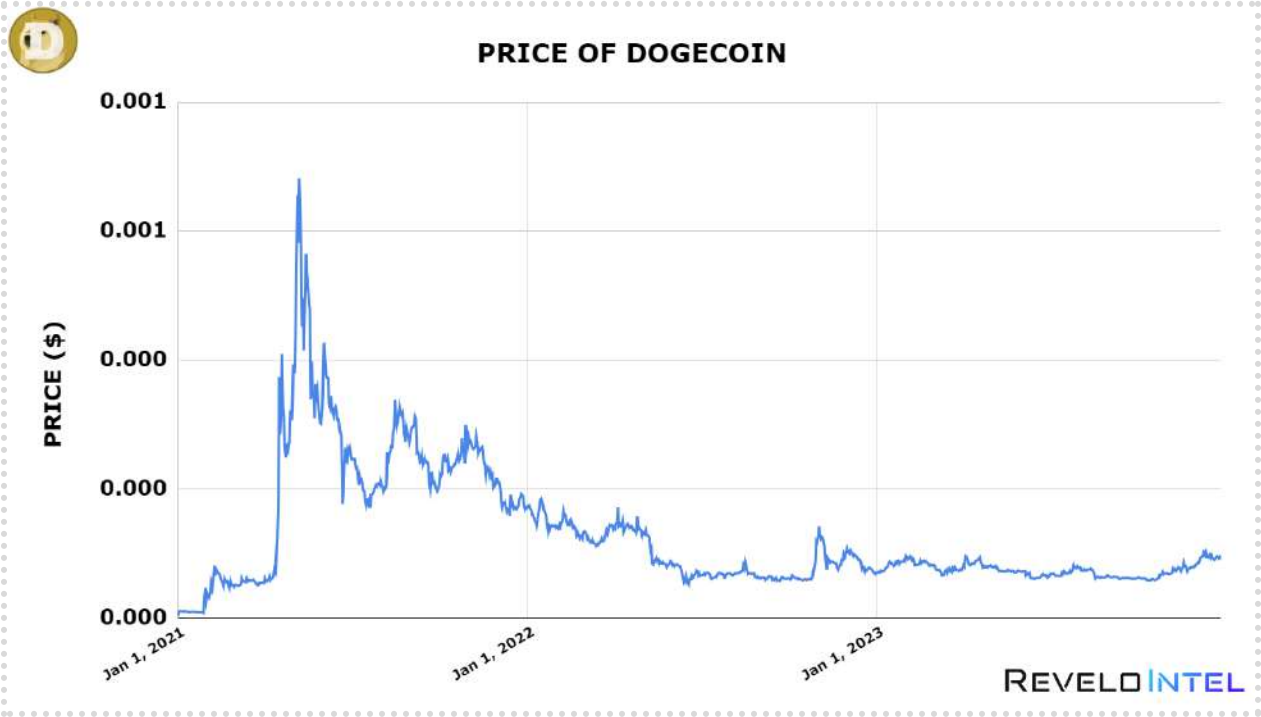
Source: GCR (Twitter)

Crypto markets are known for their quick reactions to trending narratives. Projects that align with these trends can witness rapid price increases and attract speculative capital. However, this comes with the risk of shifting attention and volatility.

Early entrants in specific crypto themes might see significant gains as the narrative gains traction, but this success can be fleeting if the project fails to evolve and retain user interest.

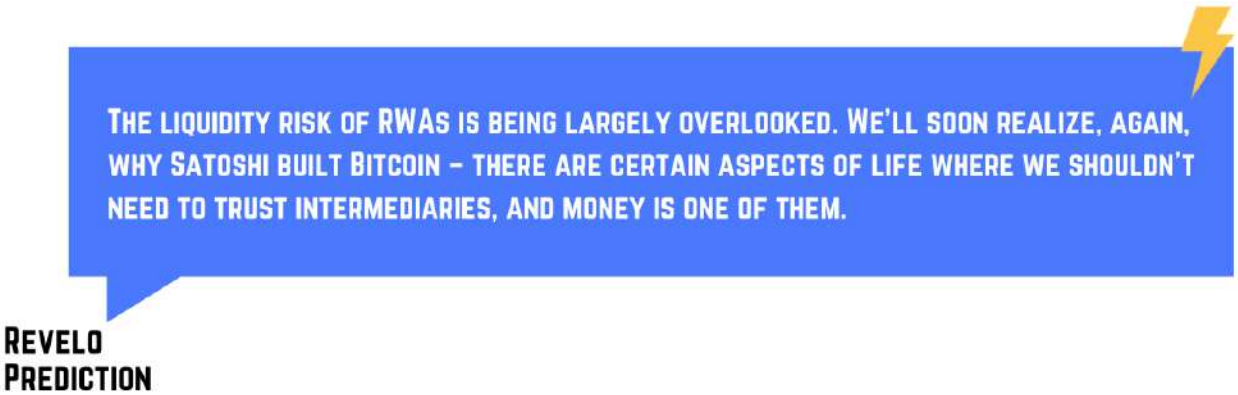
For crypto-native investors, being a tastemaker or an early adopter of emerging themes is crucial for meaningful returns. Late entry into a trend often results in diminished gains.

Image: Price Action of $DOGE



Raw Data: CoinGecko

Therefore, investors and founders need to balance the allure of trending narratives with the realities of product development and market sustainability. This balance is key to achieving long-term success in the ever-changing landscape of cryptocurrency.



The Market Opportunity

Self-custody, while important, often falls short in meeting user demands for convenience and ease of use. People are lazy and generally prefer a user experience that is quick and straightforward, rather than the current complexities of managing their capital across various chains and wallets.

This presents an opportunity for DEXs and on-chain derivatives to innovate and offer unique features that can't be found on centralized platforms.

CEXs have shown limited innovation in recent years, with most updates focusing on listings or delistings rather than significant improvements in user interface or technology. In contrast, DeFi platforms have the potential to leverage composability to create transformative features and financial products, akin to Uniswap's 0-to-1 emergence to market.

One key area where on-chain platforms can excel is in offering permissionless listings. Unlike CEXs, which often have stringent listing requirements, on-chain platforms can allow any project, token, or asset to be listed without needing approval from a central authority. This openness can foster a more inclusive and innovative DeFi environment.

Another advantage of on-chain platforms is the potential for faster transaction settlements compared to CEXs. Decentralized platforms can enable near real-time trading and settlement, enhancing liquidity and reducing counterparty risk. Additionally, on-chain derivatives platforms

have the opportunity to explore alternative risk management methods that don't rely on unfair liquidation penalties or fees, creating a more equitable trading environment for users.

Ultimately, users are less concerned with infrastructure upgrades and more interested in tangible improvements to their trading experience. DeFi builders should focus on using the unique advantages of composability to create innovative, user-friendly platforms that offer something distinctly different from what's available on CEXs.

Problems That Still Need Solving

Even though the industry has come a long way, there are still many problems that need to be addressed before it achieves the potential that those of us entrenched in the space believe it can.

And even though some solutions exist to these problems, we're still far from an optimal environment, one where we have unified liquidity. We believe that far greater efforts need to be made to create interoperable systems that allow different blockchain networks to communicate seamlessly, including the development of more bridges for easy asset and information transfer.

Enhancing the user experience of digital wallets is also a top priority, with a focus on improving security features such as social recovery options.

In the past two years, it can be debated that DeFi has taken the largest strides out of all sectors. That said, there's much left to be desired. For example, automated risk scoring systems for lending and borrowing, akin to traditional credit scores, would make the process much simpler. Dynamic models for lending markets would address common challenges like low liquidity.

Further innovations also need to be explored in undercollateralized loans, privacy mechanisms within DeFi protocols, and the optimization of profitability and protection for LPs. We also think

that there's a need to find a balance between privacy and efficiency in DEXs and to integrate privacy mechanisms into Miner/Maximal Extractable Value sharing.

On the technological front, there's a need for advancements such as the development of tools for zero-knowledge circuit design, applications for ZK-based identity verification, deep learning, architectures for coprocessors, and verifiable off-chain computations. Efforts also need to be made in designing decentralized sequencers, shared sequencing mechanisms, and expanding oracle systems to access a broader range of data types.

Image: A Look Into the Future

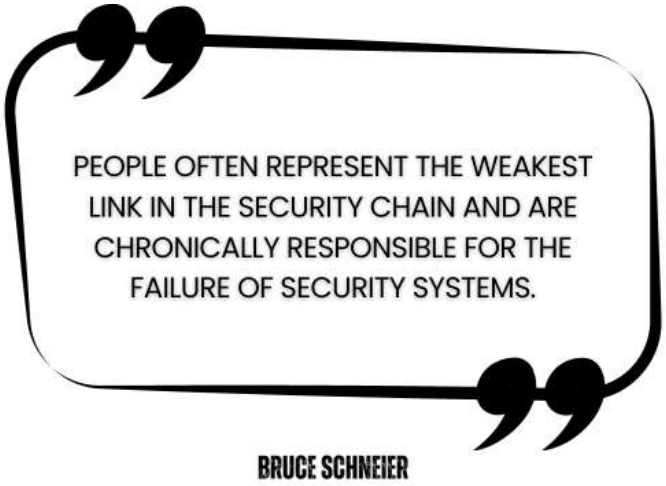
Source: Qiao Wang (Medium)

In governance and tokenomics, new models need to be explored, including dual governance systems and solutions beyond traditional token voting. The development and adoption of decentralized data networks and reputation systems are encouraged to foster a more transparent and accountable blockchain ecosystem.

These development areas represent the forefront of blockchain and crypto technology and we believe that, in the years ahead, there needs to be a strong focus on making these systems

more efficient, secure, user-friendly, and integrated with a wider range of real-world applications.

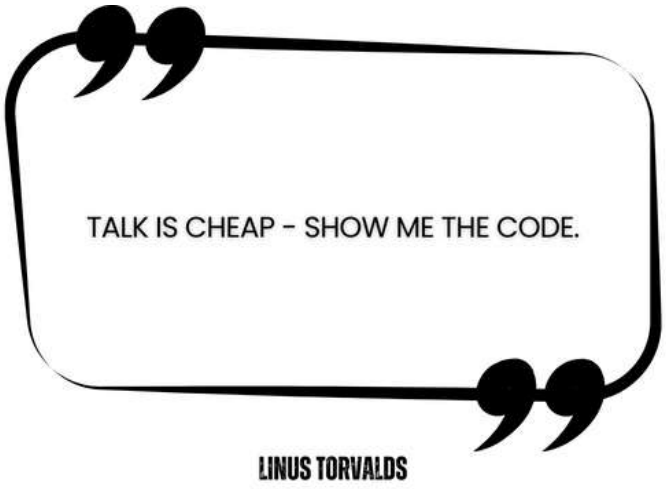
Security – The Weakest Link in the Chain



The intricacy of blockchain technology, combined with the reality that no code is completely error-free, inevitably leaves us vulnerable to security risks. These risks are compounded by the fact that human error can occur at any stage of the development, deployment, and management of blockchain systems.

Whether it's a developer overlooking a crucial vulnerability, an end-user falling prey to a phishing scam, or an administrator mishandling secure keys, the human element introduces a layer of unpredictability and vulnerability. As blockchain technology continues to evolve and integrate into various sectors, acknowledging and proactively addressing these human and technical vulnerabilities becomes crucial for building more secure and resilient systems.

A Dark Cloud Hanging Over



This year, while not as tumultuous as 2022, has still seen its share of hacks, highlighting that the industry still has a lot to learn and mature. These incidents ranged from protocols audited by multiple 'top-tier' firms, like Euler or Kyberswap, to unaudited ones like Stars Arena, and even included rug pulls that went unnoticed by Certik. No protocol will ever be 100% secure, regardless of how many years it has been in production or how talented its contributors are.

Two of the biggest hacks involved Mixin, with a staggering $200M loss, and Euler, with losses of around $197M; in total, the industry has suffered $2.12B in hacked funds this year.

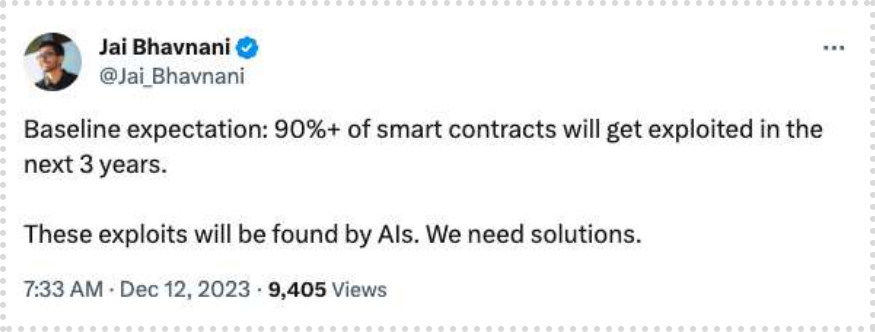
However, a positive development has been the difficulty faced by hackers in getting away with the stolen funds. The collaborative effort of the DeFi community in tracking stolen funds in real-time has led to the successful recovery of assets on several occasions, including the Euler hack.

It's reassuring to see an increasing number of white-hat hackers, independent auditors, and bug bounty programs but events like the bug in Vyper's compiler, which impacted protocols such as Curve, Alchemix, and JPEG, can't be overlooked.

However, these incidents underscore the need for more funding and support for small security teams working on complex areas like compilers, which is crucial for gaining institutional adoption.

This year's notable hacks, including those on Euler and Multichain, as well as others like Kyber, reveal various vulnerabilities. To be blunt, there's a lot of room for improvement when it comes to incident response and communication.

Image: Jai Bhavnani's Prediction on Smart Contract Exploits

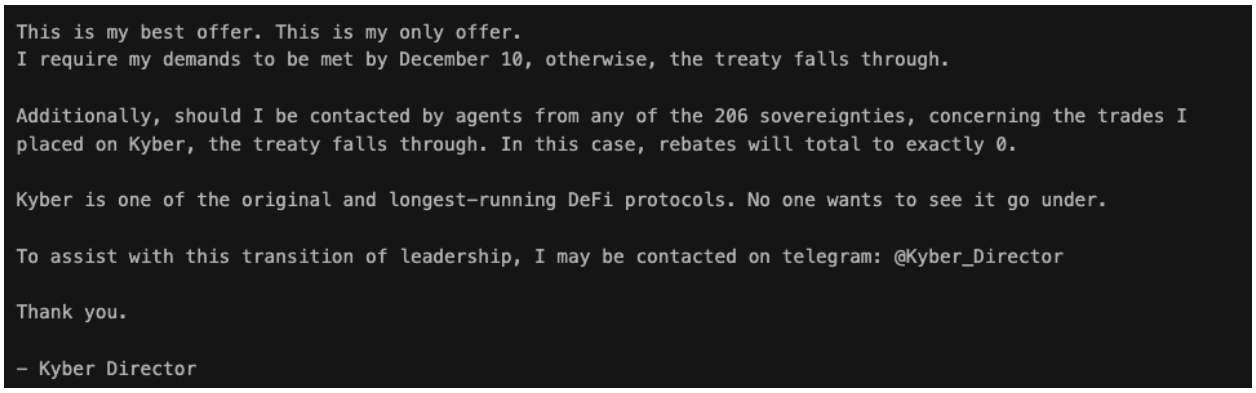


Source: Jai Bhavnani (Twitter)

The Vyper compiler issue demonstrated that protocols can be compromised by mistakes outside of their immediate scope. The concept of endogenous collateral, such as using LUNA to back UST or employing illiquid governance or LP tokens as collateral, presents challenges in pricing, liquidation, or unwinding insolvent positions.

We have also witnessed that the persistence of teams can lead to the recovery of funds. In the past, when a protocol was hacked, it was over. Whereas now, we have precedents of teams getting more sophisticated in how they communicate, offer bounties, and negotiate with hackers.

Image: Kyberswap Exploiter Negotiates



Source: Kyberswap (Exploiter On-Chain Message)

We have also had circumstances where the opposite has happened, i.e., the recent Kyberswap exploit. It is also important to note that not all exploits are a result of coding errors; economic attacks are also a risk, as demonstrated by Avi Eisenberg's attempt to exploit Mango Markets.

Following the incident which involved Michael Egorov's loan collateralized with $CRV, we anticipate a rise in DAOs and companies specializing in risk management. These entities will likely offer services similar to Gauntlet or Block Analitica, providing guidance on setting parameters and continuous monitoring and assessment of collateral assets for protocols like Compound, Aave, or Maker.

We also expect the emergence of more money markets offering permissionless opportunities to use long-tail assets as collateral. We will discuss the differences of products vs protocols in a separate section as well.

Looking ahead, it is still prudent to exercise caution when interacting with any DeFi protocol. The possibility of sophisticated hacking attacks and exploits is never-ending and even well-established, thoroughly audited protocols are not immune to record-breaking hacks.

Even though the smart contracts live on the actual blockchain, there are still many intermediate steps that we need to take before interacting with them, i.e., frontend interfaces, CDNs, RPC providers, and domain registration.

Images: Top 10 DeFi Hacks by Dollar Value

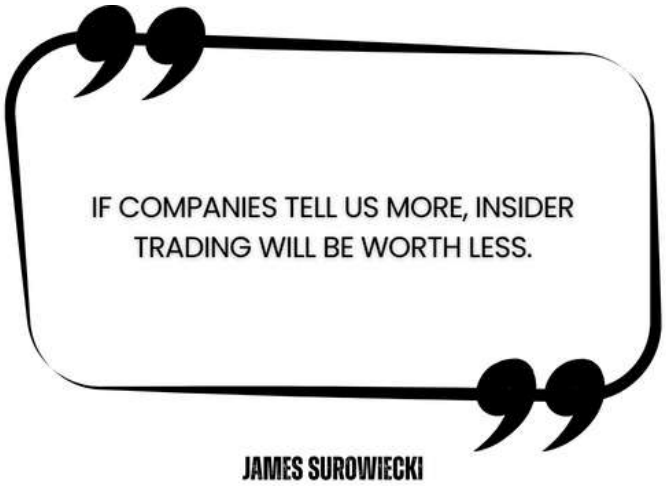
Name	Date	Chains	Classification	Technique	Amount lost
Ronin	23 Mar, 2022, 00:00		Infrastructure	Private Key Compromise...	$624m
Poly Network	10 Aug, 2021, 00:00		Protocol Logic	Access Control Exploit	$611m
Binance Bridge	6 Oct, 2022, 00:00		Protocol Logic	Proof Verifier Bug	$570m
FTX	12 Nov, 2022, 00:00		Infrastructure	Private Key Compromise...	$450m
Wormhole	2 Feb, 2022, 00:00		Protocol Logic	Signature Exploit	$326m
Gate.io	21 Apr, 2018, 00:00		Infrastructure	Private Key Compromise...	$235m
Mixin Network	23 Sep, 2023, 00:00		Infrastructure	Database Attack	$200m
Euler Finance	13 Mar, 2023, 00:00		Protocol Logic	Flashloan Donate Functi...	$197m
Bitmart	4 Dec, 2021, 00:00		Infrastructure	Private Key Compromise...	$196m
Nomad	1 Aug, 2022, 00:00		Protocol Logic	Trusted Root Exploit	$190m

Source: DefiLlama

It's important to remember that security in the crypto world is not absolute. Risks can also include off-chain backend services, social engineering, and even threats to physical security. Regardless, we are very glad to see how teams and communities get together every time there is a vulnerability.

Every time there is a hack or problem the community gets together and tracks the funds, making it much harder for attackers to cash out. This is a unique strength of crypto, where everyone is rowing in the same direction to make the industry more resilient over time.

The Future of Auditing



In the world of blockchain and DeFi, evaluating the expertise of auditing firms is tricky and it can be a dangerous game to claim that one auditing firm is ‘better’ than another. There aren't yet universally accepted standards to measure their skills, and most of the current participants in the DeFi community lack the experience to make informed judgments about them.

There's room for innovation and experimentation, particularly in how auditing firms are incentivized to ensure thorough and effective audits. Chainlight.io made a name for themselves through their performance in hacking competitions, often ranking in the top three. Their achievement in identifying a complex ZK-proof forgery bug in ZKSync is particularly impressive, as this type of bug is generally not well understood, let alone caught, by audit firms.

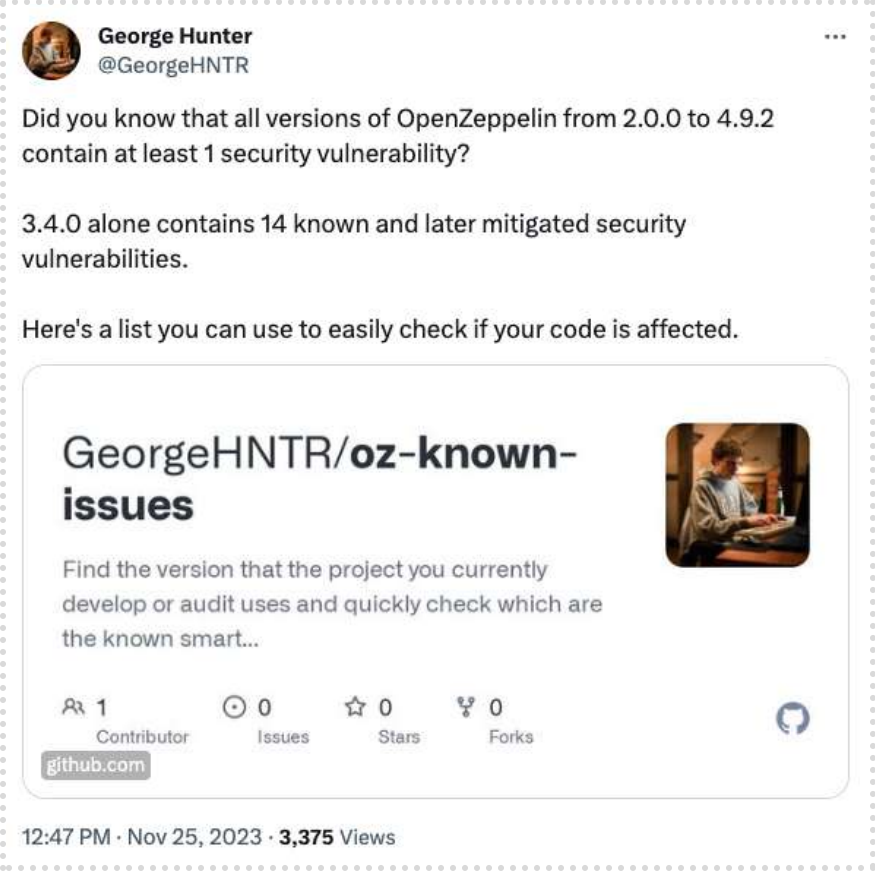
Their success in these competitions can encourage other firms to participate more actively in such events, enhancing their skills and demonstrating their capabilities to potential clients. We are glad to see the popularity of bug bounties, but we would like to encourage more competition-based environments as an extra step to make the industry even more resilient.

Another area of conflict is usually due to high costs for audits. As an example of a rule-breaker, Guardianaudits.io adopts a unique payment model where they charge only if they find vulnerabilities, aside from a small initial deposit.

This approach can be appealing to clients who have previously paid for audits that didn't uncover any issues/bugs, leading them to question the thoroughness of the audit. We expect to see novel payment models, most of the time coming from independent auditors or small teams that implement a pay-per-vulnerability business model.

Immunefi still stands out as the leading platform for bug bounties, offering a valuable service to protocols as a last line of defense. If a whitehat hacker discovers a bug in a live protocol, they can report it to Immunefi, which then assesses the severity of the issue and arranges payment. Bug bounties are often more cost-effective - both monetarily and reputationally - than full audits and can prevent disastrous outcomes.

Image: George Hunter on Security Vulnerabilities

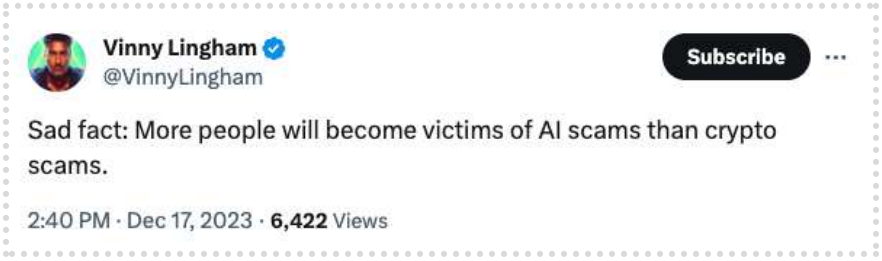


Source: George Hunter (Twitter)

For new users of crypto, as well as for institutions and large investors, a higher level of security is crucial. These groups are less familiar with the crypto-native practice of "do your own

research" and are less comfortable with the risk of rug pulls, bugs, or malicious contracts. Making these groups comfortable requires a more robust security infrastructure. It's not far-fetched to think that some of the most sophisticated hacks could have been executed by insiders or auditors with subject-level expertise.

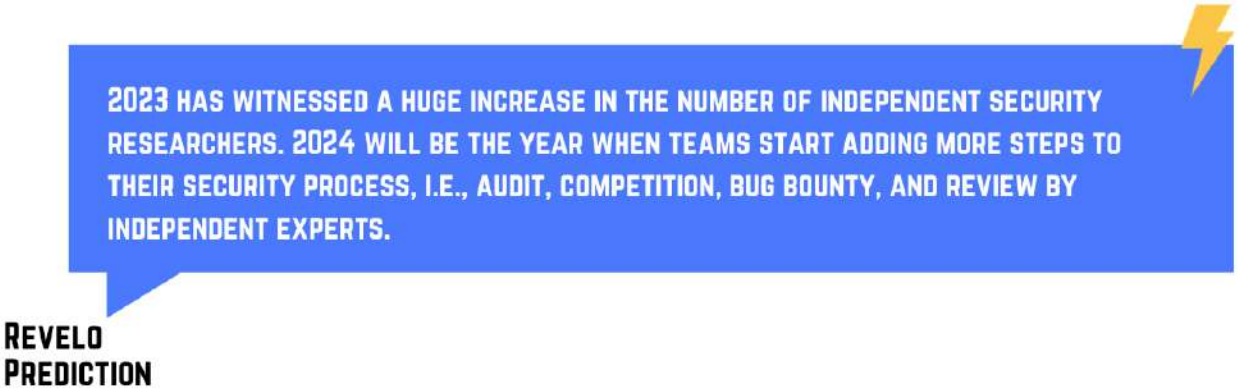
Image: Vinny Lingham on AI Scams



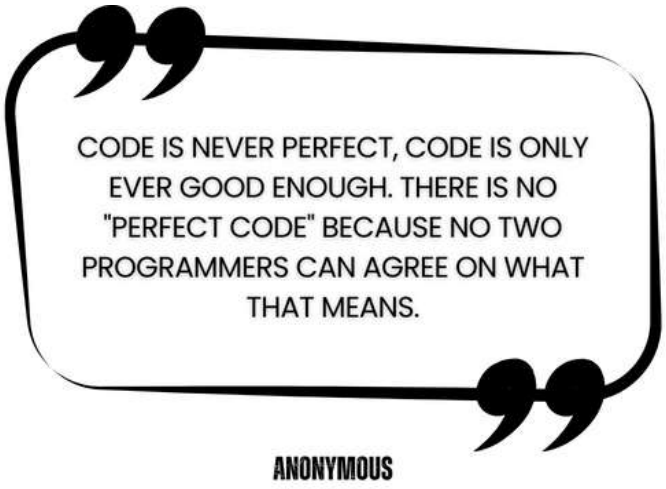
Source: Vinny Lingham (Twitter)

Finally, it is also worth highlighting that there are a lot of improvements to be made when it comes to disclosing vulnerabilities, and being transparent while not revealing too much information that could lead to future exploits.

Even though teams like Balancer and Aave have led by example, it is still very common to see auditing firms compete against each other to be the first to come out on Twitter and showcase their expertise, often making things worse.



No Such Thing as “Perfect Code”



The choice between immutable and upgradeable smart contracts presents its own set of trade-offs. Immutable contracts, which cannot be changed once deployed, are perceived as more trustless due to their unchangeable nature and lower counterparty risk. However, if bugs are later discovered in these contracts, they can pose significant risks, as there is no way to rectify them.

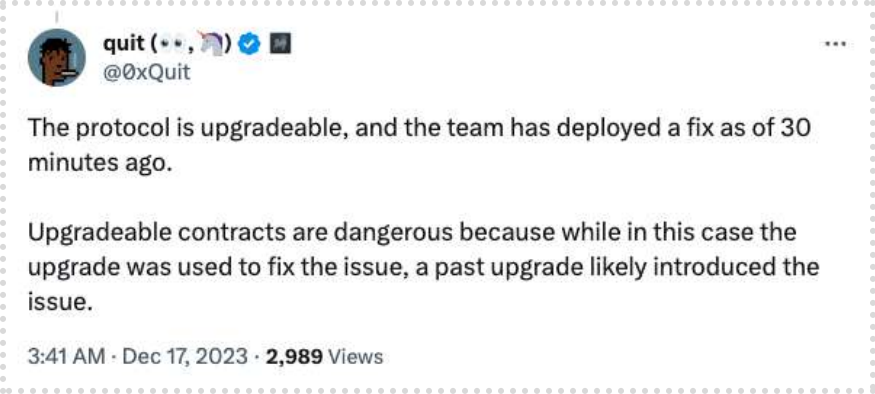
On the other hand, upgradeable contracts provide the flexibility to fix issues as they arise, but this flexibility requires careful management to ensure the integrity of the upgrade process. Even following extensive audits, it's impossible to guarantee that a smart contract is entirely bug-free.

In this context, immutable contracts with undiscovered bugs can lead to significant problems, whereas upgradeable contracts offer a safety net through the possibility of post-deployment fixes but this might introduce new problems as well. The notion of ‘perfect code’ will forever be elusive and this is due to several inherent challenges.

Table: Why Code Can Never Be Perfect

Challenge	Explanation
The Human Factor	Software development is a human-centric process. Humans are responsible for writing code, setting specifications, and developing verification tools. However, human error is inevitable, leading to potential bugs not only in the code but also in the specifications and verification tools.
Complexity of Systems	Software systems, particularly those designed for autonomous and decentralized operations, is often extremely complex. As systems grow in complexity, the likelihood of unexpected interactions and vulnerabilities rises. As a result, it becomes challenging to anticipate every possible scenario and code flawlessly for each one.
Evolving Security Threats	Security threats and attack vectors constantly evolve. Techniques and strategies that are secure today may become vulnerable tomorrow as new methods of attack are developed. This ever-changing nature of security challenges makes it hard to create code that is perpetually secure.
Resource Limitations	Ideally, having unlimited resources could lead to more thorough testing and verification of software. However, most projects face resource constraints, which can limit the depth and breadth of testing and verification efforts.

Image: Quit on Upgradeable Contracts



Source: quit (Twitter)

Taking into consideration the ethos of crypto, which is deeply rooted in open-source principles, it's important to recognize that the industry also operates in an environment characterized by open state, open entry, and open exit. This openness adds another layer of complexity and vulnerability.

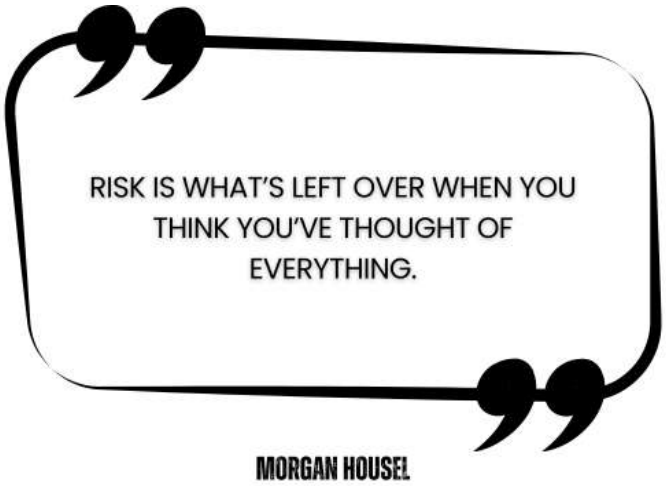
Image: The Irony of "Perfect Code"

Source: Bernard Bado (Medium)

Perhaps the safest way to build immutable code in DeFi is to adhere to first principles and strive for simplicity in code. The simpler the code, the fewer opportunities for vulnerabilities.

This is particularly crucial for codebases that could pose existential risks to the industry, such as those involved in liquid staking, staking, and collateral backing. By focusing on reducing code complexity, the industry can aim to minimize the attack surface and enhance overall security.

Multisigs as Fallback Mechanism



The use of multiple-signature (multisig) contracts has become increasingly recognized as a necessary balance between trust and security. While no code can ever be perfect, multisigs can offer an extra layer of trust. Multisigs introduce an additional layer of human intervention, which, despite its own risks, can sometimes be crucial in rescuing funds or upgrading contracts to patch vulnerabilities.

Over time, the DeFi community has come to realize that the sector may not be as utopian as it once thought. Replicating the level of decentralization and security found in Bitcoin, which still requires contributors and maintainers, is extremely challenging for other projects.

The security of multisig contracts is particularly crucial in Layer 2 solutions like Arbitrum, Optimism, and Polygon. These rollups currently employ multisig mechanisms for upgrades as a temporary safety measure while the technology matures.

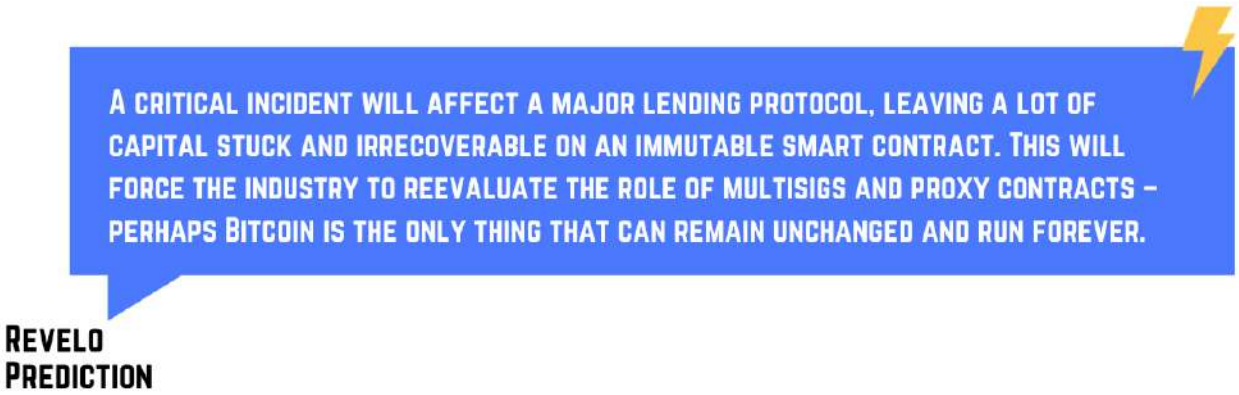
As outlined by L2Beat in their blog, L2 stages, the ultimate goal for a rollup is to gradually limit the powers of these security councils, ensuring that they only intervene in cases of serious flaws.

To effectively utilize multisig contracts, certain security measures are essential:

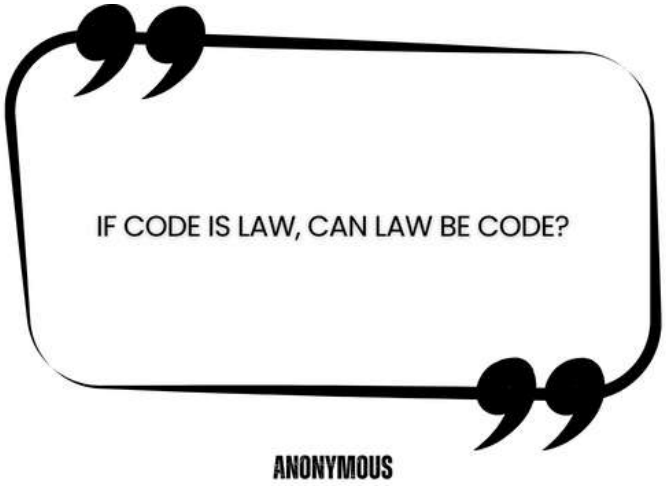
Table: Security Measures for Multisigs

Measure	Explanation
Independence of Signing Keys	Each key used in a multisig setup should be independently secure, with a strong preference for cold storage to reduce the risk of digital compromise.
Public Knowledge of Members	Ensuring that the members of the multisig are publicly known adds a layer of transparency and accountability. This public knowledge can help build trust within the community and provide a clear understanding of who is responsible for key decisions and actions.
Management by Independent Parties	To minimize the risk of collusion or compromise, different, independent parties should manage these keys.
Geographic Separation	Distributing key holders across various geographic locations enhance the overall security of the multisig system, making it more resilient to localized threats or legal pressures.

At the end of the day, we believe that while multisig contracts add a layer of human intervention, their strategic implementation can enhance the security and flexibility of DeFi projects, especially when dealing with the inherent limitations of smart contract code.



Code is Law



In 2023, several incidents brought the idea of "code is law" into the spotlight. This concept suggests that the rules and agreements encoded into smart contracts are legally binding and should be enforced as such. However, the application and interpretation of this idea are complex and not without its nuance.

It's crucial to understand that "code is law" does not provide a free pass for unethical or illegal activities like market manipulation or hacking protocols. The notion that one can simply abide by the technical rules of a code and claim innocence in the face of manipulative or harmful actions is a misinterpretation of this principle.

Just because a smart contract operates as programmed, it doesn't mean that exploiting its vulnerabilities or using it for malicious purposes is legally or morally justified.

While smart contracts have the potential to be legally enforceable, the extent to which they can replace or complement traditional legal frameworks is very much still undetermined. The ability of blockchain to provide a credible, neutral, and efficient medium for recording and enforcing agreements adds a unique dimension to the discussion.

As a result, smart contracts can act as digital versions of traditional contracts, with elements like offer, acceptance, and consideration. The code acts as the offer, and the use of private keys for transactions signifies acceptance.

Smart contracts are significant because they can be responsible for substantial values and imply certain duties of care. Therefore, not unlike traditional contracts, when individuals and organizations rely on smart contracts, they may come to harm if terms are not upheld.

Like traditional contracts then, they should prevent and remedy harm if the coded promises aren't fulfilled. Parties involved in smart contracts, including individuals, corporations, or DAOs, are seen as entering legal agreements.

However, not all smart contracts carry the same legal weight and the notion of “code is law” exists on a spectrum. Their significance varies from simple agreements to complex financial transactions. Therefore, there will be ongoing disputes over the extent to which code should be considered law, especially in economically significant cases.

Image: Machine98 on ‘Code is Law’

Source: Machine98 (Twitter)

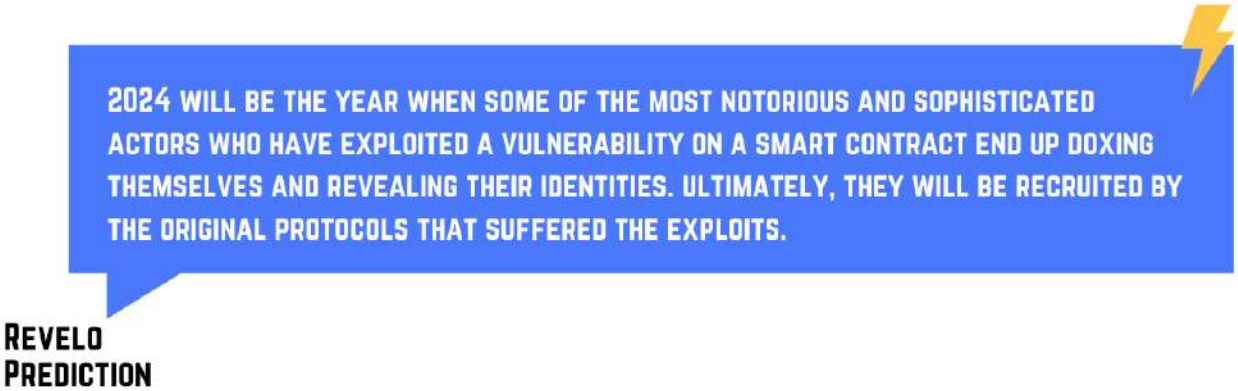
Well-designed smart contracts function predictably and minimize risks associated with the contract, i.e., smart contract risk, and the host blockchain, i.e., chain risk. Legal duties can be implied from the contract's code, statements, and marketing and parties need to ensure that their smart contracts reflect their promises and representations.

The blockchain offers a neutral, decentralized medium for recording and enforcing agreements, and has the potential to reduce society’s reliance on traditional legal infrastructure. Due to the potential of large ramifications, we believe that its full implementation and mainstream adoption as a legal framework is still years away.

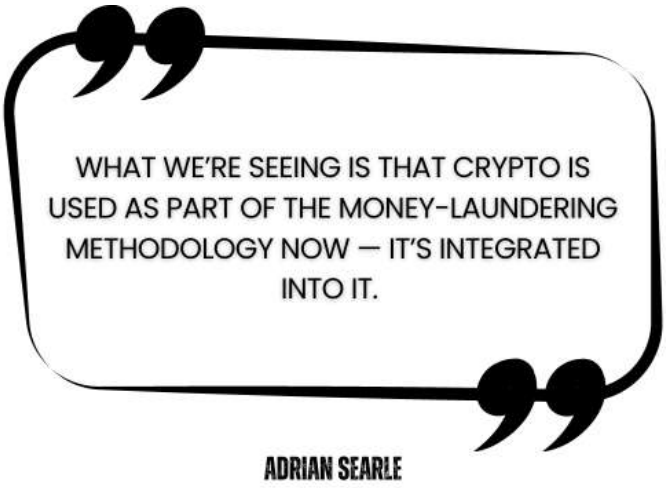
Image: Code is NOT Law - Avi Arrested

Source: Rekt.news

With that said, we are confident that smart contracts have a significant role to play in the facilitation of quicker resolution of property and contract disputes.



Financing Undesired Needs



Despite the increasing adoption of cryptocurrencies, a common argument against their use is still their possible facilitation and funding of illegal activity. There is still a constituency of people, regulators included, who believe that these digital assets are tools for criminals. While we won't blatantly ignore the possibility, we also can't ignore the fact that any medium of exchange, including traditional ones, can be misused for illegal activities.

According to the 2022 Crypto Crime Report by Chainalysis, $18B in crypto was used for illegal activities. While significant, this pales in comparison to the estimated $2.8 trillion laundered globally in 2022.

Despite the rapid growth and adoption of Bitcoin and other cryptocurrencies, their total market size is still much smaller than that of the global U.S. dollar market and crypto criminal activity is relatively small compared to the vast amount of dollar transactions.

So while we acknowledge that the anonymous and trustless nature of crypto could make it easy for criminals to conduct illegal activity, we believe that regulators and other relevant parties need to consider other aspects before forming a hard stance.

Table: Arguments Against 'Crypto Funds Illegal Activities'

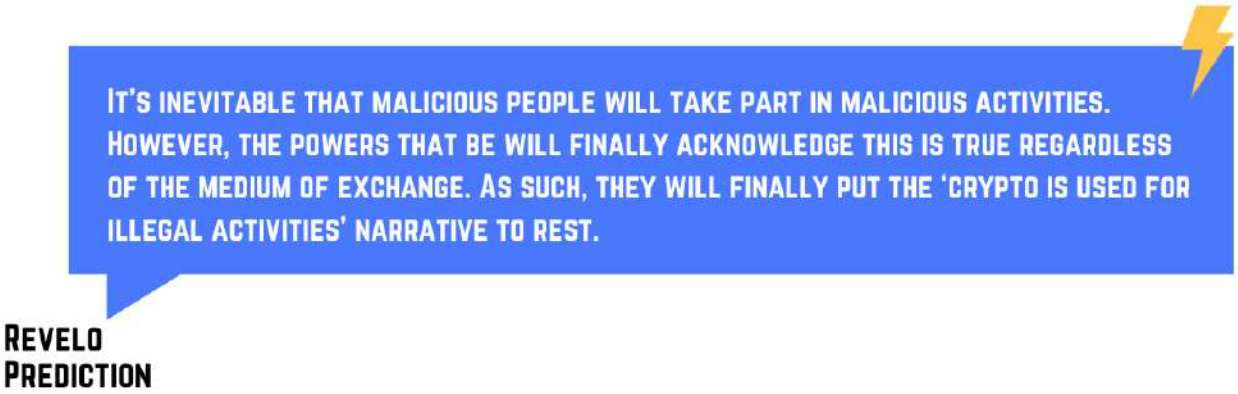
Fact	Explanation
Limited Use by Large-Scale Criminals	U.S. officials, including Treasury Secretary Janet Yellen, have testified that crypto is not a practical tool for large-scale operations like evading sanctions. Large transactions on blockchains are traceable, and the Treasury Department has not observed significant evasion through crypto.
Traditional Financial Instruments	The 2022 National Terrorist Risk Financing Assessment indicated that traditional financial instruments, including the U.S. dollar, are still the preferred tools for criminal and terror financing, not crypto.
Crypto Transparency Aids Law Enforcement	Contrary to the belief that blockchain technology hinders investigations, it actually helps law enforcement. The percentage of crypto transactions involving criminal actors is decreasing. Crypto exchanges, like Binance, have cooperated with law enforcement, providing data more quickly than traditional financial institutions. The U.S. Department of Justice successfully used blockchain tracing tools to recover over $3B in stolen Bitcoin from the Bitfinex hack.
The Need for Evolution of Money	The rapid adoption and innovation in crypto show the need for the evolution of money. Cryptographic transactions offer privacy for consumers and transparency for law enforcement, presenting a valuable use case for both individuals and institutions. Central bank digital currencies (CBDCs) are gaining interest, and financial institutions are investing in blockchain and crypto assets.

At the end of the day, we know that regardless of the playing field, if there is money to be made, bad actors will exist. We've seen it once, and we'll see it again. That does not mean we condone the action. In fact, we fully acknowledge that we suffer as a whole when notorious entities act in bad faith.

Image: Elizabeth Warren on Binance

Source: Elizabeth Warren (Twitter)

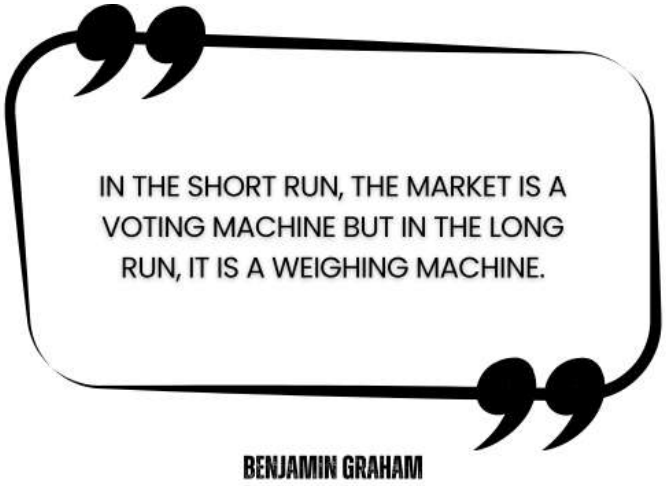
We're simply stating that regulators shouldn't let the actions of a few cloud their judgment when it comes to evaluating a technology that has the potential to affect the magnitude of positive change that blockchain and cryptocurrencies can. We also encourage policymakers to educate themselves before taking any such action.



THE BUSINESS OF BLOCKCHAIN

Section 4

THE BUSINESS OF BLOCKCHAIN



The evolution of the internet into Web3 marks a significant shift from its Web2 counterpart. Currently, Web3 faces an uphill battle due to lower switching costs, weaker network effects, and lack of economies of scale.

These challenges exist primarily due to Web3's trust-minimized, transparent, and open-source nature. And, it cannot be overlooked that user trust and therefore monetization strategies also vary significantly between the two.

Blockchain's core value proposition, as a global computing platform with user-controlled data and digital property rights, has the potential to disrupt various industries and create new internet-native business models.

In the digital art and collectibles world, Ethereum's Non-Fungible Tokens (NFTs) are enabling artists to monetize their work directly and receive royalties from secondary sales, transforming the way digital creations are valued and traded. Similarly, musicians are using NFTs to distribute their music directly to fans, bypassing traditional channels and unlocking new revenue streams.

Table: Key Differences Between Web2 and Web3 Businesses

Difference	Explanation
Switching Costs and User Loyalty	In Web3, users face low switching costs due to the trust-minimized and transparent nature of platforms. This contrasts with Web2, where users often develop a strong loyalty to platforms, influenced by factors like brand recognition and customizability.
Network Effects	Web3 experiences weaker network effects compared to Web2. This is largely due to the product homogeneity that stems from the open-source nature of Web3 projects.
Economies of Scale	Unlike Web2, Web3 lacks significant economies of scale. The addition of more users to dApps doesn't lead to substantial reductions in operational costs.
Monetization and Trust	Web3 platforms, exemplified by Uniswap, prioritize transparency and low switching costs. Uniswap's decision not to take a cut from liquidity provider fees highlights this. This approach differs from Web2 aggregators, which focus on user aggregation and control. This aggregation and control leads to a "winners-take-all" phenomenon, where users stick with established platforms.
Ease of Trusting New Platforms	The transparent and open nature of Web3 platforms reduces the perceived risk of switching to new platforms, as operations are open to public scrutiny through their code.
Non-Custodial Interactions	Web3 interactions are often non-custodial, lowering barriers to switching compared to Web2 services that may require custody of user assets.

In gaming, NFTs have introduced dynamic in-game economies and secondary markets, enhancing the gaming experience and creating new economic opportunities. Brands are also leveraging NFTs in loyalty programs, offering unique, personalized experiences to customers and using digital twins for innovative marketing strategies.

For enterprises, Ethereum's smart contracts are streamlining processes in finance and supply chain management, automating business functions for increased efficiency and transparency. In the realm of digital content, NFTs are redefining the value of intellectual property, leading to the emergence of secondary markets where digital content can be traded.

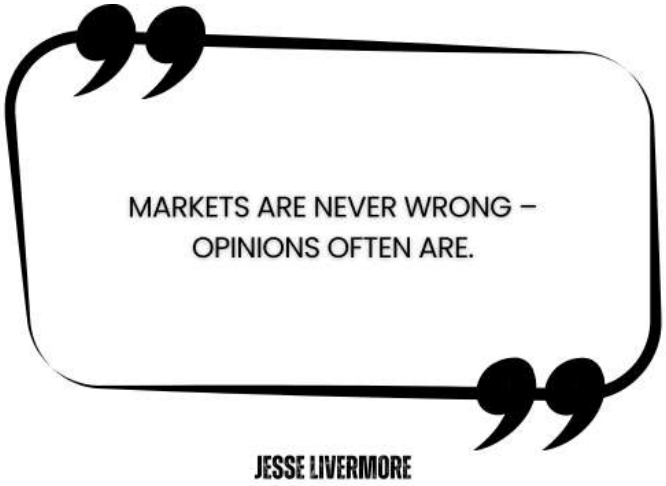
Digital wallets are evolving beyond simple transaction tools, becoming integral to digital identity and enabling personalized marketing based on user history. In social media, new Ethereum-based protocols are allowing creators to maintain and grow their follower base across platforms, enhancing user engagement.

Image: Ben Thompson on Aggregation

Source: Li.Fi (Article)

Lastly, the rise of decentralized marketplaces for cloud computing resources is offering cost-effective alternatives for web hosting and cloud services, demonstrating the vast potential of blockchain technology in transforming traditional business models and consumer experiences.

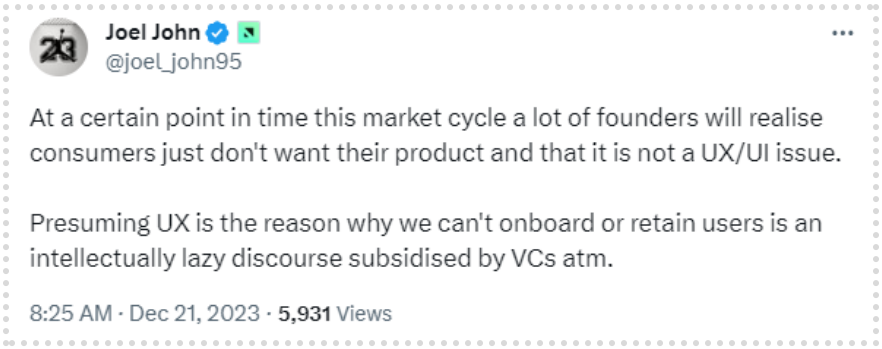
On a Quest To PMF



Nowadays, it is very easy to take for granted the maturity of traditional markets. However, this has been a long journey that began in 1602 with the establishment of The Dutch East India Company, the world's first publicly traded company. This led to the creation of the Amsterdam Stock Exchange, marking the birth of stock markets.

Later on, stock markets expanded to European cities like London and Paris in the 1800s. In the United States, the Industrial Revolution fueled speculation in railroad stocks, culminating in the birth of the New York Stock Exchange. By the early 1900s, stock markets had become integral to the global economy. However, a lack of regulation and access to information contributed to the stock market crash of 1929 and the subsequent Great Depression.

Image: Joel John on Products



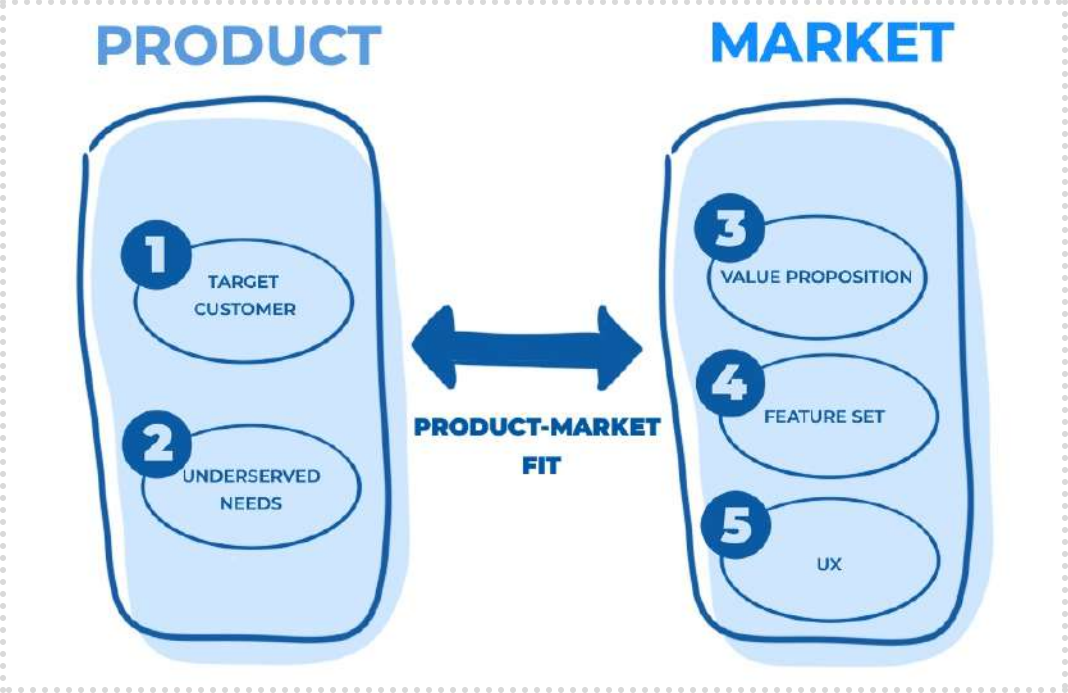
Source: Joel John (Twitter)

After all, it is very easy to forget about all of the above when the global equities markets hold $100+ trillion of value, with about $45 trillion in the US alone. However, public blockchains have a lot of value to offer in this regard: they address the challenge of access to information through real-time transparent data.

As we get closer to the 10th anniversary of Ethereum, it is important to look back and analyze the product-market fit that the industry has experienced so far. This exercise reveals clear use cases and their potential adoption in the near future.

First, the most obvious use case is the use of crypto as an alternative store of value. This is one of the most dominant use cases so far, which also explains why Bitcoin accounts for the largest share of the crypto market.

Image: Product Market Fit



Source: AKTIA Solutions

Both Bitcoin and Ethereum offer a convenient and efficient way to own a non-sovereign store of value. At the same time, the demand for alternative stores of value has persisted despite modern monetary policies. They can also be a hedge against global collapse or the devaluation of the US dollar.

However, the US dollar continues to dominate. Nowadays stablecoins are the primary active use case, with billions of dollars deployed across multiple chains. This is particularly useful for those regions with unstable local currencies.

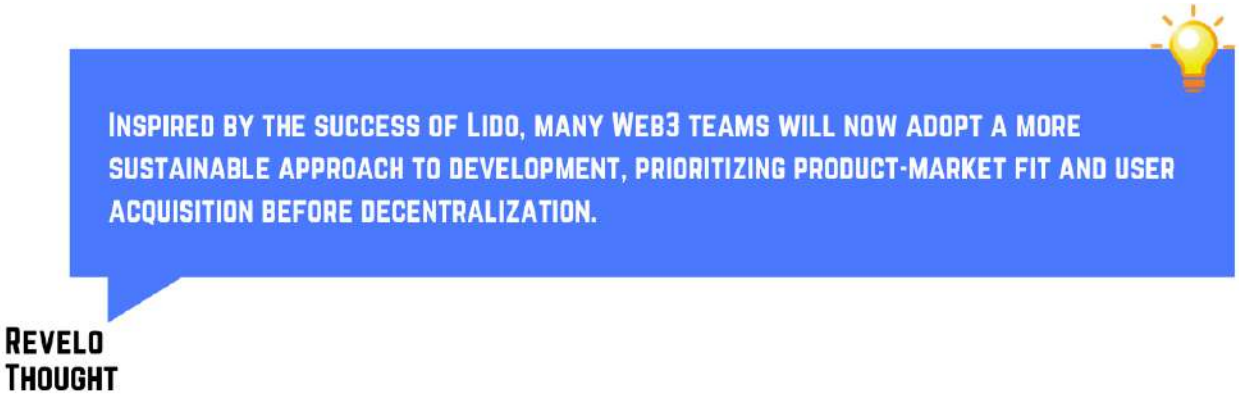
Additionally, there is no doubt that speculation and gambling are substantial use cases for crypto, but they can be seasonal and occasional. Their prominence may vary over time, but we continue to see time and time again how cult-like communities are formed around specific currencies.

That being said, despite the large number of hacks and lack of mainstream use cases, we cannot underestimate the utility of DeFi and social coordination through DAOs. DeFi enhances the utility of alternative store-of-value use cases but is currently limited and inefficient.

However, it is still a viable alternative for those who don't have access to better financial rails. Similarly, DAOs still make sense within crypto protocols, but their potential scalability is largely limited due to the subjective nature of inputs. They might find niche use cases, but they won't replace traditional organizations any time soon.

Speculation has been at the heart of driving innovation throughout history. It serves as the impetus for birthing new industries and technologies. Even though the notion of "value" is subjective and relies on human opinions and social constructs, crypto has transitioned from a phase of pure speculation to one where utility and fundamentals are gaining prominence.

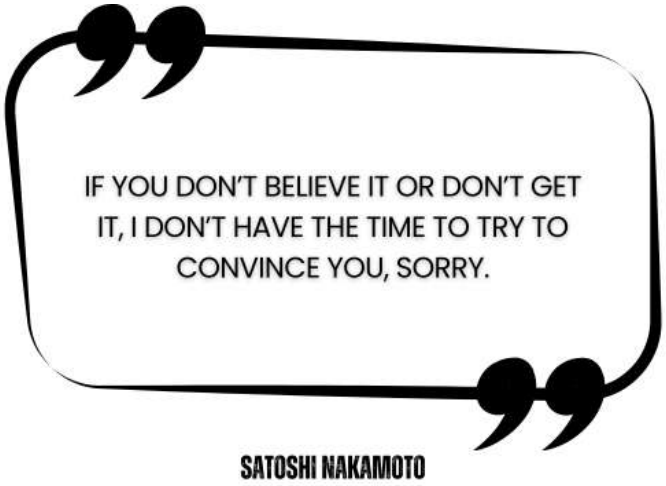
While critics have often dismissed crypto by claiming it lacks intrinsic value and backing, evidence suggests a different long-term trajectory.



BITCOIN - THE GOLD STANDARD

Section 5

BITCOIN - THE GOLD STANDARD



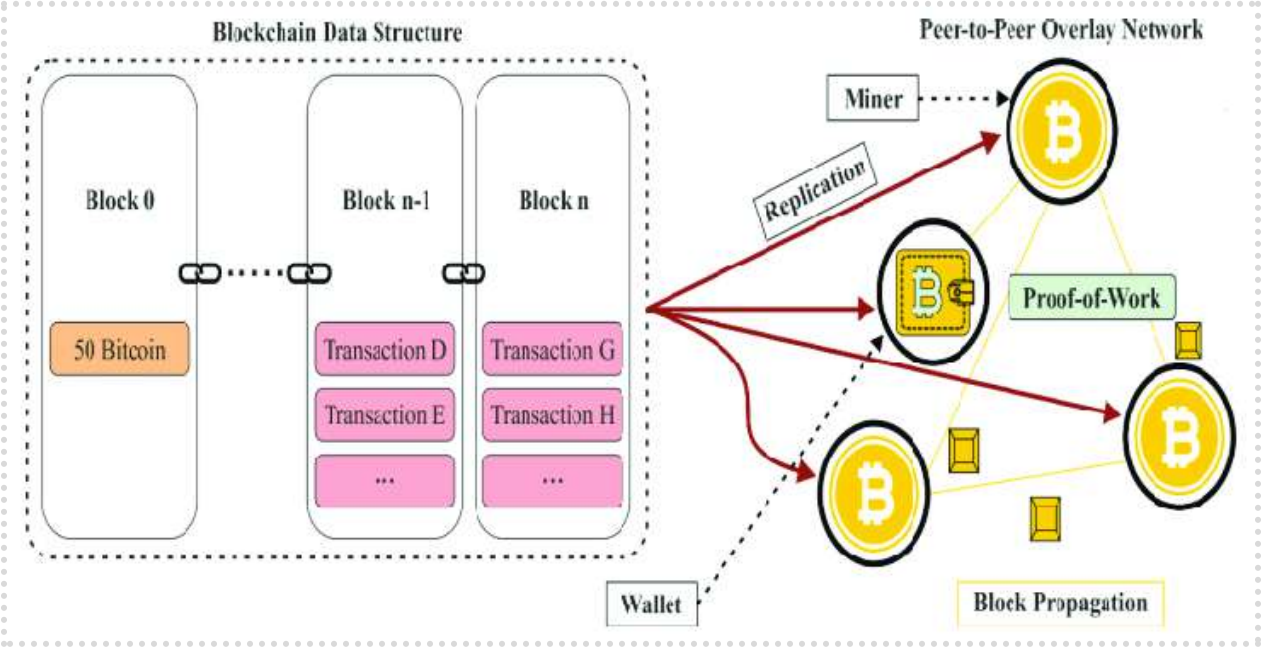
Bitcoin, launched in 2009, is a relatively young phenomenon compared to the internet, which dates back to 1994. Despite its shorter history, Bitcoin's growth in adoption has been remarkable, often catching even the most informed financial institutions by surprise. It represents a global connector, transcending traditional boundaries and offering a platform for value exchange in a world often divided by tribalism and emotion.

As an institutional-grade asset, a global remittance system, and potentially a programmable network, Bitcoin stands out as a hedge and alternative to the current financial system. The narrative keeps changing all the time. First, it was meant to be used for payments and then it became a store of value.

However, to truly understand Bitcoin, one must look into and understand its various facets: the roles of users, nodes, and miners, the differences between Proof of Work (PoW) and Proof of Stake (PoS), the history of the Blocksize Wars, and developments like SegWit, Taproot, and the Lightning Network.

Bitcoin can be more than just “lazy gold” and easier to transport. Should DeFi on Bitcoin gain more adoption the network would become programmable and unlock unprecedented yield-generating capabilities.

Image: The Bitcoin Network



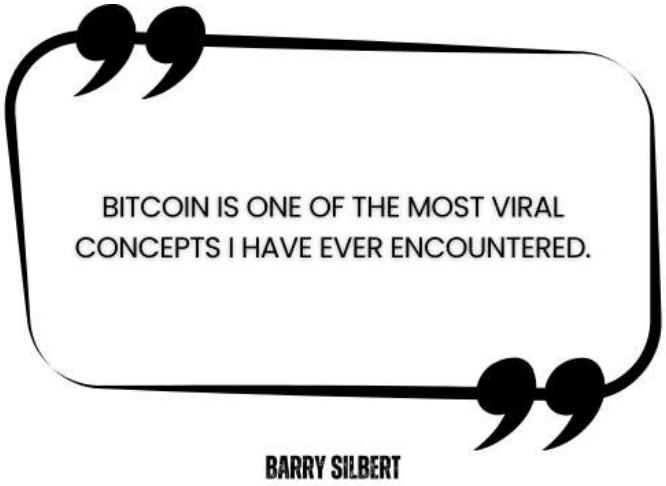
Source: ResearchGate

Rather than simply advocating for buying Bitcoin, it's crucial to adopt a "learn Bitcoin" approach. Understanding Bitcoin's history and mechanics is vital, whether you're bullish or bearish on its future. This knowledge is key to navigating (and surviving) market cycles and remaining engaged in the crypto market.

THE BITCOIN NETWORK WILL BE FORKED AT LEAST ONCE IN 2024. THIS WILL HAVE NO IMPACT ON ITS PERCEPTION BY INSTITUTIONS OR THE GLOBAL COMMUNITY. JUST LIKE ETH-POW, EVERYONE WILL FORGET ABOUT THE FORKED CHAIN IN A MATTER OF MONTHS - IT WILL BE FORGOTTEN.

REVELO PREDICTION

Subjective Value of Bitcoin: Perception & Narrative

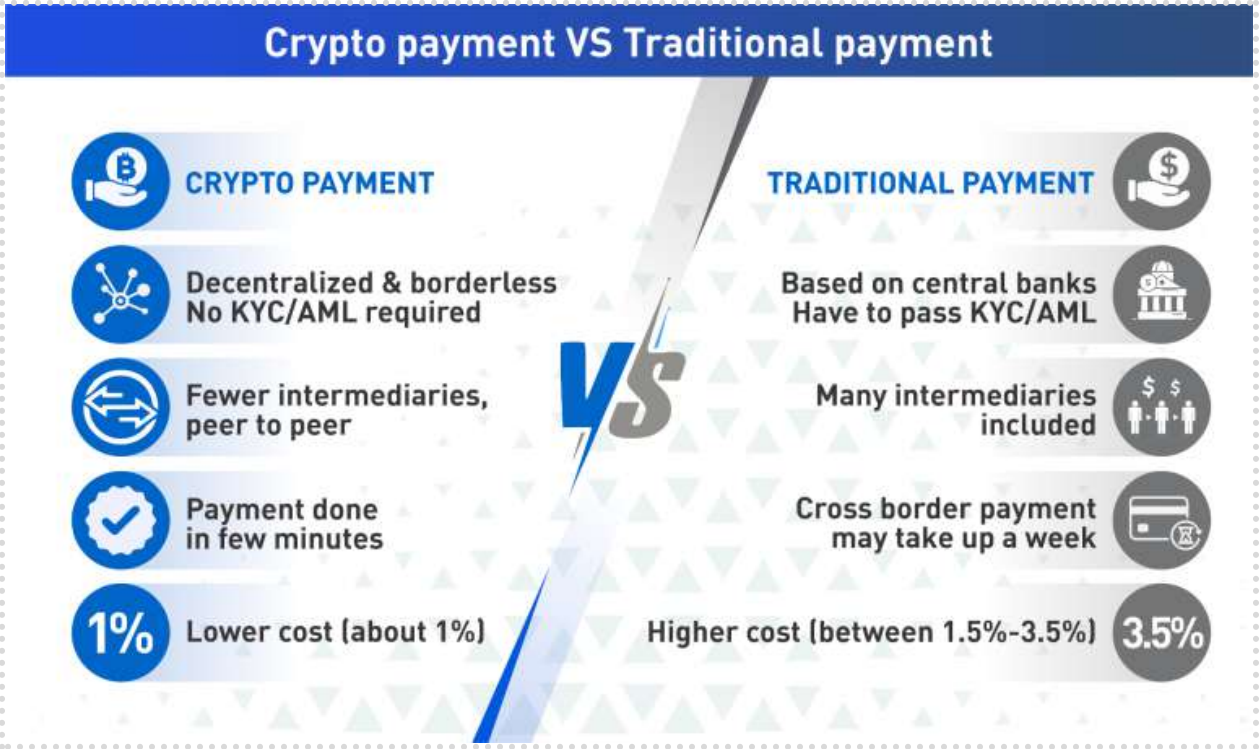


Bitcoin was initially envisioned as a "Peer to Peer Electronic Cash System," as stated in its whitepaper. Its value is subjective and varies based on perception, underpinned by the compelling narrative that surrounds it. Understanding Bitcoin's history is essential for anyone starting their crypto journey, offering lessons that are crucial for navigating this evolving space.

Bitcoin's creation was not about building an online casino or platform for speculation. Rather, Bitcoin’s creation was about censorship resistance and permissionless access to money, which can only be achieved through a decentralized network of nodes that reach consensus in a trustless manner.

The ambiguity surrounding Bitcoin's identity, whether as digital gold, a currency, or a programmable layer one, is viewed as a positive factor. The fact that Satoshi disappeared and there are so many coins that have been lost over the years makes this thesis even more attractive for people to get interested in it.

Image: Comparing the Crypto Payment System and Traditional Payment System



Source: Bitcoin.com

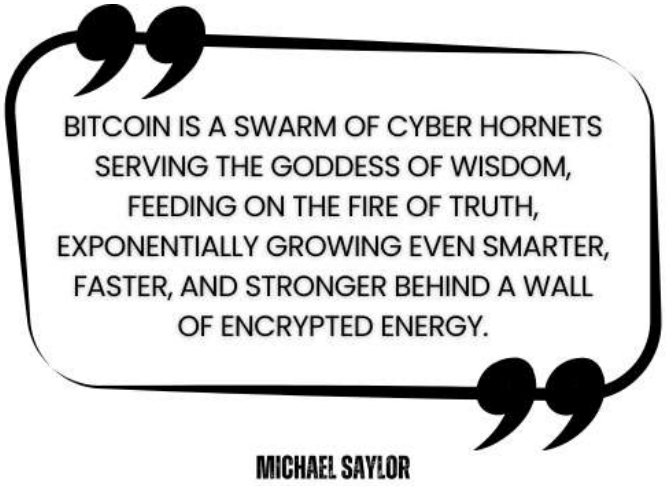
In the end, the history of Bitcoin is one of the most compelling stories to awaken the intellectual curiosity of most people, regardless of what their interests and areas of expertise are.

Most importantly, the 2023 progress from crypto winter to what might be the beginning of a bull market, is backed by strong fundamentals. Small account balances surged, reflecting broader retail participation and confidence among the long-term holders.

Image: $BTC Long/Short-Term Holder/Supply Ratio

Source: Cointelegraph

Addressing Common Criticisms of Bitcoin



While we recognize the potential of Bitcoin and its path toward widespread adoption, it's important to maintain an objective stance by considering and addressing the prevalent criticisms it faces.

In the end, BlackRock's application for a spot ETF is the realization that something of "no value" can turn into something "of value" just by capturing mindshare consistently over more than a decade.

Image: Kraken Exchange on Improved Perception on Bitcoin

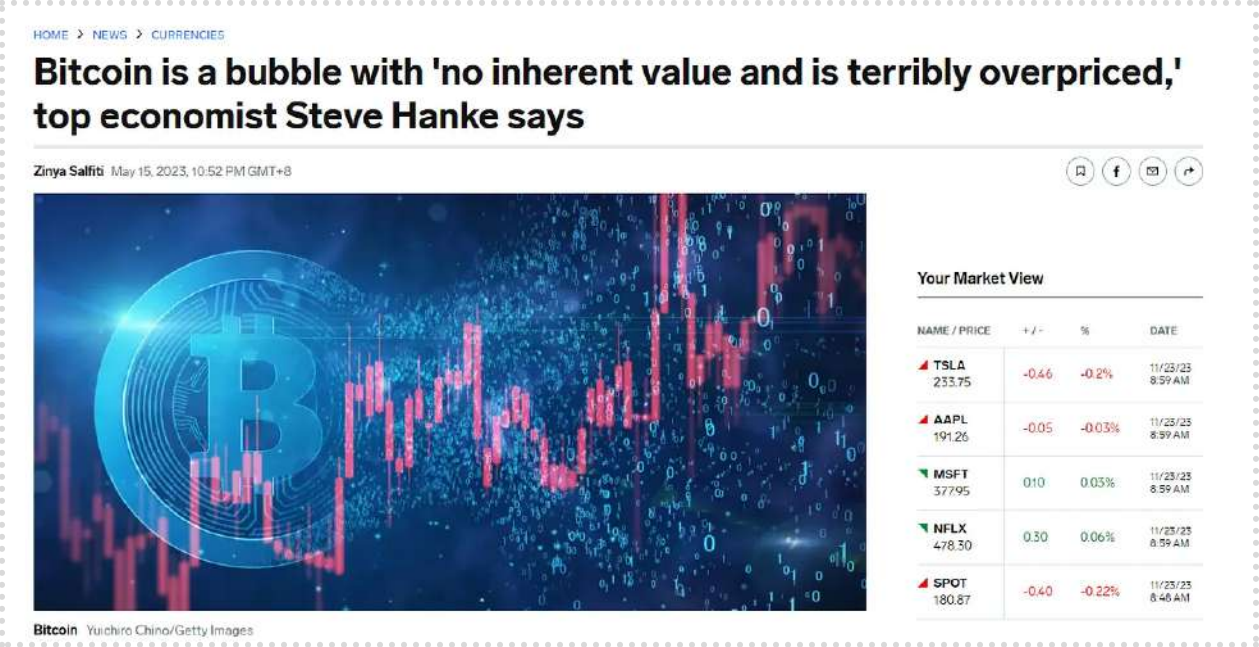
Source: Kraken Exchange (Twitter)

Table: Common Criticisms of Bitcoin and Counterarguments

Criticism	Argument
Volatility	Bitcoin's volatility is often seen as a trade-off for its supply inelasticity. As adoption grows, its volatility is expected to decrease.
Means of Payment	While prioritizing decentralization and security, Bitcoin may not be the fastest for transactions. However, Layer 2 solutions like the Lightning Network are enhancing its capacity for everyday payments.
Environmental Concerns	The majority of Bitcoin mining utilizes renewable or wasted energy. Efforts are ongoing to make mining more environmentally friendly.
Competition	Bitcoin's strong network effects and community support make it a tough competitor to surpass in the crypto market.
Backing	Bitcoin's value is underpinned by its code and the social consensus around its core properties like scarcity, immutability, and decentralization.
Code Bugs	Past bugs have been promptly resolved, and the open-source nature of Bitcoin reduces the risk of severe, irreversible damage.
Regulation	Regulatory developments can impact Bitcoin both positively and negatively. Clear regulations could aid its growth.
Interest	The ongoing interest and accumulation in Bitcoin suggest its continued relevance and value.

We believe that moving forward, there will be a significant shift in the perception of Bitcoin as an ESG investment. Despite historically being criticized for its heavy electricity use, the yearly electricity consumption from mining operations is only 137.91 terawatt-hours, according to Digiconomist's Bitcoin Energy Consumption Index, or the equivalent of Ukraine's power usage.

Image: Business Insider Headline - Bitcoin Has No Inherent Value!



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Bitcoin is a bubble with 'no inherent value and is terribly overpriced,' top economist Steve Hanke says

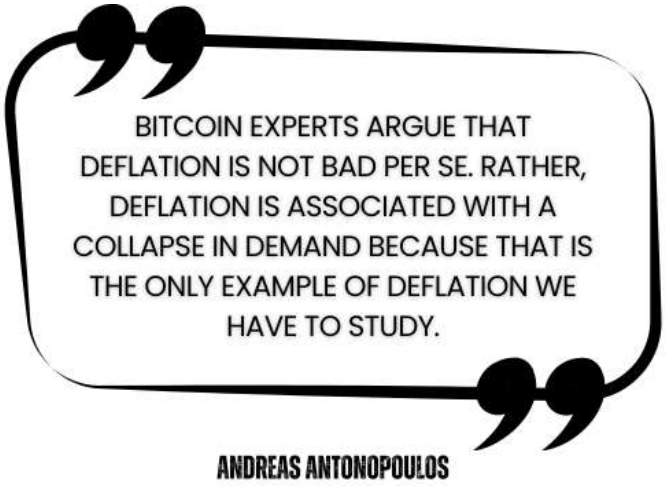
Zinya Salfiti May 15, 2023, 10:52 PM GMT+8

Bitcoin Yuichiro Chino/Getty Images

Source: [Business Insider]

As more companies recognize the potential benefits, Bitcoin mining could transform the energy landscape, especially in developing countries. Mining operations have the potential to make small, unprofitable electrical grids, often powered by local renewable energy sources, into profitable ventures. This shift could significantly enhance electricity access in these regions, turning a point of contention into a catalyst for positive change and development.

The Much Anticipated Halving



Since the last halving, the infamous event when the reward for mining $BTC transactions halved, the world of cryptocurrency has evolved in ways and at a pace that most didn't expect.

As we approach the much anticipated Bitcoin halving, the landscape for gaining exposure to Bitcoin ($BTC) has expanded significantly, becoming more accessible, decentralized, and innovative than ever before.

These advancements could be potential catalysts for more people, both retail and institution, to purchase Bitcoin before next year's halving, generating positive price movement.

As most people know, Bitcoin operates on a fixed supply model, with a total of 21 million coins set to be released gradually over time. The supply of new bitcoins decreases predictably and transparently.

Every four years, the block reward for miners, known as the "block reward," is halved. This event is referred to as the "halving." It will continue until the year 2140 when the maximum supply of 21 million bitcoins is reached.

Bitcoin's supply and distribution rules are based purely on mathematics and are designed to be predictable. The next Bitcoin halving is projected to occur on April 20, 2024, with the mining reward per block decreasing from the current 6.25 $BTC to 3.125 $BTC.

The Efficient Markets Theory suggests that if an event like the Bitcoin halving is widely known in advance, it should already be priced into the market. However, there can still be opportunities for investors to profit even when an event is anticipated.

Historical data shows that Bitcoin tends to follow certain patterns around halving events. The price typically bottoms out approximately 477 days before the halving, experiences a rally leading up to it, and then sees significant price increases afterward.

The impact of Bitcoin halvings is often analyzed using the stock-to-flow (SF) ratio. This is the infamous indicator that tricked the masses into believing that $BTC would reach $100k in the previous cycle. Regardless, the SF ratio measures the existing supply of a commodity relative to its new production.

Image: Bitcoin Halving

Source: DALL-E

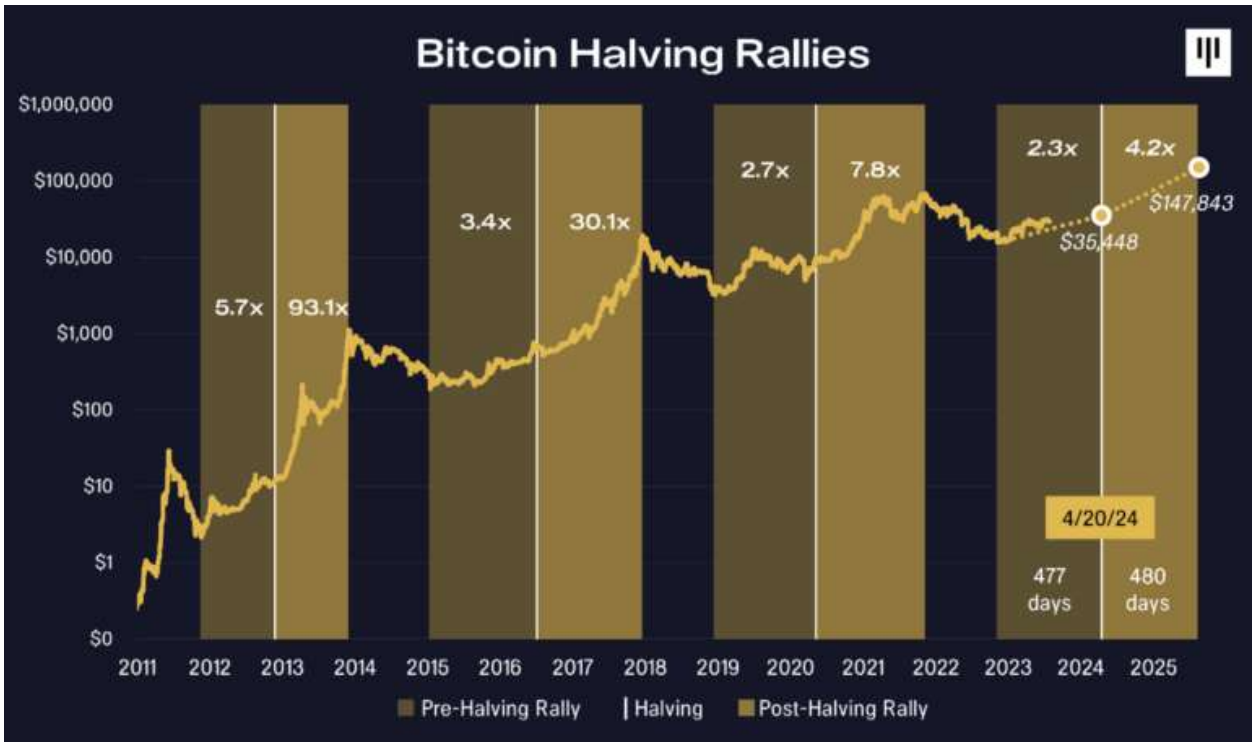
You can infer that previous halvings had a substantial impact on price because they significantly reduced the new supply of bitcoins. However, as Bitcoin matures and most of its coins are already in circulation, the impact of each halving on supply reduction decreases.

If historical patterns were to repeat, the next Bitcoin halving could see the price rise before the event and experience significant growth afterward. However, this time is different – it will be the first halving that will take place in a high-interest rates environment.

As the year comes to an end, there remains to be much anticipation surrounding the Bitcoin ETF, representing continued advancement in market accessibility. This ETF is expected to offer a more straightforward way for traditional investors to gain exposure to Bitcoin, mirroring the impact of similar financial products in traditional markets.

As an example, we are seeing that TradFi continues to bid $BTC, with $BTC CME basis at the top end of its range as we approach the end of the year. Current interest in CME futures hints at good participation once the ETF is approved.

Image: Panterra Capital Shows Past Bitcoin Halving Rallies



Source: [Pantera Capital - Blockchain Letter]

We think that this newfound ease of access and the overall increase in awareness and adoption of Bitcoin can give it the tailwinds that it needs to generate positive, pre-halving price movement. But with that said, reflecting upon cycles past, we've historically seen that halvings don't result in immediate price movement.

Rather, halvings have typically resulted in small net movements, with the 'pump' coming months after. As is often said in markets, history doesn't repeat but it tends to rhyme.

Overall, the upcoming Bitcoin halving is set against a backdrop of diverse investment and engagement options, ranging from direct purchases and innovative trading platforms to earning yield and investing in crypto-related equities. This variety caters to a wide range of investor preferences and risk appetites, making Bitcoin more accessible and versatile than in previous cycles.

Here's something to think about: when the pump does come, watch for spot tokens that are highly correlated to $BTC's price action on halving events - track the rolling correlation and rotate capital into tokens that are lagging and are likely to catch up.

The Bitcoin Spot ETF: A Multi-Billion Opportunity

The introduction of a Bitcoin Exchange-Traded Fund (ETF) is a pivotal development as it provides a regulated avenue for a diverse range of investors to access the Bitcoin spot market. This could lead to substantial capital inflows, potentially influencing Bitcoin's value, especially with the upcoming halving event.

This presents a unique opportunity for some of the largest financial institutions in the world to generate a Bitcoin-centric narrative, which is something that has never occurred before.

Image: GCR on 'Sell the News'

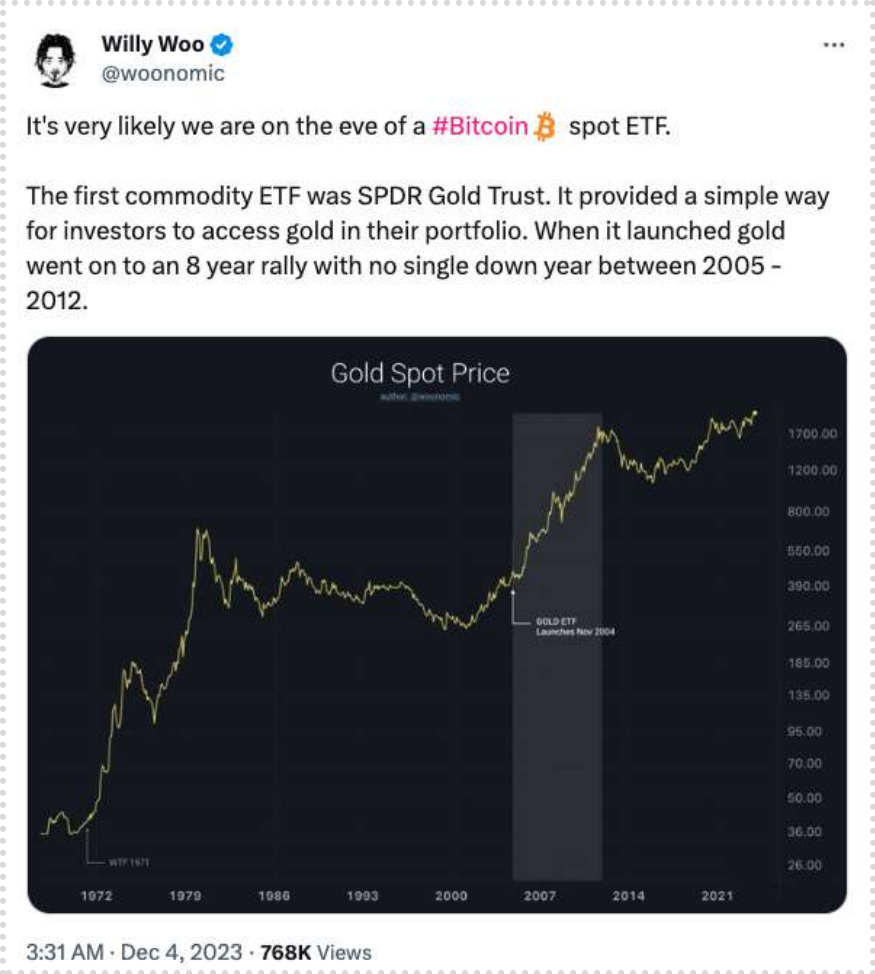
Source: GCR (Twitter)

Table: The Opportunities That a $BTC Spot ETF Introduces

Opportunity	Description
Global Access	The ETF simplifies entry into the Bitcoin market, overcoming hurdles like KYC norms, custody issues, and regulatory challenges.
Investor Diversity	It appeals to various investors, including family offices, private banks, and hedge funds, who have been keen on a Bitcoin ETF.
Market Potential	The ETF's Total Addressable Market is estimated between $10B and $20B, indicating the capital it could attract.
Demand Across Sectors	There's anticipated demand from retail, private banks, hedge funds, family offices, mutual funds, and pension funds.
Gradual Capital Inflow	Capital influx into the ETF is expected to be steady, due to factors such as the Bitcoin halving event, credit tightening followed by quantitative easing measures, and geopolitical uncertainties.
Incentives for Providers	ETF providers are motivated to promote this product due to its profitability. In 2022, over $100B in fees were collected in ETF fee revenue.
Market Perception	Approval of the ETF signals Bitcoin's legitimacy as an investable asset.
Tax Efficiency and Passive Turnover	ETFs have significantly lower capital gains payouts as a percentage of their NAV compared to mutual funds. At the same time, the majority of ETFs are passive, which typically results in lower turnover rates compared to active mutual funds. Lower turnover leads to fewer capital gains distributions.
Secondary Market Trading	ETFs primarily trade on the secondary market, which does not affect the underlying portfolio, unlike mutual fund trades that can alter the fund's composition.
In-Kind Redemptions	ETFs have a unique mechanism called in-kind redemptions, which allows for the exchange of ETF shares for baskets of underlying securities without triggering a taxable event.

It is also important to note that upon ETF approval there will be a time gap before it starts trading. This is another uncertain event for which traders might want to position, especially with the halving on the horizon.

Image: Willy Woo on the Likelihood of a $BTC Spot ETF

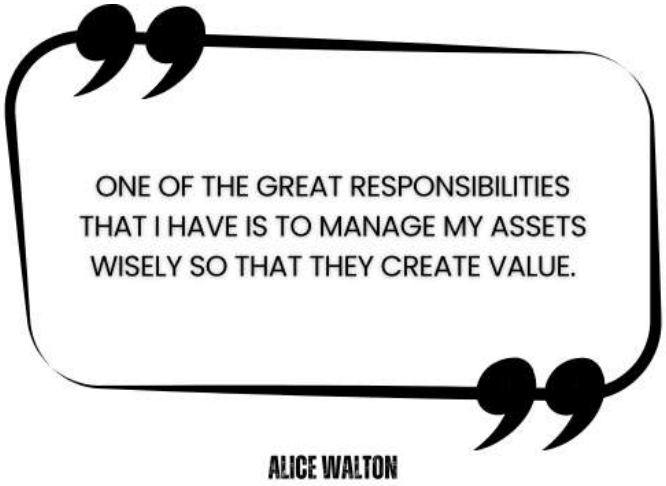


Source: Willy Woo (Twitter)

BTC WILL HIT A NEW ALL-TIME HIGH, ESTABLISHING ITSELF AS A NEW ASSET CLASS. BUT POLITICAL EVENTS AND THE POTENTIAL SHIFT IN REGULATORY STANCE WILL ULTIMATELY DICTATE HOW HIGH THE PRICE OF BITCOIN GOES. HOWEVER, EVEN IF IT ESTABLISHES A NEW HIGH, WE'RE MORE OPTIMISTIC THAT ANY BREAK OF 100K WILL OCCUR IN 2025.

REVELO PREDICTION

Bitcoin’s Price Action



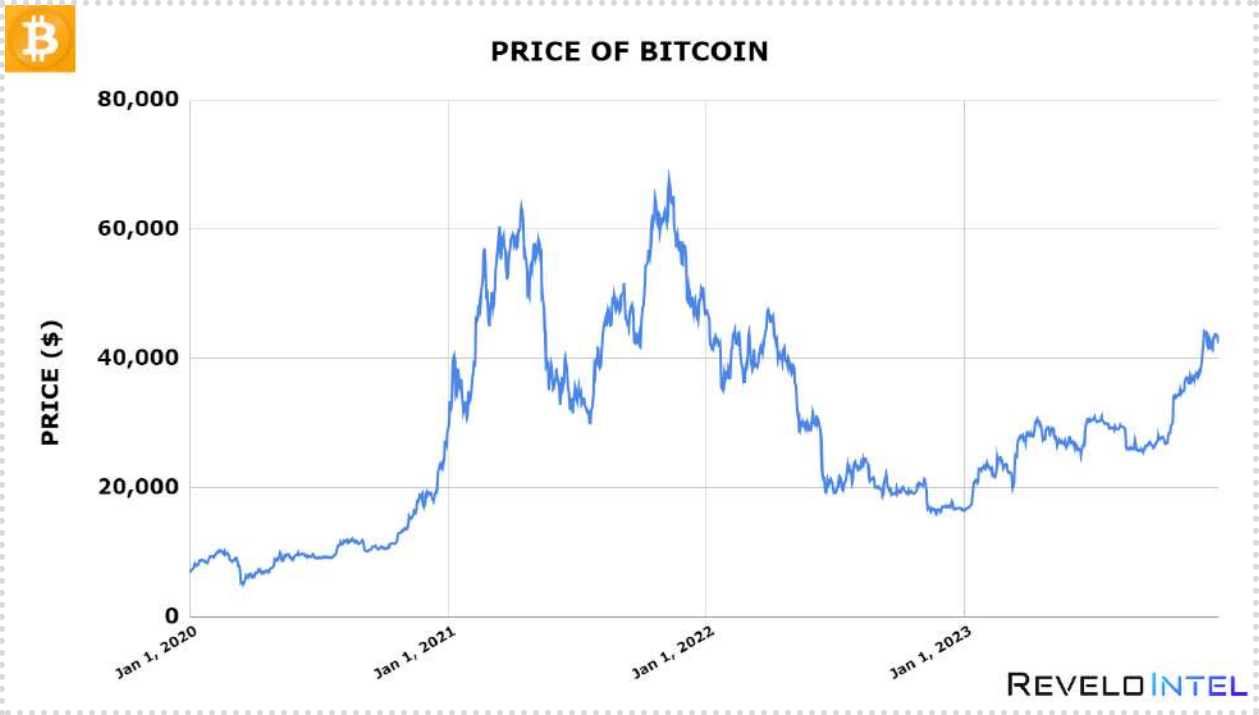
In 2023, Bitcoin has continued to demonstrate its fundamental value and resilience, solidifying its position as a globally relevant asset and network. Despite the volatility, Bitcoin has shown a long-term uptrend, with an average annual growth rate of approximately 2.3 times over the past twelve years.

Bitcoin's notable outperformance compared to traditional safe assets since the start of the year has caught the eye of the entire asset management world, including those in TradFi who were previously less engaged with cryptocurrencies.

It's no longer merely a speculative vehicle but a platform for innovation and a symbol of decentralization and permissionless access. This distinct trend has sparked curiosity about what's driving it.

There’s no doubt that the period between November 2021 and November 2022 was a bear market phase. During this time, Bitcoin's price sharply declined and it gave up a significant amount of the gains achieved between mid-2020 and mid-2021. However, it appears that we have turned the corner and Bitcoin is heading into 2024 with some serious tailwinds at its back.

Image: Price of Bitcoin on the Move



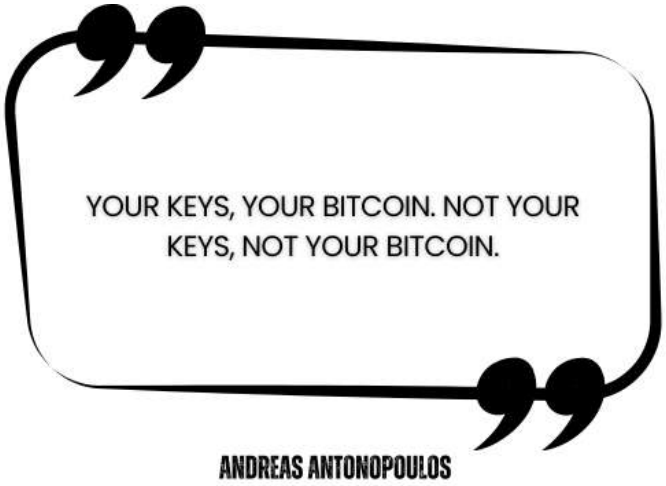
Raw Data: Token Terminal

Table: Factors That May Affect Bitcoin's Price in 2024

Factor	Explanation
Unusual Divergence	Bitcoin's performance deviating from its usual trends and other safe assets is unusual and noteworthy.
Potential for 'Recoupling'	During market downturns, Bitcoin might temporarily align again with broader market trends, offering potential investment opportunities.
Bitcoin ETF Anticipation	The expected launch of a Bitcoin ETF is a major factor fuelling a torrid run from ~$24,000 to ~$38,000 between June and November.
Looking Beyond the Obvious	The sudden, significant rise in Bitcoin's price might also suggest other influences at play, not just ETF anticipation.
Market Insight	The market might be factoring in unknown elements. This has happened before with other assets, like gold's surge in price.

With all of these factors at play, we think that monitoring Bitcoin's price movements and staying attuned to the market sentiment and news is essential. While the anticipation of an ETF is a significant factor, it's important to remain vigilant and watchful for other potential catalysts or information that explains or drives Bitcoin's performance and to understand the broader market dynamics that may influence its movements.

The Custody Problem



Crypto's biggest strength, its portability and accessibility, can also be its biggest weakness. The ability to carry around and access one's net through a simple set of words, i.e., seed phrase, is a great proposition. However, this ability also poses challenges, especially when it comes to integrating institutional players into the crypto space.

The debate between self-custody and third-party custody is a central aspect of this challenge. Self-custody, often epitomized by the adage "not your keys, not your crypto," offers unparalleled control over one's assets. However, self-custody is fraught with complexities and risks, such as vulnerability to phishing attacks.

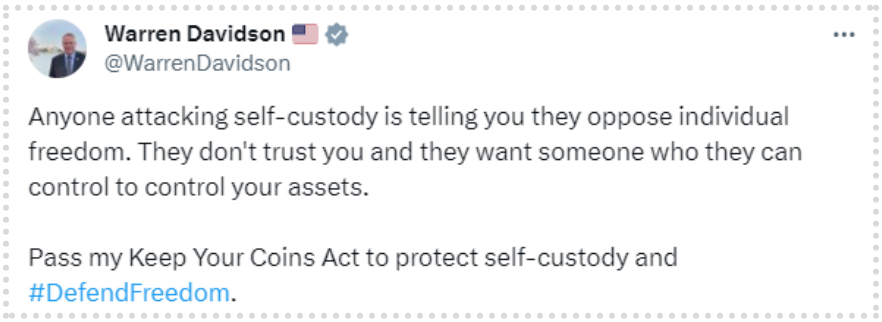
Even sophisticated institutions often grapple with the nuances of private key management. Conversely, third-party custody solutions, while mitigating some risks, introduce their own set of trade-offs, including dependency and potential security vulnerabilities.

These big institutions, with the sophistication to understand self-custody, still struggle with private-key mismanagement in the market. The industry has suffered multiple, significant incidents underscoring these challenges.

Fortress experienced a severe security breach leading to substantial customer fund losses. Similarly, Prime Trust faced regulatory scrutiny due to inadequate custody solutions, resulting in substantial financial discrepancies.

The reliance on hardware wallets, such as Trezor and Ledger, as a safer alternative for storing private keys, has proven not to be a foolproof solution. For instance, James Howells, who inadvertently disposed of a hardware wallet containing $81M in Bitcoin, illustrates the limitations and risks associated with physical storage devices.

Image: Warren Davidson on Protecting Self-Custody



Source: Warren Davidson (Twitter)

These examples underscore a clear gap in the market: the need for robust, reliable custodial infrastructure capable of supporting the stringent requirements of major financial institutions. As the crypto industry continues to evolve, developing and implementing effective custody solutions remains a critical area for growth and stability.

Scaling Bitcoin to New Heights

The Bitcoin ecosystem has seen remarkable growth and innovation in 2023, marked by a surge in Bitcoin addresses and transaction volumes, indicating an expanding user base. Despite market fluctuations, Bitcoin continues to attract advocates and dedicated supporters, showcasing its resilience and long-term appeal.

However, there remains a lack of consensus on whether Bitcoin should be treated solely as a store of value or be used to unlock DeFi use cases and drive innovation and diversity within the Bitcoin ecosystem. This has brought forth the question of whether Bitcoin should be more programmable or capital-efficient.

Some napkin math reveals that $BTC dominance fluctuates between 40-60%, while $ETH + Layer 2s + 'all dApps' have achieved an all-time high of 20% dominance of total crypto market share. Even if institutions passively hold all of their $BTC, unlocking only a small amount of $BTC liquidity for DeFi purposes could more than double the total size of DeFi markets as we know it today.

Making Bitcoin more programmable involves enhancing Bitcoin's capabilities to resemble Ethereum, focusing on smart contracts, DeFi, token standards, interoperability, layer 2 solutions, and more. This can unlock use cases such as trustless $BTC staking, native stablecoins, insurance products, and even address Miner Extractable Value (MEV) issues.

On the flip side, the psychology of BTC holders, especially those who are risk-averse, i.e., Bitcoin Maxis, prioritizes security and risk mitigation over programmability. Enhanced programmability may introduce vulnerabilities that deter such holders from participating.

Image: Bitcoin Dominance

Source: Tradingview

As more net-new liquidity comes from institutional players and non-crypto-native retail holders, the most proficient subset of builders and DeFi users can get a significant edge by not disregarding Bitcoin scaling solutions and keeping an eye on the latest developments.

One of the key developments in the Bitcoin space is the revival of BRC-20 transactions, leading to increased network activity and fees. This resurgence is highlighted by Binance's listing of $ORDI in November, the first token on the BRC-20 platform, signaling growing interest and adoption in this ecosystem.

The introduction of BitVM (Bitcoin Virtual Machine) marks a significant milestone, enabling smart contract execution and computational programs on Bitcoin's network without altering its core rules. This innovation brings decentralization, trustless Bitcoin Peg-Ins, and Turing-Complete Contracts to Bitcoin, broadening its capabilities and use cases.

There are currently multiple solutions for scaling Bitcoin, predominantly focused on facilitating faster and cheaper payments.

Table: Bitcoin Scaling Solutions

Solution	Description
Lightning Network	The most popular solution, the Lightning Network, which introduced state channels and high-speed microtransactions, still faces challenges due to its complexity and reliance on custodial wallets which goes against the core ethos of crypto.
Sidechains	Sidechains like Rootstock, Liquid Network, and Drivechain offer diverse use cases, especially in DeFi, by enabling smart contracts while maintaining a strong connection to Bitcoin's security.
Rollup Chains	Rollup chains, such as Rollkit, are gaining traction as they address scalability and efficiency issues. These solutions involve running verification code and storing result data on Bitcoin's Layer 1. While there are debates about their true nature, as they are sometimes seen as alternative Layer 1 networks that store their block data on Bitcoin, they present potential benefits.
Bitcoin Layer 2s	The growing interest in Bitcoin Layer 2 solutions compatible with the Ethereum Virtual Machine (EVM) is crucial for unlocking Bitcoin's full potential. Projects like Rootstock, Botanix, Chainway, and Rollkit, developed by Celestia, are notable examples. They enable the creation of decentralized applications, including DeFi projects, stablecoin, and exchanges, on Bitcoin.

Stacking Up Bitcoin

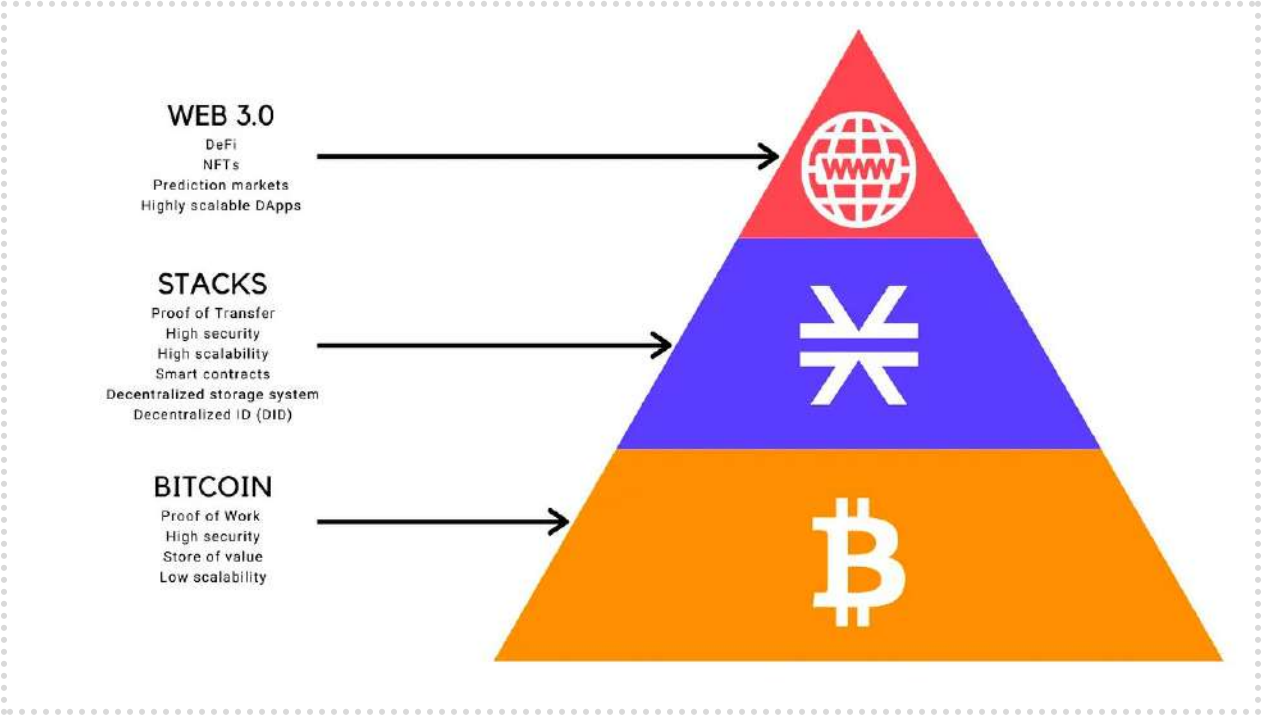
Stacks (STX) is making significant strides in the Bitcoin ecosystem, distinguishing itself with a range of innovative features. Unlike the Lightning Network, which primarily focuses on payments, Stacks is evolving into a dominant, general-purpose Layer 2 solution for Bitcoin. Earlier this year, we shared our thesis on Stacks in an Analyst Insight - read it here.

S - Secured by Bitcoin's hash power.
T - Trust minimized peg mechanism, see sBTC whitepaper.
A - Atomic swaps and assets owned by $BTC addresses.
C - Clarity programming language for safe and secure contracts.
K - Knowledge of the full state of the Bitcoin network.
S - Scalable and fast transactions that settle on Bitcoin.

Interoperability is a major focus for Stacks, especially with the upcoming Nakamoto Upgrade. Stacks will introduce new subnets that will support various programming languages and execution environments, including Ethereum Virtual Machine (EVM) subnets and Rust VM. This expansion will open doors to a wider range of developers and applications.

The integration of WebAssembly (WASM) support directly at the Stacks Layer 2 level is also underway, further enhancing the platform's flexibility and appeal. And after the Nakamoto upgrade, $STX will inherit Bitcoin's full hash power, significantly enhancing transaction security and resistance to reorganization.

Image: Stacks Architecture



Source: Trevor Owens (Medium)

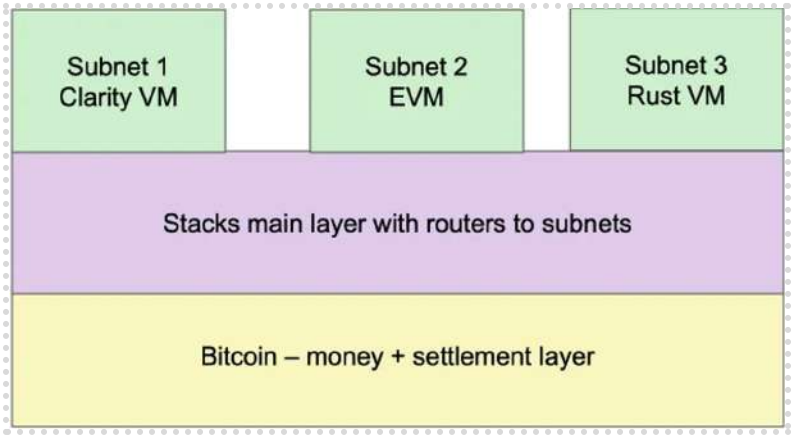
The introduction of sBTC within the Stacks ecosystem will allow for the direct pegging to raw Bitcoin. While this system is trust-minimized rather than completely trustless, it represents a secure and practical solution for using Bitcoin on the Stacks network without altering its operational codes.

From a regulatory standpoint, $STX stands out as the first token to achieve SEC compliance. While many other major tokens continue to undergo the battle with the SEC to ward off the label of "security token", $STX will not be distracted by legal fights going forward. This compliance shields $STX from potential legal challenges that other major tokens might face, allowing it to focus on growth and development.

In terms of market valuation, STX's Fully Diluted Valuation (FDV) of $1.2B is noteworthy, especially when compared to the higher FDVs of recent Ethereum Layer 2 protocols like Celestia, Optimism, and Arbitrum, whose FDVs stand at $5.5B, $7.4B, and $10B respectively.

The vesting schedule of $STX is another critical aspect, with about 75% of its tokens vested, similar to established projects like Solana. This is in stark contrast to newer chains like Arbitrum, which has a vesting schedule of only 13%, and Optimism and Celestia, which have vesting schedules of 20% and 15% respectively. This schedule plays a vital role in balancing the circulating token supply and maintaining its value.

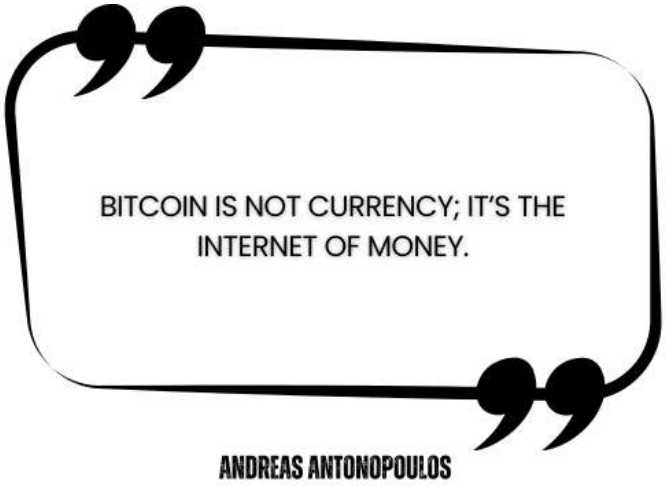
Image: Stack's Nakamoto Upgrade



Source: Flagship (Artcicle)

Lastly, the growing number of developers working on $STX indicates a rising interest and potential for innovation within the Stacks ecosystem. This growth in developer engagement is a positive sign for the platform's future, suggesting a broadening scope of applications and use cases.

DeFi on Bitcoin



For some, Bitcoin is ultrasound money. For others, it's just a memecoin. Regardless, Bitcoin has a story to tell, and that's what counts most. This year, Ordinals have proven to be the first step in turning $BTC into more than a simple store of value that simply sits in cold wallets doing nothing productive.

Nearly 37 million Ordinals have been inscribed so far. While Ordinals bring dynamism to Bitcoin, they are not without controversy. Some Bitcoiners express concerns about potential technical and regulatory risks and believe that Bitcoin's narrow focus should be maintained.

A Bitcoin is considered dormant if it has not moved for more than a year. We can see in the chart below that the number continues to increase over time, implying a greater and greater number of holders who refuse to move their coins and thus sell them.

Similarly, the purple line represents the number of Bitcoins mined by miners who have not moved them.

Image: Dormant Bitcoin

Source: BiTBO

While some may say that their stance is unreasonable, at the same time, the Bitcoin network is not meant to be programmable. It does support smart contract capabilities although the Script programming language is not Turing-complete to limit the attack surface.

Currently, P2PKH (Pay-to-Public-Key-Hash), P2SH (Pay-to-Script-Hash), DLC (Discrete Log Contract), time-locked transactions and multisigs dominate the scene, but Taproot opened up the doors for a more efficient and private network.

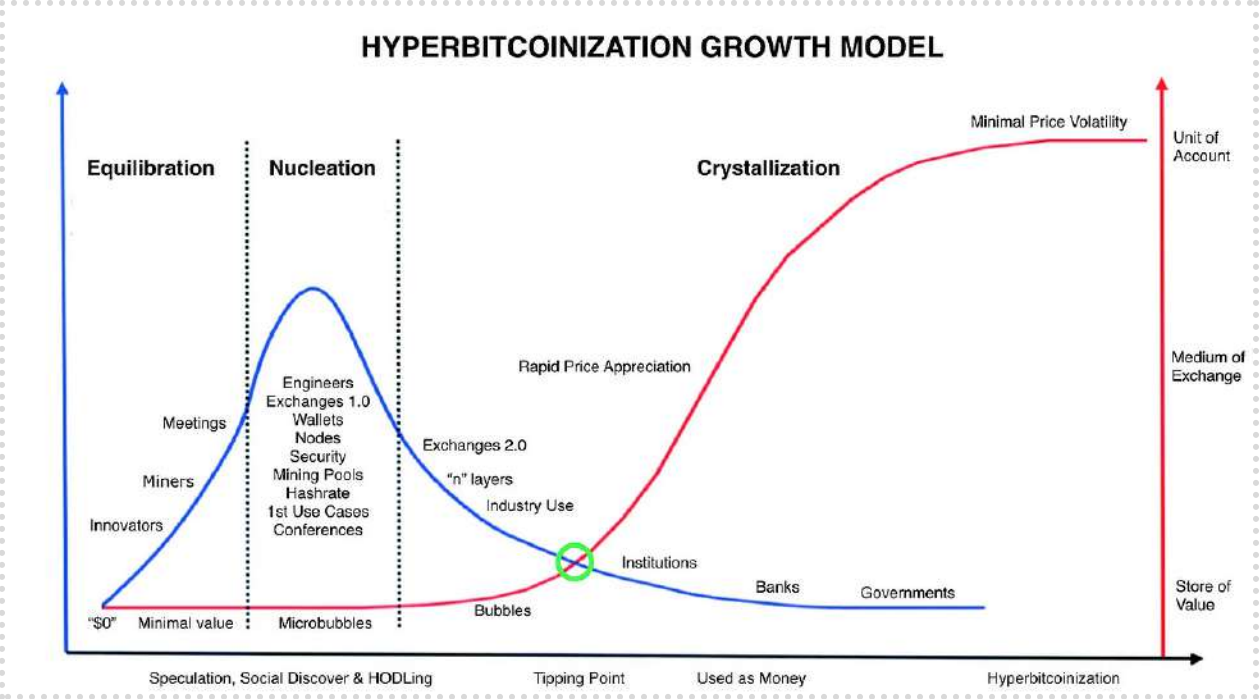
The Taproot upgrade unlocked more flexible authorization mechanisms for transactions, improving privacy, and scalability, and giving birth to use cases such as Ordinals. For instance, Ordinals were enabled by SegWit and Taproot, allowing for the storage of images, videos, and media.

Still, the idea of enhancing Bitcoin's capabilities beyond being a store of value is a topic of ongoing debate within the community. Nonetheless, there are multiple reasons to believe that this might be about to change.

In 2024 we will continue to see the evolution of this sector. Right now some of the emerging “tribes” include Stacks, the Lightning Network, Ordinals, new, token standards (like BRC-721E,

SRC-20, RUNES, and ORC-Cash), sidechains (like RootStock, Threshold Network or Liquid), and various rollup solutions, including Botanix Spiderchain Layer 2, ZK rollups, Urbit architecture, and BitVM.

Image: Classic Crystal Growth Model in Context of Bitcoin Adoption



Source: ObiWan Kenobit (Medium)

It's important to note that these arguments are part of an ongoing discussion about the evolution of Bitcoin's role and capabilities. While Bitcoin's core value proposition as digital gold remains intact, exploring additional use cases and enhancements is driven by the desire to maximize its utility and address both scalability and security concerns. Ultimately, the future development of Bitcoin will depend on the consensus of its community and stakeholders.

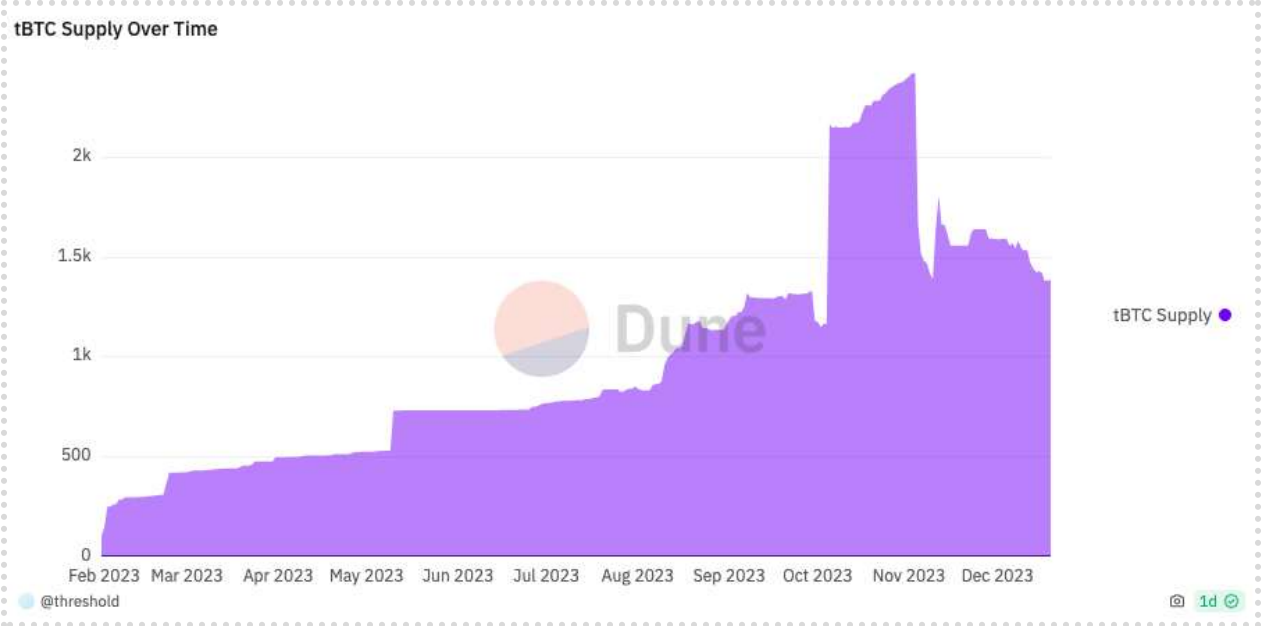
Table: Reasons Why Bitcoin Might Move Beyond a Store of Value

Reason	Explanation
Market Share	Bitcoin has a significant market share in the crypto space. Unlocking a portion of its liquidity for use in DeFi could substantially increase the size of the DeFi market.
Halving Events	Bitcoin halving events reduce mining rewards and may lead to a decline in the number of miners and potential security risks. Increasing network activity and fees through smart contracts could help offset these effects, ensuring the long-term security of the Bitcoin network.
Pending ETFs	The approval of Bitcoin spot ETFs and other institutional investment vehicles can significantly increase market accessibility and demand. This could have a profound impact on Bitcoin's price and market stability, as well as boost investor confidence.
Unspent Transaction Output	Bitcoin's UTXO model has advantages over the account model used by Ethereum, especially in certain use cases. It offers improved privacy, simplified verification, and security benefits. It is also suitable for atomic swaps and executing simpler smart contracts.
Demand for Blockspace	Increased demand for Bitcoin's blockspace, as seen during the minting of NFTs, has led to high transaction fees. Solutions are needed to address these scalability issues and make Bitcoin more usable for various applications.

With every halving, Bitcoin experiences a security reduction. Up until now, this has largely gone unnoticed. This is due to the significant price appreciation, with $BTC more than doubling in price every 4 years. However, as the asset class matures, the probability for $BTC to keep doubling in price becomes slim.

It should be noted that the demand for tokenized Bitcoin is quickly increasing. tBTC developed by Threshold Network has started permeating DeFi apps, along with continued demand for wBTC throughout the year; see chart below.

Image: tBTC Supply Over Time



Source: Dune

In the end, we believe that innovation is vitally important in keeping Bitcoin relevant and attracting the best talents in the crypto space. Experimentation is what will keep Bitcoin from becoming an eventual relic.

Inscriptions – Feature or Bug?

The debate surrounding Bitcoin Inscriptions has generated significant discussions in the Bitcoin community, with some arguing that it's a bug that compromises Bitcoin's security, while others view it as a valuable feature.

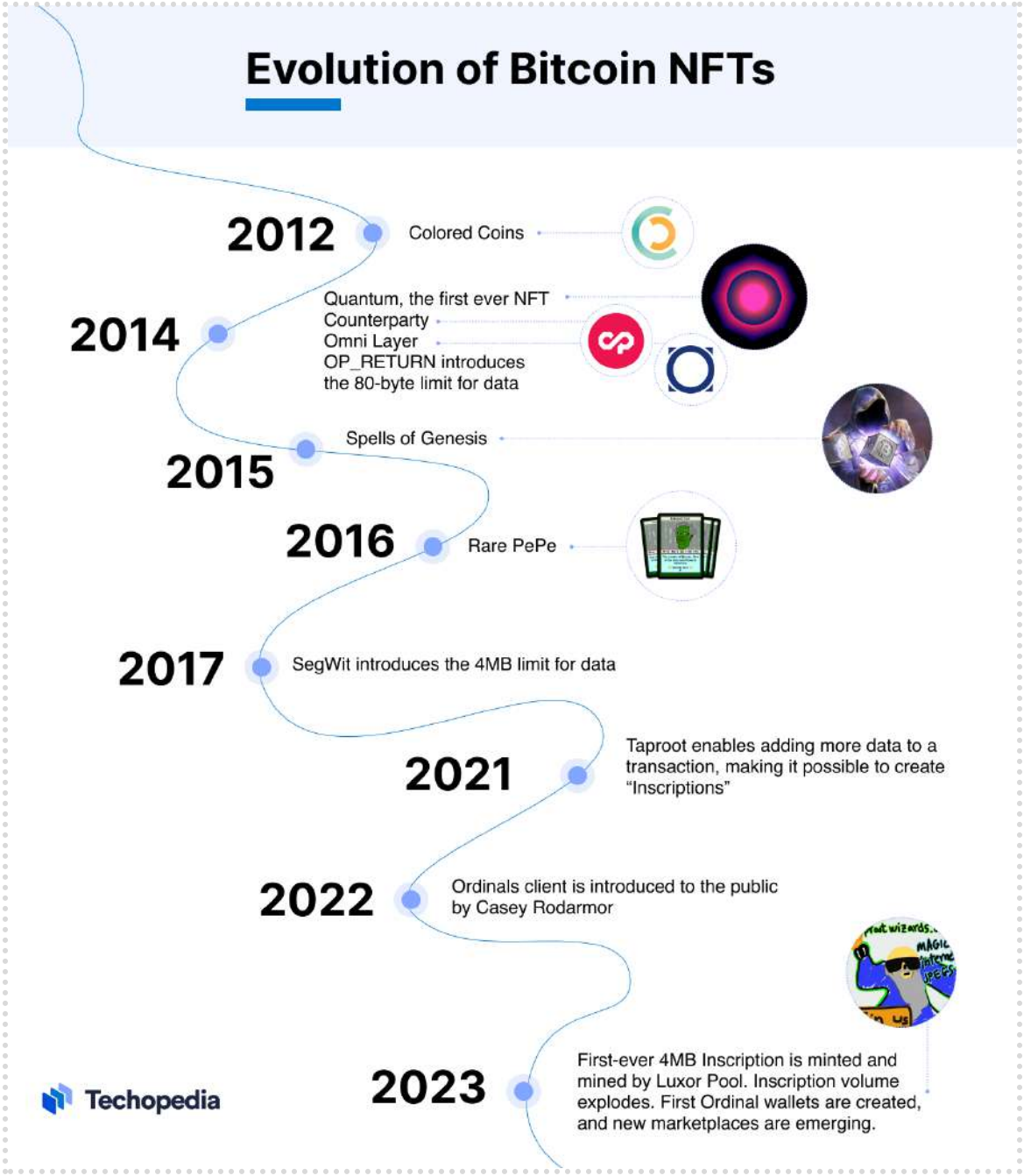
Image: Hexn.io on Bitcoin Ordinals

Source: Hexn.io (Twitter)

Casey Rodarmor's "Ordinal Theory" allowed for the tracking of individual Satoshis, the smallest units of Bitcoin, by assigning a unique identifier to each one. These individual Satoshis

could then be "inscribed" with arbitrary content, such as text, images, videos, etc., effectively creating Bitcoin NFTs.

Image: The Evolution of Bitcoin NFTs

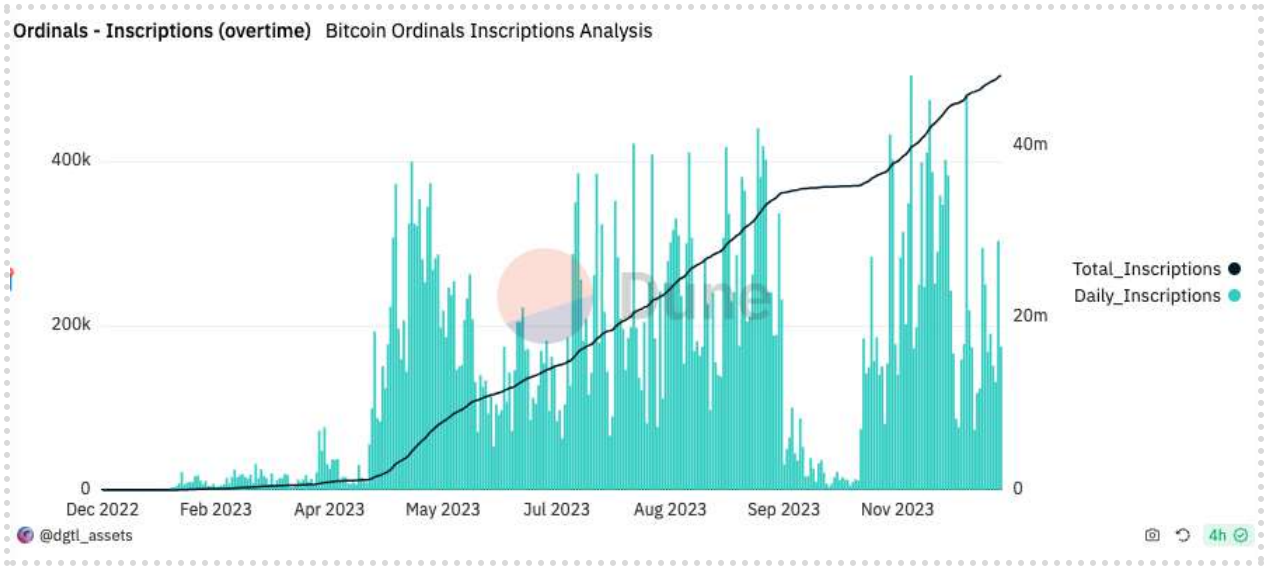


Source: Techopedia

One side of the debate questions whether inscriptions affect the security of the Bitcoin network. This can be paradoxical since it's usually argued that the number of full nodes is a critical metric for network security.

The popularity of inscriptions has led to increased interactions with the Bitcoin network, potentially increasing the number of full nodes, which could enhance security.

Image: The Number of Bitcoin Ordinals Inscriptions



Source: Dune

At the same time, the security of a blockchain network is not solely dependent on the number of full nodes but on users' interest in the correctness of the ledger. As long as users find value in the ledger, they will care about its security.

In its current state, Inscriptions have increased the number of on-chain interactions as well as network fees, which makes the network more sustainable in the long term when inflationary emissions dry out.

In a way, this paradigm shift can bring forth the under-discussed topic of sovereign rollups. Inscriptions can be seen as a form of sovereign rollup, utilizing Bitcoin as a Data Availability layer.

This allows for open protocols and data formats, with execution and verification occurring off-chain. While this model has drawbacks, such as high transaction fees, it also offers advantages in terms of open protocols and data sharing.

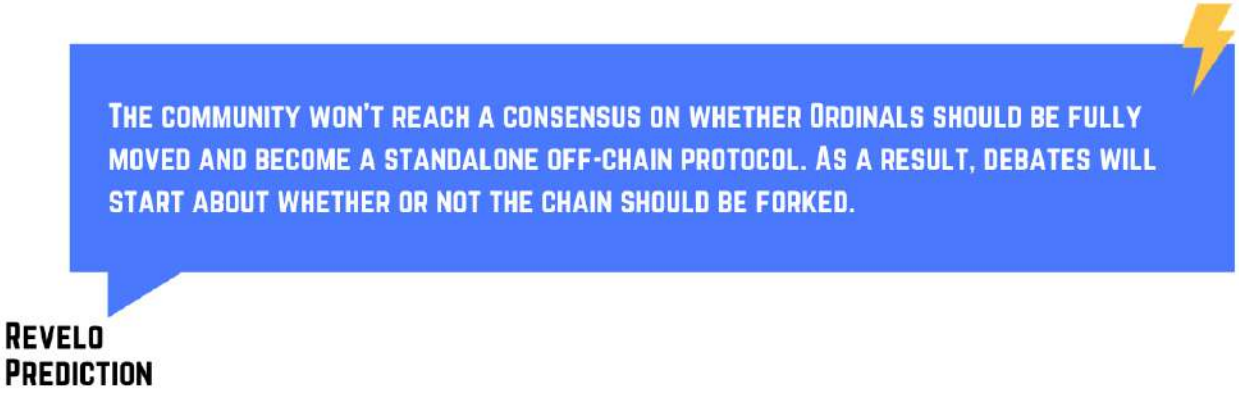
In the case of Layer 2s on Bitcoin, this is critical to understand. Multiple Layer 2s could then share the same data rather than compete for space. This contrasts with Ethereum's Layer 2 solutions, which operate independently without data sharing.

Image: Adam Back on JPEGs on Bitcoin

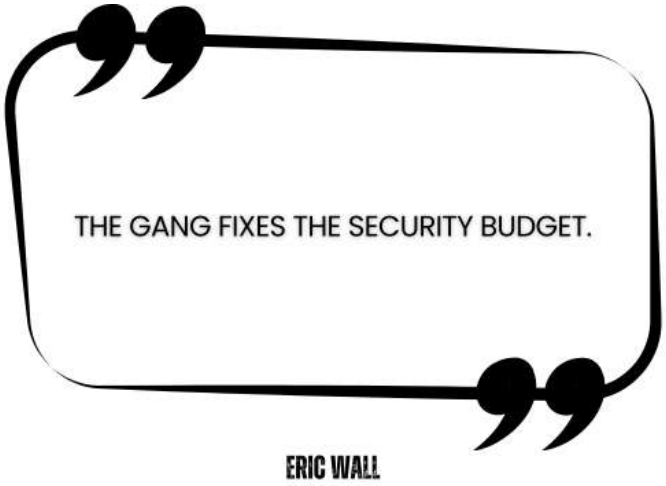
Source: Adam Back (Twitter)

Nevertheless, we must also acknowledge the concerns around bloating the UTXO set with Inscriptions. Given the current skepticism of the most purist $BTC holders, it makes sense to start thinking about future solutions that replace Inscription with hashes.

This would result in the development of an off-chain protocol that maintains the benefits and use cases of Inscription while being more friendly with the underlying Bitcoin chain.



Inscriptions – A New Distribution Mechanism



It hasn't only been Bitcoin and BRC-20 where Inscriptions have had an impact. It's made an impression on all chains, gaining the most prominence on Ethereum, Solana, NEAR, Polygon, and Fantom. There's a good reason for their widespread use and fast adoption.

Instead of inscribing data on individual SATs, EVM inscriptions inscribe data on transaction calldata, which is optional data that can be sent in one transaction. Most of the time it's used for passing inputs to smart contracts and rollup data.

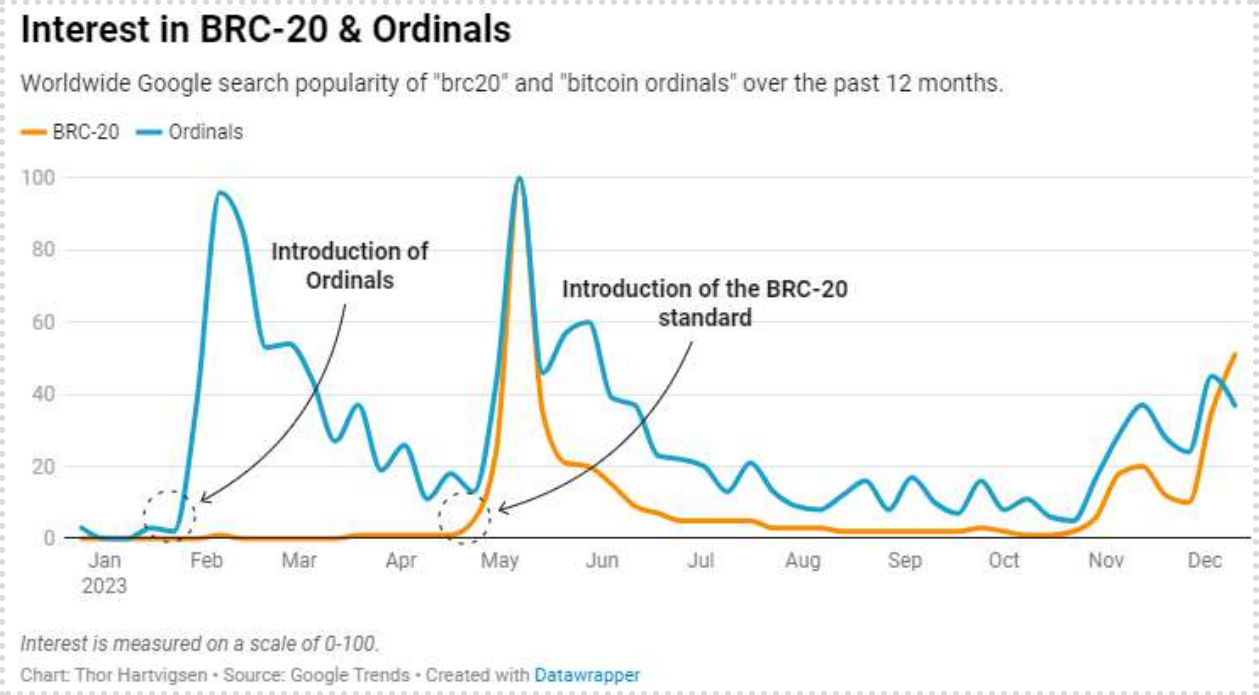
But there's more to inscriptions than just the fact that everything is completely on-chain and available for anyone to read. The reason for their widespread adoption is that burning gas or utilizing blockspace is one of the last remaining distribution mechanisms accessible to retail users. Smart contracts need to execute logic and store data on-chain. Inscriptions only involve sending calldata on-chain, which is much cheaper to do.

Arguably, the biggest downside of inscriptions is that there's a huge reliance on off-chain indexers. While everyone can technically recreate the state of a token themselves, this requires indexers to follow the same set of protocol rules. One of the advantages of doing this on the EVM instead of Bitcoin is that the EVM already enforces those rules.

Accessing low-market cap cryptocurrencies, particularly those with sub-$1M market caps, has become challenging in the current regulatory environment. On the one hand, retail-facing

Initial Coin Offerings are often illegal, limiting participation to accredited investors. On the other hand, airdrops can be cumbersome, forcing users to take multiple actions across multiple dApps with evolving eligibility requirements.

Image: Interest in BRC-20 & Ordinals



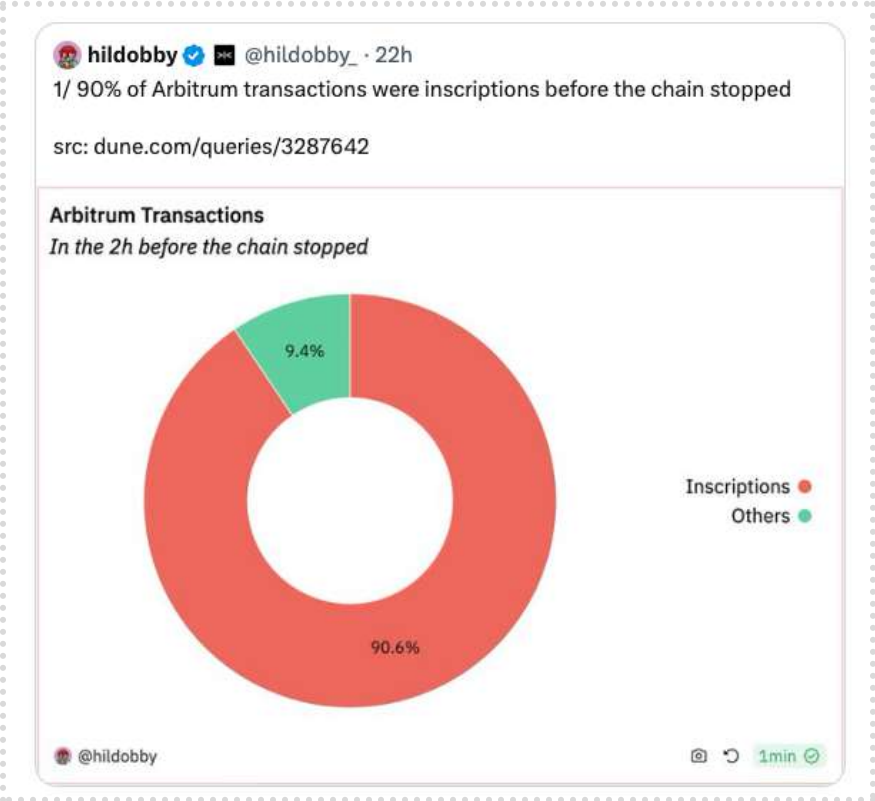
Source: Thor Hartvigsen (Substack)

Buying memecoins on DEXs like Uniswap comes with risks. The issuer's large supply holdings and potential market manipulation can lead to price volatility, insiders can pull out liquidity, and large holders can dump their coins at any time. This is a paradigm shift that appeared out of nowhere, even causing downtime to Layer 2s like Arbitrum or Layer 1s like Tonchain.

Inscription coins, a unique variant of the BRC-20 standard, stand out by allowing widespread participation in the issuance of a specific token. This is achieved through a process where participants 'burn' blockspace right from the start.

This accessibility provides a way for retail users to get in on the ground floor of a project without facing the legal or logistical challenges of other distribution methods.

Image: Hildobby on Arbitrum Before Chain Stoppage

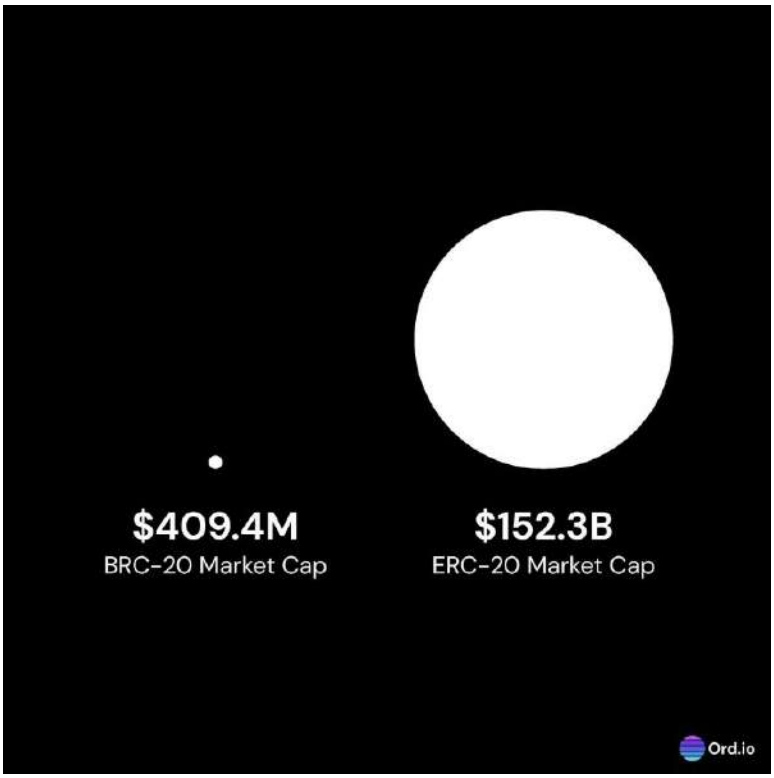


Source: Hildobby (Twitter)

So, where's the magic? The intriguing aspect of this mechanism lies in its issuance process. To issue the entire supply of a BRC-20, SLP-20, or an equivalent derivative on the EVM, one must engage in extensive blockspace utilization, potentially spanning days or even months.

This process is open to anyone and mirrors the issuance model of traditional Proof of Work (PoW) settings; we can call it "Proof-of-Wasted-Blockspace", where the deliberate consumption of blockspace plays a central role in the token distribution process.

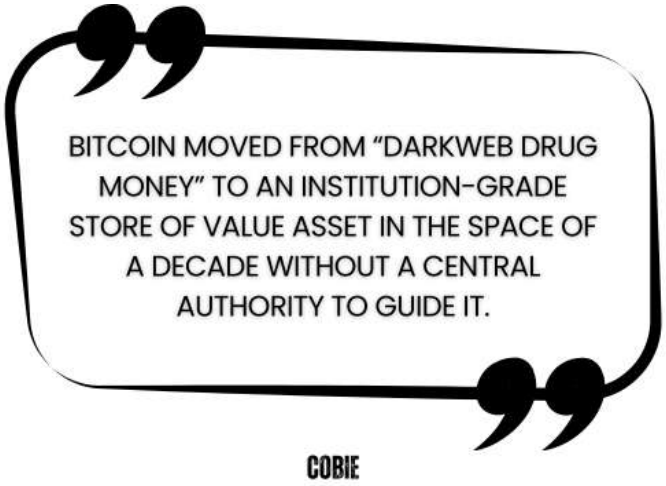
Image: BRC-20 vs. ERC-20 Market Caps



Source: Ordinals Council (Twitter)

However, it's also worth noting that inscriptions on the EVM can be perceived as taking a step backwards. The EVM was meant to support smart contracts and enable composability, whereas the current use of inscriptions is most often spam transactions trying to recreate the success they found on Bitcoin. This spam explains why some chains like Arbitrum and zkSync experienced downgraded performance at the end of the year.

Bitcoins Outlook for the Upcoming Cycle

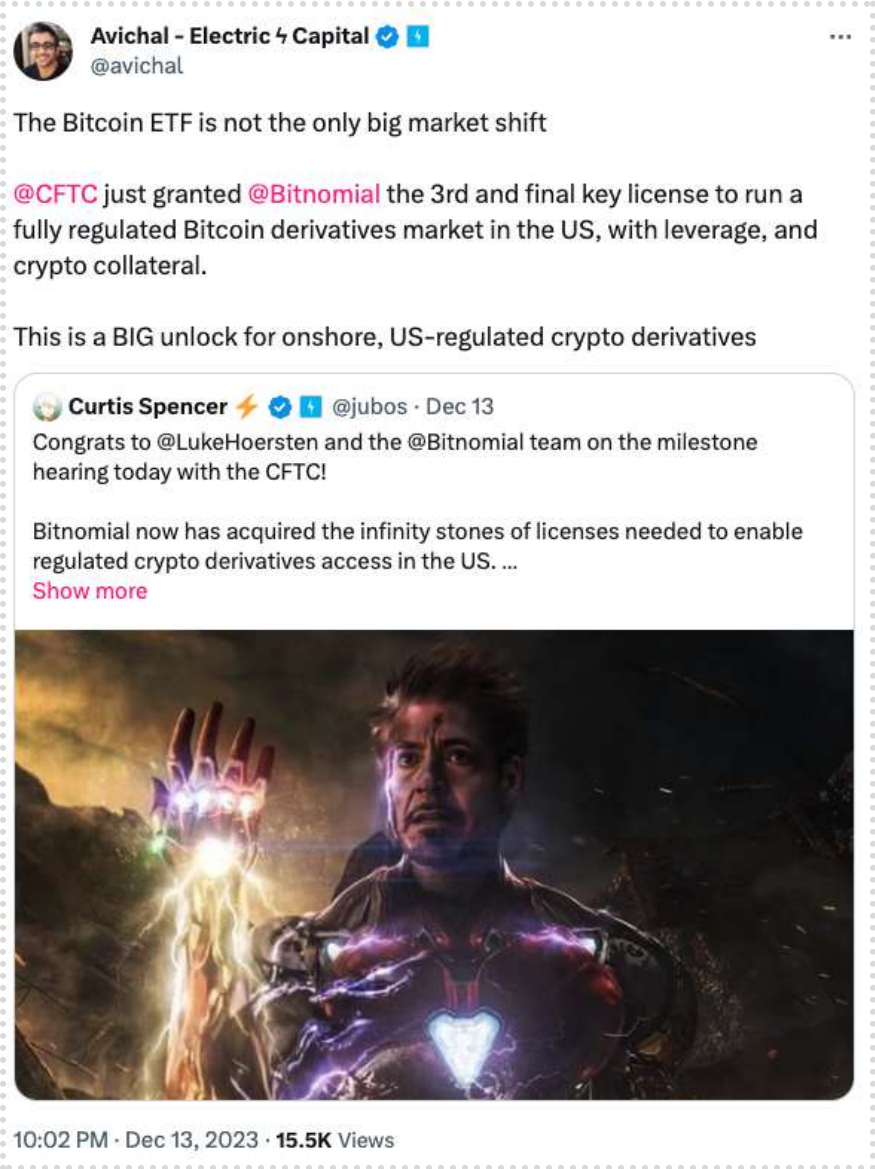


While diminishing returns are apparent, there have been noticeable cycles, characterized by three years of bullish trends followed by a year of bearish trends that align with Bitcoin's halving cycles. It appears that the current cycle is following suit.

Notably, most of Bitcoin's price decline occurred in 2022, with its value plummeting from $46,000 to $16,000, a significant 65% decrease. 2023 has seen a remarkable recovery, with Bitcoin surging by 170%, reaching a price of $44,700.

This cycle is particularly interesting due to the growing interest in Bitcoin and cryptocurrencies from some of the world's largest financial institutions. Multiple governing bodies and sovereign wealth funds are showing curiosity and considering investments in this asset class. This shift indicates a broader acceptance and potential integration of cryptocurrencies into mainstream finance.

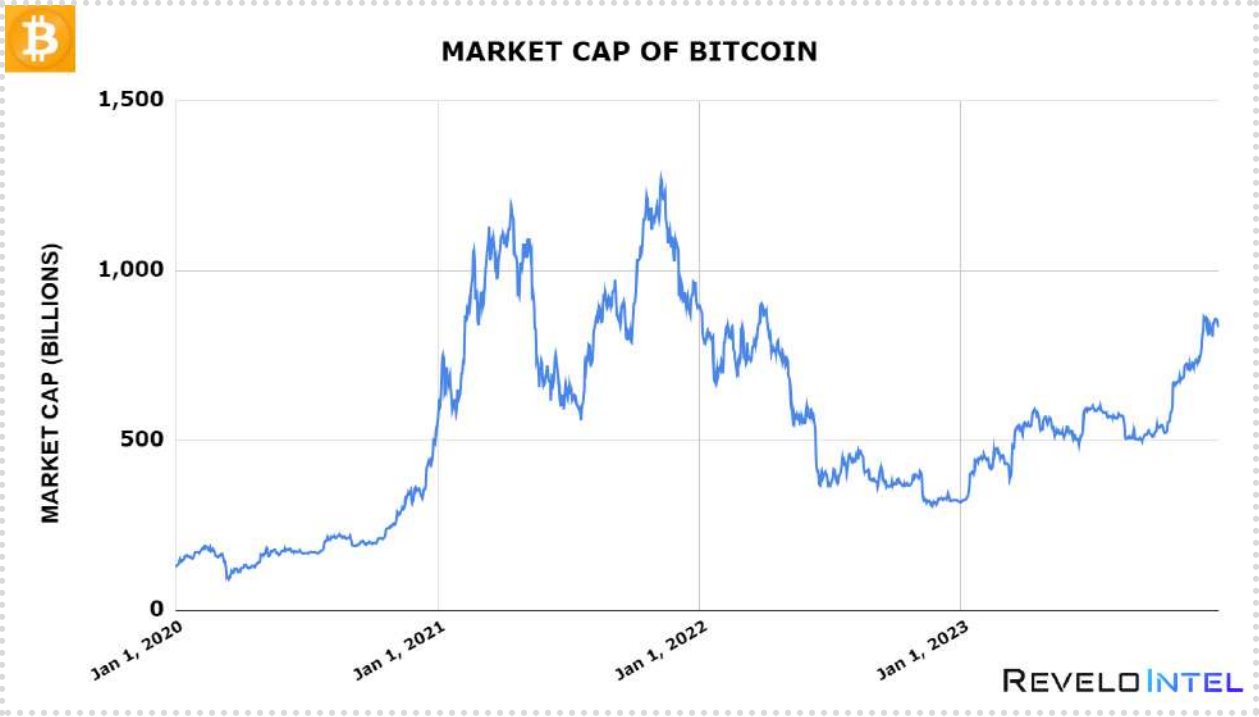
Image: Avichal on the Bitcoin ETF



Source: Avichal (Twitter)

Additionally, there's a global conversation around moving away from the US dollar's dominance, known as de-dollarization, that is gaining momentum. This trend could significantly impact Bitcoin's role, especially if its premise as an alternative to the US dollar as a reserve currency gains traction. Notably, trade blocs and alliances, such as BRICS (Brazil, Russia, India, China, and South Africa), are taking initial steps that could lead to this shift.

Image: Bitcoin Market Cap Climbing



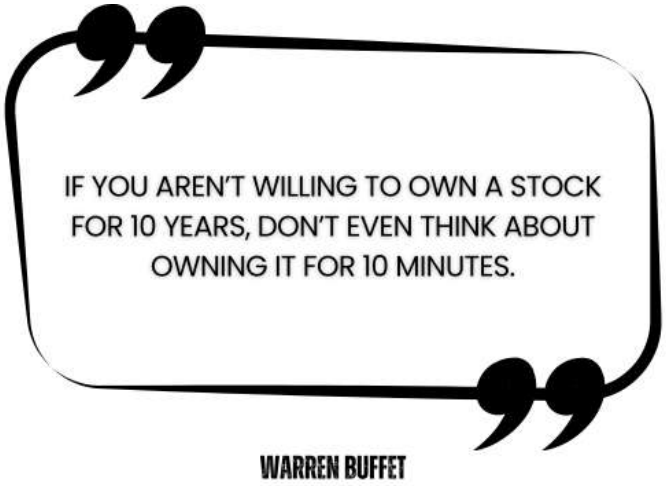
Raw Data: Token Terminal

Smaller, more autonomous governments and city-states like Hong Kong and Dubai are already laying the groundwork by creating crypto-friendly regulations and partnerships. These efforts foster the adoption and acceptance of cryptocurrency as a whole, potentially setting a precedent for other regions to follow.

ETHEREUM - THE DIGITAL OIL

Section 6

ETHEREUM - THE DIGITAL OIL



In terms of cryptocurrencies, Bitcoin is, without question, in a class of its own. A close second though, is none other than Ethereum. While both have their places in the crypto ecosystem, they serve different use cases and attract different user bases. Where Bitcoin stands to be a reliable store of value, Ethereum stands to become the base settlement layer for global finance, offering self-custody of assets, smart contract automation, and efficient reconciliation.

Ethereum stands out in its ability to introduce a new data layer, enabling user-controlled data through digital bearer instruments like fungible and non-fungible tokens, controlled by private keys and digital wallets. This shift to tokenization and DeFi has the potential to revolutionize the crypto industry, with traditional financial institutions like JP Morgan exploring its applications.

Tokenization can revolutionize traditional capital markets by streamlining trading, clearing, and settlement processes, making them faster, cost-effective, and less risky. These improvements may not excite crypto enthusiasts, but they can make financial services more affordable and efficient for everyday users in the off-chain world.

Public blockchains like Ethereum are transforming the digital landscape by bringing digital property rights and a neutral, shared accounting system to the internet. In doing so, it enables users to control their data and assets, securely connecting billions of people and

revolutionizing various business models through smart contracts. Ethereum's evolution from a clunky and inefficient system to a streamlined and scalable one mirrors the evolution of the Internet. It's important to note that Ethereum's evolution is made possible through Layer 2 solutions.

Image: Ultra Sound Money on Daily ETH Burn, Issuance, and Supply

Source: Ultra Sound Money (Twitter)

Ethereum's dominance isn't just due to its proprietary technology; it's also a result of widespread adoption, prevalent programming language, token and smart contract standards, node infrastructure, wallets, and more. Like the internet, Ethereum operates on a public, permissionless, and decentralized model, making it a natural monopoly in a positive, open, and innovative sense.

Ethereum's potential extends beyond just connecting billions of people globally in a peer-to-peer manner and facilitating the transactability of financial assets. It can revolutionize B2B interactions, the global financial services industry, and sectors like art, collectibles, gaming, and cloud computing.

It introduces digital property rights and a shared, secure, permissionless global accounting system, missing from the current internet. Ethereum also introduces a new way of tracking balance sheets in real time.

Open-source technologies in Ethereum foster collaboration and innovation, enhancing trust and security. As an extension of this, Ethereum benefits from Metcalf’s law, where the network’s value increases as more users join, attracting more developers and creating a virtuous cycle of growth and value creation.

Ethereum's network value grows with factors like developer support, developer tools, programming languages, EVM standards, token standards, wallets, liquidity, applications, scaling solutions, and venture capital investment.

With that said, we are strong proponents of the fact that Ethereum's long-term success depends on the continued development of infrastructure and tooling. Its development follows phases similar to past technological revolutions, including phases of eruption, frenzy, synergy, and eventually maturity.

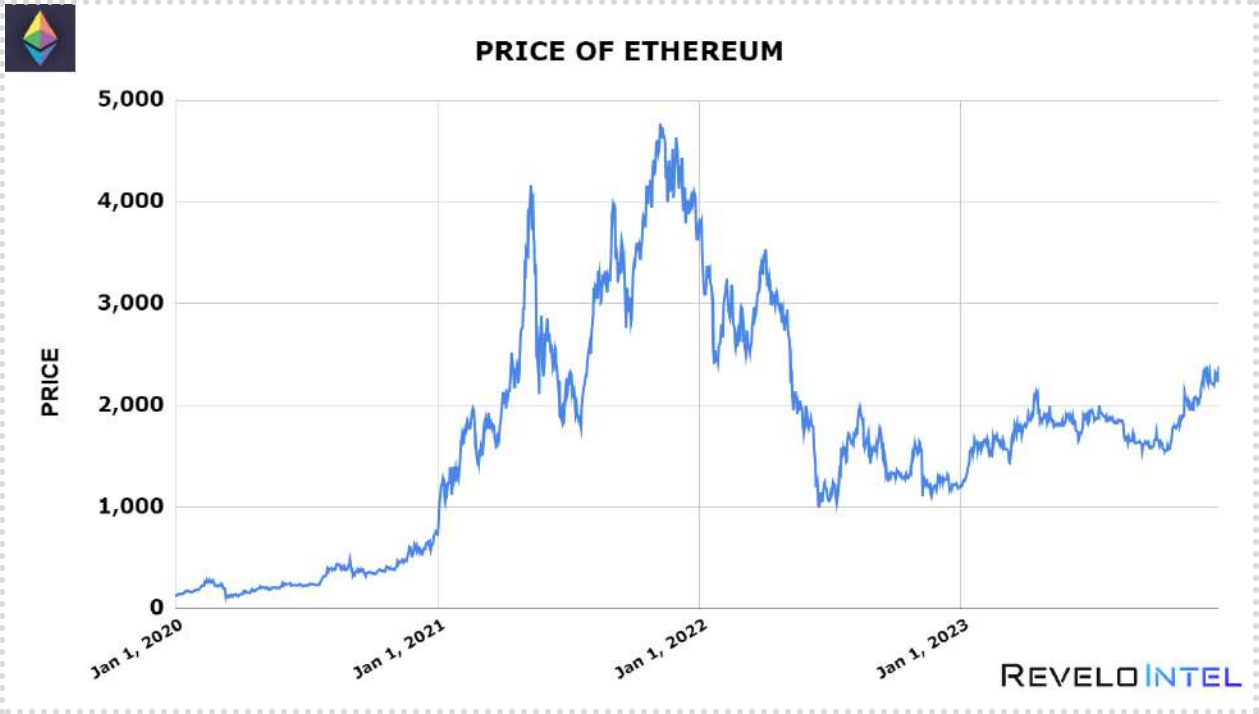
The question of whether Ethereum should enshrine more features in its core protocol is complex. Enshrining certain features can help avoid centralization risks, but adding too many can over-extend the trust and governance load of the protocol. It's important to strike the right balance between functionality and complexity, considering users' needs and the potential need for de-enshrinement of obsolete features.

Ethereum has been a trailblazer in creating decentralized incentive structures, where network participants like validators and users are encouraged to support the network's security and growth through economic rewards. This includes burning transaction fees to benefit token holders and providing block rewards to those who validate transactions.

As Ethereum evolves, there's a debate about whether to integrate more features into its core protocol. Initially, Ethereum's design was minimalistic, allowing for flexibility and innovation on top. However, as the network grows, there's a push to include more built-in features to meet diverse user needs and reduce the risk of centralization that can occur when complex functions are managed externally.

Yet, adding too many features can overburden the protocol with trust and governance issues, potentially making it less neutral and more complex. This complexity can lead to maintenance challenges and security risks. It's crucial to balance functionality with simplicity and to align new features with actual user needs.

Image: Ethereum Looking Up



Raw Data: Token Terminal

The process might also involve removing outdated features, and ensuring Ethereum remains adaptable and relevant. The key is to find a middle ground that maintains Ethereum's foundational principles while evolving to meet the changing demands of its users.

Even though Ethereum has already seen much advancement and adoption, we believe that Ethereum and its ecosystem are poised for significant growth and continued evolution. This will be driven by increased institutional adoption and advancements in Layer 2 solutions. The ongoing development of Ethereum will further improve the network's sustainability and performance.

Regulatory clarity will provide a more secure environment for investors and developers. Enhanced interoperability between blockchain networks and a focus on user experience will make Ethereum more accessible and interconnected. The Ethereum community will continue to grow, driving collaboration and innovation within the ecosystem, making 2024 a pivotal year for Ethereum and the broader crypto space.

At the same time, censorship resistance must remain the core value. Today, users can be censored at different layers of the stack. For instance, builders can exclude certain transactions, relays can refuse to relay them, and validators can build local blocks that exclude specific entities. Today, with almost 95% of MEV-Boost adoption, the network's minimum censorship is the maximum of all these layers.

The ETH-BTC Trade

The question of whether Ethereum will surpass Bitcoin in market capitalization is often asked. Our view is that this is unlikely to happen in the near future. The gap between the two is still significant, despite Ethereum's advancements and diverse applications. This doesn't exclude the possibility of $ETH making ATHs on the ETH/BTC chart.

Bitcoin fundamentals remain center stage and have been the primary driver of market action. However, there is still global uncertainty when it comes to new inflows, elections, and rate cuts. At the same time, $ETH's deflation and CEX supply feel irrelevant at this point.

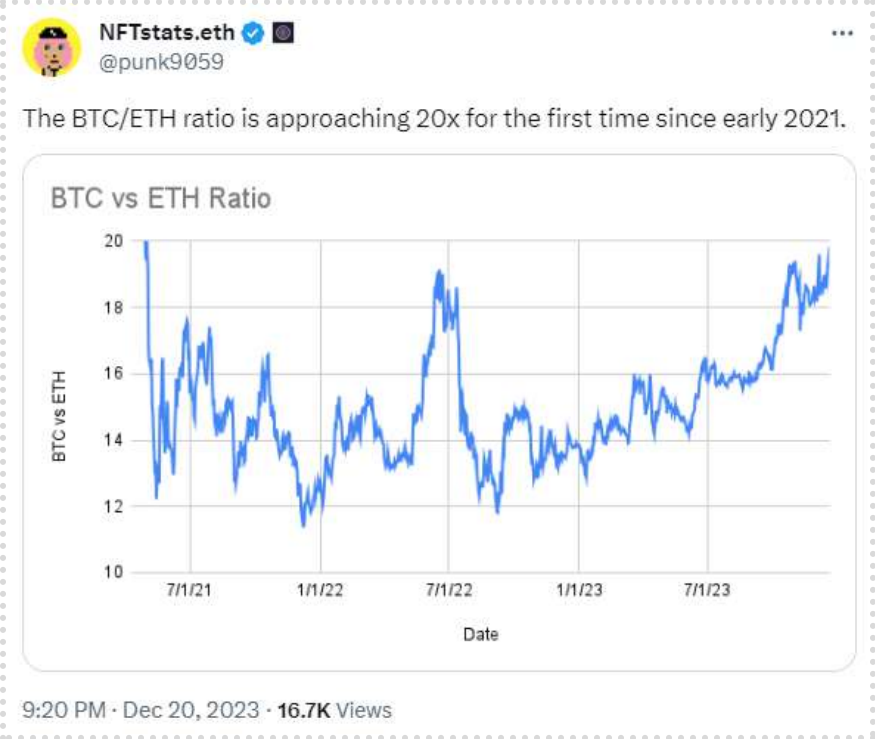
Institutional interest and the speculative nature of a possible $ETH ETF approval can drive $ETH's price past $3,000. CME's open interest reflects that TradFi is not fully positioned in $ETH, and all it takes is one narrative to regain interest, i.e., $ETH deflation, NFTs, Layer 1s becoming Layer 2s, or expectations of a yield-bearing ETF in the form of staked $ETH.

Zooming out, it's fairly clear that Bitcoin and Ethereum serve distinct purposes and have different design goals. Bitcoin has established itself as "internet money" or digital gold, gaining significant traction for its store of value proposition. It is designed to be simple, reliable, predictable, decentralized, and secure.

Ethereum, in contrast, is crypto's digital oil and is recognized as a leading platform for smart contracts and decentralized applications. In terms of sticky narratives, Bitcoin's store of value

narrative is still the safer of the two, even though the narrative driving Ethereum holds more long-term potential to the upside.

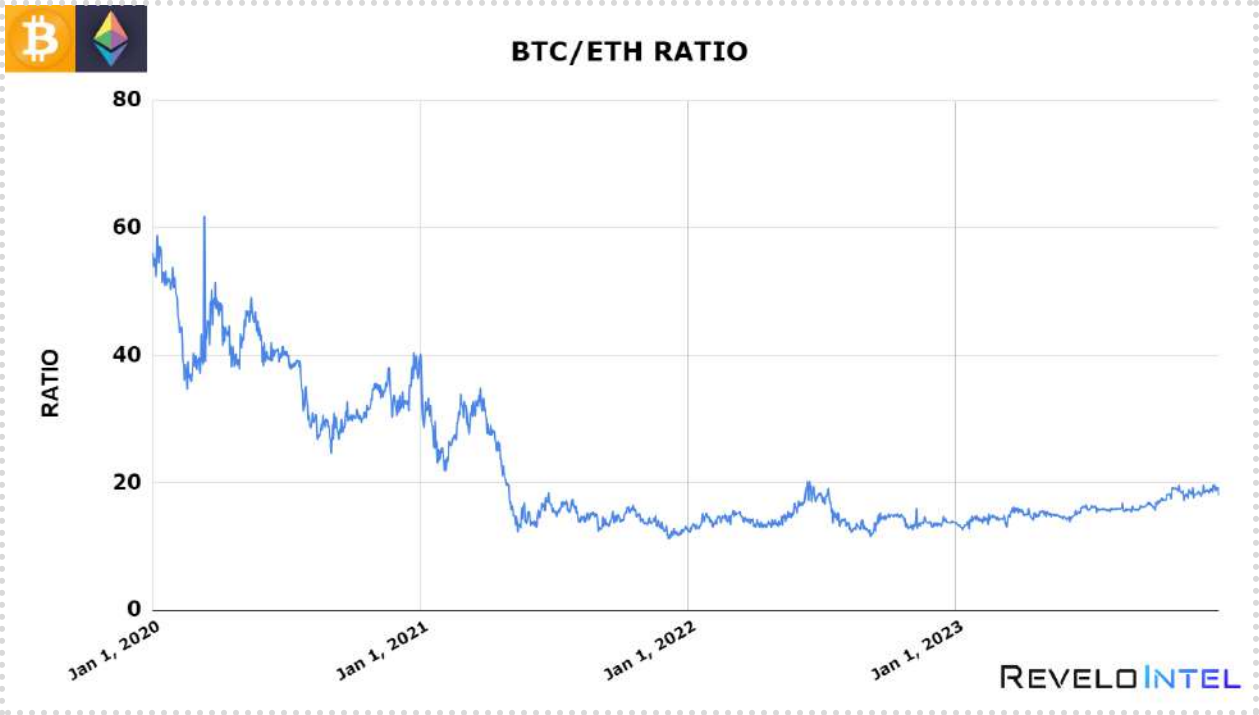
Image: NFTstats.eth on BTC/ETH Ratio



Source: NFTstats.eth (Twitter)

Despite Ethereum's rapid adoption and continuous innovation, it still lags behind Bitcoin in terms of market dominance. The Bitcoin-Ethereum ratio recently hit 20:1 which was the highest it had been since May 1, 2021. In the midst of a looming recession, it’s best to exercise general caution.

Image: BTC/ETH Teetering



Raw Data: Token Terminal

Bitcoin is still perceived to be the safer asset, and in the event of a general market decline, will be less impacted. If the crypto market faces another colossal collapse, we might see this ratio spiking to around 30:1. However, if the market remains strong, it's possible to see a shift towards the all-time best ratio of 12:1; at the time of this writing, it is about 19:1.

When Cheaper and Faster Aren't Enough

As time passes, the industry is rapidly diversifying beyond just Bitcoin and Ethereum. Today, we see a variety of altcoins serving different purposes, stablecoins pegged to fiat currencies or assets, and non-fungible tokens (NFTs) that represent unique digital or physical items.

For existing Layer 1 and Layer 2 platforms, the focus is on user onboarding, infrastructure improvement, and sustainable solutions. The big question is whether alternative Layer 1 (alt Layer 1) blockchains can challenge Ethereum's dominance in adoption, market share, and influence. While Ethereum, a pioneer in smart contracts and decentralized applications (DApps), holds a strong position, there's potential for a third major player alongside Bitcoin and Ethereum.

This setup also raises the question: if the apps built on top of a chain are not decentralized, does it even matter that the chain is fully decentralized? In fact, the word “decentralization” is not mentioned in the Bitcoin whitepaper at all. But if we want to understand the potential of alt Layer 1s to surpass Ethereum, we need to consider several factors.

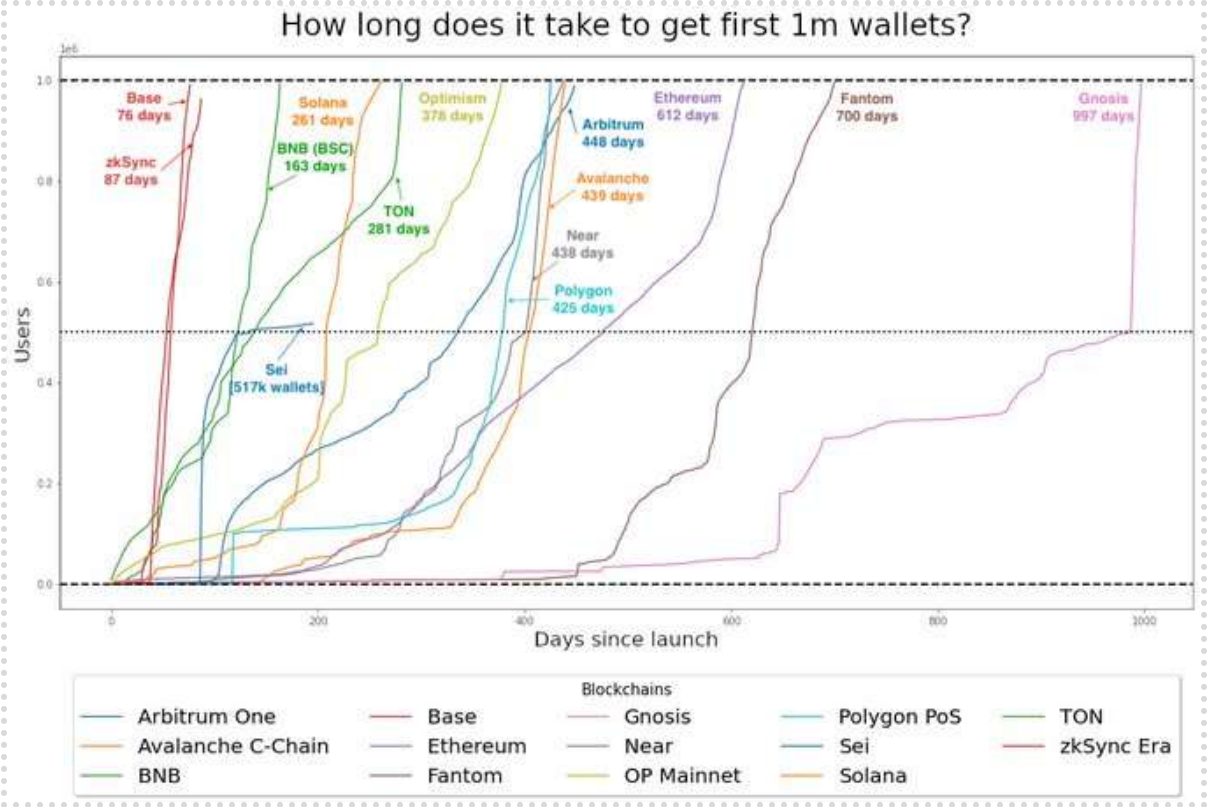
Table: Factors to Consider When Evaluating Alt Layers 1s Against Ethereum

Factor	Explanation
Network Effects	Ethereum's large user base and developer community create a self-reinforcing cycle that attracts more projects and users. Alt Layer 1s face the challenge of breaking into this cycle. To bootstrap liquidity they must first face a challenging cold-start problem which can onboard and retain the first cohort of users.
Ecosystem and DApp Development	Ethereum boasts a rich ecosystem with numerous tools and resources. Alt Layer 1s often start from scratch, needing to build their ecosystems or convince developers to switch. While some alt Layer 1s have introduced compatibility features with Ethereum's Solidity language, interoperability is a critical factor in luring developers away from Ethereum.
Security and Decentralization	Ethereum's security, especially after its Proof of Stake (PoS) upgrade, sets a high bar. Alt Layer 1s must demonstrate robust security and decentralization. Paradoxically enough, formally-proven languages like Move solve multiple of the security problems associated with Solidity (Ethereum's primary programming language) such as reentrancy. But at the same time the majority of developers are already familiar with Solidity, and the switching costs to a new programming language that they must learn from scratch add too much friction.
Scalability and Throughput	Ethereum's scalability issues have opened doors for alt Layer 1s with better performance solutions, like Layer 2s for execution or Layer 1s with different consensus mechanisms. These solutions can attract projects and users looking for better performance. We should not underestimate the fact that these chains can enable unique use cases that are simply not possible on Ethereum, on EVM chains, or even on account-based chains.
Use Case Specialization	Alt Layer 1s focusing on specific niches like DeFi, NFTs, or gaming could outperform Ethereum in those areas. We have seen this in the past with privacy chains like Monero or ZCash, and we are starting to see this with the advent of Chain Development Kits.
Innovation and Adaptability	Ethereum continues to innovate and upgrade its protocol to address limitations. Likewise, continuous innovation is key for alt Layer 1s to stay competitive in the fast-evolving blockchain space.

While alt Layer 1s can gain prominence and challenge Ethereum, it is a formidable task due to Ethereum's established network effect, ecosystem, and security.

Ethereum is evolving into a "network of networks," separating settlement (Layer 1) and execution (Layer 2) but maintaining connectivity. This modular approach, similar to Android's ecosystem, allows for various third-party networks (Layer 2 solutions) to operate on it, catering to different use cases or regions.

Image: Days to One Million Wallets



Source: Roman Zinovyev (Twitter)

In contrast, Solana offers a monolithic (or integrated) architecture, combining settlement and execution for a seamless experience. It focuses on performance with lower transaction costs and higher throughput, aiming to simplify user and developer experiences.

Regardless, monolithic is not really the proper word to describe this phenomenon. Instead, integrated chains are a better description, since these chains also boast specific components that are put together in a modular manner.

Integrated Chains and Rollups

We are witnessing a dynamic interplay between two distinct paradigms of trust-minimized computation technologies: integrated chains and rollups. Both of these paradigms share a common goal—to provide users with trust in computational outcomes without relying on a single party. However, they achieve this objective through fundamentally different approaches.

On the one hand, integrated chains operate by duplicating computations across a decentralized network of nodes. These nodes collectively reach a consensus on the computation's outcome through a consensus protocol. The chosen outcome is considered correct as long as a certain percentage of nodes are honest. Users, in turn, trust the network majority, rather than a single entity, for the validity of the computation.

On the other hand, rollups delegate computation to a single party, which then employs proof systems, such as fraud proofs or validity proofs, to demonstrate the correctness of the outcome. Users, instead of trusting a single entity, independently verify the provided proof.

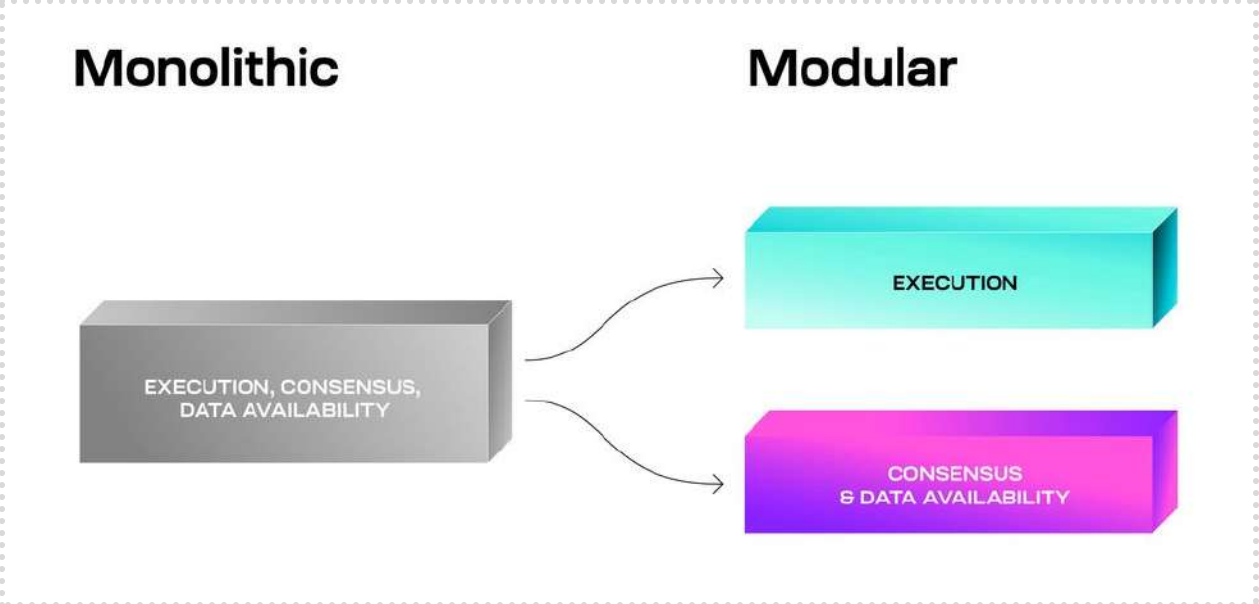
This sovereignty empowers users to validate computation results themselves, a hallmark of sovereign rollups. Each paradigm offers very distinct strengths and tradeoffs.

Table: Integrated Chains vs. Rollups

Integrated Chains	Rollups
Neutrality: Integrated chains prioritize neutrality, ensuring that the network remains unbiased and open to all participants.	**Sovereignty:** Rollups empower users with the ability to verify computations independently, enhancing trust.
Liveness: They maintain consistent transaction processing and network uptime.	**Customizability:** They allow for tailored solutions, enabling specific use cases and functionalities.
Censorship-resistance: Integrated chains resist censorship attempts and maintain transaction freedom.	**Agility:** Rollups are adaptable execution environments and can swiftly integrate new features or upgrades.

Rather than viewing monolithic chains and rollups as competitors, their coexistence can be symbiotic. Examples of synergy include rollups leveraging monolithic chains to enhance censorship resistance through forced transaction inclusion mechanisms.

Image: Monolithic vs. Modular Blockchains

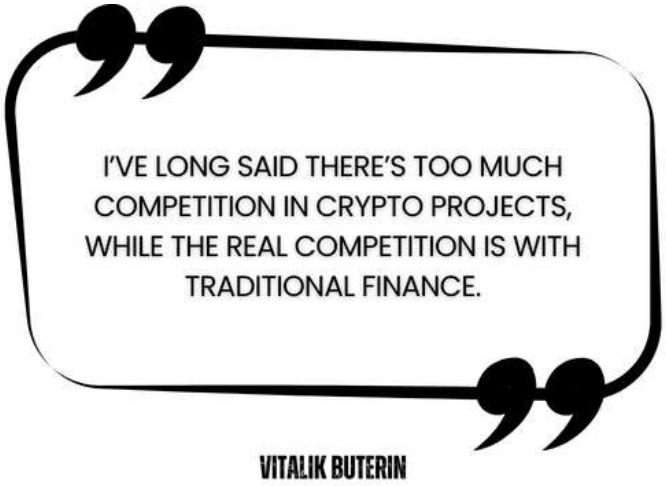


Source: Celestia

In the future we may see a blockchain ecosystem that features a limited number of monolithic chains, serving as trusted assets and data availability providers, alongside numerous rollups. Users could predominantly interact with rollups for everyday transactions, with monolithics handling small volumes of high-value computations.

Successful rollups may exhibit vertical integrations as well, combining multiple DeFi functionalities within a single chain. However, they are also likely to remain relatively app-specific, with distinct rollups for different use cases. This approach aligns with the evolving landscape of appchains.

Valuing Ethereum and Other Layer 1 Networks



Successful projects like Ethereum not only inspire new ventures but also shape investment trends. This is influenced by both triumphs and challenges, with investors often rushing to potential solutions during times of difficulty. Initially driven by long-term investment strategies, these metagames gradually gain popularity.

Ethereum's valuation is often measured against other Layer 1 networks, particularly in terms of the economic opportunities it presents. Dominating in aspects like "GDP" and TVL, Ethereum continues to dominate, with prospects for significant growth as the network continues to evolve and expand.

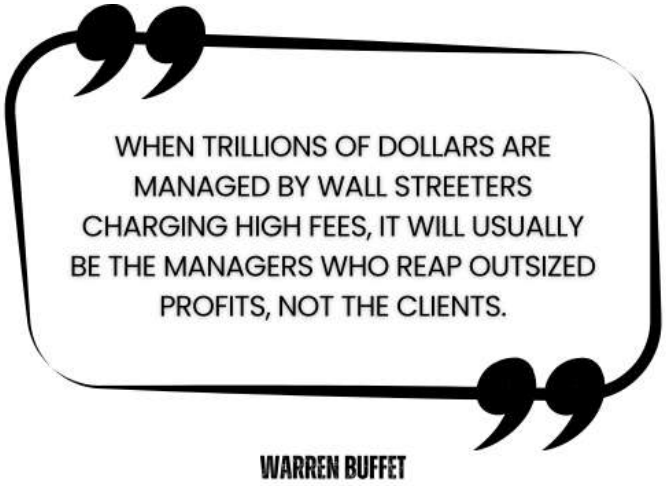
There are many ways to evaluate Ethereum's value against its Layer 1 counterparts.

Table: Metrics for Valuation of Ethereum and Other Layer 1 Networks

Metric	Explanation
Capital Asset	Ethereum generates cash flows captured by validators, offering a yield for stakers while at the same time rewarding token holders by burning a portion of transaction fees. This is a unique economic model that is hard to grasp for traditional investors.
Commodity Value	Ethereum has commodity-like features, such as using $ETH as network access fees and token burning to reduce circulating supply, benefit passive holders. The tokenomics of $ETH offer cash flows that are captured by the distributed set of validators through user transactions. At the same time, the underlying yield is then captured by staking the native token, and these cash flows are used for share buybacks or token "burns" and validator rewards (dividends).
Store of Value/Money Asset	Ethereum's potential as a store of value is backed by its technology, network effects, scarcity, and tokenomics. It is portable and divisible, and it is also used to pay for transactions on the network, which gives it utility beyond being a static store of value.

Ethereum's utility as a currency within its ecosystem, similar to the dollar's role in various transactions, creates demand. This demand is expected to grow as the network expands, with Layer 2 solutions enhancing transaction throughput and reducing costs.

Institutionalizing Ethereum Staking



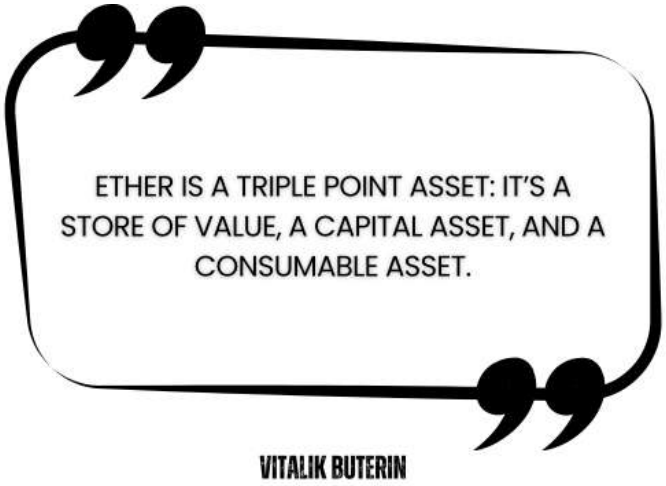
The decentralization of Ethereum's staking layer is a crucial aspect of its blockchain ecosystem, especially as it transitions to a PoS model. However, this decentralization faces threats, particularly with the growing interest of institutional investors and the potential emergence of staked $ETH ETFs.

Table: Threats to Decentralization

Threat	Explanation
Institutional Influence and Centralization Risks	The growing involvement of institutional investors in Ethereum staking introduces a centralization risk. Institutions often prefer centralized staking providers for regulatory compliance and convenience, potentially leading to a concentration of staked $ETH in a few entities. This centralization could impact network security and governance, as a small number of entities might gain disproportionate influence over network decisions or, in extreme cases, compromise network security.
$ETH ETFs and Staking Dynamics	The introduction of $ETH ETFs offering staking rewards could further amplify these centralization concerns. Such ETFs would allow investors to gain exposure to $ETH and its staking rewards without direct participation in the staking process. This convenience could result in a significant portion of staked $ETH

	being controlled by a few ETF providers, amplifying the centralization.
Regulatory Compliance and Identity Verification	Both institutional players and ETF providers are subject to strict regulatory compliance, including KYC and Anti-Money Laundering (AML) regulations. This could lead to staking becoming increasingly tied to identity verification processes, potentially moving away from the anonymous or pseudonymous nature of blockchain networks.
Liquidity Preferences and Decentralization Ethos	Institutional investors and ETFs might prioritize liquidity, leading to a preference for liquid staking solutions. While offering flexibility, these solutions often rely on a few large providers, contributing to centralization. This challenges Ethereum's foundational ethos of decentralization, sparking debates within the community about the network's direction and principles.
Market Dynamics and Ethereum's Future	The entrance of institutional players and the creation of staking-based financial products could introduce new market dynamics, influencing staking rewards, investment strategies, and the overall behavior of the Ethereum network. Balancing the growth brought by institutional involvement with the need to maintain Ethereum's decentralization will be crucial for the network's long-term health and integrity.

$ETH ETFs Will Follow Bitcoin ETF Approvals



The imminent approval of a spot Bitcoin ETF has heightened expectations for a spot $ETH ETF. This interest has been fueled by several factors. Firstly, the SEC's mixed approach towards approving futures-based products while hesitating on spot-based ones has sparked curiosity.

Adding to this anticipation is BlackRock's recent application for a spot $ETH ETF, which is significant given its influence in the financial sector. Moreover, the SEC's previous stance on $ETH as a non-security suggests that they might lean towards approving a spot $ETH ETF.

The approval of spot $ETH ETFs could lead to a surge in institutional investment, potentially exceeding expectations as seen previously with Gold ETFs. Companies like Bitwise have already noted a growing interest from institutional investors.

However, this influx of investment could lead to a concentration of Ether being staked with centralized providers, raising concerns about the impact on Ethereum's decentralization and neutrality.

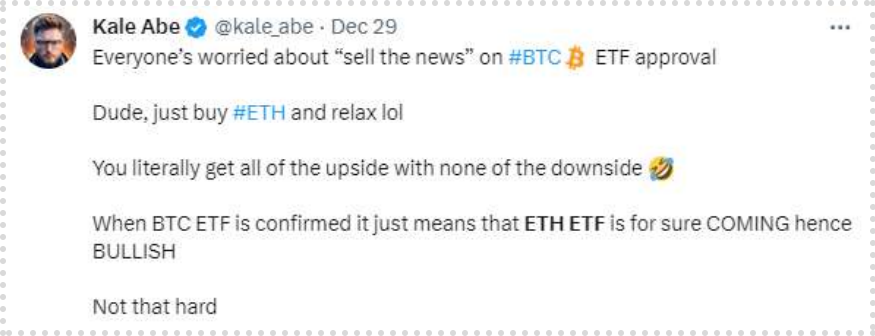
To be fair, DeFi has increased risks of centralization itself. Lido currently holds over 9M of $ETH's ~120M supply. The advent of restaking via EigenLayer may introduce another entity with a large relative amount of the $ETH supply.

Bitcoin is also subject to this risk; MicroStrategy already holds over 1% of the total $BTC supply. There have also been rumors of nations trying to acquire large stakes in Bitcoin.

If spot $ETH ETFs are approved, it's expected that issuers will quickly introduce ETFs that allow investors to earn staking rewards on their $ETH holdings. These issuers could market these staking rewards as 'dividends', making $ETH yield easier to understand. From an ETF standpoint, this is a unique benefit that $ETH offers that $BTC does not.

This approach is likely to be more attractive to investors compared to holding $ETH without additional benefits. However, due to the complexities and risks involved, ETF issuers might prefer partnering with third-party centralized staking providers rather than managing staking operations themselves.

Image: Kale Abe on $ETH ETF



Source: Kale Abe (Twitter)

However, this does not come without risk to the issuer and to manage the associated risks, they might use financial instruments like interest rate swaps. Another consideration for issuers will be liquidity management, as they need to balance the staked $ETH with a reserve for immediate withdrawal requests, which could affect the overall returns for investors.

On the other hand, more experienced investors might opt for staking directly with providers outside of ETFs to seek more cost-effective options. Decentralized protocols such as Lido, which offer institutional-grade security and accessibility, could serve as an alternative to centralized staking dominance.

Lido, in particular, is actively exploring ways to limit the growth of individual node operators, addressing concerns about centralization. Additionally, new projects like the Liquid Collective are emerging to cater to institutional demand with a focus on compliance and security.

Institutional Staking and Liquid Staking

The emergence of institutional interest in $ETH staking is reshaping its dynamics, particularly with the potential of staked $ETH ETFs. This process involves the purchase of $ETH, ensuring its safekeeping (custody), and then issuing it for market use. However, institutions must navigate complexities associated with staking, particularly the balance between staking rewards and challenges like the illiquidity of staked assets.

As institutional interest in Ethereum staking grows, there's a shift toward liquid alternatives. However, institutions often prefer the ease and regulatory compliance offered by centralized staking providers. This shift could potentially lead to increased centralization, potentially impacting the core principles of decentralization.

Institutions are increasingly exploring liquid alternatives to traditional $ETH staking and may seek providers with more favorable cost structures and utility beyond ETFs. Decentralized protocols like Lido could gain traction among institutional investors in various custodial and regulated environments.

They also provide a consistent experience and institutional-grade security while remaining accessible to all market participants. Projects like the Liquid Collective are specifically developing liquid staking solutions to meet institutional needs, emphasizing compliance and maximizing staking rewards.

Despite these developments, the concentration of staking power within a single entity, like Lido, poses a significant threat to Ethereum's decentralization. This is further complicated by governance risks within these protocols.

Lido's efforts to expand its Node Operator Set and implement features like the staking router aim to enhance decentralization, but governance dynamics, as highlighted in Hasu's GOOSE submission and the Dual Governance Proposal, remain a concern.

Image: Hasu on His GOOSE Proposal (Partial)

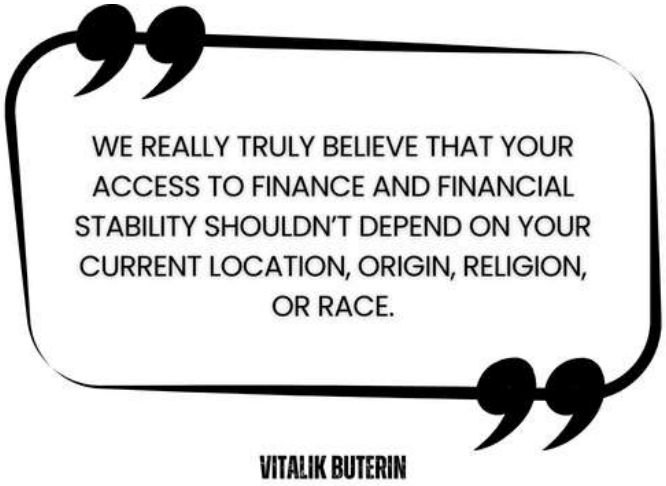
Source: Hasu (Twitter)

The market dynamics of staking, particularly liquid staking, tend to exhibit strong winner-takes-most dynamics. This is evident in the substantial market share of protocols like Lido and centralized entities like Coinbase in the staking space. Coinbase, as the single largest validator with 16% market share, is an example of a centralized entity that can quickly establish dominance in staking.

To maintain a robust and decentralized Ethereum staking layer, it's crucial to support the growth of decentralized liquid staking protocols. Lido has successfully attracted a significant portion of staked $ETH and has implemented measures to prevent any single operator from gaining excessive control. And, the move towards minimal governance within Lido aims to reduce the potential for centralized decision-making.

However, the potential for attacks like block reorganization, finality delays, and fork choice issues remains a concern, especially if a single node operator gains excessive market share. These risks underscore the importance of balancing decentralization with the influx of institutional participation in Ethereum's staking ecosystem.

The Magnitude of the Opportunity



The potential for institutional investment in Ethereum, specifically in $ETH staking, is growing. Institutions are increasingly drawn to the potential yields and diversification benefits that staking offers. This influx of large-scale capital could significantly impact the Ethereum staking landscape, potentially even influencing governance decisions within the Ethereum network.

One key development that could facilitate this influx is the introduction of exchange-traded products, like ETFs (Exchange-Traded Funds). ETFs have a history of making various asset classes more accessible and standardized, leading to significant capital inflows when they become part of institutional investment strategies.

If a spot $ETH ETF were to be introduced, it would make $ETH accessible to a vast portion of U.S. wealth, which is currently managed by financial advisors and institutions. This would not only bring substantial funds into $ETH but also bring legitimacy and recognition among regulators and governments.

While predicting the exact scale of these institutional inflows is challenging, there are already signs of growing interest. For instance, Bitwise has reported a potential increase in allocations to $ETH from 1% to 5%, and Coinbase observed a doubling in the number of institutions it onboarded in Q3.

To put this in perspective, if we compare it to the Gold's GLD ETF, which attracted $3.1B in its first year, $ETH could potentially see even greater inflows. This is largely in part because, unlike physical assets like gold, $ETH is digital and more accessible.

Image: Pentoshi Prediction on $ETH Price Post ETF

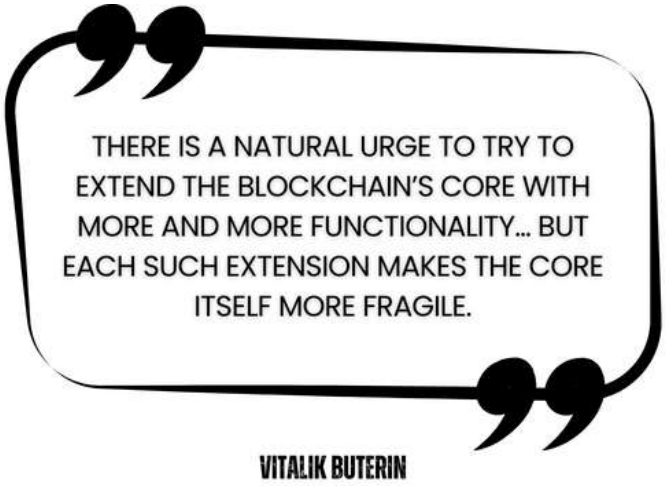
Source: Pentoshi (Twitter)

However, the potential surge in institutional investment in $ETH staking presents a few implications. Large institutional flows, which might not be as sensitive to yield fluctuations, could push the total amount of $ETH staked to levels higher than what might be expected from purely economic considerations. These inflows could help us surpass estimates based solely on cryptocurrency market dynamics.

Another concern is the potential concentration of staked $ETH in centralized entities, both within and outside of the ETF framework. If a significant portion of the stake is held by a few centralized providers, it could pose a risk to Ethereum's foundational principles of censorship resistance and credible neutrality.

This concentration would give disproportionate power to these entities, potentially affecting the decentralized and equitable nature of the Ethereum network. We think that, while there may be implications, the prospect of institutional funds flowing into $ETH staking is significant, with the potential to reshape the Ethereum ecosystem.

Restaking and LRSTs



Restaking and liquid restaking are emerging as transformative concepts in the blockchain space, especially within the Ethereum ecosystem. And, although less talked about, restaking will be quite prevalent in the Cosmos ecosystem as well. These mechanisms are redefining how staked assets are utilized, enhancing both the utility and security of blockchain networks.

EigenLayer first introduced the concept of restaking which allows users who have staked their $ETH to further utilize these assets to secure other applications and services on the network. This process repurposes the $ETH, initially locked for securing Ethereum's blockchain, to support additional applications and services on the network, such as dApps, oracles, and layer-2 sidechains.

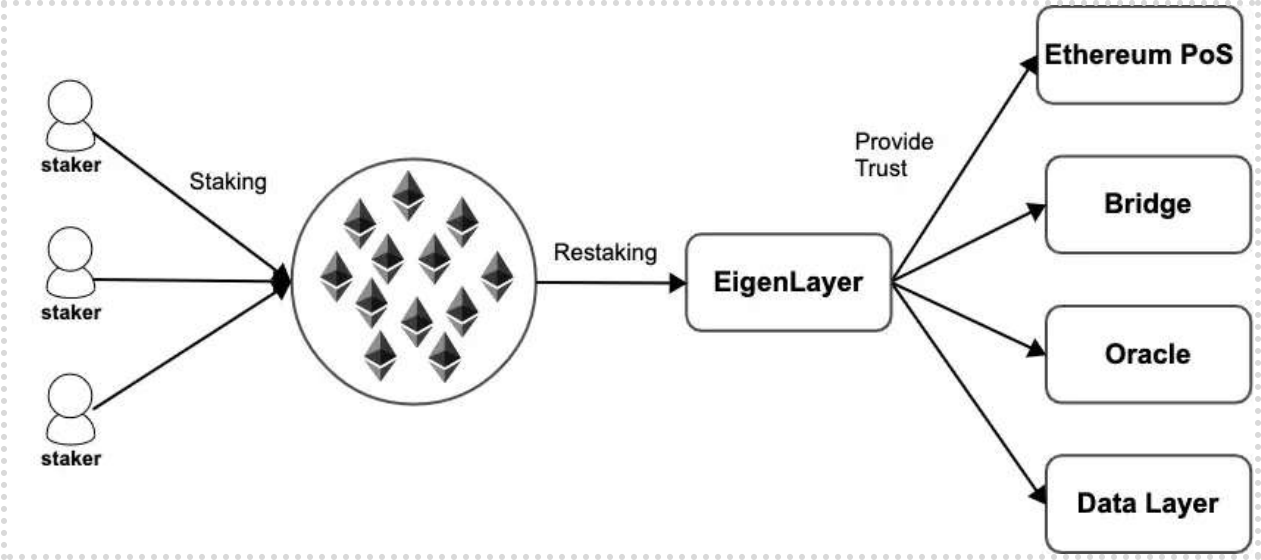
The idea is to extend Ethereum's existing security to these services, creating a more integrated and robust security environment within the Ethereum ecosystem without the need for each application to develop its own security infrastructure.

Building on the concept of restaking, liquid restaking is a further development in the staking landscape, integrating the benefits of liquid staking with the principles of restaking. In traditional staking models, assets are locked up to secure a network, rendering them illiquid for the duration of the staking period.

Protocols like Lido or Rocket Pool issue liquid staking tokens (LSTs) in exchange for staked assets, which can be traded or used in DeFi applications, thus maintaining liquidity for stakers. Combining liquid staking with restaking leads to an even more dynamic ecosystem.

Protocols like EigenLayer enable the restaking of these LSTs, allowing users to participate in securing additional protocols while maintaining liquidity through the issued LSTs. This synergy enhances capital efficiency and enables stakers to earn rewards from multiple protocols simultaneously without sacrificing liquidity.

Image: EigenLayer Restaking



Source: Albert.Lin (Mirror)

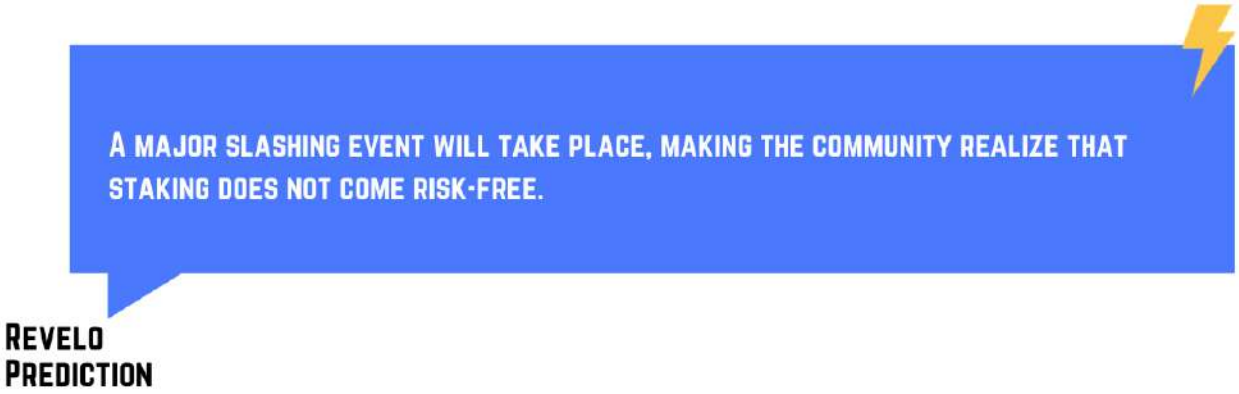
The integration of restaking and liquid restaking presents significant potential. It addresses challenges like fragmented security, capital inefficiency, and the high costs of bootstrapping security for new protocols. By pooling security and enabling stakers to engage with multiple protocols, these mechanisms contribute to a more robust and efficient blockchain ecosystem.

They also encourage broader participation in network security, incentivize honest behavior, and foster a competitive marketplace for security services. This could lead to more innovative applications on Ethereum, as developers can rely on the underlying network's established security.

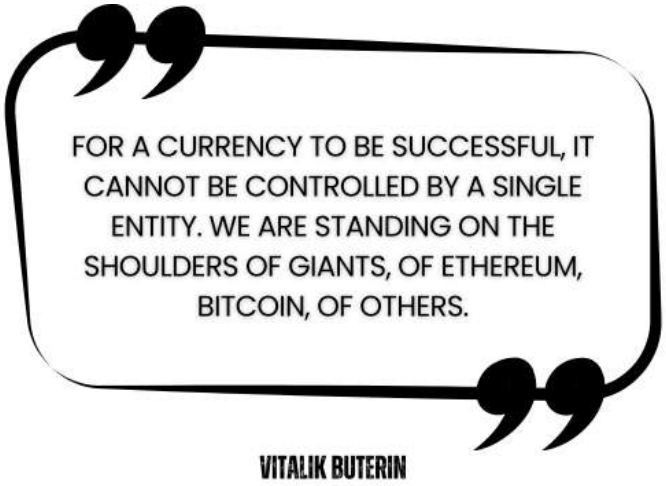
While restaking and liquid restaking offer numerous benefits, including improved yield generation and augmented liquidity in DeFi, they also present potential risks. Vitalik has highlighted concerns about centralization and systemic vulnerabilities.

The aggregation of staked $ETH in large pools could influence Ethereum's consensus process and threaten its decentralized nature. Additionally, the reliance on smart contracts introduces security risks, and the complexity of these financial models may attract regulatory scrutiny.

So, while we believe that restaking and liquid restaking represent significant advancements in blockchain technology, it's crucial to balance the benefits with an awareness of potential risks, especially regarding centralization and security.



The Future of LSDFi



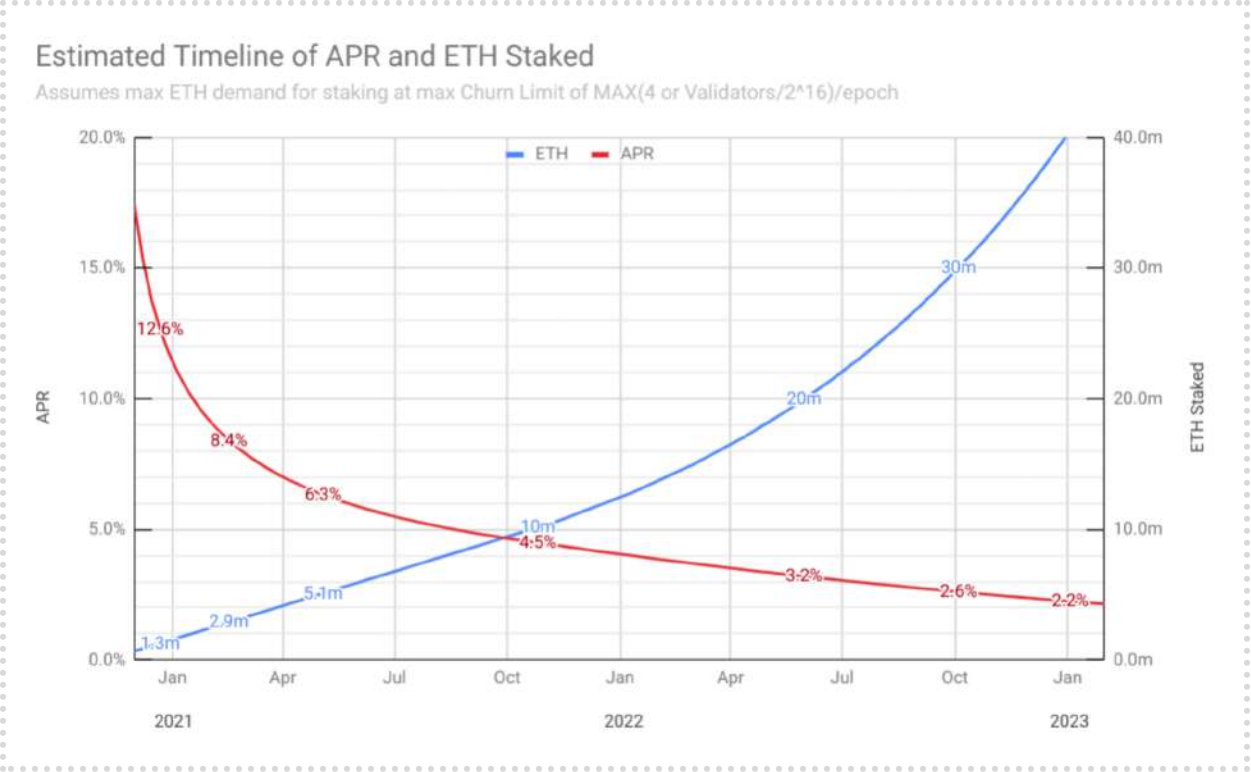
The Shapella upgrade and the upcoming Dencun upgrade, along with EIP-4844, are shifting the focus from LSDFi towards Layer 2s. There's ample capital in the crypto space that could be put to better, more efficient uses, beyond just Ethereum staking yield.

Ethereum's high staking yield may not last forever, and there are active discussions about reducing it. As such, DeFi developers are encouraged to explore business models that effectively utilize capital, such as lending and dynamic market-making.

At this point, months after withdrawals were enabled for staking rewards, the trend is clear: there is a diminishing demand for staking. This started to materialize at the end of Q3 when the Ethereum validator queue almost cleared out.

This weak staking demand is inevitable. As more $ETH holders stake, the more diluted the rewards get. In the end, reduced staking rewards, combined with rising short-term interest rates, create a negative feedback loop that kills the demand for staking.

Image: Estimated Timeline of APR and ETH Staked



Source: Reddit

We think that governance tokens like $RPL and $LDO may have limited upside potential, with $FXS being an exception as we consider it to be a Swiss army knife that can profit from the upside of multiple verticals ranging from stablecoins to Layer 2s.

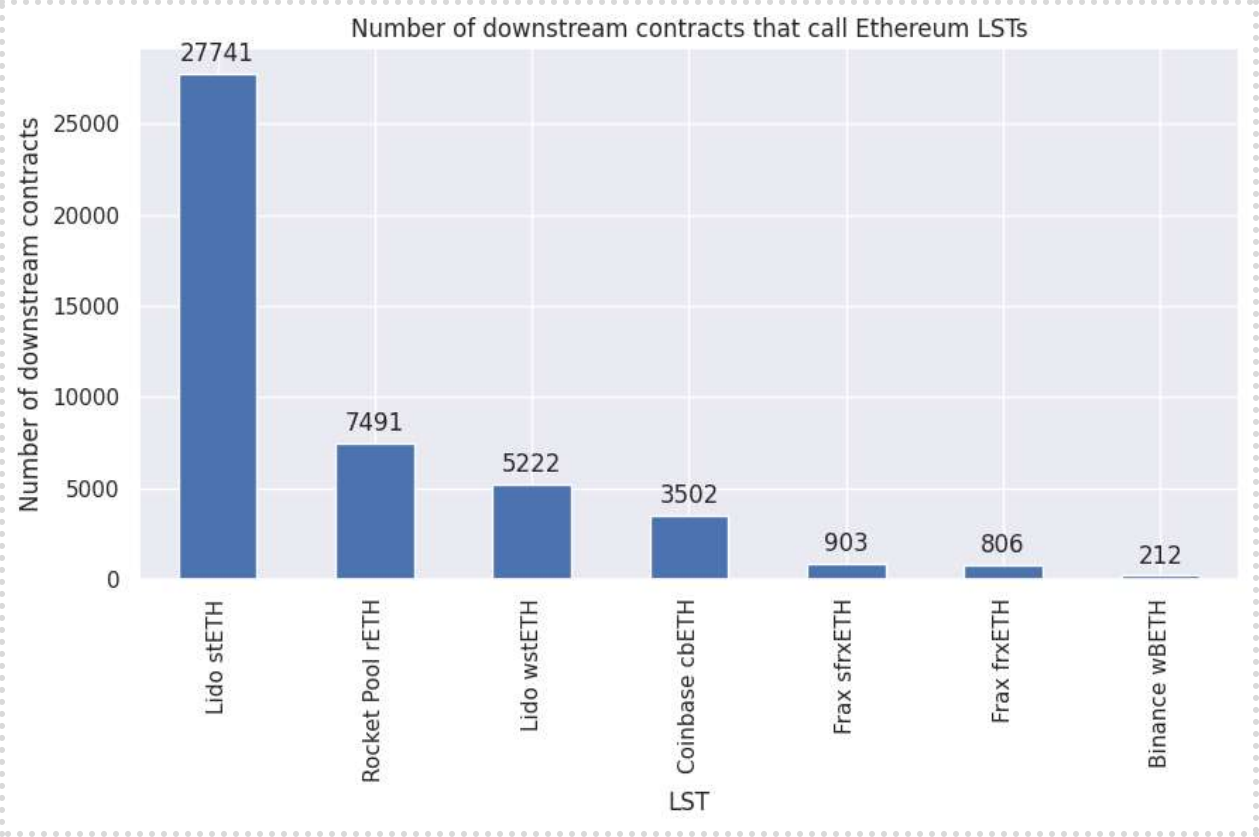
Ethereum doesn't support stake delegation in the protocol, and native $ETH staking is a painful experience for the overwhelming majority of crypto users. It also requires forgoing liquidity on 32 $ETH and maintaining a server w/ Ethereum client software.

Lido's success in liquid staking is attributed to its ability to help users bypass these harsh requirements. Lido allows users to stake any amount of $ETH, and it outsources the management responsibilities to a set of 37 professional node operators. Additionally, it offers stakers liquid staking tokens (LSTs) like stETH that accrue rewards and provide liquidity.

Perhaps, the most attractive is the fact that these LSTs are highly liquid and may be freely used while still accruing rewards. They also have ample liquidity to be sold at a moment's notice and can be used as collateral to borrow funds or to provide liquidity on a DEX.

Despite their utility, in the long term, we favor reducing exposure to LSTs. We believe that regulatory concerns and actions against Coinbase and Kraken have played a key role in the reduced interest and participation in staking. Once staking participation peaks, growth drivers for this sector will diminish, leading to a decline in the staking yield.

Image: Downstream Contracts That Call LSTs



Source: ren (Twitter)

Despite the risks, LSTs remain valuable yield-bearing collateral assets that will continue to be used for leverage. The market for liquid staking has become a winner-takes-all scenario, with integrations playing a crucial role in determining market dominance.

It’s not a coincidence that $stETH is both the LST with the most integrations and the most dominant. The greater the utility of an LST across DeFi, the harder it is for competitors to gain market share.

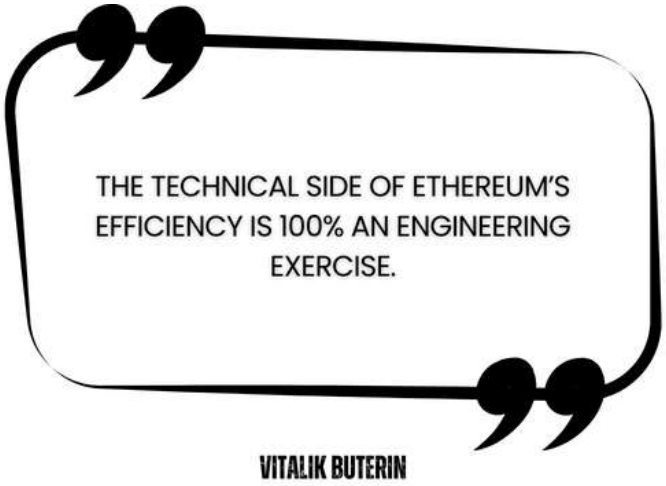
Image: $LDO and $RPL Performance vs. $ETH

Raw Data: Token Terminal

In an ideal scenario, Ethereum's network would be upheld by numerous individual stakers, each operating their own validator nodes. However, the reality is more complex due to the high maintenance demands and the significant initial investment of 32 $ETH required for staking. This setup is challenging for solo stakers, who must be constantly vigilant to manage their nodes and avoid slashing penalties for inactivity.

As a result, Ethereum staking is gradually becoming centralized, with a few large institutional node operators taking the lead, a trend highlighted by Rated Network. Contrary to the belief that node operation is a low-effort affair, it actually requires continuous attention and maintenance to ensure constant uptime.

From LST to DVT



As time passes and staking rewards consolidate in a range - likely to be between 2% and 3% - the attention on Ethereum Liquid Staking will shift to DVT (Distributed Validator Technology). DVTs will decentralize the network and ensure more reliable uptime and better key management.

While DVTs are a highly intricate technology, both the underlying concept and the problems it aims to solve are remarkably simple. Typically, a validator operates on a single hardware machine or node. DVTs introduce a new concept where distributed validators run individual validators across multiple nodes. In other words, DVTs divide a single validator's responsibilities across multiple nodes.

This division is achieved by splitting the validator's private key into several parts, each managed by different nodes in a network. This collaborative approach allows for more reliable network operation and reduces the financial barrier for individual stakers, as the 32 $ETH requirement is shared among multiple participants.

DVT aims to mitigate the slashing risk significantly. This risk reduction could pave the way for institutional adoption of staking in Ethereum, potentially attracting more than 50% of staked $ETH to leverage DVT. Not only that, but this technology offers benefits for different validator types:

Table: Types of DVTs

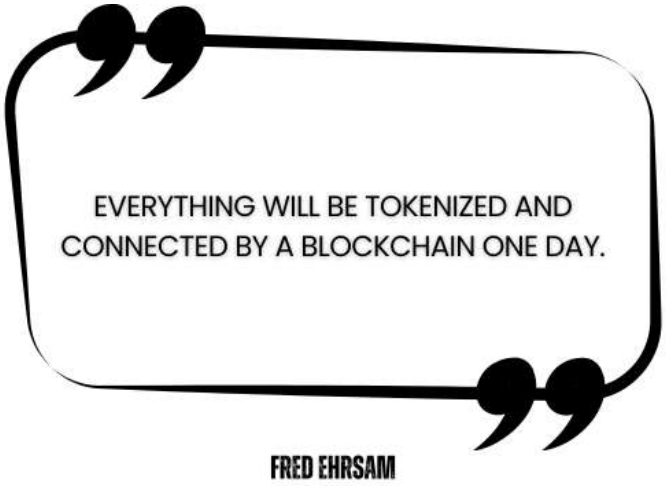
Type	Explanation
Large Validators	DVT enables larger validators to run multiple validation nodes more efficiently, reducing hardware costs and slashing insurance expenses. It also provides active redundancy, increasing overall reliability.
Liquid Staking Protocols (LSPs)	DVT's efficiency and risk reduction benefits LSPs by increasing operator participation, reducing network downtime, and improving protocol performance.
Community & At-Home Validators	Smaller validators and individual users can benefit from DVT by running nodes with increased confidence, achieving uptime and efficiency comparable to larger validators. Lower ETH requirements and group validation contribute to greater participation.

We expect to see DVT solutions expand their operations to other chains as well, extending risk-management benefits beyond Ethereum. Additionally, we believe that these projects will play a pivotal role in further decentralization for Layer 2s, i.e., block builders, provers, sequencers, etc.

THE TOKENIZATION OF EVERYTHING

Section 7

THE TOKENIZATION OF EVERYTHING



Innovation has a curious way of hiding in plain sight, often escaping us until it reaches a critical inflection point. Just like the gas-powered car and the proliferation of mobile phone cameras, the potential of tokenization via blockchain technology has been discussed for years but its transformative impact is only beginning to emerge. In this case, the tokenization of financial and real-world assets could be the "killer use-case" that propels blockchain into the mainstream.

Tokenization is the process through which real-world assets or rights are represented by digital tokens on a blockchain. These tokens can represent a wide range of values, from real estate and art to stocks and commodities. The beauty of tokenization lies in its ability to allow for fractional ownership, enhance liquidity, and facilitate easy asset transfers.

Unlike consumer products like cars or phones, blockchain is an infrastructure technology, one that works behind the scenes. This makes it hard for many to grasp its disruptive potential. However, it's this very characteristic that could lead to a quiet yet profound impact in various sectors.

Given the recent institutional interest, we are on the cusp of the inflection point where blockchain's promised potential becomes a reality. Its success will be measured by the billions of users who are using the blockchain and may not even realize they are doing so.

Table: Potential Catalysts to Drive Mass Adoption

Catalyst	Explanation
Central Bank Digital Currencies (CBDCs)	Many central banks are exploring or adopting CBDCs. By 2030, we might see up to $5 trillion in CBDCs, many of which will be based on blockchain technology. This move could introduce billions of people to blockchain, even those who aren't tech-savvy.
Tokenization of Assets	The tokenization trend is expected to grow significantly, potentially reaching a value of nearly $4 trillion by 2030. This growth will be evident in areas like gaming, real estate, and social media platforms that integrate blockchain-based payments, making blockchain interactions more common and seamless for users.

Several key players and technologies are set to play crucial roles in driving blockchain adoption. Decentralized digital identities stand at the forefront of this change, ensuring enhanced user privacy and security within the blockchain ecosystem. These identities will provide users with control over their personal data, fostering trust and security in digital interactions.

Alongside, Zero-Knowledge Proofs (ZKPs) are emerging as a groundbreaking technology. ZKPs enable the verification of data without revealing the actual information, thus maintaining privacy while ensuring data integrity. This technology is pivotal in addressing privacy concerns, allowing users to interact and transact with confidence that their sensitive information remains secure.

Complementing these technologies are Oracles and Secure Bridges, which are integral to the functionality and expansion of blockchain networks. Oracles act as trusted data sources, providing a crucial link between blockchains and the external world.

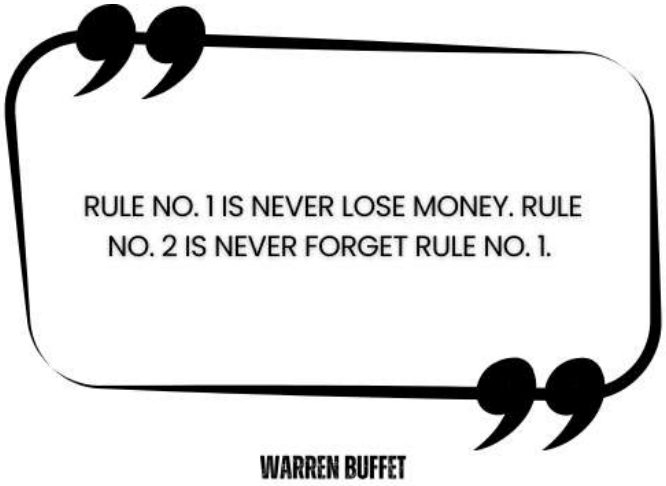
They play a key role in feeding reliable, real-time data into smart contracts, enabling them to execute based on accurate and current information. This connection is vital for the practical application of blockchain in various industries, from finance to supply chain management.

Secure Bridges, on the other hand, are essential for enhancing interoperability among diverse blockchain ecosystems. They facilitate seamless communication and transaction across

different networks, breaking down barriers and creating a more connected and efficient blockchain universe.

The integration of smart legal contracts and careful regulatory considerations will also be essential. Smart contracts have the potential to disrupt global commerce and finance. However, clear regulations are needed to encourage adoption without stifling innovation.

From Risk Asset to Asset Class



In 2022, over 10% of US adults owned or used cryptocurrency, with estimates suggesting this could be as high as 20% in 2023. This growing interest is reflected by the actions of many Fortune 100 companies, which are actively developing blockchain initiatives to stay competitive. The rising popularity and market demand for crypto highlight the need for regulations that encourage innovation while ensuring consumer protection.

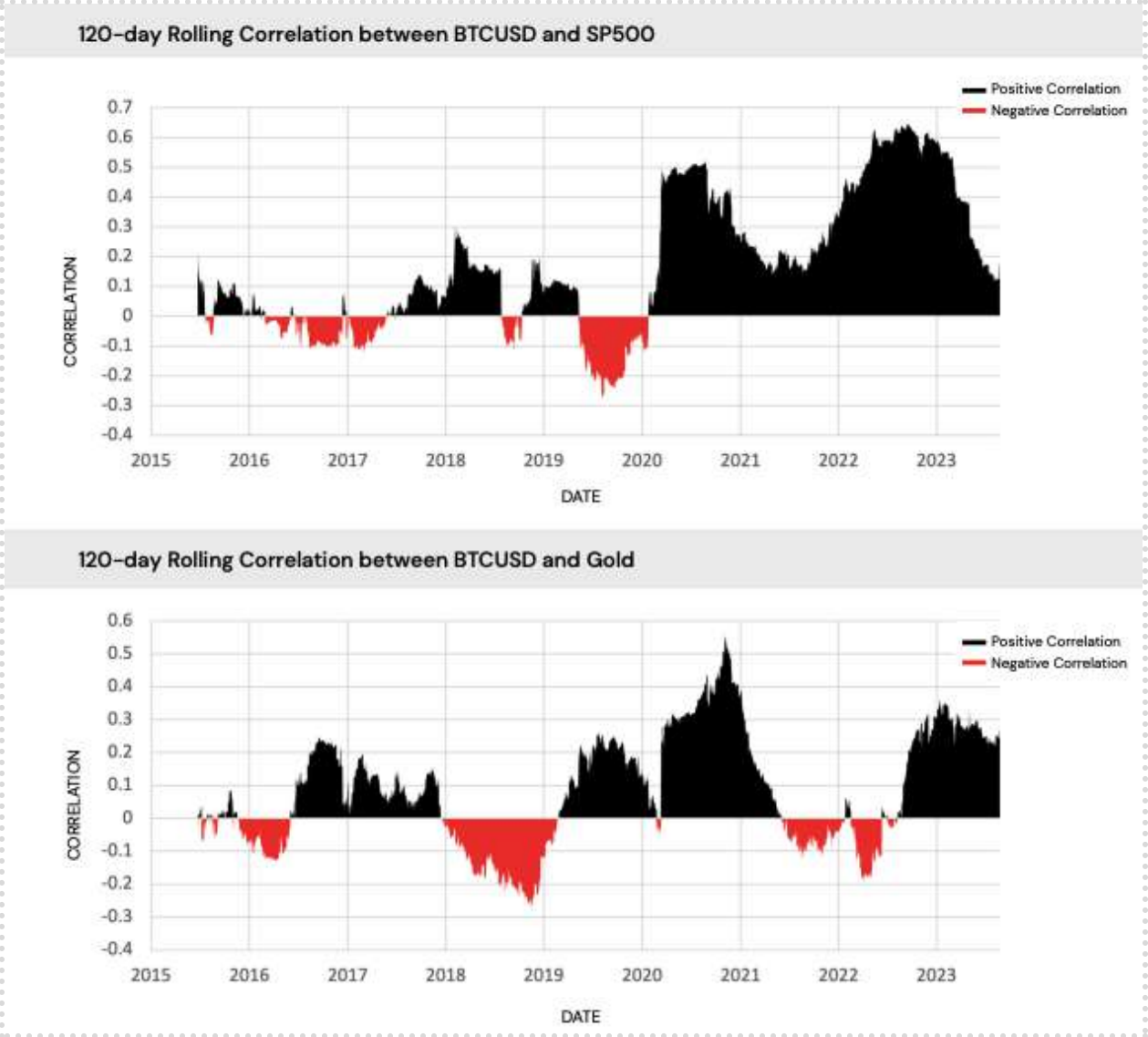
The maturing blockchain domain is increasingly attracting institutional investors. These investors are seeking opportunities in this evolving space but require regulatory clarity that mirrors the familiarity and rigor of traditional financial systems. Their involvement spans investing in crypto assets, developing cryptocurrency trading platforms, and exploring blockchain applications in TradFi.

To understand the intersection between crypto and TradFi, it is crucial to examine Bitcoin's correlation with traditional assets, particularly equities, and gold. Bitcoin often serves as a barometer for broader crypto market sentiment, making these correlations essential to comprehend.

Since 2020, Bitcoin has shown a consistent positive correlation with stocks and, increasingly, with gold. This trend aligns with the perception of Bitcoin as a hedge against inflation (and as a store of value).

At the same time, Bitcoin's growing correlation with stock market trends indicates its role as a risk asset, with its price movements often paralleling those of traditional equities. Concurrently, its frequent correlation with gold suggests its emergence as an alternative asset class, especially in times of inflation and economic uncertainty, positioning Bitcoin as both a store of value and an inflation hedge, akin to gold.

Image: Correlation Between Bitcoin and SP500



Source: Flow Traders Report

These trends, coupled with the expansion of financial products in Bitcoin's spot and derivatives markets, support the view that Bitcoin is now recognized as a significant asset class and a defense against currency devaluation.

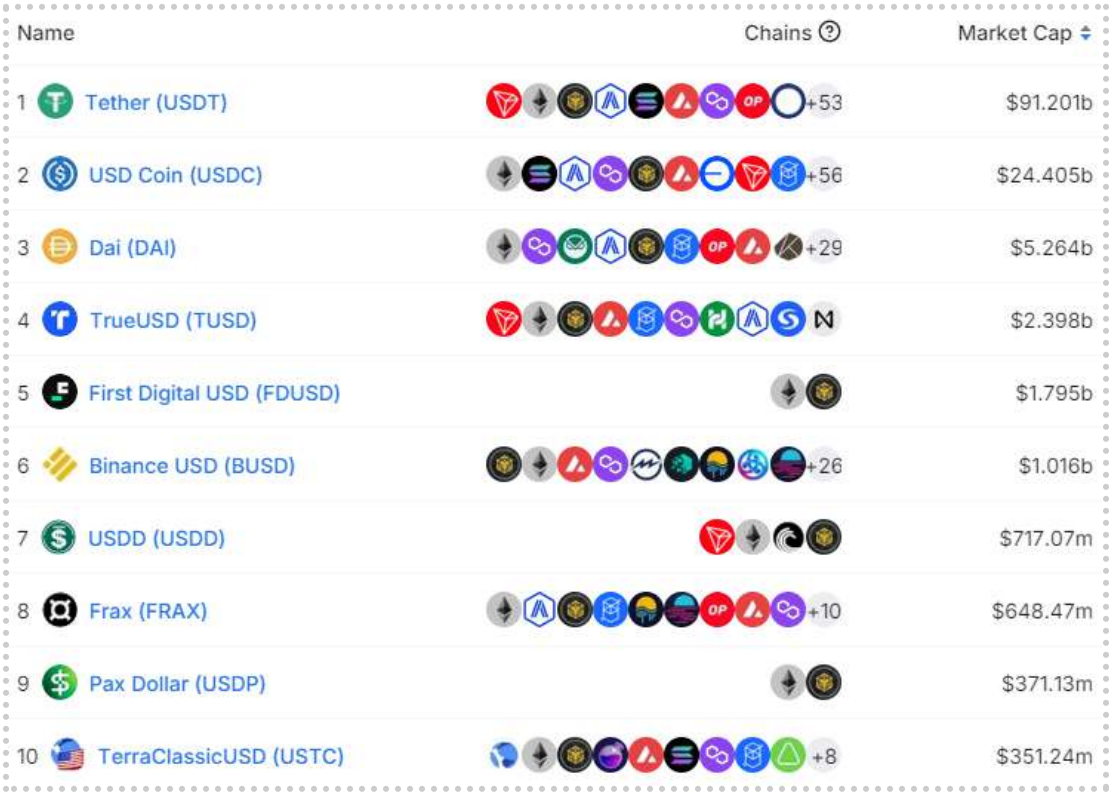
Going Beyond Correlations

Understanding the evolution of crypto involves looking beyond market correlations to product growth and tokenization. These two aspects are crucial for insights into how TradFi is merging with the cryptocurrency world and the direction of capital flows.

Tokenization, which involves converting real-world assets or values into digital tokens on a blockchain, is a key factor in this convergence. It acts as a bridge between TradFi and the emerging world of cryptocurrency.

Tokenization opens up off-chain assets to a wider audience by leveraging the global accessibility of crypto markets. This accessibility, accessible to anyone with an internet connection, reduces barriers to asset ownership, democratizing financial opportunities.

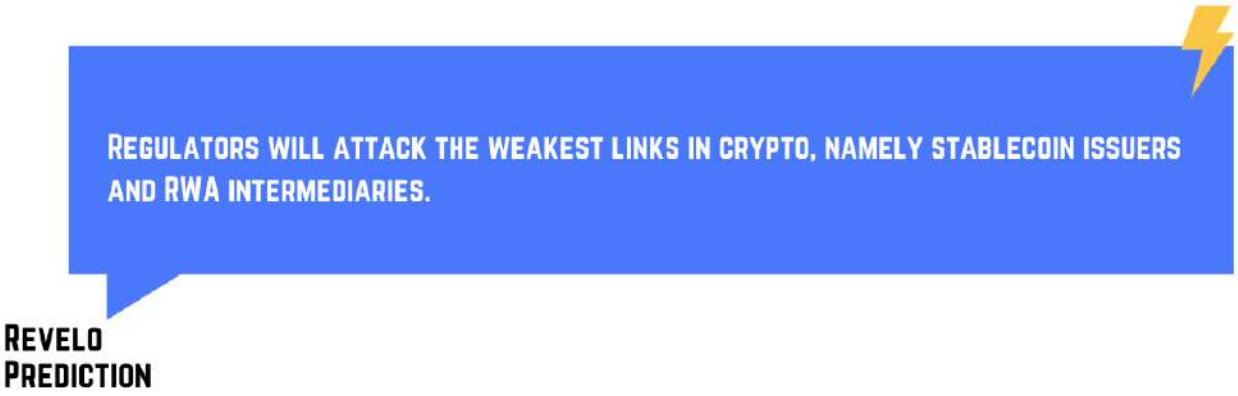
Image: Top 10 Stablecoins by Market Cap



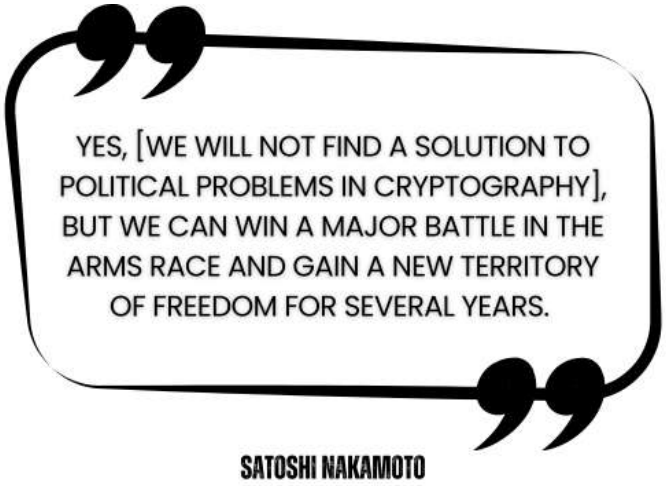
	Name	Chains	Market Cap
1	Tether (USDT)	+53	$91.201b
2	USD Coin (USDC)	+56	$24.405b
3	Dai (DAI)	+29	$5.264b
4	TrueUSD (TUSD)		$2.398b
5	First Digital USD (FDUSD)		$1.795b
6	Binance USD (BUSD)	+26	$1.016b
7	USDD (USDD)		$717.07m
8	Frax (FRAX)	+10	$648.47m
9	Pax Dollar (USDP)		$371.13m
10	TerraClassicUSD (USTC)	+8	$351.24m

Source: DefiLlama

The tokenization concept became prominent with the introduction of Tether (originally Realcoin) on the Bitcoin network in 2014. Since then, stablecoins, which are digital versions of fiat currencies, have become a standout example of successful tokenization. They have demonstrated their utility and resilience across different market conditions and economic scenarios.

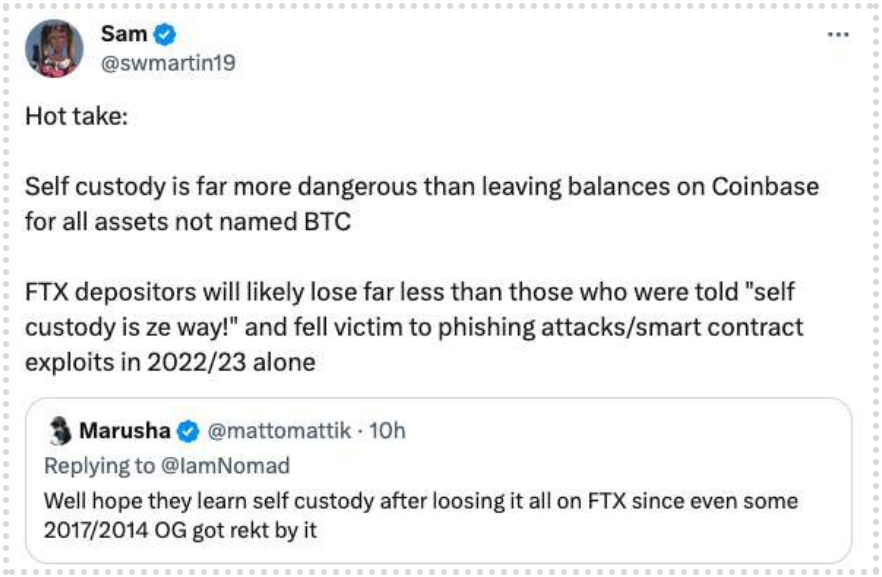


Asset Control Through Custody and Clearing



Digital assets faced several significant challenges in 2022, including major incidents like the Ronin Bridge Hack, the UST and LUNA collapse, 3AC liquidations, and the FTX insolvency. These events highlighted the need for better segregation of custody and clearing in the crypto space. Adopting best practices from TradFi, particularly in custody and clearing mechanisms, is seen as a key step towards fostering wider adoption.

Image: Sam on Dangers of Self Custody



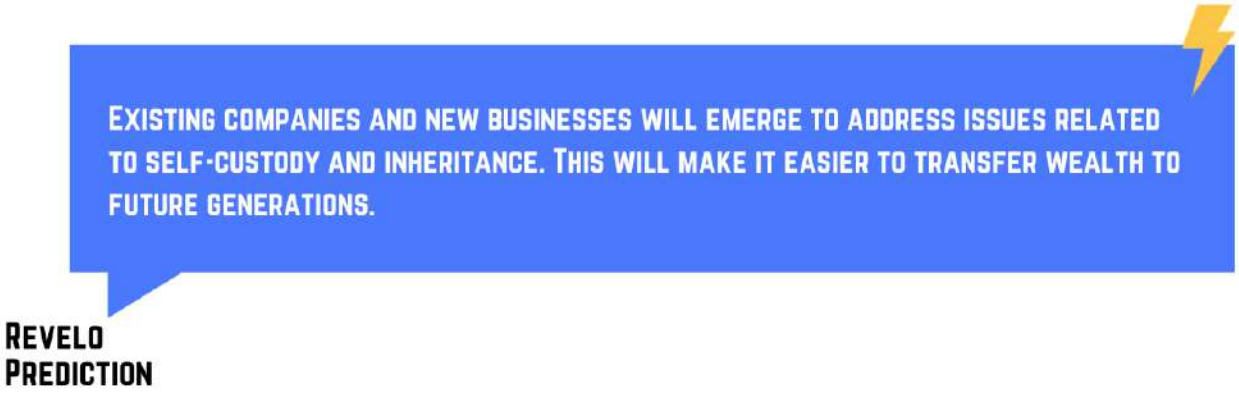
Source: Sam (Twitter)

In response to concerns, various companies are developing solutions to address these issues.

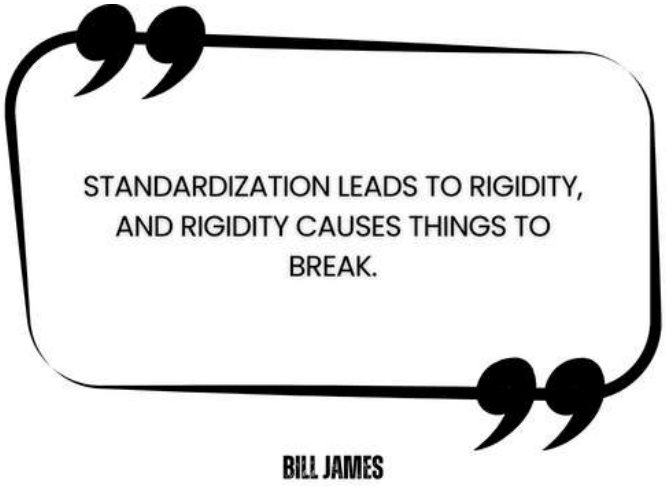
Table: Solutions to Concerns Around Self-Custody

Solution	Explanation
Non-Custodial Trading	Platforms like Copper, Fireblocks, BitGo, and Ledger allow for trading without giving up control of assets.
Clearing Services	Companies like ClearToken are emerging to provide specialized clearing services for digital asset exchanges.
Prime Brokerage and Credit	Firms like Hidden Road Partners and FalconX offer prime brokerage and credit services tailored to the needs of the crypto market.

The development and adoption of these platforms and services are vital for establishing trust in the sector. They are instrumental in paving the way for crypto to achieve its full potential and attract a broader base of users, including both retail and institutional investors.



The Urgent Need For Standardization



For 2024, moving fast and breaking things is no longer an option, and the industry is in desperate need of a universal classification structure. The absence of a framework similar to the Global Industry Classification Standard (GICS) used in TradFi creates barriers for investors and capital allocators.

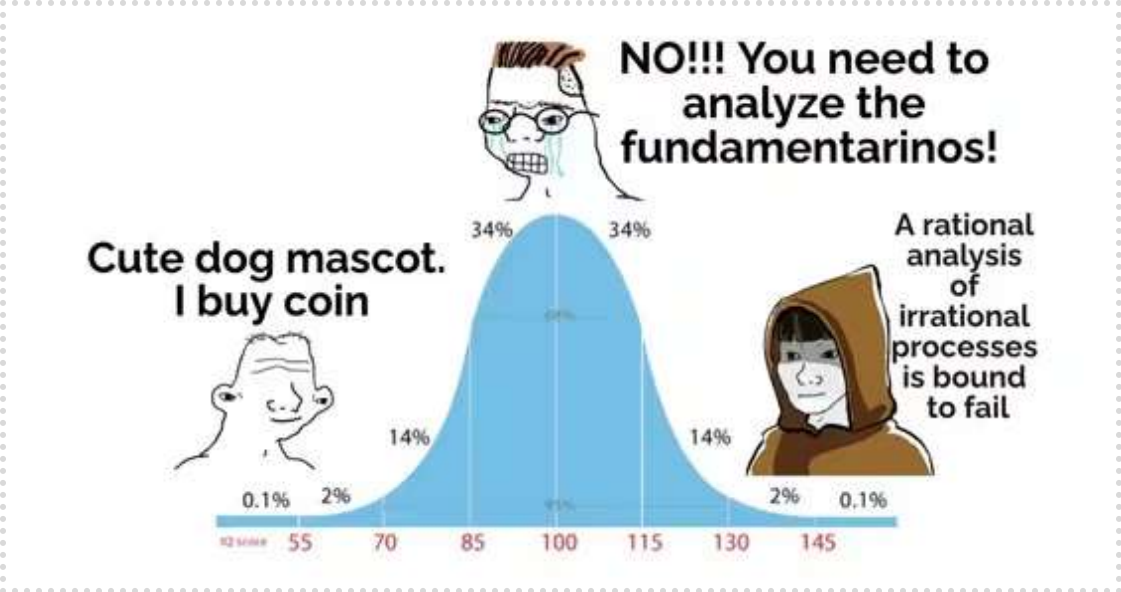
The GICS plays a crucial role in the TradFi world by providing a standardized and comprehensive industry classification system. This standardization is essential for investors, analysts, and other market participants, allowing them to categorize and compare companies across different sectors and industries on a global scale.

It serves as a fundamental tool for investment analysis, enabling the identification of industry trends, performance comparisons, and informed portfolio diversification. GICS also facilitates the creation of industry benchmarks, crucial for measuring investment performance against relevant standards, and improves communication within the financial community by using a common language for discussing market trends and strategies.

GICS aids in risk management by helping investors understand the industries in which they are invested, and in market research by providing a framework for organizing and interpreting data. The global coverage of GICS offers a comprehensive perspective, enabling cross-border comparisons and analysis, which is increasingly important in today's interconnected global economy.

This structure is very much absent from the world of crypto, but it's a must if we truly want to achieve the mass adoption we seek. Having a GICS in the crypto industry would significantly enhance market clarity and investor understanding. This standardization would categorize the diverse range of crypto assets, from cryptocurrencies and tokens to NFTs and DeFi projects, into defined sectors or industries.

Image: Meme of Reail Buying Philosophy



Source: Coindesk (Blog)

This clarity is crucial for investors, as it simplifies risk assessment, portfolio diversification, and the identification of growth opportunities. Additionally, a GICS would improve market transparency and credibility, making the crypto market more accessible and understandable to traditional investors and financial analysts.

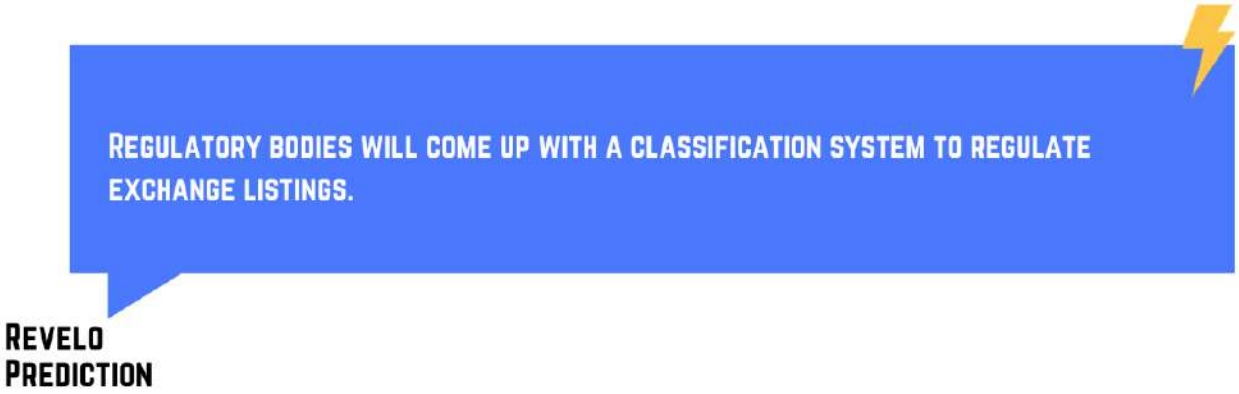
It would also facilitate the creation of industry benchmarks, allowing investors to track the performance of specific crypto sectors, compare them, and make informed investment decisions. Additionally, a GICS could play a vital role in regulatory efforts by providing a clear framework for categorizing and regulating different types of crypto assets, aiding in areas like taxation, securities regulation, and anti-money laundering measures.

Table: Why Having a Classification System for Investments is Important

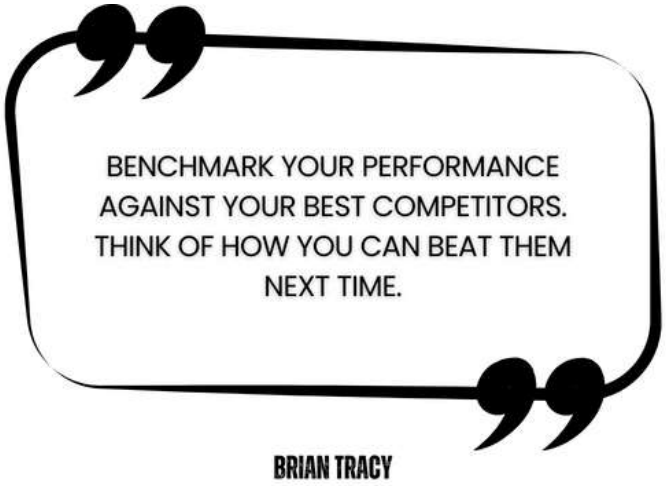
Reason	Explanation
Enhances Credibility and Acceptance	A structured classification system will boost the credibility and mainstream acceptance of digital assets.
Differentiation Between Market Segments	It will help investors identify and understand the differences between various segments of the market.
Facilitates Creation of New Products and Strategies	With clear classifications, it becomes easier to develop indexes, new financial products, and effective allocation strategies.
Enables Better Measurement and Benchmarking	Standardization allows for the measurement of global trends, benchmarking investments against indexes, and evaluating portfolio performance across different industries.
Specialization in Market Segments	It encourages specialization and a deeper understanding of specific market segments.

This standardization is particularly appealing to institutional investors, who are accustomed to such systems in TradFi and can apply similar investment strategies and risk management practices in the crypto space.

As the crypto industry continues to evolve, a GICS would help track the growth and emergence of new sectors, providing valuable insights into innovation trends and market dynamics, and thereby fostering a more structured and mature market environment.



The Need For Specialized Benchmarking



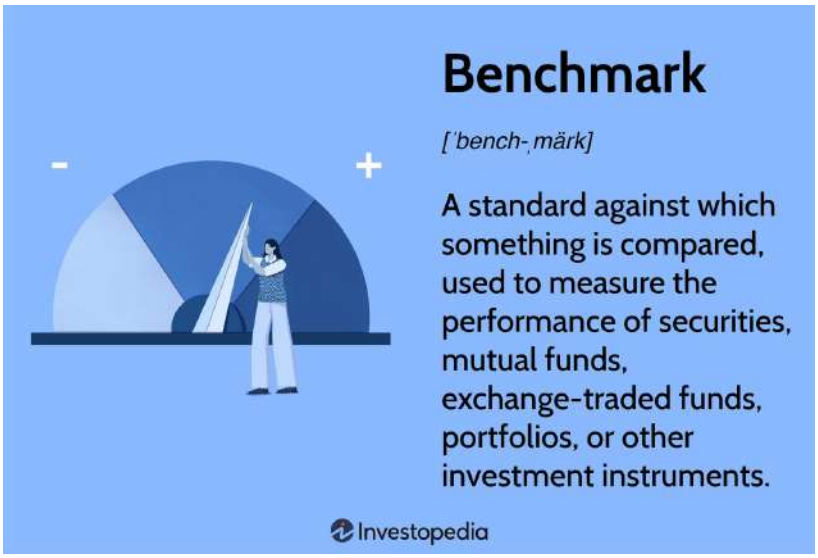
In TradFi, benchmarking is a key tool for evaluating a portfolio manager's performance. It involves comparing returns against an index to provide insights into various aspects of portfolio management, such as alpha generation, sector allocation, and tracking error.

However, in the cryptocurrency world, the practice of benchmarking is still developing. Many crypto funds, especially those with a "long-only" strategy, tend to benchmark their performance against Bitcoin's Net Asset Value (NAV). This approach, while straightforward, may not be suitable for all types of funds, particularly those with specific themes like DeFi or infrastructure.

Fund ratings play a significant role in the decision-making process for financial platforms, independent financial advisors (IFAs), and financial advisor dealer groups. These ratings often influence what is included in an Approved Product List (APL), which lists products or platforms meeting certain criteria.

Rating agencies typically use a mix of qualitative and quantitative methods to evaluate funds, considering factors like the fund's operational history, performance, assets under management (AUM), and more.

Image: Investopedia's Definition of Benchmark



Source: Investopedia

For many crypto funds, aligning with these traditional criteria can be challenging. They often have shorter performance histories and AUMs below the common threshold of $100M.

Looking ahead, the industry is expected to increasingly align with traditional asset allocation processes. This alignment is crucial for accommodating the institutional investments that are becoming more prevalent in the crypto space.

THE EVOLUTION AND IMPLEMENTATION OF BENCHMARKING AND FUND RATINGS IN THE CRYPTOCURRENCY SPACE WILL FACILITATE GREATER INSTITUTIONAL PARTICIPATION AND INVESTMENT.

REVELO PREDICTION

Stablecoins - The Next $1T Asset Class

Stablecoins serve three primary use cases: a hedge against hyperinflating currencies, a means to bypass capital controls in cross-border transactions, and a tool for transferring funds between various crypto exchanges and DeFi platforms.

The success of stablecoins is not just due to their decentralization but also due to the ease of access to USD they provide. This accessibility is a regulatory gap that public blockchains have filled, making it simpler for foreign individuals to access USD.

Image: Total Stablecoins Market Cap

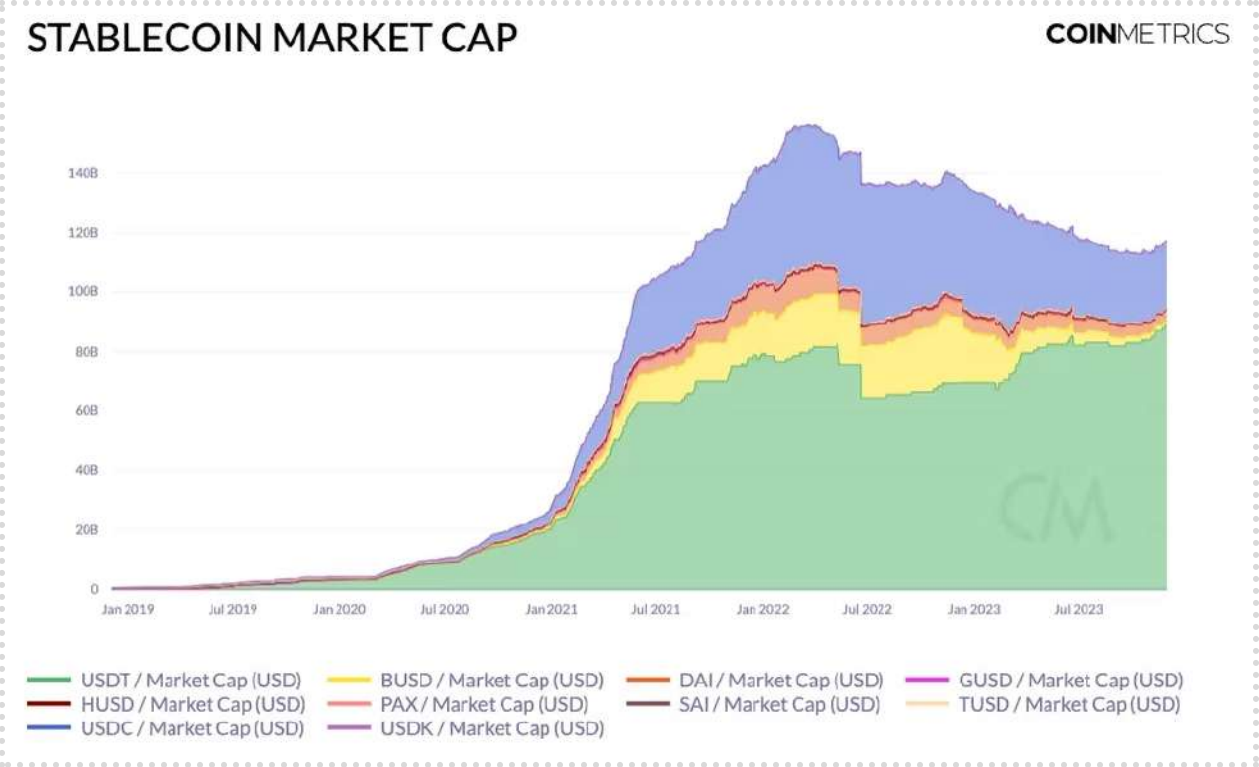
Source: DefiLlama

Nowadays, the industry has become complacent with stablecoins, as it shifts its focus to infrastructure development. It's crucial to move consumer stablecoin usage to more sustainable solutions such as Ethereum Layer 2 networks, improve user experience, and encourage competition in the market. Neglecting stablecoins can weaken the overall product-market fit.

The stablecoin market has evolved with a focus on integrating Real World Assets (RWAs) to overcome the stablecoin trilemma of price stability, scalability, and decentralization. However, user demand remains a challenge, and future developments are expected to improve user experience, education, and awareness.

Understanding the complexities of the underlying technology is crucial for users to fully appreciate the potential benefits and applications of stablecoins.

Image: Chart of Popular Stablecoin Market Caps



Source: Coinmetrics

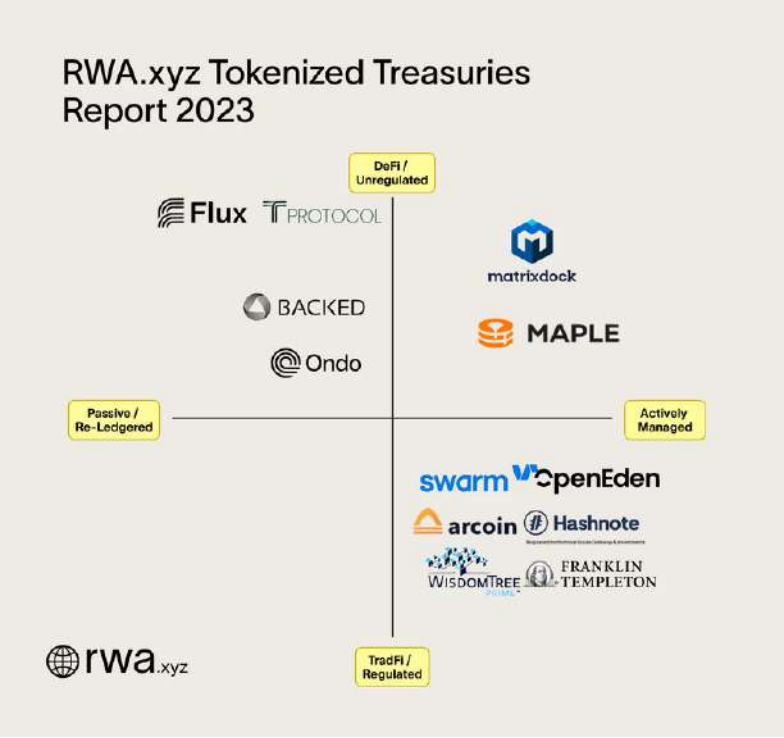
Tokenized short-term US Treasuries, particularly those based on Ethereum Virtual Machine (EVM) platforms, are gaining traction. Issuers like Ondo Finance, Matrixdock, Maple Finance, Backed Finance, and OpenEden are leading this trend, collectively representing the majority of tokenized US Treasury issuances.

However, it's important to note that these products are primarily accessible to non-US professional investors and involve compliance with KYC and AML procedures.

Despite the early stage of tokenized US Treasuries, they represent a significant step in bridging TradFi with blockchain, potentially influencing the short-to-medium-term development of the crypto space.

For the same reason that almost nobody wants to use volatile assets as a store of value or medium of exchange, most users are comfortable enough holding fiat-backed stablecoins. Most users currently prefer fiat-backed stablecoins due to their stability and familiarity.

Image: Protocols Building Tokenized Treasuries



Source: RWA.xyz

Data shows that stablecoins don't need to be permissionless to be a superior alternative to fiat currency. Perhaps, at some point, decentralized stablecoins will be large enough to become an accepted form of currency worldwide. But given the current circumstances, we believe that the industry could be decades away from this becoming a reality.

We look forward to more strategic partnerships with traditional financial institutions as they are key to integrating stablecoins into established financial systems. These partnerships could

enable the seamless exchange between fiat currencies and stablecoins, not only expanding the user base but also bridging the gap between TradFi and DeFi.

Tokenizing T-Bills on Ethereum, for example, could allow fintech and digital banks to operate with the equivalent of full reserves while offering higher yields than traditional savings accounts and has the added advantage of allowing for global settlement in seconds. And as security and transactional activity would be delegated to a blockchain network like Ethereum, the operational costs are virtually eliminated.

As we continue to head down this path, clear regulatory frameworks are essential. Regulatory compliance is increasingly important for building trust and attracting institutional investors and driving mainstream adoption, not just for USD-denominated stablecoins but also for other currencies like EUR and JPY.

Additionally, it must become a priority for all stablecoin designs to effectively manage varying interest rate environments. Adapting to these fluctuations can make or break their adoption. We argue that stability mechanisms must be built into the design of stablecoins such that they can withstand changes in TradFi interest rates.

In this context, we emphasize the importance of having on-chain oracles that relay information about macroeconomic indicators such as the Secured Overnight Financing Rate (SOFR), the Interest on Reserve Balances (IORB) rate, inflation, GDP, exchange rates, etc.

The stablecoin market has undoubtedly seen growth with new issuances like Aave's $GHO and Curve's $crvUSD. Stablecoins have become significant holders of US Treasuries and collectively hold more than many countries. This underscores the growing influence and potential of stablecoins in the global financial landscape.

The future of stablecoins could take several paths, including the launch of a central bank digital currency (CBDC) by the US Federal Reserve, the development of separate networks for USDT and USDC, or a combination of these approaches. CBDCs with privacy features, like zero-knowledge proofs (ZKPs), offer enhanced privacy and decentralization compared to some blockchain stablecoins.

We believe that in relatively short order, assuming no macroeconomic meltdown, the total stablecoin market cap, including $USDC, $USDT, $DAI, etc., will hit a trillion dollars. Of course, it would be foolish to think that this will be accomplished before the big two, Bitcoin and Ethereum.

What Will Happen With CBDCs?

Central Bank Digital Currencies (CBDCs) are rapidly becoming a focal point in the financial world, with numerous countries exploring their development. These digital currencies, controlled by central banks, offer governments greater control and the potential for more effective financial oversight.

Many CBDC projects are currently being developed on private or permissioned blockchains. While this approach offers a degree of control and security, it raises significant questions about governance, independence, and coordination among various central banks.

Establishing consortium networks for CBDCs is an important but complex endeavor. It involves creating multi-party governance structures that maintain each member's independence, which is complex and often challenging to achieve consensus on common technical standards.

In contrast, public blockchains like Ethereum present several advantages that could be beneficial for CBDCs. Ethereum itself stands out as the largest public blockchain network with significant network effects. Governments could leverage Ethereum to create their own Layer 2 networks, ensuring both privacy and scalability while benefiting from Ethereum's robust ecosystem.

Implementing CBDCs on a platform like Ethereum could offer transparency to the public while maintaining individual privacy through advanced technologies like zero-knowledge proofs. This

would enable governments to prove the validity of monetary policy without revealing individual user data.

Image: CBDCs - Yes or No?

Source: Cointelegraph

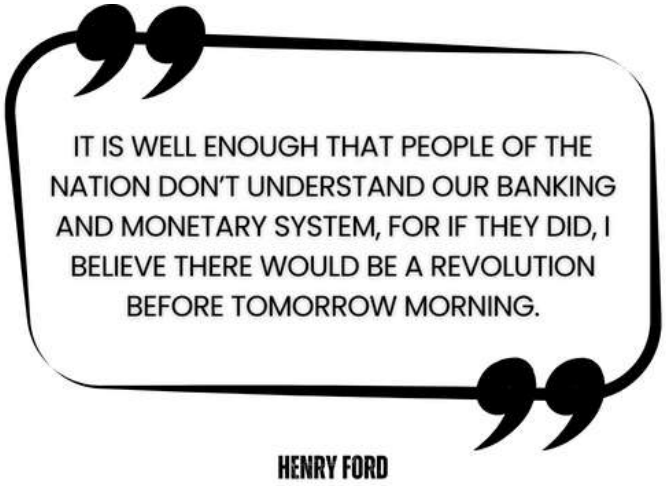
Public blockchains can provide regulators with improved tools for monitoring systemic risks, ensuring tax compliance, and preventing money laundering. They enable governments to establish specific rule sets to ensure acceptable usage of CBDCs, balancing the need for regulatory oversight with respect for citizens' rights and privacy.

So we believe that, while CBDCs are still in the developmental phase, the use of public blockchains, particularly Ethereum, offers a promising path forward. This could lead to more efficient, secure, and user-friendly digital currencies, potentially transforming the global financial landscape.

REVELO THOUGHT

THE IMPLEMENTATION OF CBDCS WILL CATCH MANY BY SURPRISE. CENTRAL BANKS WILL ADVOCATE FOR THEIR DISTRIBUTION LIKE TRADITIONAL CASH. THIS INVOLVES WITHDRAWING THEM FROM ATMS OR USING THEM DIRECTLY FOR TRANSACTIONS. THIS MAINTAINS A FAMILIAR USER EXPERIENCE AND ALLEVIATES CONCERNS ABOUT INVASIVE TRACKING.

Universal Capital Markets



The world of on-chain and universal capital markets in crypto holds a ton of potential, especially with the rise of DeFi ending platforms. These platforms are changing the way lending works by eliminating the need for traditional financial intermediaries.

In DeFi, interest rates for deposits and borrowing are determined by supply and demand, and smart contracts bring transparency and streamline the entire lending process. A key advantage of DeFi lending is that borrowers don't need to go through the usual burdens of KYC procedures, credit scores, or provide personal information.

Despite its success, DeFi lending is still in its early stages. Currently, its primary use has been for speculative purposes, such as providing leverage to traders, rather than for more productive uses like working capital or long-term investments. Challenges in on-chain business lending include the lack of predictable revenue, diversified treasuries, compliance with KYC norms, and clear rules for debt recovery.

To bridge the gap between on-chain and off-chain worlds, projects like Centrifuge, Atlantis, Trufi, Maple, and Goldfinch are exploring the use of Real-World Assets (RWAs). They are focusing on the importance of on-chain collateral sources.

For example, protocol treasuries could issue governance tokens, akin to shares, directly on the blockchain. This could enable fundraising and access to a global pool of investors without

intermediaries, reminiscent of the early days of ICOs (Initial Coin Offerings). Despite some associated risks, ICOs showed the potential for permissionless access to equity markets.

Table: Current Problems Related to Bringing Off-Chain Assets On-Chain

Problem	Potential Solutions
On-Chain Debt Markets Are Mostly Overcollateralized	Undercollateralized lending backed by RWAs.
Difficult to Put Off-Chain Assets On-Chain (Oracle Problem)	Tokenization of assets on-chain, bearer assets rather than contractual agreements.
	Advances to legally recognize on-chain assets, i.e., the internet as a foreign jurisdiction and the recognition of smart contract governed entities as legal entities.

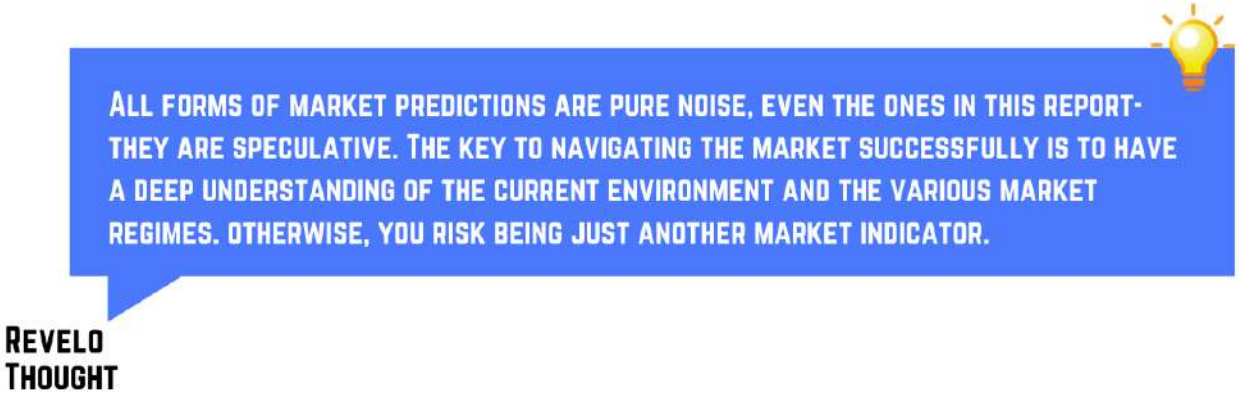
However, this approach raises regulatory concerns, particularly regarding the application of securities law to on-chain equity markets. It's crucial to protect retail investors in these markets, which could involve measures like issuing non-transferable tokens for project teams, implementing an independent review process, and focusing on investor education.

The growth of these initiatives could benefit from an "app store of financial products", which could unlock various use cases.

Table: “App Store” of Financial Products

Use Case	Example
On-chain Treasury Management	Managing and diversifying treasuries in a transparent and verifiable manner.
Hedging Against FX Risk and Currency Debasement:	Providing tools to mitigate these financial risks.
24/7 Lending/Borrowing Without Bureaucracy	Streamlining financial transactions at any time.
Trustless Transactions	Utilizing on-chain payment streams and escrow services for secure transactions.
Capital Raises from International Investors	Facilitating fundraising with instant settlement.
Instant and Affordable International Money Transfers	Simplifying and reducing the cost of sending money across borders.

We believe that, while DeFi lending platforms have made significant strides, there's still a long way to go in fully realizing the potential of on-chain and universal capital markets. The focus is on overcoming current challenges and exploring innovative solutions to integrate real-world assets with blockchain technology, all while ensuring regulatory compliance and investor protection.



The Convergence Of TradFi and DeFi

We are drawing nearer and nearer to the true convergence between TradFi and DeFi, but still have a long way to go. We expect it to be a very gradual process, evolving through several key developments.

Initially, TradFi firms like BlackRock and Fidelity may offer trading and custody services for well-established cryptocurrencies such as Bitcoin and Ethereum. This could extend to the integration of these digital assets within retirement accounts like 401(k)s and mutual funds, providing mainstream investors with exposure to cryptocurrencies.

A narrative that has really started to heat up in the second half of 2023, is the possible introduction of Bitcoin and Ethereum ETFs, which would make it significantly easier for investors to access these assets through traditional brokerage accounts.

On the back of this, we could see the tokenization of traditional financial products like treasuries and money market accounts, which would offer increased liquidity and efficiency on public blockchains. This would lead to traditional stocks and equities being represented as tokens on blockchain networks, simplifying ownership and enabling new trading possibilities.

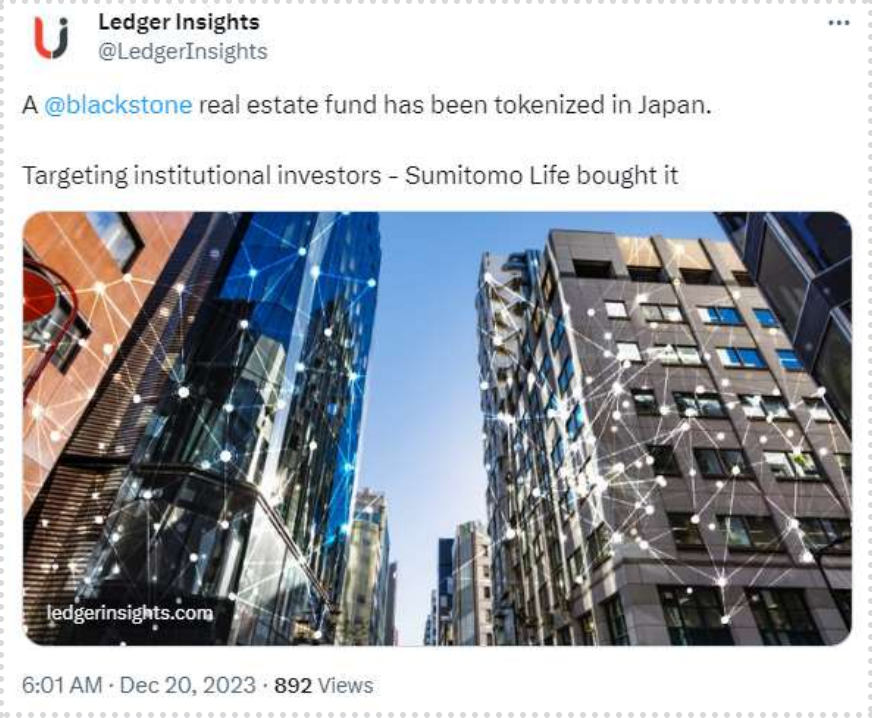
Financial firms might also offer separately managed accounts focused on a basket of crypto infrastructure projects, allowing investors to diversify their exposure. There could be ETFs

introduced to track and provide exposure to Layer 1 blockchain projects beyond Bitcoin and Ethereum, as well as ETFs representing a basket of DeFi protocols.

As the offerings expand, financial firms may include a broader range of cryptocurrencies and tokens, and customers might have the option to stake their crypto assets, earning passive income through these services.

Integration with on-chain data and analytics platforms will enable financial firms to provide a comprehensive analysis of crypto networks and protocols. Through privacy-enabled Layer 2 solutions like Ernst & Young's Nightfall, firms can seamlessly integrate with DeFi protocols, offering lending, borrowing, asset management, and liquidity provision services.

Image: Blackstone Real Estate Fund Tokenized in Japan



Source: Ledger Insights (Twitter)

Additionally, firms may offer access to private assets like commercial real estate and private equity, utilizing DeFi integrations for additional services. Insurance products to protect self-custody wallet holdings could become essential as individuals take control of their crypto assets.

In the long term, the vision is for all assets to be tokenized and for the entire financial ecosystem to operate on public blockchains. This transition could take 10 years from the point of clear regulations and market acceptance, mirroring the migration of enterprises to cloud computing in recent history.

According to a Brevan Howard report: in 2022, stablecoins settled over $11 trillion in on-chain transactions almost surpassing Visa's payment volume of $11.6 trillion.

THE LAYER 1 PLAYGROUND

Section 8

THE LAYER 1 PLAYGROUND

Without question, Layer 1s have been at the forefront of blockchain innovation and growth. However, as the landscape evolves, the future of Layer 1s is becoming increasingly complex and competitive, and in some cases, uncertain.

The key questions for industry participants are whether the space is overcrowded, the viability of new Layer 1s entering the market, and the challenges they face in gaining market share. At the end of the day, being cheaper and faster alone is not enough to overtake Ethereum.

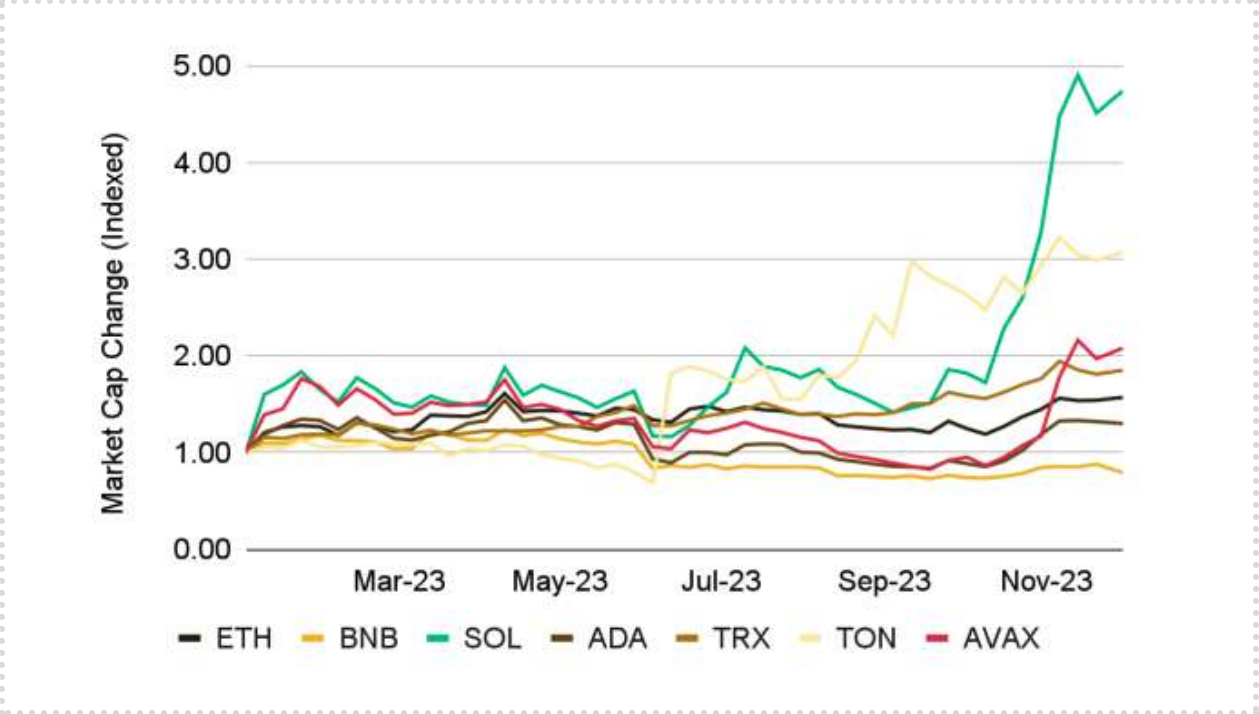
2023 has definitely been a year of introspection for Layer 1 blockchains. While some have shown impressive resilience amidst market volatility and even growth, others have struggled to meet expectations.

The market has seen the introduction of many new Layer 1s like Aptos, Sui, Sei, and Kaspa, each vying for a share in a market that's becoming increasingly saturated. This saturation raises questions about the necessity and feasibility of new Layer 1s, especially given the challenges of building an ecosystem from scratch, i.e., the 'cold start' problem.

Several alt Layer 1s have outperformed $ETH this year. Despite Ethereum's continued dominance, Solana, in particular, stood out as the best performer, increasing its market capitalization by more than 50% in November.

One notable trend is the pivot of some Layer 1 projects towards Layer 2 solutions, as seen with Celo. This shift indicates a growing recognition of the need for scalability and efficiency beyond what traditional Layer 1s can offer. The rapid rise of Layer 2s, such as Base on the Optimism stack, Scroll ZKEVM, Linea, Manta Pacific, and Zora suggests a future where the focus may shift more towards Layer 2 solutions.

Image: Layer 1 Market Cap Change



Source: Binance Research - Top 10 Narratives

Despite the crowded market, Layer 1 blockchains that manage to differentiate themselves with unique features continue to thrive. For instance, Solana's partnership with Google Cloud and its focus on high throughput and performance demonstrate how Layer 1s can carve out a niche.

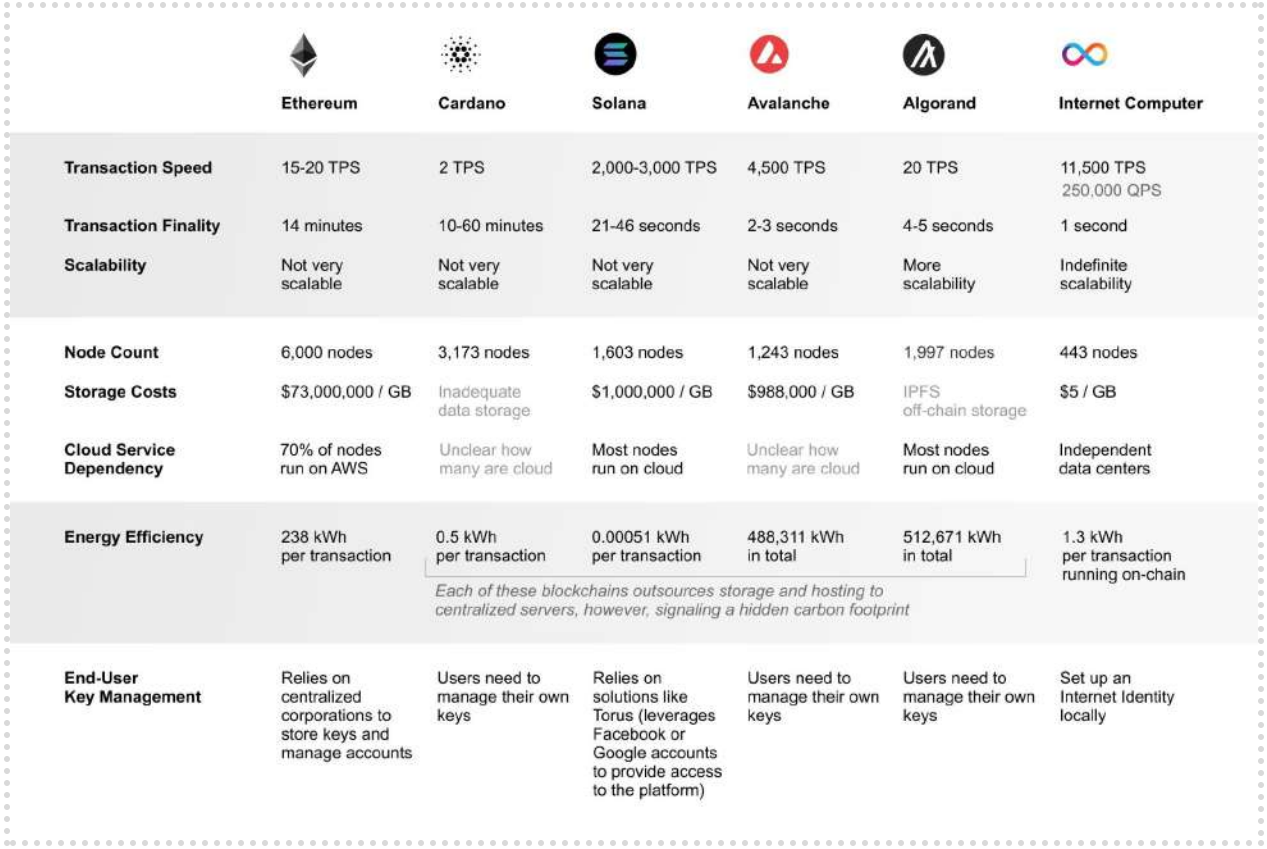
Another one that stands out is NEAR which did not manage to fully participate in the Layer 1 rotation trade of end 2021. However, the ecosystem remains focused on prioritizing user and developer experience. Even though not many native applications have gained much traction so far, the ecosystem is making strides to become more Ethereum-aligned.

As a result, it will be worth paying attention to those Layer 1 ecosystems that decide to add value to Ethereum as a settlement layer. It is also important to be on the lookout for repricing opportunities in token prices.

For example, $MATIC used to be a token that secured Polygon's PoS chain; however, with the migration from $MATIC to $POL, the token will now secure a modular network of Ethereum rollups each with its own modular stack of Data Availability (DA), sequencer and prover.

We have also witnessed a new focus on performance and speed, initially with Injective and Sei on the Cosmos ecosystem, and later on with Fantom and Monad. We believe that Monad will find a sweet spot in the market as a layer 1 that incorporates the best of both worlds: parallel transactions and EVM compatibility.

Image: Layer 1 Performance Comparison



	Ethereum	Cardano	Solana	Avalanche	Algorand	Internet Computer
Transaction Speed	15-20 TPS	2 TPS	2,000-3,000 TPS	4,500 TPS	20 TPS	11,500 TPS 250,000 QPS
Transaction Finality	14 minutes	10-60 minutes	21-46 seconds	2-3 seconds	4-5 seconds	1 second
Scalability	Not very scalable	Not very scalable	Not very scalable	Not very scalable	More scalability	Indefinite scalability
Node Count	6,000 nodes	3,173 nodes	1,603 nodes	1,243 nodes	1,997 nodes	443 nodes
Storage Costs	$73,000,000 / GB	Inadequate data storage	$1,000,000 / GB	$988,000 / GB	IPFS off-chain storage	$5 / GB
Cloud Service Dependency	70% of nodes run on AWS	Unclear how many are cloud	Most nodes run on cloud	Unclear how many are cloud	Most nodes run on cloud	Independent data centers
Energy Efficiency	238 kWh per transaction	0.5 kWh per transaction	0.00051 kWh per transaction	488,311 kWh in total	512,671 kWh in total	1.3 kWh per transaction running on-chain
		Each of these blockchains outsources storage and hosting to centralized servers, however, signaling a hidden carbon footprint				
End-User Key Management	Relies on centralized corporations to store keys and manage accounts	Users need to manage their own keys	Relies on solutions like Torus (leverages Facebook or Google accounts to provide access to the platform)	Users need to manage their own keys	Users need to manage their own keys	Set up an Internet Identity locally

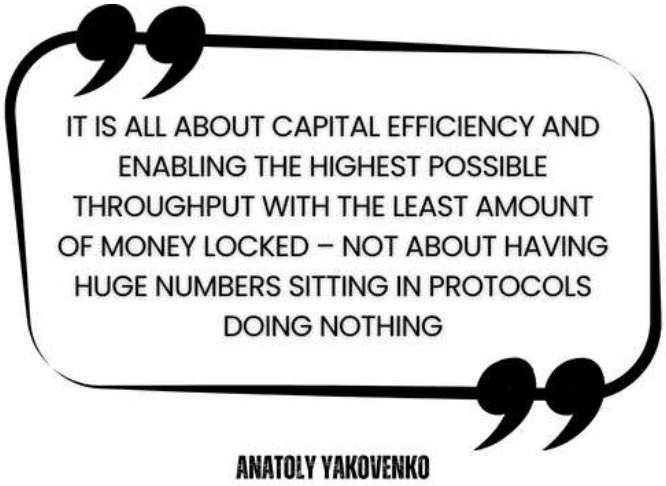
Source: CoinCodex

Toncoin has also seen positive developments, particularly its partnership with Telegram. Telegram will rely exclusively on TON as its web3 blockchain infrastructure, with TON Space, a self-custodial web3 wallet, integrated for all of Telegram's 800 million monthly active users. Animoca Brands, a gaming and metaverse venture capital firm, has invested in the TON Foundation and become the largest validator of the TON chain.

Looking ahead to 2024, the blockchain industry must pivot its attention from infrastructure battles to addressing scalability and usability. The focus should be on developing resilient technology that stands the test of time, improving efficiency, and onboarding new users and use cases.

We believe that the future of Layer 1s will involve a blend of continued innovation within existing Layer 1s and the growth of Layer 2 solutions, each playing a crucial role in the broader blockchain ecosystem.

Solana, the Clear Number 3



Solana faced challenges in 2022, including the FTX collapse, but its ability to weather those storms and continue to release new products and improvements has renewed optimism in the project. Furthermore, while Solana experienced network outages in 2022, there has been only one such incident in 2023, and it is expected that these incidents will further decrease with the release of Firedancer, a new, independent validator client.

Of all of the alt Layer 1s, Solana has clearly separated itself from the others, both in price and performance. Solana has its own set of unique features, and we don't think it's necessary to judge its network based on value accrual.

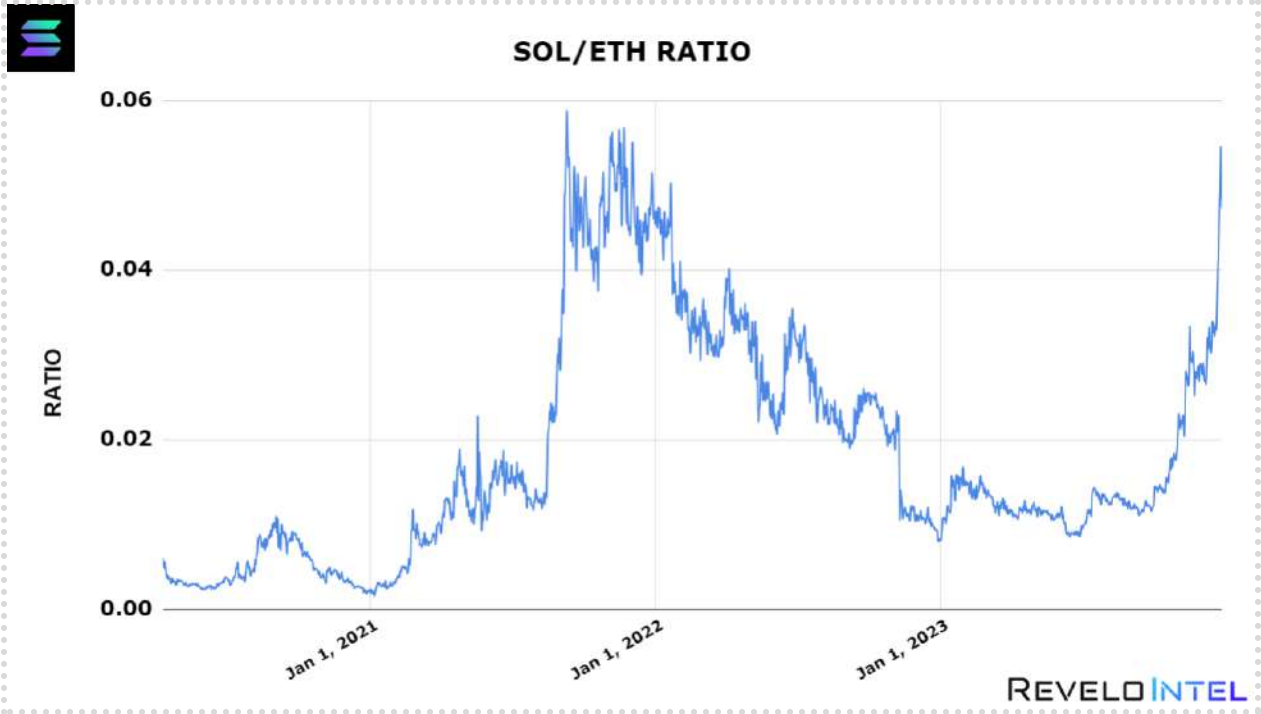
Unlike Ethereum, which relied on mechanisms like EIP-1559 to reduce its supply and potentially increase its value, Solana doesn't need such a mechanism, especially in its early stages, even though there are improvements to be made to the current fee structure.

Solana is perfectly positioned to become the home for all narratives, i.e., DeFi, DePIN, payments, NFTs, gaming, RWAs, etc. Even though we are currently seeing an environment that largely replicates Ethereum on the DeFi front, i.e., Aave-equivalent, Uniswap-equivalent, 1inch-equivalent, etc., in the coming years, we expect to see unique use cases that are only possible on Solana.

Solana has the potential to kick off a new era where crypto is increasingly used in mobile environments. In our Analyst Insight we highlighted Solana's potential to onboard a new generation of users and these individuals may not be primarily motivated by earning liquidity mining rewards or a commitment to decentralization. Instead, their adoption of the technology will be driven by its convenience, cost-effectiveness, and speed.

Even though the current adoption rate of the Solana Phone might have been underwhelming, the Solana Mobile Stack represents a very bold bet on mobile infrastructure, opening up endless opportunities for both users and developers. With TVL rising and the "wealth effect" of airdrops, we expect to see even more activity and attention within the Solana DeFi space.

Image: SOL/ETH Ratio Approaching ATHs



Raw Data: Token Terminal

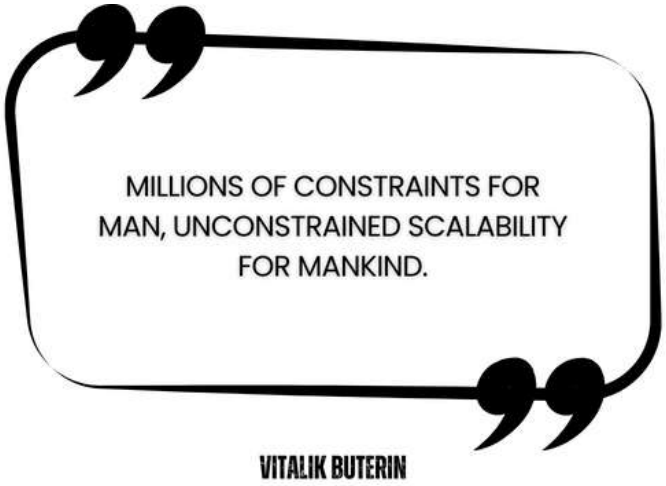
When evaluating Layer 1 assets like Solana, it's important to think about their potential to be widely held by people around the world. A good comparison is with how many people own stocks.

We should consider whether more people will end up holding Layer 1 assets like Solana in their wallets compared to the number of stocks they own. Ethereum faces challenges here due to its high transaction fees, but Solana doesn't have this problem, making it more accessible for widespread ownership. Another thing that is worth highlighting is the increase in open-source software within the ecosystem.

“Currently, we are at a stage where Ethereum is riding a narrative of “ultra-sound money”, chasing after the story started by Bitcoin itself. However, when we look at the third property, we can infer that the use as “money” is a function of how many people own a specific asset.

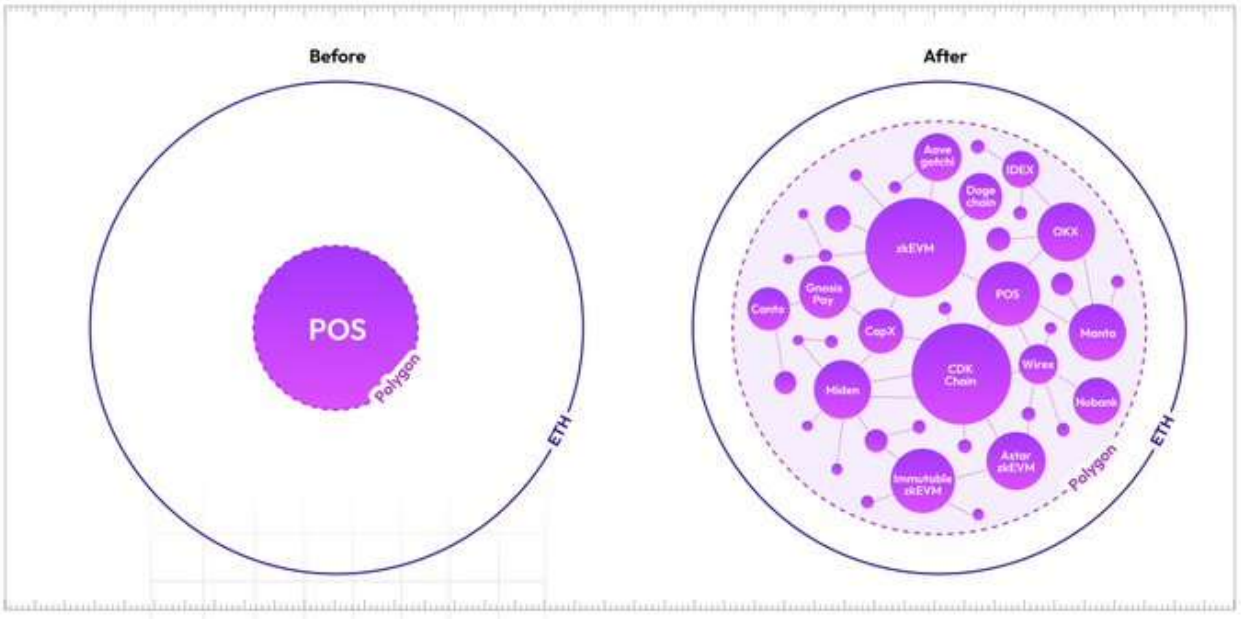
As a result, we contextualize $ETH as a deflationary commodity that struggles to achieve that third property – it cannot be money if more people can’t have it. More specifically, the adoption of $ETH is hindered by its high transaction costs.” - **Excerpt from an** [Analyst Insight](#) we wrote earlier this year.

Polygon – The Powerhouse



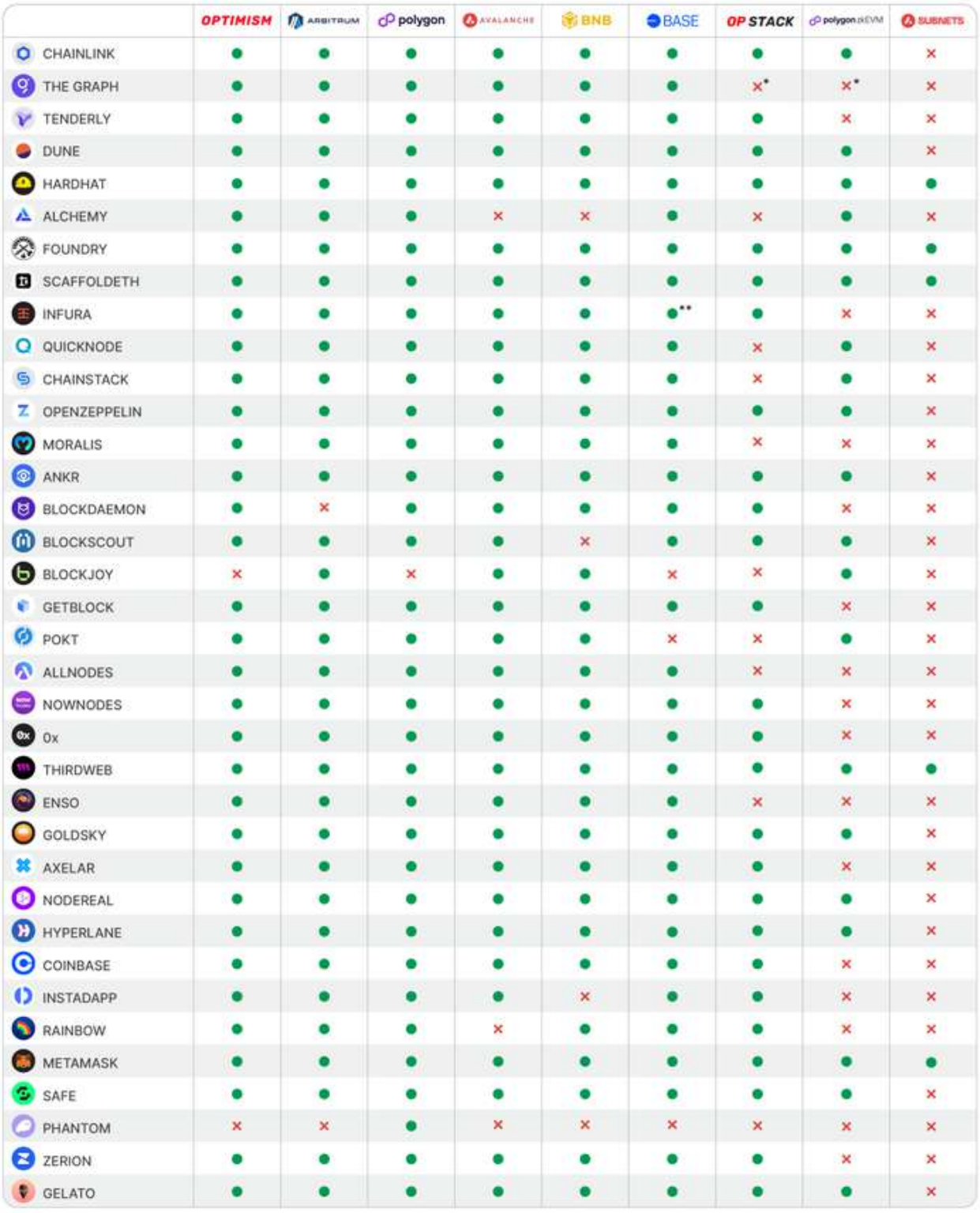
We include Polygon in this category because it has historically been recognized as a Layer 1 and there is a lot of merit to Polygon's PoS. That being said, Polygon has become an infrastructure powerhouse with one of the strongest teams when it comes to ZK technology. Not only that, but it is also one of the most adopted EVM-compatible chains.

Image: MATIC Secures 1 PoS vs POL Which Secures Mulitple



Source: Polygon (Docs)

Image: EVM Network Landscape

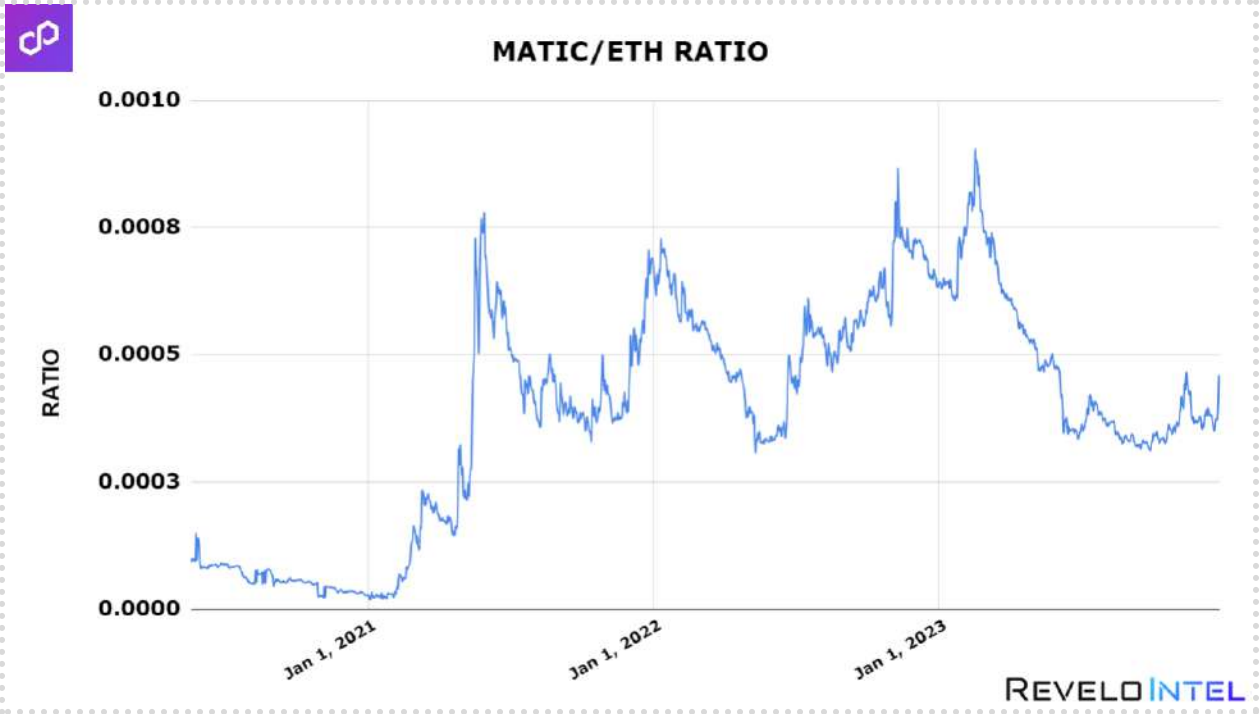


	OPTIMISM	ARBITRUM	polygon	AVALANCHE	BNB	BASE	OP STACK	polygon zkEVM	SUBNETS
CHAINLINK	●	●	●	●	●	●	●	●	✕
THE GRAPH	●	●	●	●	●	●	✕*	✕*	✕
TENDERLY	●	●	●	●	●	●	●	✕	✕
DUNE	●	●	●	●	●	●	●	●	✕
HARDHAT	●	●	●	●	●	●	●	●	●
ALCHEMY	●	●	●	✕	✕	●	✕	●	✕
FOUNDRY	●	●	●	●	●	●	●	●	●
SCAFFOLDETH	●	●	●	●	●	●	●	●	●
INFURA	●	●	●	●	●	●**	●	✕	✕
QUICKNODE	●	●	●	●	●	●	✕	●	✕
CHAINSTACK	●	●	●	●	●	●	✕	●	✕
OPENZEPPELIN	●	●	●	●	●	●	●	●	✕
MORALIS	●	●	●	●	●	●	✕	✕	✕
ANKR	●	●	●	●	●	●	●	●	✕
BLOCKDAEMON	●	✕	●	●	●	●	●	✕	✕
BLOCKSCOUT	●	●	●	●	✕	●	●	●	✕
BLOCKJOY	✕	●	✕	●	●	✕	✕	●	✕
GETBLOCK	●	●	●	●	●	●	●	✕	✕
POKT	●	●	●	●	●	✕	✕	●	✕
ALLNODES	●	●	●	●	●	●	✕	✕	✕
NOWNODES	●	●	●	●	●	●	●	✕	✕
0x	●	●	●	●	●	●	●	✕	✕
THIRDWEB	●	●	●	●	●	●	●	●	●
ENSO	●	●	●	●	●	●	✕	✕	✕
GOLDSKY	●	●	●	●	●	●	●	●	✕
AXELAR	●	●	●	●	●	●	●	✕	✕
NODEREAL	●	●	●	●	●	●	●	●	✕
HYPERLANE	●	●	●	●	●	●	●	●	✕
COINBASE	●	●	●	●	●	●	●	✕	✕
INSTADAPP	●	●	●	●	✕	●	●	✕	✕
RAINBOW	●	●	●	✕	●	●	●	✕	✕
METAMASK	●	●	●	●	●	●	●	●	●
SAFE	●	●	●	●	●	●	●	●	✕
PHANTOM	✕	✕	●	✕	✕	✕	✕	✕	✕
ZERION	●	●	●	●	●	●	●	✕	✕
GELATO	●	●	●	●	●	●	●	●	✕

Source: [Tenderly (Report)]

We reiterate the point we made in our Analyst Insight that Polygon is no longer another alt Layer 1 chain with great execution on the Business Development front. Polygon's journey is more than just a series of partnerships and product launches. We continue to believe that most investors have not yet caught up to the foundational shifts that have been occurring within the ecosystem.

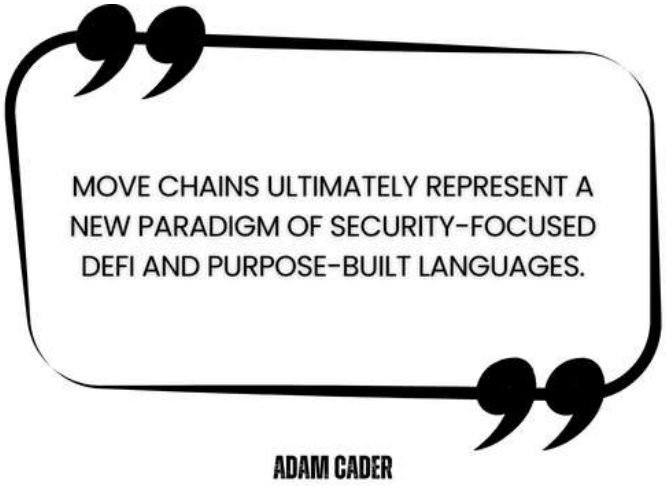
Image: MATIC/ETH Ratio Holding Steady



Raw Data: Token Terminal

With Polygon 2.0, the Polygon zkEVM, Polygon Supernets, the Polygon CDK, and Polygon ID, we believe that Polygon is in a class of its own and will be the most dominant chain among Layer 1s, only following Layer 1s like Bitcoin, Ethereum, and Solana.

Aptos and SUI – The New Kids On The Block



Aptos and Sui have faced challenges in gaining community support, possibly due to their association with Facebook's Diem project. Despite this, they offer unique value propositions and have the potential to attract a new generation of users, potentially achieving mass adoption.

These ecosystems focus on developer accessibility, particularly through the MOVE programming language. MOVE was designed to overcome limitations in existing smart contract languages like Solidity (used for Ethereum and EVM-compatible blockchains) and Rust (used by Solana, NEAR Protocol, and Polkadot).

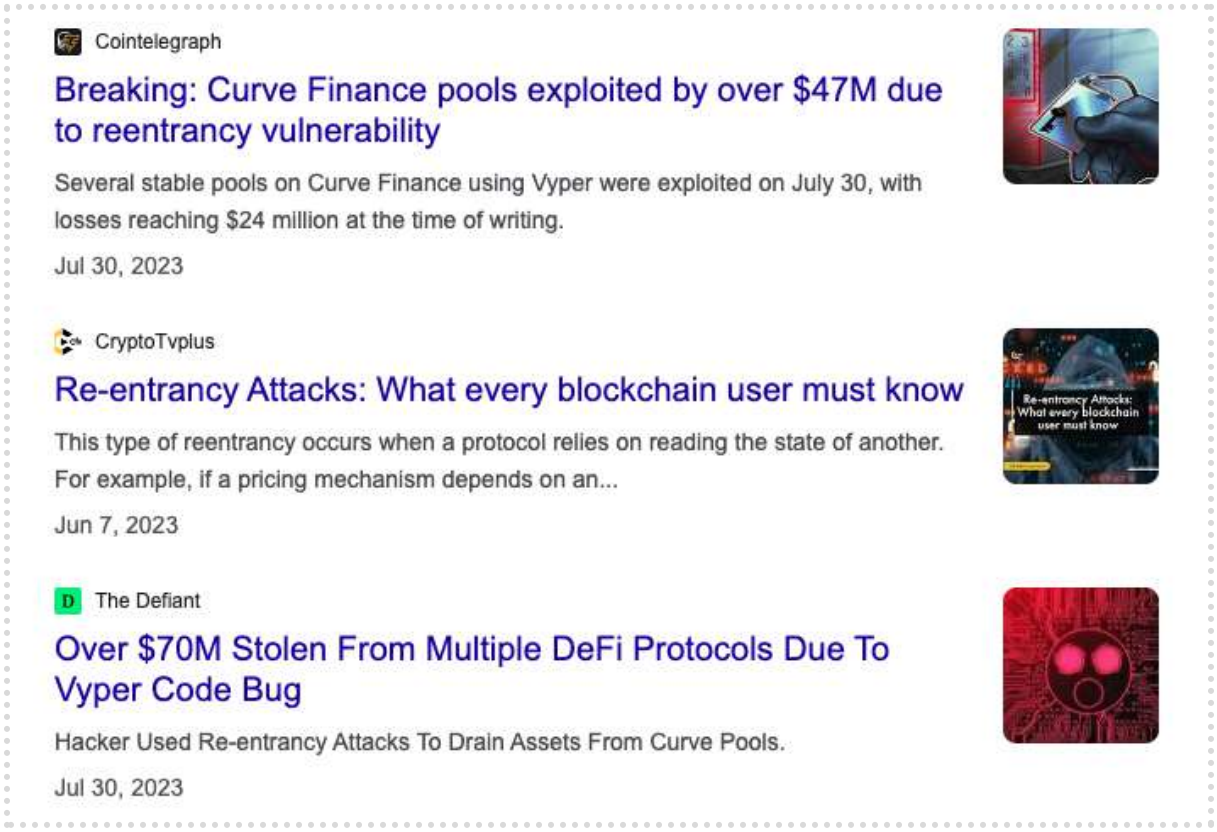
Developed initially by Facebook, MOVE aims to provide a more structured and secure environment for smart contracts, which could appeal to both traditional web developers and those already in the blockchain space.

Aptos and Sui emerged during a bear market, with their core builders having experience from working on Libra/Diem at Meta. MOVE's resource types enforce strict access control, reducing the risk of unintended state changes on the blockchain. Aptos further enhances security with a formal verification framework for smart contracts, aiming to minimize vulnerabilities and hacks.

A significant challenge for blockchain throughput is smart contract execution. Aptos and Sui address this by focusing on parallel execution, promising higher transactions per second (TPS)

and lower latency. Aptos uses a Block STM (State Transition Machine) engine for concurrent transaction handling, while Sui employs a dual-execution model allowing independent transactions to bypass consensus for near-instant finality.

Image: Headlines of Re-Entrancy Attacks

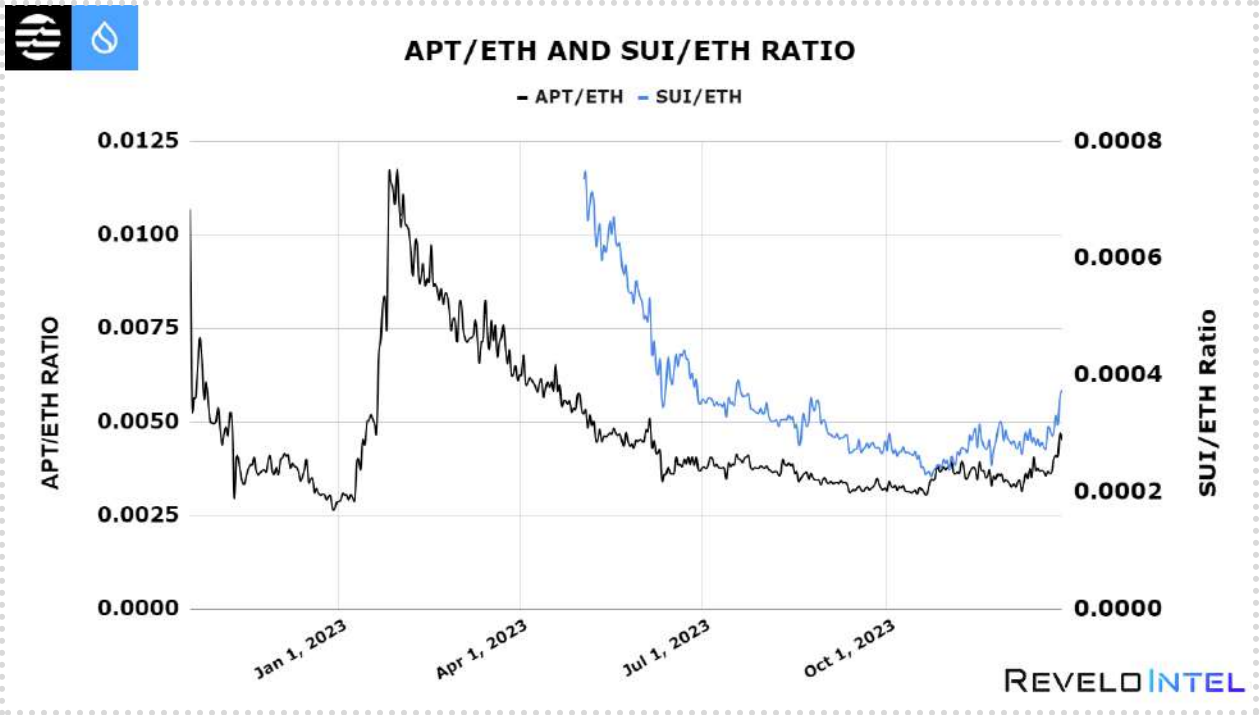


Link: Google Search

Aptos emphasizes scaling single-shard performance and safety, using the Hotstuff Consensus known for speed and efficiency, enabling the processing of thousands of TPS and achieving finality in seconds. These properties make it practical for real-time applications and gaming, which is popular among its developer community.

On the other hand Sui, with its object-centric data model, offers efficient data storage and processing, leading to high throughput and scalability. This is possible as simple transactions can bypass consensus, while complex transactions can be parallelized. Sui also features sponsored transactions, where transaction costs can be covered on behalf of users.

Image: APT/ETH and SUI/ETH Ratios Found a Bottom?



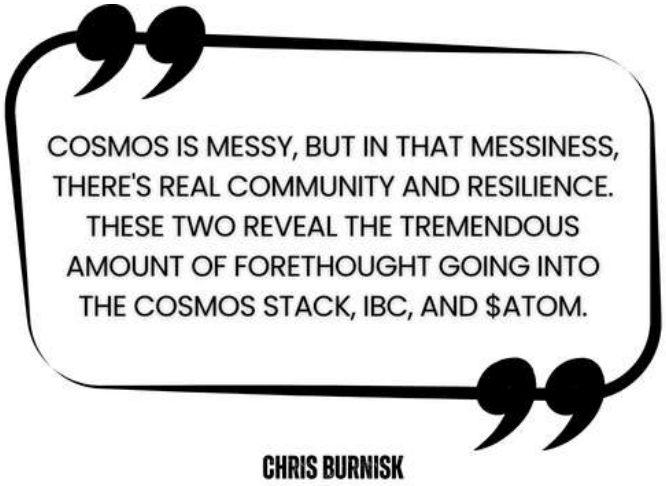
Raw Data: Token Terminal

Overall, the use cases for Aptos and Sui are very similar. They both aim to make it simple for developers to build financial applications while minimizing associated risks. For consumers, they strive to offer a seamless user experience for on-chain transactions, making blockchain technology more accessible and less intimidating.

THE MARKET HAS BEEN UNDERESTIMATING THE POTENTIAL OF APTOS AND SUI AND THEIR ABILITY TO REMOVE BARRIERS FOR NEW USERS. $SUI AND $APT WILL SHINE AS PART OF THE L1 ROTATION, WITH BOTH OF THEM FINISHING THE YEAR IN THE TOP 50 BY MARKET CAP, TAKING ATTENTION FROM SEI AND INJECTIVE IN THE PROCESS.

REVELO PREDICTION

Cosmos Ecosystem – The Internet Of Blockchains



The Cosmos ecosystem has seen a surge in activity following the launch of Celestia. However, there's an ongoing debate within the community about how the native token, $ATOM, should accrue value. This discussion has even led to a fork of the network called Atom1, initiated by Jae Kwon, one of Cosmos' original founders.

Amidst this backdrop, those involved in the Cosmos ecosystem, including builders and investors, have come to realize that $ATOM is on the verge of an existential crisis. They recognize the need for a stronger and more distinct identity for the token in the coming year.

Despite this uncertainty, we believe that $ATOM will eventually become "Interchain Money", at which time its utility will be maximized. At the same time, core aspects like security, liquidity, and usability will be addressed.

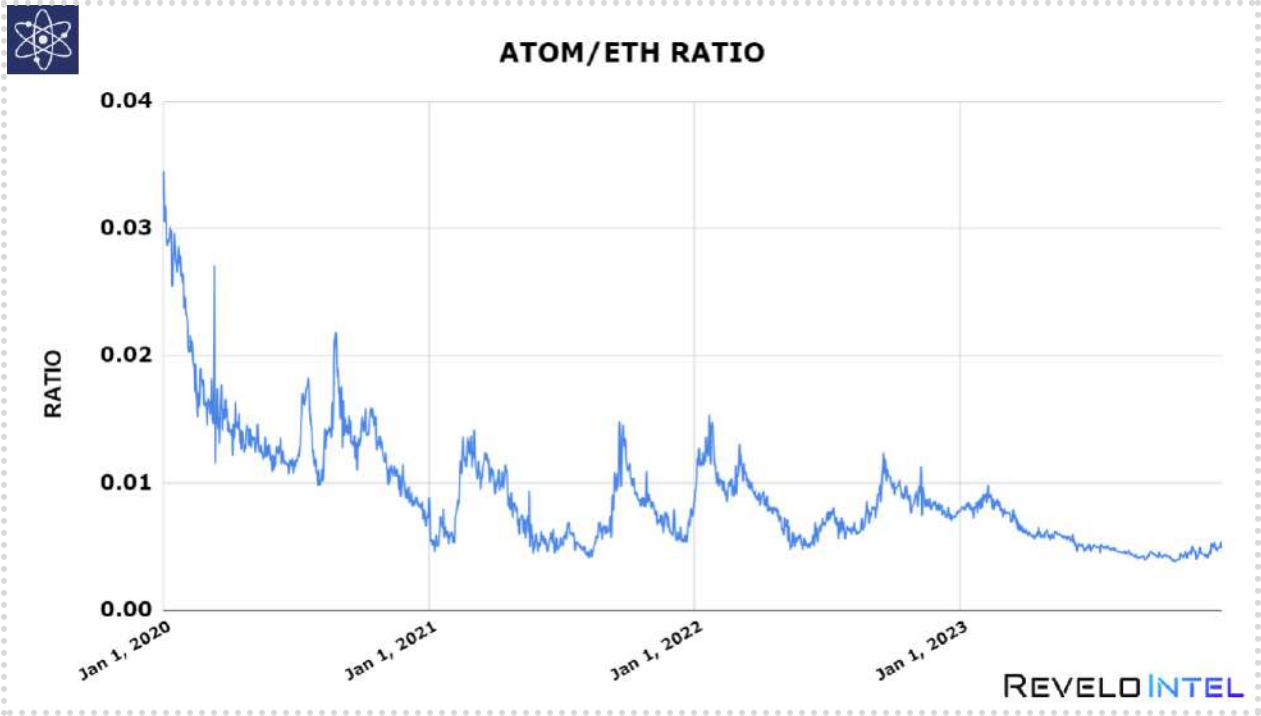
The economic security of $ATOM is closely tied to its market valuation and liquidity. Liquidity, in turn, is linked to the token's utility, which comes from its various uses like staking, governance, transaction fees, and its role as a medium of exchange.

Table: Initiatives That Could Become Core Infrastructure

Initiative	Explanation
Relayers as First-Class Citizens	The ecosystem will invest in improving relayer infrastructure for a seamless user experience with Inter-Blockchain Communication (IBC).
Cosmos Hub Bridge	Developers will prioritize building a best-in-class IBC bridge interface with a high degree of security.
$ATOM Staking	The Cosmos Hub Wallet will be created to incentivize and prioritize $ATOM staking.
ATOM as Gas	Encourages chains to accept $ATOM as gas or abstract away the friction of using a different token as gas.

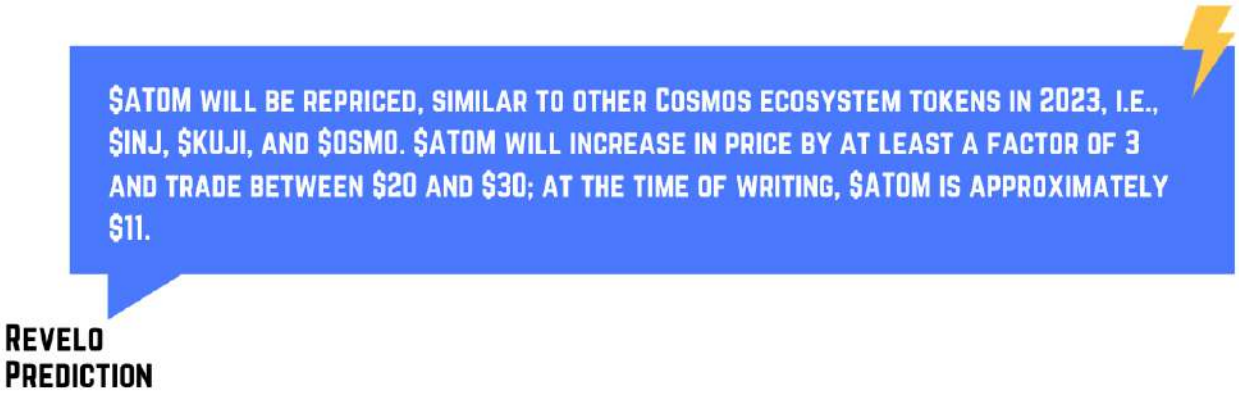
To boost $ATOM's profile and market presence, initiatives are underway. One strategy involves lending $ATOM to DeFi projects to increase its liquidity and revenue potential for the Cosmos hub. Another critical aspect is expanding $ATOM's use cases, particularly in the realm of LSTs.

Image: ATOM/ETH at the Bottom

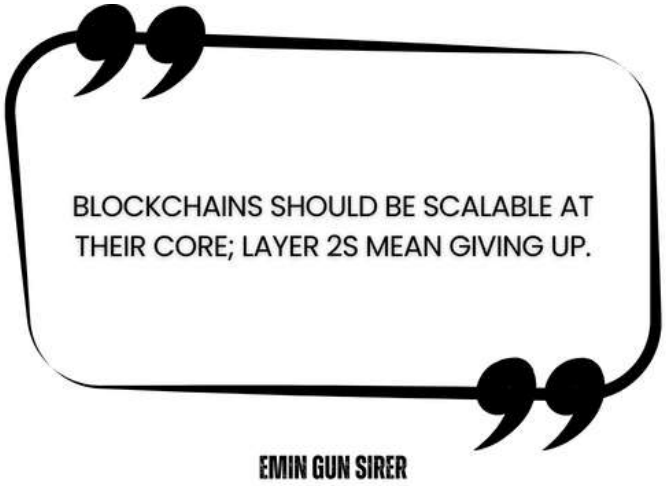


Raw Data: Token Terminal

Attracting stablecoin liquidity is also seen as a vital step for the growth of the entire Cosmos ecosystem. In parallel, there's a concerted effort to market $ATOM as the default currency for interchain transactions. This rebranding initiative aims to position $ATOM at the forefront of the interconnected blockchain world, reinforcing its role and value within the Cosmos network.



Avalanche – Unleashing the Power of Subnets



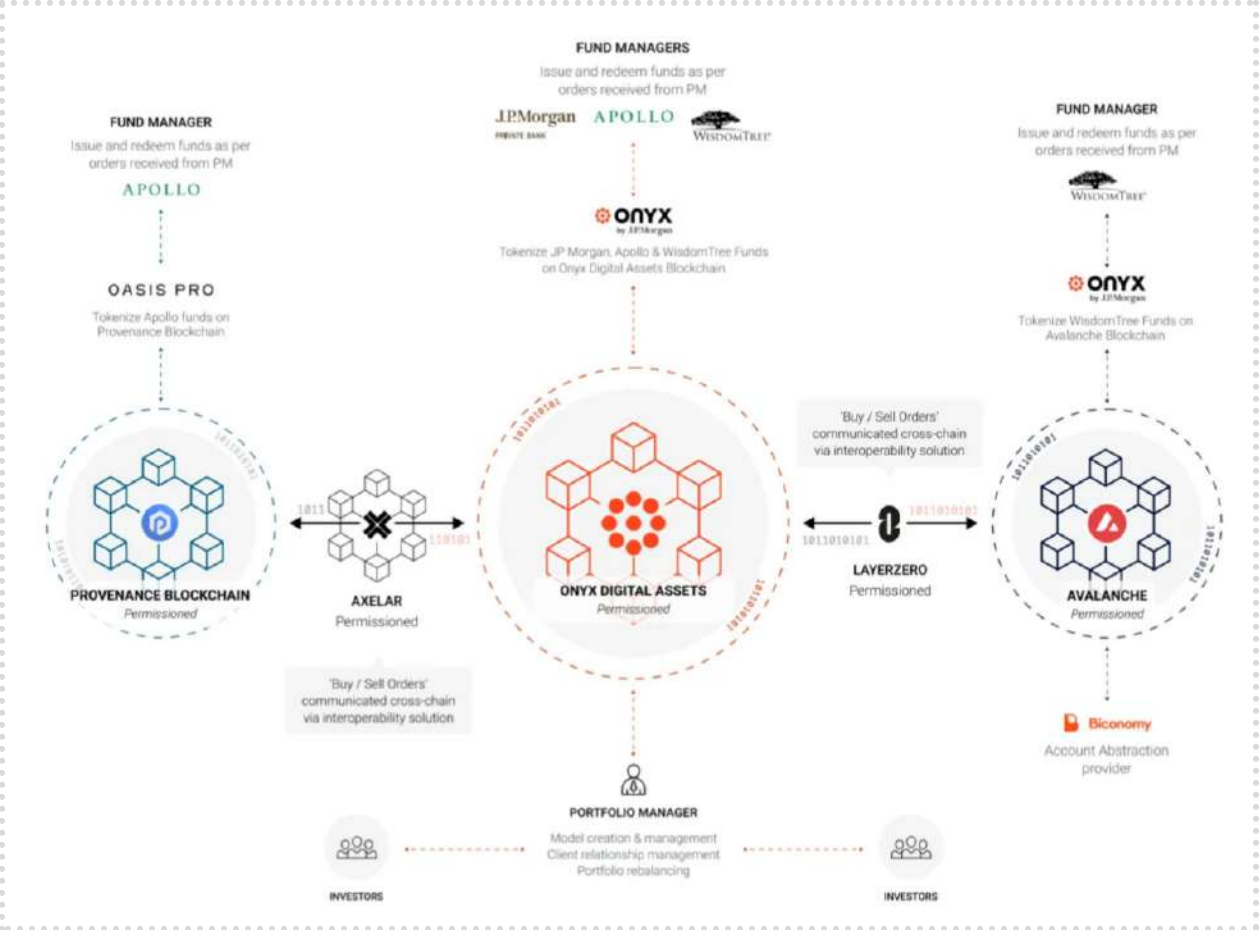
Avalanche's focus on scaling through subnets and tokenization shows the potential for Layer 1s to reinvent themselves and stay relevant. It consists of three chains: the Platform Chain (P-Chain) which is the base layer of the network, the Contract Chain (C-Chain) for managing smart contracts, and the Exchange Chain (X-Chain) for trading and transactions.

Its subnets are like mini-networks within the larger Avalanche network, each operating independently with its own rules, fees, security measures, and even legal requirements. They can have their own token systems and incentives, and they don't affect each other's performance.

What makes Avalanche's subnets stand out is the Warp Messaging framework, which allows for smooth communication between these subnets. This is particularly useful for developers who want to set up various communication methods between different parts of the network.

One of Avalanche's core strengths is its ability to allow organizations to create private subnets. These are exclusive areas of the blockchain where only selected validators can access the data. This could involve setting specific criteria for validators, like their geographic location, identity checks, or holding certain licenses, which could make Avalanche more attractive for institutional adoption.

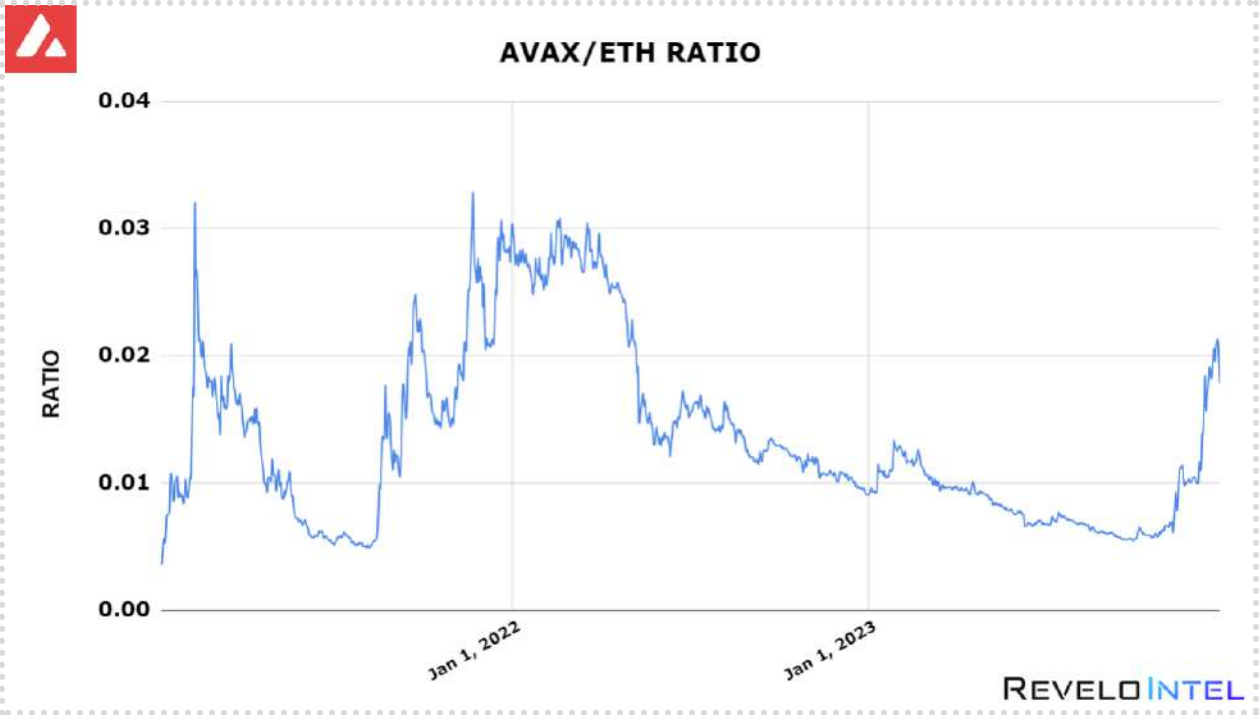
Image: Onyx by J.P. Morgan Leverages Avalanche



Source: [Wheatstones - Medium]

Avalanche is also making significant strides in the tokenization landscape. For instance, JP Morgan is using Avalanche's technology to tokenize funds, integrating blockchain into their operations. This isn't limited to real-world assets (RWAs); Avalanche is also making a name for itself in the gaming sector.

Image: AVAX/ETH Ratio Up Only



Raw Data: Token Terminal

It supports some of the most notable crypto games, including Heroes Chained, Shrapnel, and Playa 3ull. This diverse application of its technology showcases Avalanche's potential to be a versatile and influential player in the future.

WHILE THE PSYCHOLOGICAL BARRIER AND REMINISCENCES OF THE PAST WILL BE HARD TO OVERCOME, WE WILL SEE $AVAX TRADING ABOVE $100 BEFORE THE END OF 2024; AT THE TIME OF WRITING, $AVAX IS APPROXIMATELY $40.

REVELO PREDICTION

NEAR – The Blockchain Operating System

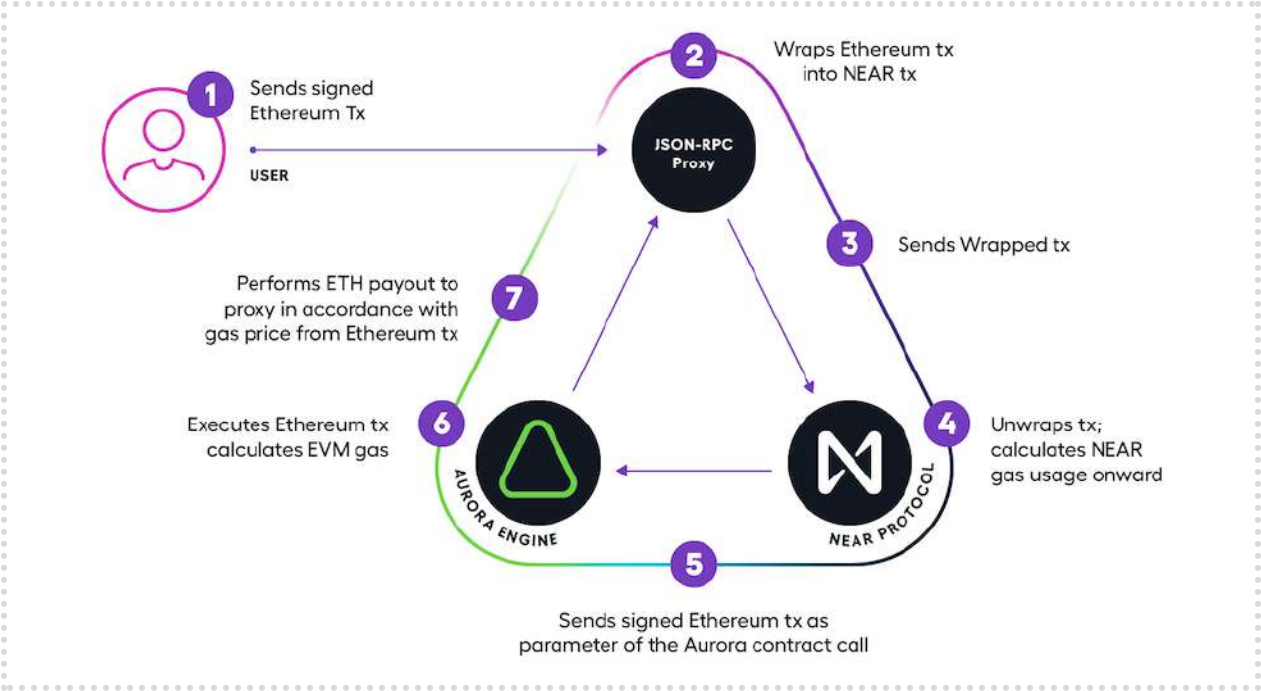
NEAR Protocol stands out for its emphasis on scalability, low transaction cost, and decentralization. It's designed to handle a high volume of transactions efficiently, due to its use of dynamic sharding and Nightshade consensus mechanism. Users can expect consistent transaction costs without the risk of overpaying.

One of NEAR's features is its ability to support horizontally sharded dApp environments for different virtual machines such as Aurora (NEAR's EVM-compatible shard). This flexibility allows NEAR to grow by adding more shards with identical execution environments. Each shard is capable of supporting different blockchain frameworks and environments from other Layer 1 ecosystems.

While this approach is reminiscent of Ethereum's vision, NEAR goes a step further by supporting rollups, sidechains, and modular appchains, potentially eclipsing all of those narratives.

Besides its technical capabilities, NEAR prioritizes usability for developers and users alike. Its account model structure is straightforward, and features like Function-Call Limited Permissions make it easy for developers to interact with the protocol.

Image: Aurora



Source: Aurora.dev

Developers are further incentivized with a 30% reward from the gas fees generated by their contracts. Additionally, NEAR supports popular programming languages like Rust, Javascript, and AssemblyScript, welcoming developers from traditional web backgrounds.

As time passes, NEAR is increasingly becoming aligned with Ethereum. It's collaborating with Polygon to build ZKWASM, a new runtime to generate zero-knowledge proofs. NEAR is also working with Eigenlayer to launch a fast finality layer for Ethereum rollups that processes transactions in just 3 - 4 seconds, compared to hours or days on Ethereum.

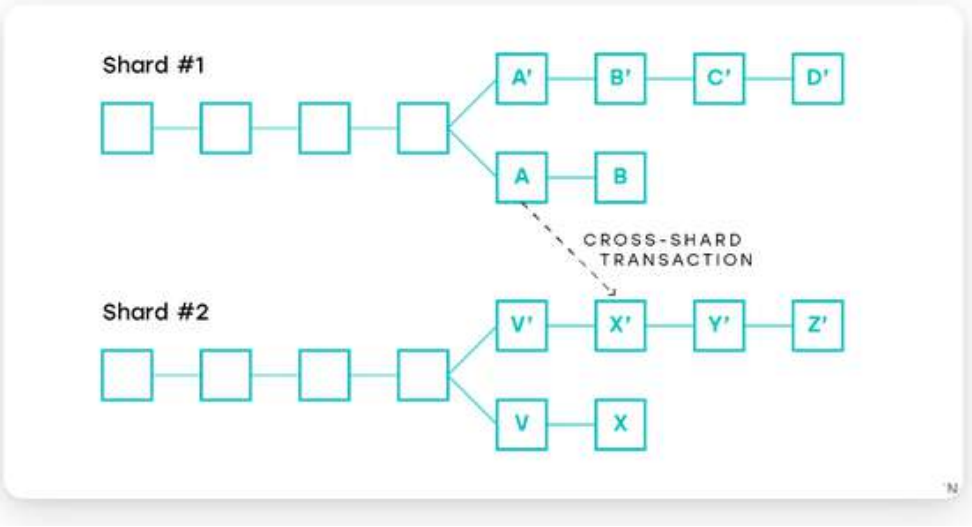
This shows that NEAR is the possible realization of Ethereum's 2.0 roadmap and also demonstrates its commitment to helping Ethereum scale.

NEAR's unique "receipt-centric" design treats each account and smart contract as a separate shard, facilitating interoperability and communication between different smart contracts and layers. This feature could be crucial in the future of blockchain interoperability.

However, NEAR faces challenges common to many Layer 1 platforms. Relying on ecosystem grants and liquidity mining programs for growth can lead to a dependency on incentives, with participation waning as these dry up. To thrive, NEAR must build a sustainable ecosystem that offers value beyond financial incentives, focusing on a diverse range of applications, community engagement, and innovation.

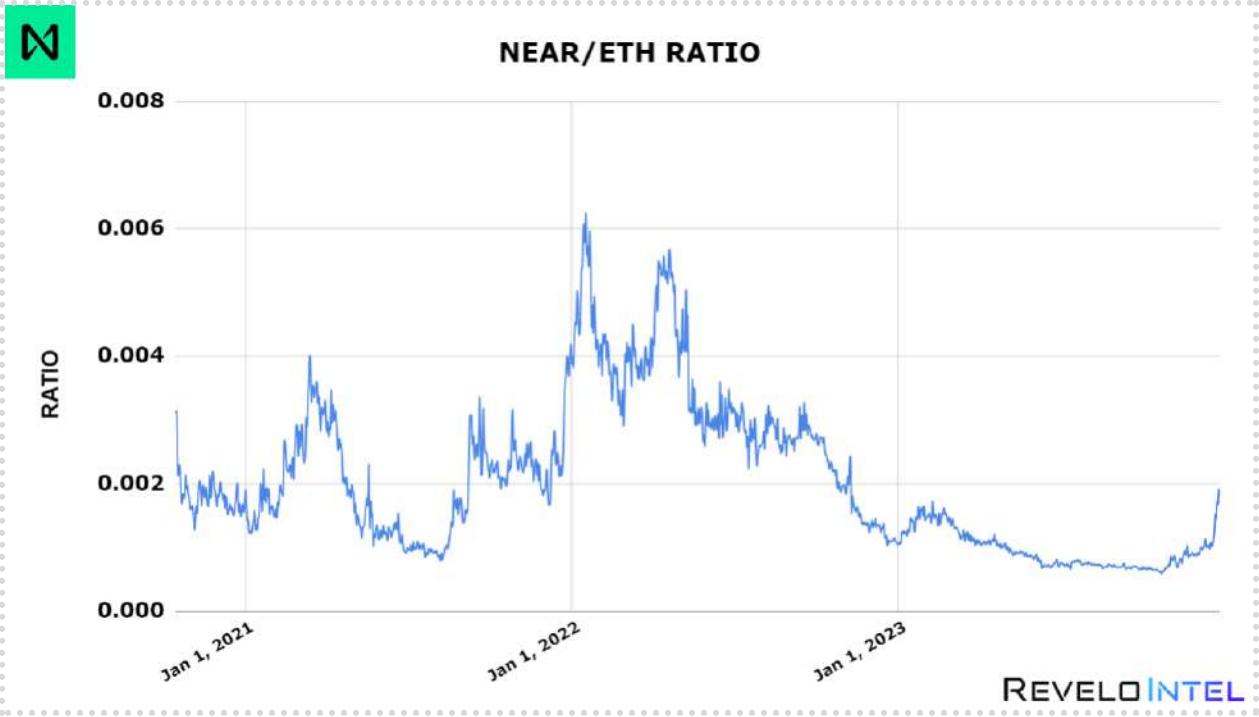
The platform needs to prioritize attracting new users, offering unique use cases, enhancing efficiency, and focusing on resilient technology. It's also important to support existing applications with proven market fit, like stablecoins, payment systems, and derivatives trading. Gradually reducing incentives and encouraging long-term involvement through governance participation can help transition the ecosystem to a more utility-driven environment.

Image: Cross-Shard Transactions



Source: Near (Docs)

Image: NEAR/ETH Ratio Higher Highs



Raw Data: Token Terminal

With the blockchain industry evolving rapidly, advancements like ZK rollups and interoperability remain crucial. Ethereum's shift from PoW to PoS sets a standard for energy efficiency and effective block validation, a path that NEAR and other Layer 1 platforms are likely to follow.

NEAR WILL ONBOARD THE GREATEST NUMBER OF DEVELOPERS INTO CRYPTO, EVENTUALLY GROWING AN ECOSYSTEM THAT'S THE DEFAULT LAYER 1 CHAIN FOR BUILDING APPLICATIONS THAT SHOW THE COMBINED POTENTIAL OF CRYPTO AND AI.

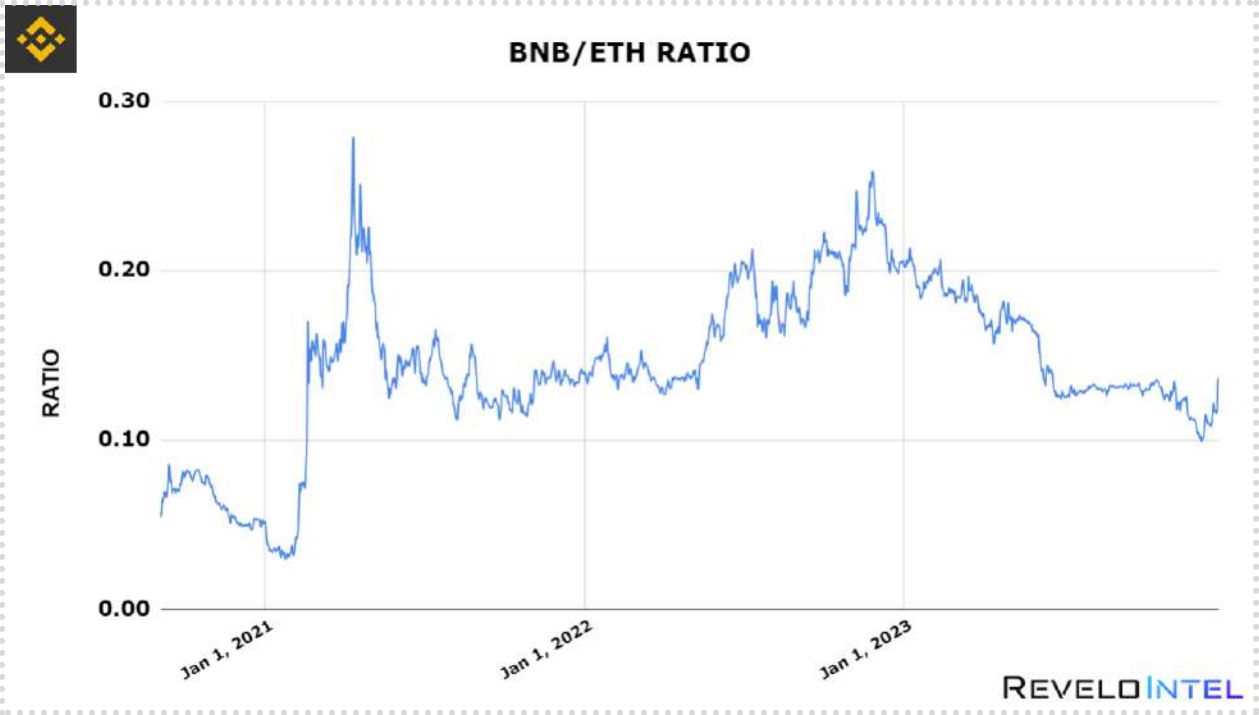
REVELO PREDICTION

BNB Chain – Past, Present, & Future

The BNB Chain, already known for its robust ecosystem, has continued to make strides with the launch of BNB Greenfield, a data storage platform, and opBNB, an optimistic Layer 2 solution. A notable yet often underappreciated aspect of the BNB Chain is its economic model, which includes a 25% discount on Binance trading fees for BNB holders and a deflationary mechanism through its quarterly token burns.

The ecosystem shows no signs of slowing down in its growth and evolution. BNB Chain is actively working towards implementing multi-chain solutions, aiming to accommodate a wider variety of applications and use cases.

Image: BNB/ETH Ratio, Pico Bottom?



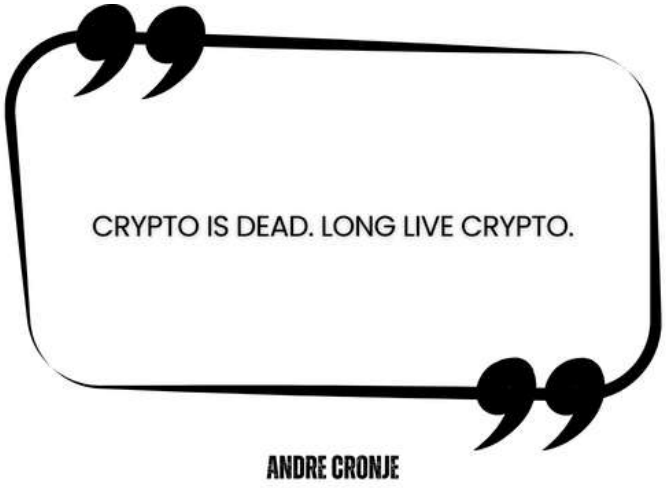
Raw Data: Token Terminal

BNB Chain has continued to grow its ecosystem, with the introduction of BNB Greenfield, a data storage platform, and opBNB, an optimistic Layer-2 solution for BNB Chain based on the OP Stack. A couple of important features that are often overlooked are the fact that it offers a 25% discount on Binance (CEX) commissions and that $BNB is a deflationary Layer 1 token realized through a quarterly burn.

REVELO PREDICTION

THE BNB CHAIN WILL CONTINUE TO MAKE STRIDES AND WILL BECOME ONE OF THE MOST DECENTRALIZED CHAINS. HOWEVER, THESE ADVANCEMENTS, IN ADDITION TO LARGE ACTIVITY NUMBERS, WILL BE IGNORED BY THE MAJORITY OF INVESTORS AND $BNB WILL DROP OUT OF THE TOP 5 TOKENS BY MARKET CAP BEFORE THE END OF 2024.

Fantom – The Sonic Chain



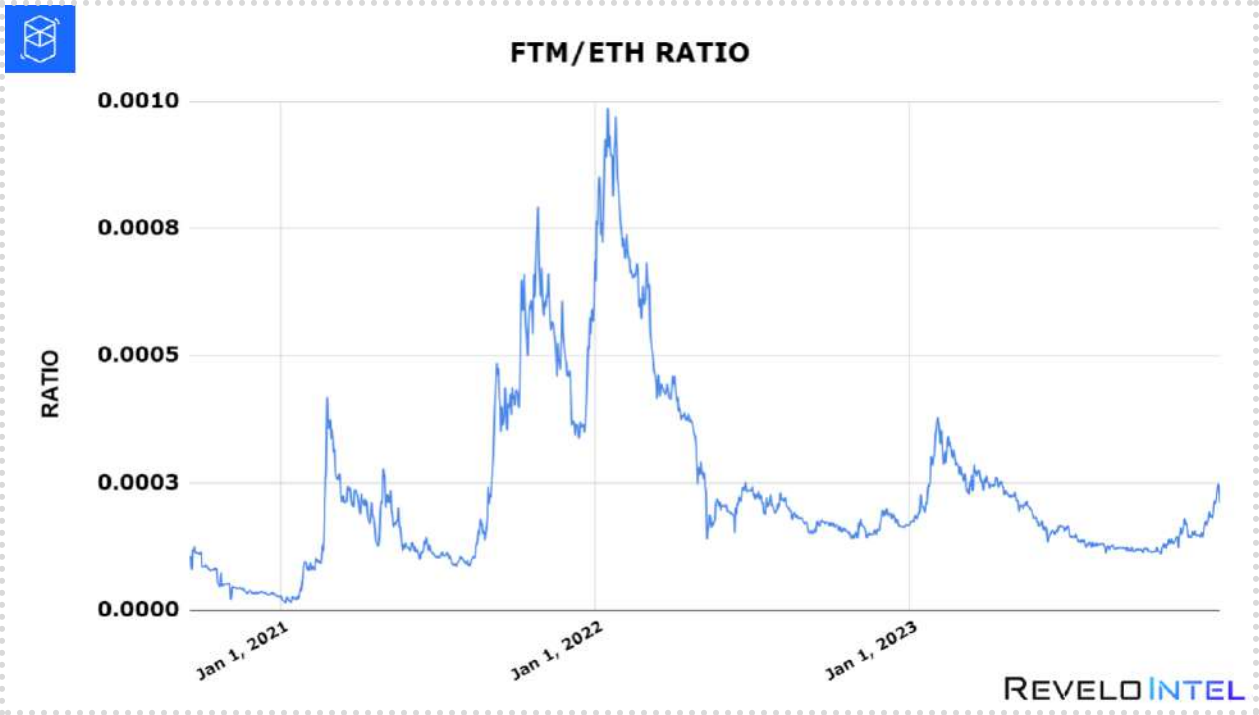
Many may have written off Fantom. However, despite facing challenges such as teams migrating to other chains and communication issues during the Multichain hack, there's still potential for revival, especially following its recent Sonic upgrade. This upgrade could be a catalyst for rejuvenating network activity.

While we don't expect a complete recovery and explosive growth akin to Solana's post-FTX resurgence, there's a possibility that some former teams who initially built on Fantom may reconsider and return. This could re-attract its previous user base and breathe new life into the ecosystem.

Image: Juan on Fantom

Source: Juan (Twitter)

Image: FTM/ETH Ratio... Second Wind



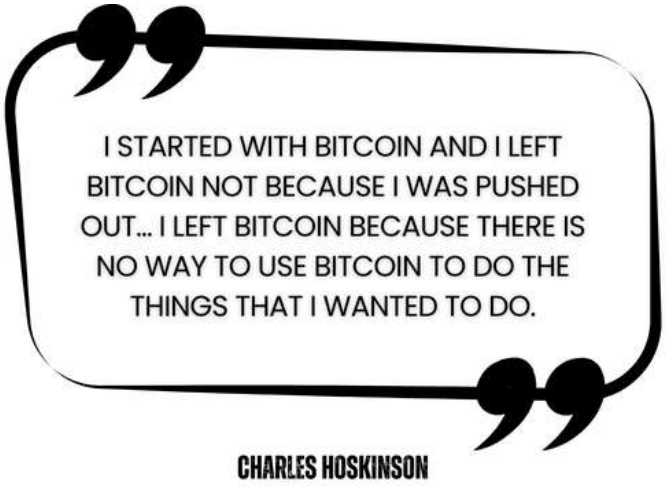
Raw Data: Token Terminal

Looking ahead, Fantom could carve out a niche for itself by fostering a fresh ecosystem and becoming a starting point for new developers in the Web3 space. By focusing on its strengths and learning from past setbacks, Fantom has the potential to reinvent itself and continue to be a relevant player in the blockchain world.

FANTOM'S RECOVERY AND RESURGENCE WILL KICK INTO HIGH GEAR WHEN MONAD, A PROMISING LAYER 1, LAUNCHES. WE ANTICIPATE A VALUATION RACE BETWEEN THE TWO SIMILAR TO OPTIMISM AND ARBITRUM.

REVELO PREDICTION

Cardano – Gearing Up



Cardano, compared to other leading blockchain tokens, seems to be lagging behind. Its performance against Bitcoin has been lackluster, and it appears to be losing traction not only to Ethereum but also to newer, more scalable and interoperable chains.

Currently, Cardano's native token, $ADA, is trading at around $0.60, which is a significant drop from its all-time high of approximately $3. This places it 80% below its peak and almost 50% below its 2018 high of $1.18.

This underperformance has led some in the crypto community to categorize $ADA as a "Dino coin," suggesting it may be becoming outdated compared to other top blockchain coins.

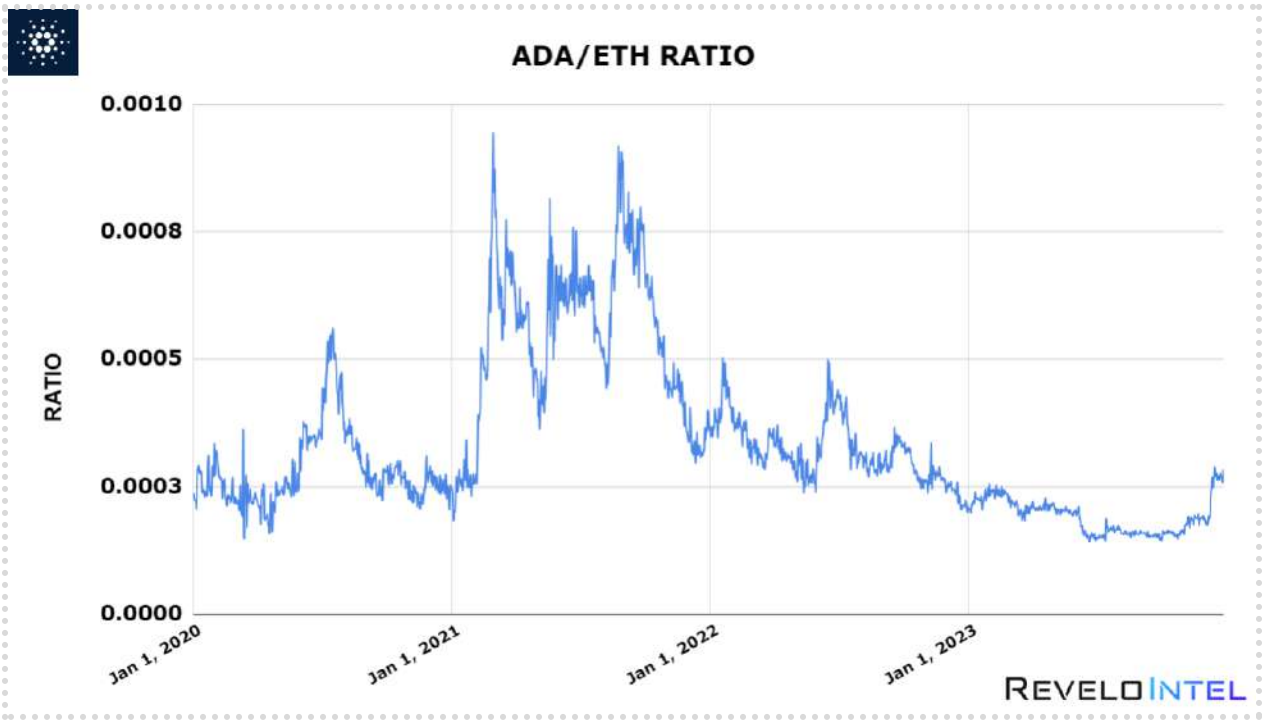
Despite this, Cardano still has a dedicated following. However, it's not capturing the attention of core crypto enthusiasts or newcomers to the market as effectively as some other chains. On the positive side, Cardano has made inroads into gaming, with projects like Cornucopias choosing to build on its platform.

Additionally, Cardano has been exploring unique use cases, such as developing ID systems infrastructure in Africa. In 2023, the IOHK Foundation continued its efforts to find adoption in Africa, including teaching the Haskell programming language in Kenya.

In November, Charles Hoskinson introduced modular Partner chains, marking Cardano's foray into appchains. SundaeSwap, a popular DEX, gained prominence when Cardano first started supporting smart contracts in late 2021. Now, Indigo, a lending market, holds the most TVL of any Cardano dApp.

Cardano has also been focusing on scaling solutions like Hydra and developing a data-protection-focused sidechain named Midnight. Towards the end of the year, there was a noticeable increase in TVL and DeFi activity on Cardano, breaking its all-time high and entering the top 10 chains by TVL.

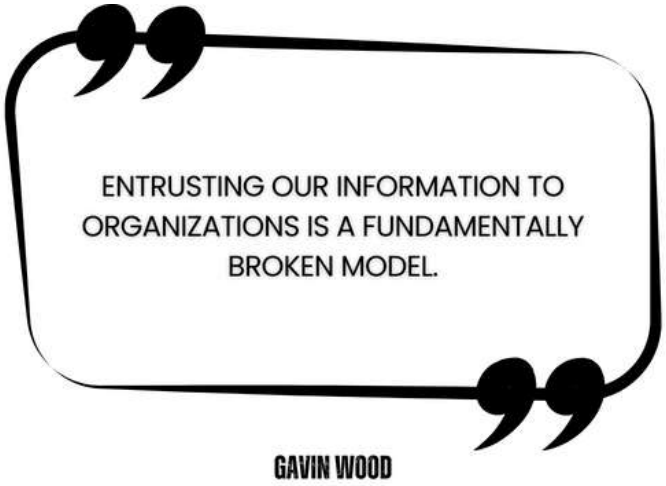
Image: ADA/ETH Ratio - Far From the Top



Raw Data: Token Terminal

This achievement is notable, especially considering that DeFi and NFT capabilities on Cardano only became possible in late 2021. Surpassing chains like Osmosis, THORChain, Ronin, and Bitcoin in TVL is a significant feat, particularly given the relatively low attention from the crypto-native community.

Polkadot – The Incubator



Polkadot is also moving away from the parachain model and embracing a new tokenomics model. Even though the current Layer 1 parachains have not managed to attract the amount of attention that was expected, the underlying technology still has a lot to offer, enabling interoperability among different Layer 1s.

Image: Polkadot Ecosystem

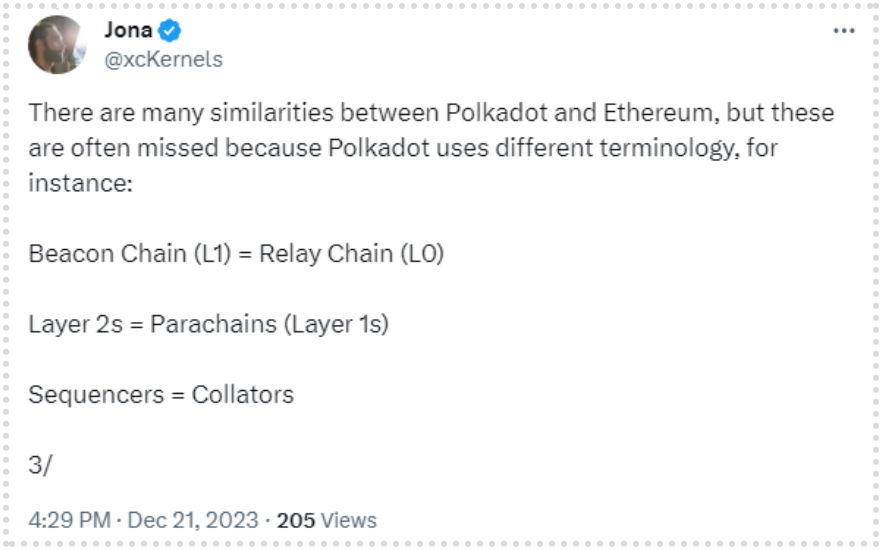
Source: [Polkadot Insider (Twitter)]

Table: Former Parachains and Where They Are Today

Former Parachains	Where They Are Today
Bittenson	Secured a parachain slot on Polkadot. You can learn more about it in our Analyst insight.
Bifrost	Originated in Polkadot, now expanding liquid staking to other chains.
Centrifuge	Continues as a leader in tokenizing real-world assets (RWAs).
Remark	Pioneering new NFT standards on EVM chains.
Manta and Astar	Transitioning to become Layer 2 solutions on Ethereum.
Kilt and Litentry	Leading in the on-chain identity sector.
Picasso	Embarking on a journey to connect IBC and Solana, including staking innovations.

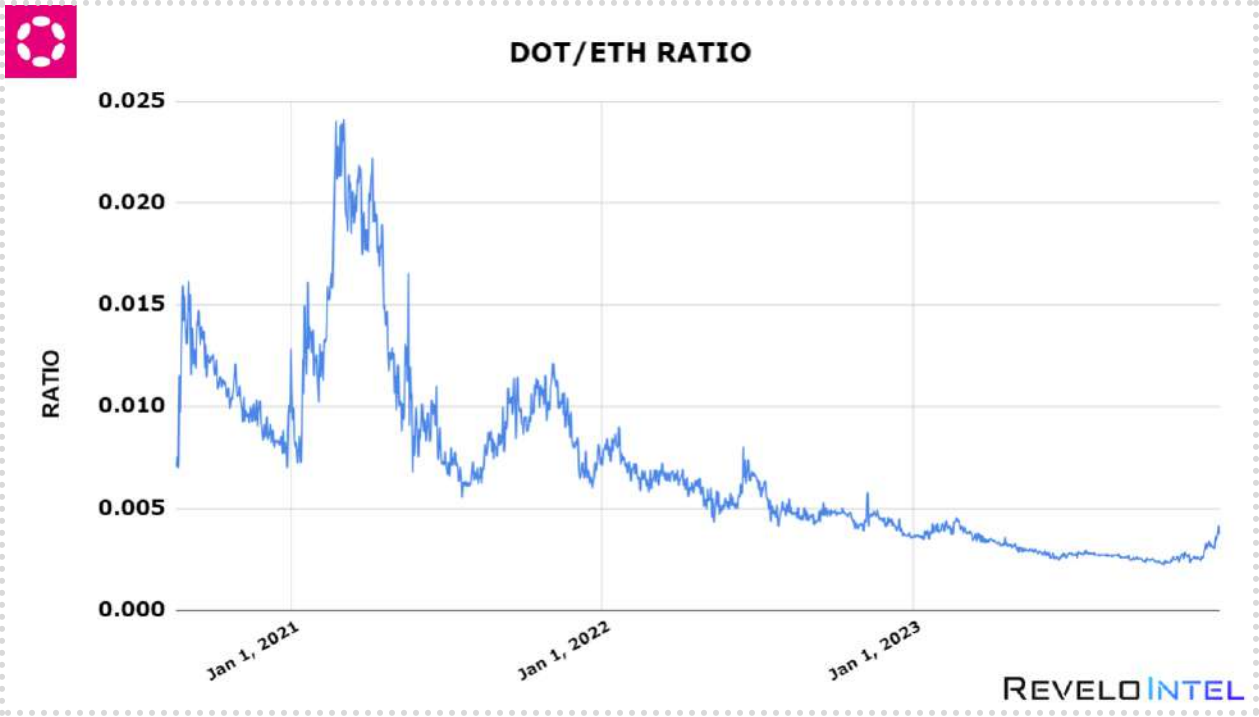
One could argue that Polkadot was one of the pioneers in envisioning an Internet of Blockchains future. Despite the low traction, there are positive takeaways and its ecosystem has given birth to notable projects that are pivoting their strategy and becoming Layer 2s in some cases.

Image: Jona on the Similarities Between Polkadot and Ethereum



Source: Jona (Twitter)

Image: DOT/ETH Ratio... Not Looking Good



Raw Data: Token Terminal

While many anticipated that the large unlock of all the $DOT staked on parachains would result in negative price action, the complete opposite ended up happening. Weeks before Polkadot also introduced Polkadot 2.0, with Gavin Wood taking the lead and showing that he still believes in the vision and is fully committed to making it work.

Tron – The Home of USDT

TRON has maintained its significance in the crypto world, particularly as a major platform for $USDT issuance and transfers. It's become an efficient network for $USDT payments globally, boasting over 200 million total accounts, 1.7 million active accounts, and a staggering $10 trillion in transfer volume.

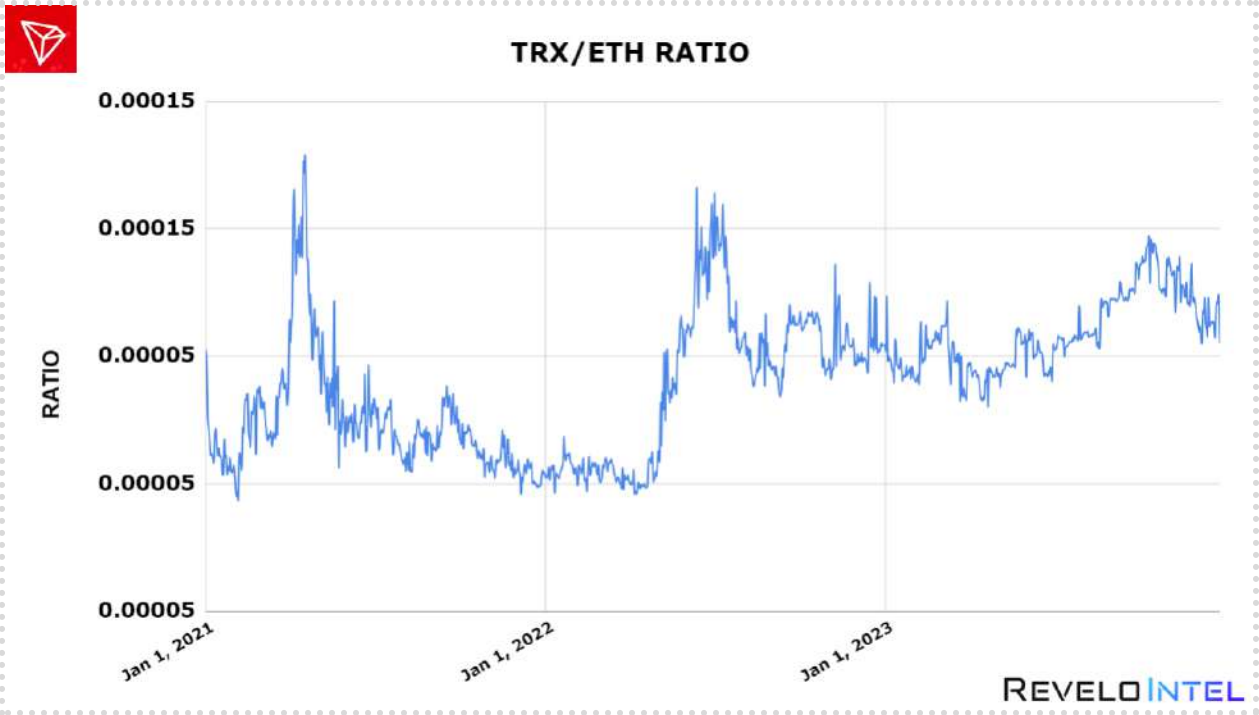
TRON's influence is most notable in emerging markets. High gas fees on Ethereum make it impractical for everyday transactions, especially in less affluent regions like Latin America, Southeast Asia, and Africa. This has opened doors for blockchains like TRON to gain traction in these areas.

Despite being less discussed in mainstream crypto circles and often overlooked by industry insiders, TRON has found its niche among users who prioritize practicality and affordability in their crypto transactions.

Avalanche, for instance, has built a strong community in Turkey, partly due to Emin Gun Sirer's connections to the country. Similarly, TRON has become a go-to blockchain in certain economies. Just as local economies historically relied on a single currency, it's plausible for entire regions to predominantly use one blockchain for transactions. Tron has already become a key player in countries like Argentina and Turkey.

Rather than sitting and waiting for adoption, Tron actively promotes its use in emerging markets. The TRON team entered into an agreement with Dominica (not the Dominican Republic) to make TRON the official blockchain of the country. The country now accepts various cryptocurrencies, including $TRX and stablecoins like $USDT.

Image: TRX/ETH Ratio Showing Strength



Raw Data: Token Terminal

This followed Justin Sun's introduction of the $USDD stablecoin. While $USDD hasn't reached the same level of penetration in emerging markets as $USDT, TRON's role in facilitating stablecoin transactions is a significant win for the chain.

In regions facing rapid inflation or financial instability, the need for a stable and efficient transaction medium is urgent. For many, using a stablecoin like $USDT on a fast and affordable network like TRON is a practical solution.

Image: Qiao Wang on TRON's Impact

Qiao Wang (👽, 👽)
@QwQiao

I learned something in 2023 that was v hard for me to swallow.

Ethereum never really banked the unbanked. Neither did bitcoin or solana. They are too volatile, too expensive, or too new.

It was tron that banked the unbanked around the world.

Most stablecoin activities across emerging economies happen on tron usdt. You can see this in the onchain data, or by talking to ppl in those countries.

Tron benefited from a massive first mover advantage. It was one of the first fast cheap chains. It was one of the first chains that supported usdt. And it was one of the first chains supported by binance which created an enormous distribution channel.

In hindsight, tron's success in those countries was not a coincidence.

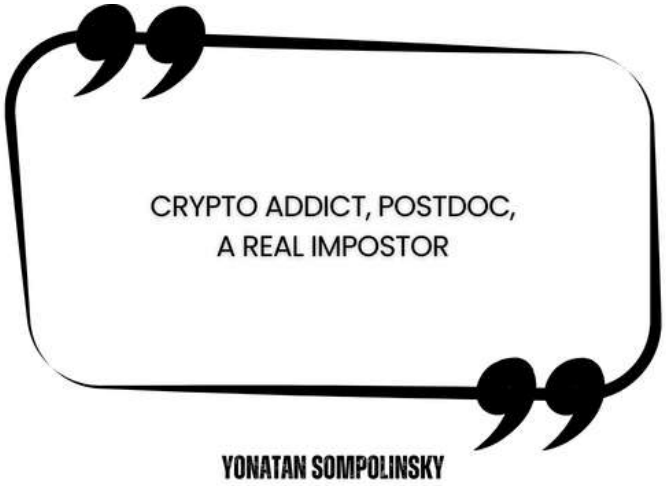
You may be shocked, incredulous, or disgusted. But I'll use this example to constantly remind myself to stay intellectually honest and flexible.

Last edited 1:30 PM · Dec 24, 2023 · **587.6K** Views

Source: Qiao Wang (Twitter)

The $TRON token has seen a notable recovery this year, doubling in price to around $0.10. Justin Sun has been involved in the acquisition and rebranding of Huobi to HTX, indicating TRON's expanding influence in the crypto space.

Kaspa – Digital Silver



Kaspa has been one of the top performers this year, even outshining established players like Litecoin. Through its popularity as "digital silver," its native token $KAS has seen remarkable growth, soaring by 7,000% since its launch and 1,800% year-over-year.

Kaspa and the $KAS token were fair-launched, with no pre-mine, pre-sale, or insider allocations. The fair launch made it accessible and equitable for early miners and adopters.

Kaspa was developed by a team of technologists who wanted to bring “digital silver” to the blockchain space through an innovative PoW and DAG (Decentralized Acyclic Graph) chain. This combination, powered by the GhostDAG protocol, enables the blockchain to process one block per second, allowing for parallel block creation and efficient consensus ordering.

Image: Litecoin vs. Kaspa... Battle for Title of “Digital Silver”

Source: Demonic Fields (Twitter)

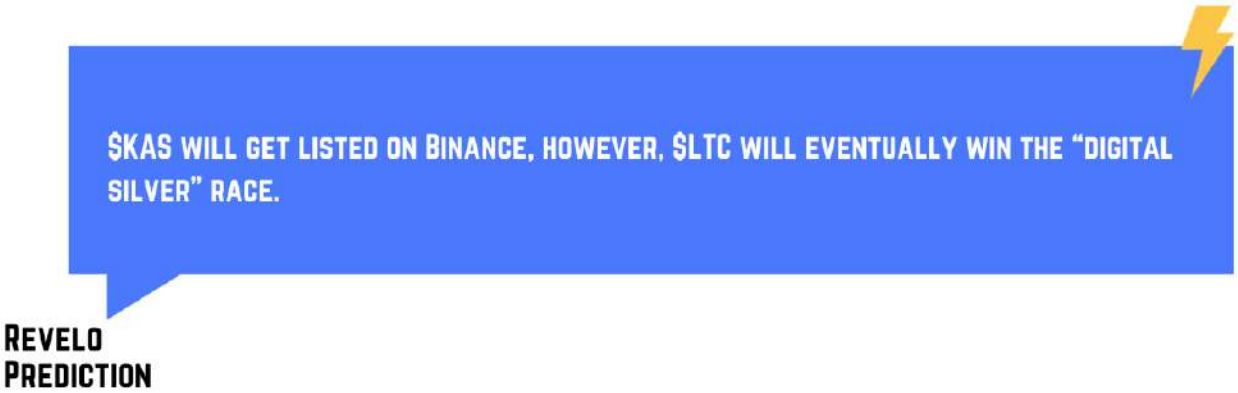
However, it's worth noting that Kaspa currently lacks Turing-complete smart contract capabilities, which could limit its application scope.

Kaspa's tokenomics are also noteworthy. The maximum supply of $KAS tokens is set at 28.7 billion, and the supply undergoes a halving event annually, with gradual monthly reductions. This structure could influence the token's value over time.

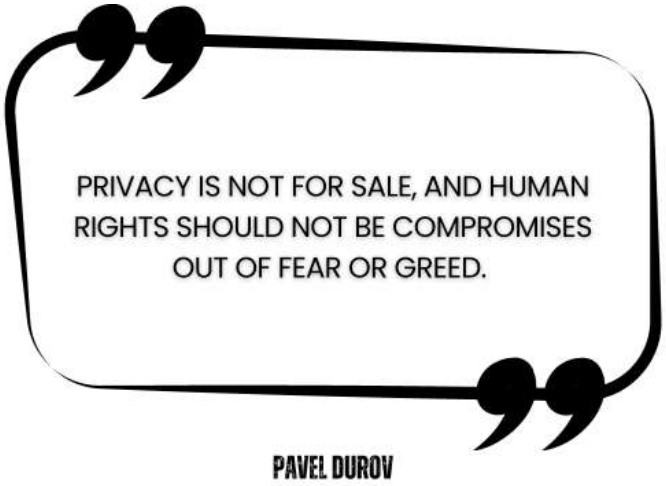
Image: KAS/ETH... Strong Performance

Raw Data: Token Terminal

Looking ahead, Kaspa's potential listing on major exchanges like Binance, where perpetual contracts for $KAS are already available, is a key catalyst that could further boost its visibility and accessibility.



TON - Leading in Emerging Markets



Telegram, a popular messaging app widely used in the crypto community, has its own native crypto token, $TON. Despite its significant market cap of approximately $7.5B and a fully diluted valuation of around $11.3B, placing it in the top 20 cryptocurrencies by market cap, $TON often flies under the radar.

The Open Network (TON), developed by Telegram, is their attempt at ushering in a new era of internet infrastructure through decentralization. TON's ecosystem includes several key components:

- TON Blockchain, which offers scalability and high transaction speeds through sharding.
- TON DNS, providing user-friendly names for wallets, akin to Ethereum's ENS.
- TON Storage, a decentralized cloud storage solution.
- TON Sites, enabling the launch of web servers and websites on the TON network.

Additionally, TON includes the TON Developers Program, TON Proxy, and TON Payments, all launched in 2022. As a Layer 1 blockchain, TON is strategically positioned to reach Telegram's billion-plus global users.

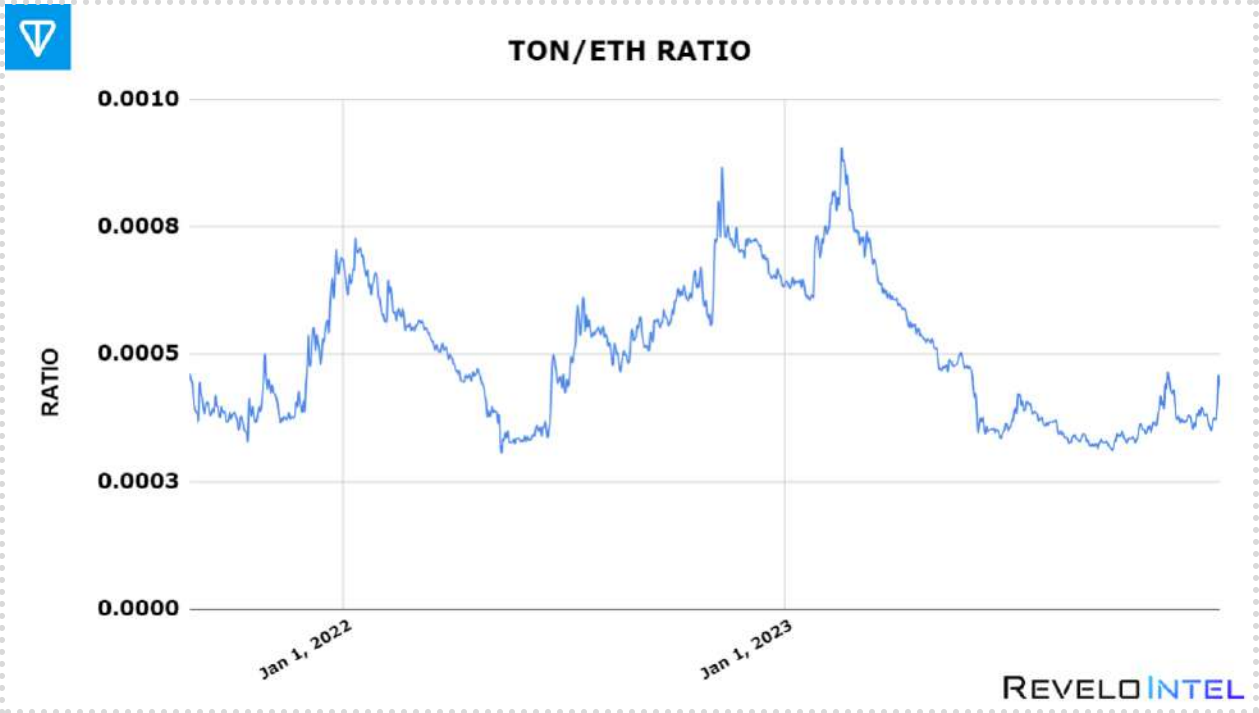
Telegram's user base, predominantly younger and from emerging markets outside the Western world, reflects a broader crypto trend of engaging with audiences in Asia, Latin America, and

Africa. TON, in particular, caters to mobile-based users with limited funds, representing a vast market segment.

Since its inception in 2017, TON has grown to support over 550 applications, including NFT collections, marketplaces, exchanges, wallets, and gambling apps. The chain has also embraced liquid staking, with providers like Bemo offering $stTON.

A important feat for TON in 2023 was its official partnership with Telegram. The project, initially raising $1.7 billion in one of the largest ICOs, was founded by Telegram's Pavel and Nikolai Durov but later developed by open-source contributors due to regulatory challenges in the U.S.

Image: TON/ETH Ratio... Tides Turning



Raw Data: Token Terminal/Coingecko

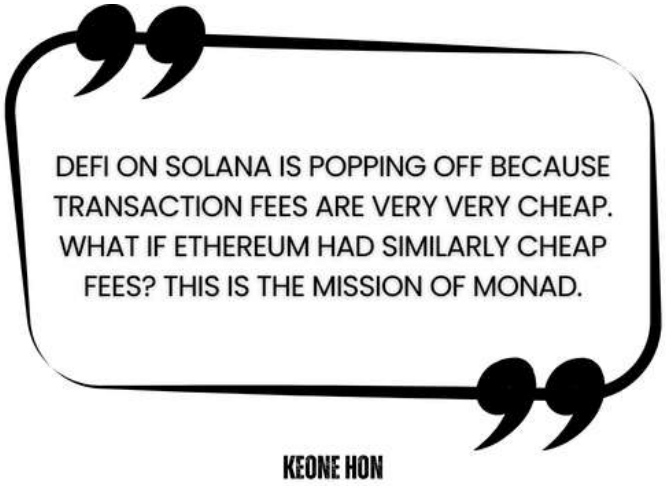
This partnership between TON and Telegram aims to onboard 30% of Telegram's users, around 500M people, in the next 3-5 years, a goal that would make TON one of the largest onboarders of users into crypto. For reference, according to a16z's 2023 report, there are 15M active users of crypto. The TON team states that their ecosystem alone is responsible for 2.5M..

Telegram bots, particularly trading bots, gained popularity in 2023, simplifying the crypto trading experience and addressing the industry's UX challenges. While these bots primarily cater to a niche market, they demonstrate TON's utility beyond just trading.

Despite $TON's underperformance compared to $BTC and the broader market in the latter part of the year, and its relatively low trading volume, its position as a top cryptocurrency remains significant.

The Telegram Apps Center, launched by the $TON foundation, further diversifies the network's offerings with chatbots, games, news apps, payment solutions, and more, showcasing TON's potential beyond its current use cases.

Monad – What if?



Monad has the potential to disrupt Layer 1s. Its unique architecture blends the strengths of Solana and Ethereum. Its key feature is the parallelization of the EVM through pipelining. This means that Monad combines Ethereum's compatibility with Solana's high processing speed.

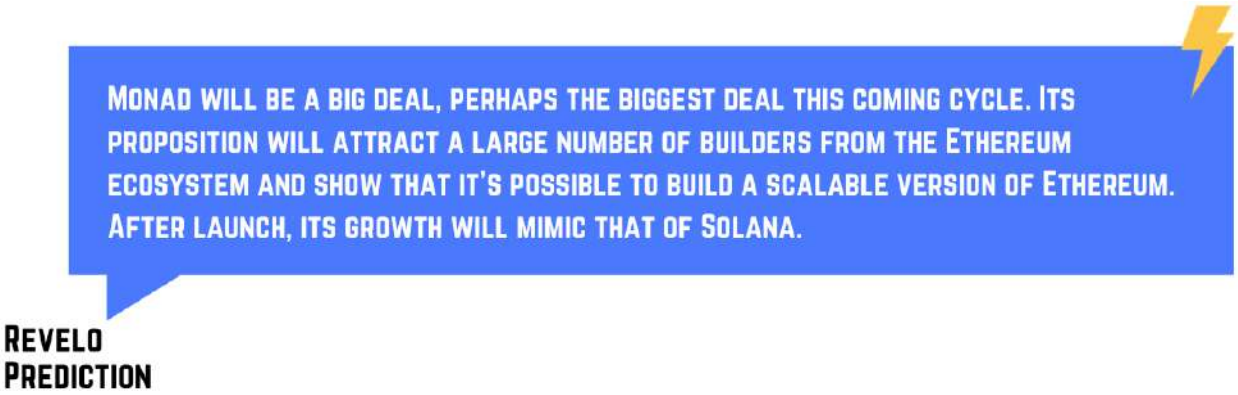
For developers, this is a game-changer: they can deploy Ethereum applications on Monad without needing to modify their code. This ease of use helps Monad attract both developers and users, solving the common ‘cold start’ problem faced by many new blockchains where a lack of users deters developers, and vice versa.

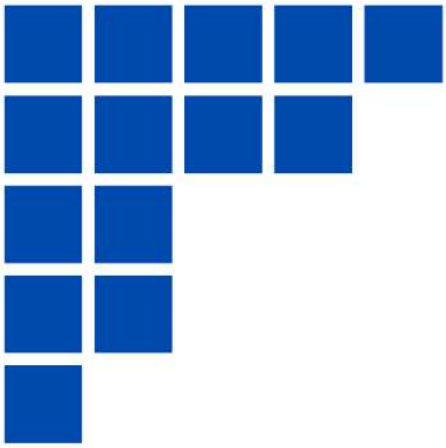
One of Monad's standout features is its impressive processing capacity. It has the potential to achieve up to 10,000 transactions per second (TPS), one-second block times, and one-second time to finality. This high throughput opens up new possibilities for developers using Solidity, allowing them to create applications that were previously unfeasible due to Ethereum's limitations.

Image: Keone on Parallel Execution

Source: Keone (Twitter)

A concern with parallelized networks like Monad is the high hardware requirements for validators. However, this is unlikely to hinder its adoption. We don't think there will be many users running their own nodes, so they won't be directly affected by these hardware demands.

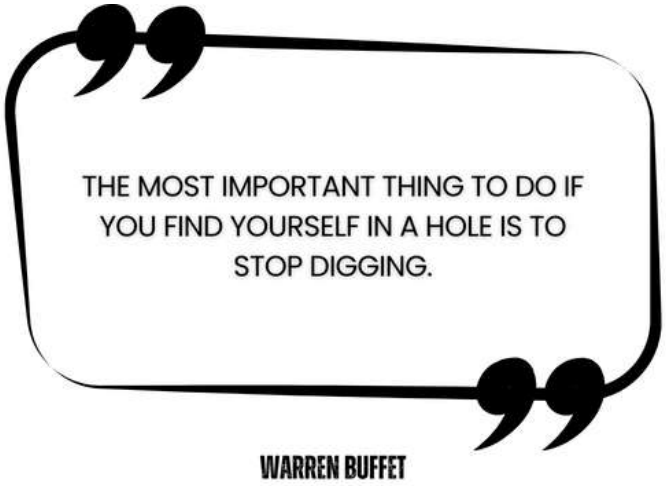




SCALING WITH LAYER 2S

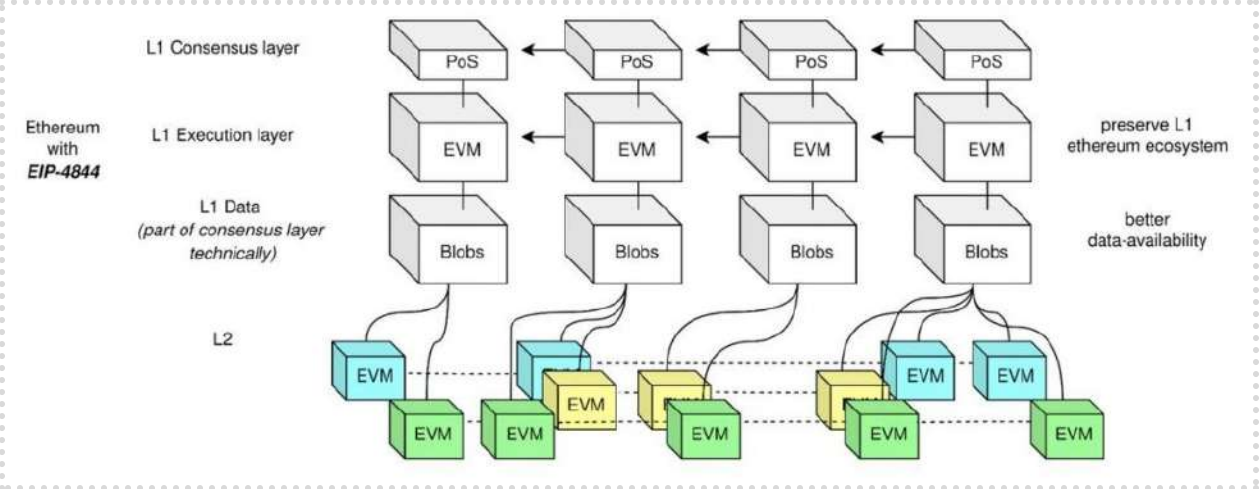
Section 9

SCALING WITH LAYER 2S



Layer 2 networks on Ethereum already process significantly more transactions than the mainnet itself, a trend we expect to continue. These Layer 2 networks, with their diverse applications and use cases, are competing in various markets, each targeting specific needs. With EIP-4844 they will benefit from cost reductions of up to 16 times or a staggering 90% lower than current gas expenses.

Image: Ethereum Post EIP-4844



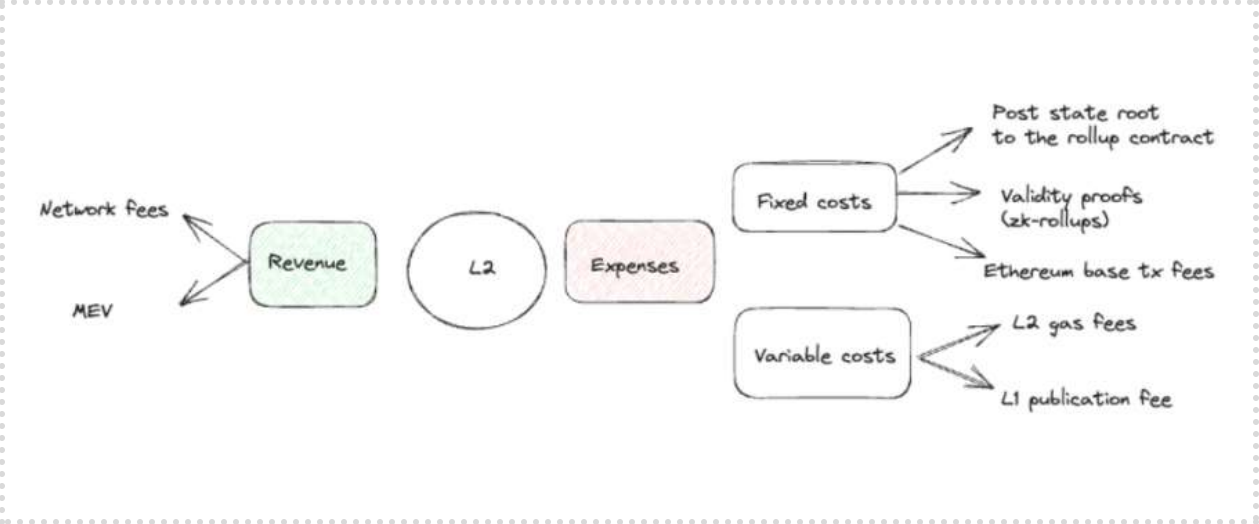
Source: Luozhu (Blog)

However, this explosion of Layer 2s also brings challenges, such as complexity in onboarding new users, poor user experience, and fragmented liquidity. The already steep learning curve of crypto is further complicated by navigating through these Layer 2s, making platforms like Solana, known for their simplicity, more appealing to newcomers.

Both Ethereum mainnet and Layer 2 networks are experiencing all-time highs in daily active addresses. Transaction counts on Ethereum mainnet and Layer 2 solutions are also at all-time highs, and the market capitalization of stablecoins on Layer 2 is reaching new highs, highlighting the growing importance of stablecoins in the ecosystem.

Fees paid by Layer 2 networks to Layer 1 are at all-time highs as well, further reducing the supply of $ETH, now at its lowest levels since the merge.

Image: Economics of Layer 2s



Source: Revelo Intel (Analyst Insight)

The rise of Layer 2s indirectly validates Ethereum's scalability roadmap, but it also highlights the need for a balance between technological development and application adoption. Many Layer 2 projects have prioritized tech development, potentially hindering ecosystem growth.

To counter this, leading Layer 2 projects should focus on ecological construction, supporting diverse applications, and combining strategies for application development and standardization.

Image: Stablecoin Market Cap on Layer 2s

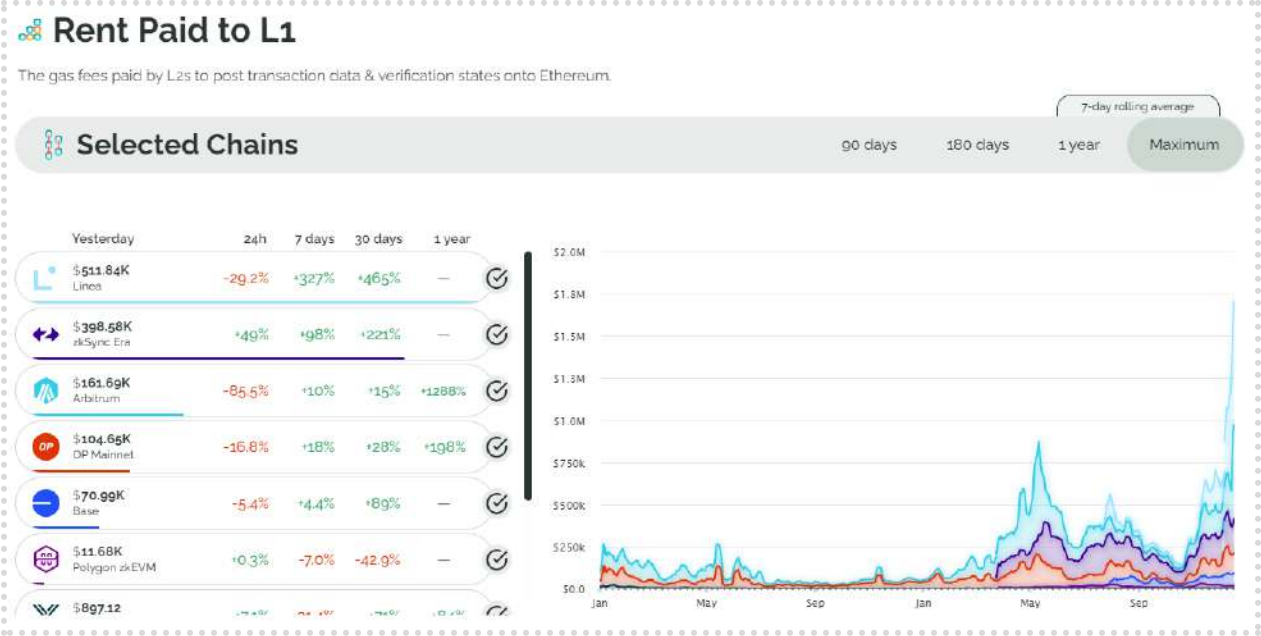
Source: [Grow the Pie]

The Ethereum Layer 2 ecosystem is becoming increasingly heterogeneous, with various projects offering different solutions, including EVM rollups like Arbitrum, Optimism, Scroll, Kakarot, and Taiko, sidechains like Polygon, and new efforts like Linea and Zeth.

Over time, we expect that the Layer 2 landscape will consolidate, with a few winning solutions emerging, similar to the consolidation seen in Layer 1 blockchains. Some independent Layer 1 projects are integrating with the Ethereum ecosystem to become Layer 2 solutions, a transition expected to be gradual to maintain usability and momentum.

We're also starting to see a multidimensional design space, with new data availability layers, new virtual machines, state management, etc. Projects like Eclipse can combine the performance of the Solana VM while competing for a different user base on the Ethereum ecosystem. The same applies to other Layer 2s like Movement. This implies that developers are building on Ethereum as a distribution strategy, and Layer 2s are their go-to-market strategy.

Image: Layer 2 Rent Paid to Layer 1s



Source: [Grow the Pie]

Rollups introduce a new layer of value capture by charging users more for transaction fees than the underlying costs, creating a profit margin for the rollup sequencer. However, this also means that value accrues to the sequencer and the base layer of the blockchain.

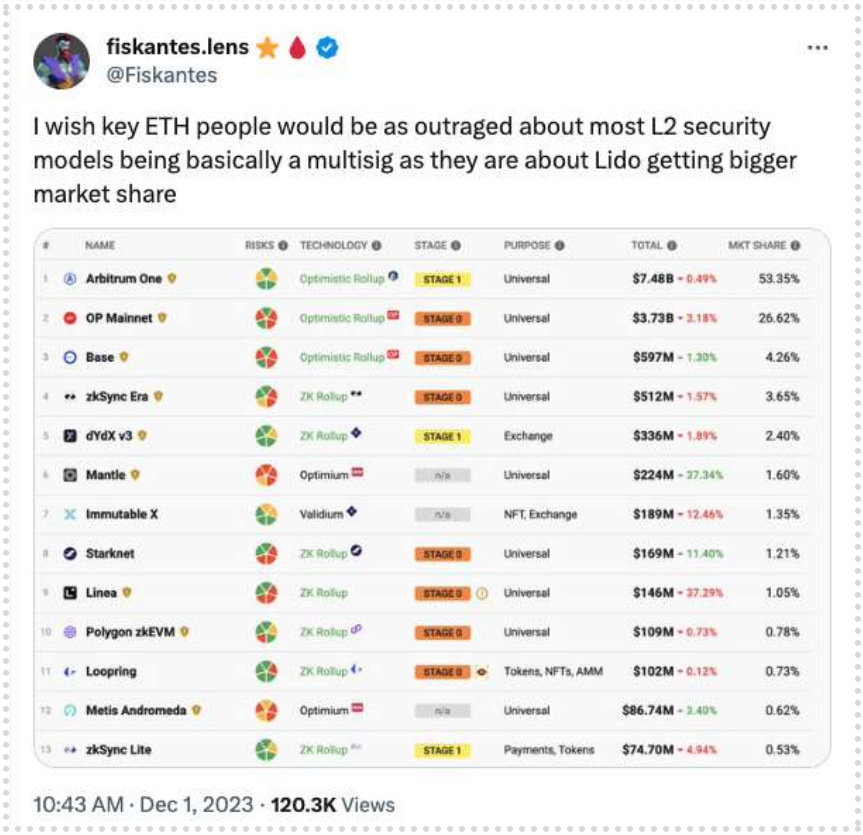
Despite the proliferation of rollups, most Layer 2 chains are not operating at full capacity, leading to underutilization and inefficient use of their potential. The economic attractiveness of Layer 2s is reduced during periods of low transaction frequency, and tokens alone may not be sufficient to drive long-term adoption. Layer 2s need to evolve into self-sustaining ecosystems with strong network effects to attract users and liquidity.

As we look towards 2024 and beyond, the Layer 2 landscape is poised for significant consolidation, with a few dominant solutions emerging from the current plethora of options. These leading Layer 2 networks will likely strike a balance between technological innovation and practical application adoption, focusing on creating robust ecosystems that extend beyond mere transactional efficiency.

The success of these Layer 2 platforms will hinge on their ability to evolve into self-sustaining ecosystems with strong network effects, attracting both users and liquidity. This evolution will

be marked by a shift from reliance on token incentives to fostering genuine utility and community engagement, ensuring long-term sustainability and growth in the blockchain space. However, it is worth noting that, over the years, the greatest fear of the Ethereum community has been “Layer 2s break composability”.

Image: Fiskantes on Layer 2 Security Models



#	NAME	RISKS	TECHNOLOGY	STAGE	PURPOSE	TOTAL	MKT SHARE
1	Arbitrum One		Optimistic Rollup	STAGE 1	Universal	$7.48B -0.49%	53.35%
2	OP Mainnet		Optimistic Rollup	STAGE 0	Universal	$3.73B -3.18%	26.62%
3	Base		Optimistic Rollup	STAGE 0	Universal	$597M -1.30%	4.26%
4	zkSync Era		ZK Rollup	STAGE 0	Universal	$512M -1.57%	3.65%
5	dYdX v3		ZK Rollup	STAGE 1	Exchange	$336M -1.89%	2.40%
6	Mantle		Optimium	n/a	Universal	$224M -37.34%	1.60%
7	Immutable X		Validium	n/a	NFT, Exchange	$189M -12.46%	1.35%
8	Starknet		ZK Rollup	STAGE 0	Universal	$169M -11.40%	1.21%
9	Linea		ZK Rollup	STAGE 0	Universal	$146M -37.29%	1.05%
10	Polygon zkEVM		ZK Rollup	STAGE 0	Universal	$109M -0.73%	0.78%
11	Loopring		ZK Rollup	STAGE 0	Tokens, NFTs, AMM	$102M -0.12%	0.73%
12	Metis Andromeda		Optimium	n/a	Universal	$86.74M -3.40%	0.62%
13	zkSync Lite		ZK Rollup	STAGE 1	Payments, Tokens	$74.70M -4.94%	0.53%

Source: [fiskantes (Twitter)]

We’re also seeing initiatives that, in an attempt to increase capital efficiency, might create additional risks. This is especially true when the actual Layer 2 is not live, such as in the case of Blast which started accepting deposits on a contract controlled by a multisig when the chain itself isn’t yet live. This could set a bad precedent, encouraging more projects to follow suit and overlook the risks.

Even though we expect similar initiatives to be spun up by other Layer 2s, there's noticeable skepticism about the implementation of these initiatives. Major players like Optimism,

Arbitrum, and Polygon have not adopted similar strategies, suggesting there might be valid reasons for their caution.

But this reflects a broader trend in the market where many participants are willing to embrace risk, sometimes overlooking systemic dangers. This risk appetite is evident in the widespread use of Liquid Staking Tokens like stETH and a general overconfidence in the security of Layer 2 solutions.

Image: Despite Not Being Live, Blast Has Over $800M in TVL

Source: Blast (Twitter)

Despite the absence of significant exploits at the infrastructure level of Layer 2s, many of these networks are still in the early stages of development and operate without a live proof system.

It is not just about centralization. It's also about the security risks that might arise as a second order effect.

Unfortunately, there's no magic pill that'll help overcome some of the more complex challenges and tradeoffs associated with Layer 2s. While the narrative around Layer 2 scaling often assumes eventual decentralization, many Layer 2s currently exhibit a degree of centralization, primarily due to the need for efficiency and speed in processing transactions.

Achieving full decentralization is challenging and may seem like a step backward compared to Layer 1 blockchains, which have largely addressed these issues. Layer 2s rely on the security of their underlying Layer 1 and typically have fewer validators, which complicates their path to decentralization.

Image: Imran Khan on the Layer 2 Conundrum

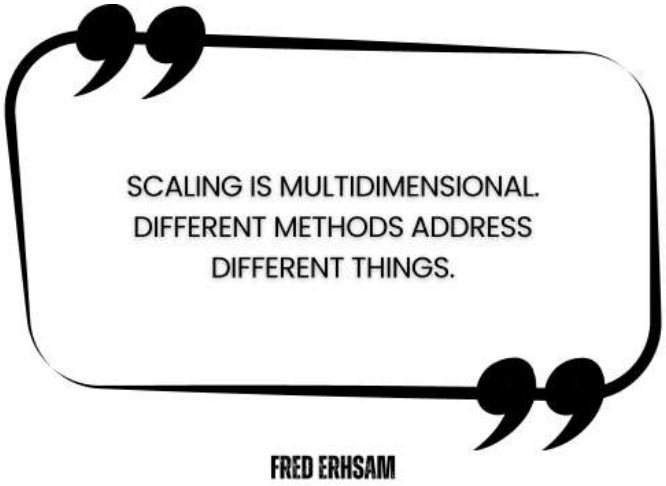
Source: Imran Khan (Twitter)

Decentralizing sequencers and removing admin keys are crucial for true decentralization on Layer 2s, but this introduces complexities similar to those faced by Layer 1s. It raises the

question of whether scalability issues should be addressed primarily at the Layer 1 level, as Layer 1 blockchains are already optimized for censorship resistance and upgradability. Relying on Layer 2s for these functions might not effectively solve the core scalability problem.

In some cases, Layer 2s might remain centralized, especially if their focus is not on providing censorship-resistant and non-custodial money. This pragmatic approach could be suitable for applications that prioritize efficiency and user experience over decentralization.

Optimistic Rollups



The landscape of rollups, a technology enhancing blockchain efficiency, is currently led by optimistic rollups like Optimism, Arbitrum, Base, and Mantle. To no surprise, they all offered lower gas fees, faster transaction speeds, better incentives, and newer dApps not viable on Ethereum, i.e., perps and options.

Of these, only Arbitrum managed to be classified as being in “Stage 1” on L2Beat. Arbitrum also stands out with the highest TVL and weekly active addresses, as reported by DefiLlama and Growthepie. The $ARB airdrop was a much anticipated event that significantly boosted its ecosystem, attracting loyal users and increasing its TVL.

Optimism continues to leverage its grants and RPGF and increase the adoption of its OP Stack. These are catalysts to fulfill the vision of the superchain and faciliate seamless interactions amongst rollups. Multiple RaaS providers are prioritizing the OP Stack as well, making it suitable not only for generalized chains like Base or Mantle but also for appchains like Aevo or Lyra.

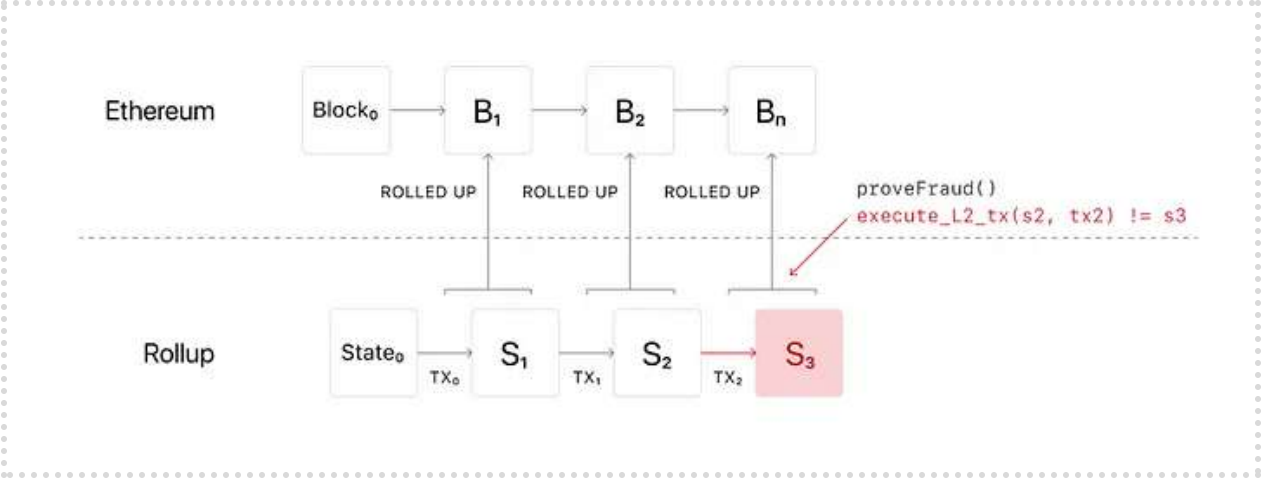
The end goal for Optimism remains the same: as demand for OP block space increases, more revenue is generated by the sequencer, which can then be reinvested into the ecosystem by funding public goods that onboard new users and developers.

Other rollups have also made strides. Base, for instance, quickly climbed the ranks in TVL, entering the top 5, and was home to the SocialFi narrative, birthing Friend.Tech which saw massive adoption among crypto native. Although that adoption was short lived, it led to multiple forks on other chains. Base also attracted degens chaising memecoins, like $BALD.

Base's growth was partly fueled by the inability to bridge funds out initially, creating a cycle of funds rotating within. Its affiliation with Coinbase positions it well for continued success, potentially becoming a platform for both institutional DeFi and social applications. Of all the rollups, we think it has the potential to onboard the largest number of users.

Mantle, despite its late entry and token migration, from $BIT to $MNT, challenges, holds potential due to its substantial treasury. That said, thus far, widely used protocols haven't been incentivized enough to deploy on Mantle or simply haven't been able to prioritize a Mantle deployment. Mantle's success will depend on its ability to attract more protocols and users. It'll be worth keeping an eye on future grants.

Image: Optimistic Rollup Architecture



Source: McKenna - Medium

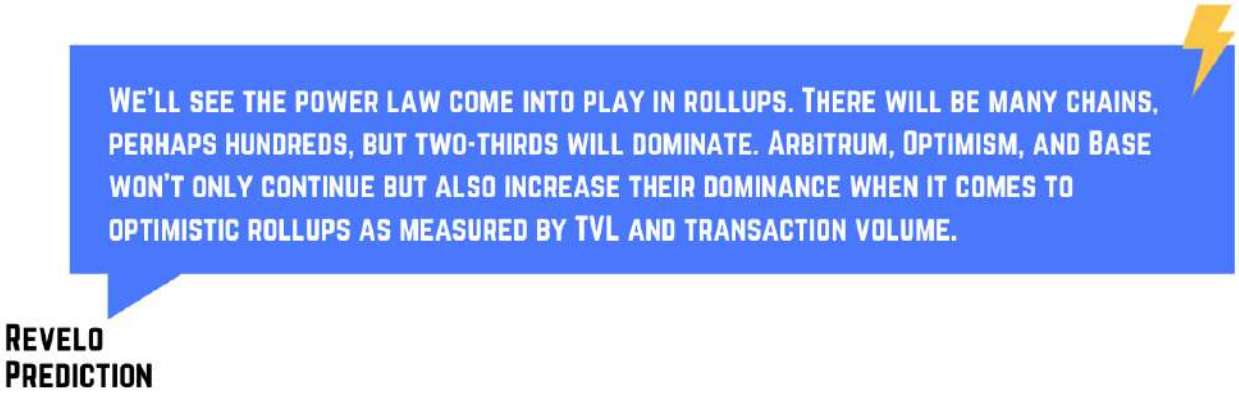
This year also showed that app-chains could thrive within a rollup environment, even without full interoperability. This allowed teams like Aevo and Lyra to build dedicated and customized environments to make the most out of their derivative instruments, offering a user experience akin to CEXs.

As we head into 2024, we believe that Arbitrum will continue to solidify its position as the leader in the rollup sector for crypto natives and derivatives traders. Its new Short Term Incentive Program will also help it maintain its momentum, but this progress might slow as we approach the first wave of token unlocks.

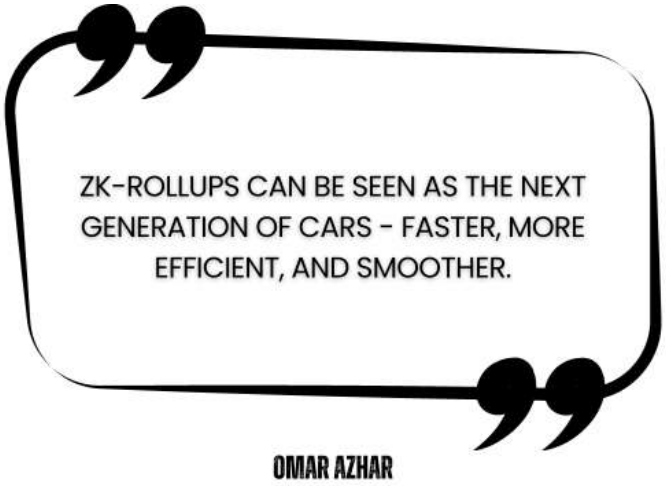
Image: Layer 2 Native Tokens vs. ETH... OP Ripping (Base Doesn't Have a Token Yet)

Raw Data: Token Terminal

We also believe that Base chain, with its user-friendly improvements and account abstraction, is likely to attract a significant number of retail users, potentially outperforming other rollups in user onboarding.



ZK Rollups



On the ZK front, chains like zkSync, Scroll, Starknet or Linea are slowly entering the market, attracting more dApps, developers and airdrop farmers. This makes it harder to judge the rate of adoption and whether the technological innovation will live up to the expectations. These are all well-funded projects whose airdrops might create a "wealth effect" and lead to a mini "DeFi" season.

Linea had its "Linea Voyage" consisting of 10 waves of tasks over 6 weeks. Scroll has been in the sights of crypto natives attempting to increase their volume and transaction count in order to position themselves for a potential airdrop.

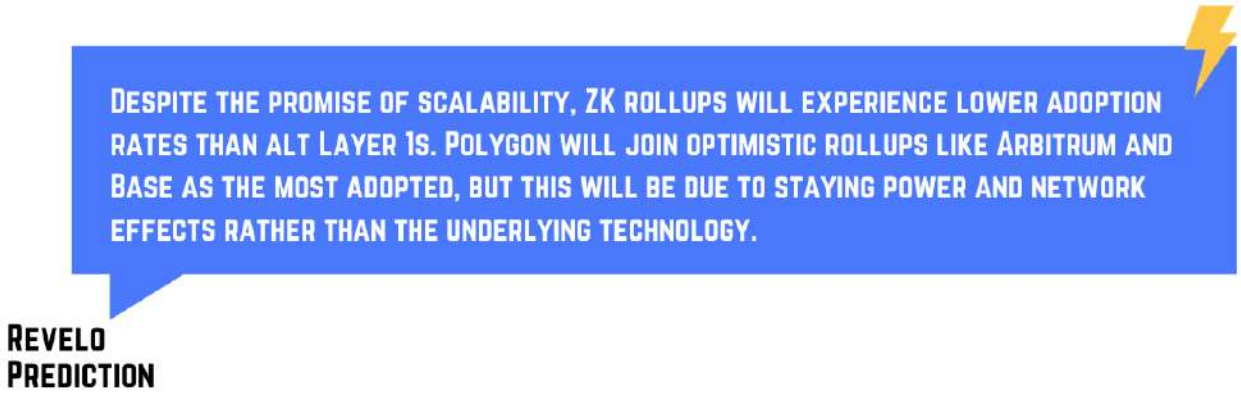
Polygon continues to show its potential and expertise with ZK technology, and the token migration from $MATIC to $POL presents bullish catalysts as we start to see more Supernets in production with built-in interoperability.

However, a superficial but relevant take to the adoption of zkSync is that, while technology matters for developers, it's still very much price action and surrounding narratives that dictate a chain's popularity and eventual adoption.

Table: Optimistic Rollups vs. ZK Rollups

Category	Optimistic Rollups	ZK Rollups
Finality	~1 week delay due to the challenge period for fraud proofs.	Zero delay due to validity proofing.
EVM Compatibility	Very similar EVM execution models.	Only a few of the, are EVM-compatible (ZKEVM).
Validity	Validity is proved with fraud proofs.	Embedded validity as part of ZK proofs.
Live Monitoring	Live tracking of the rollup state and reference state in the root is required from verifiers.	No monitoring is needed since there are no fraud proofs.
Security	Users have an incentive to ensure crypto-economic rollup security.	Cryptographic proofs automatically guarantee security maintenance.

In general, we believe that ZK-rollup technology is much harder to understand for the average crypto user than Optimistic rollups. This will make it much harder for ZK rollups to effectively brand and market and ultimately drive adoption.



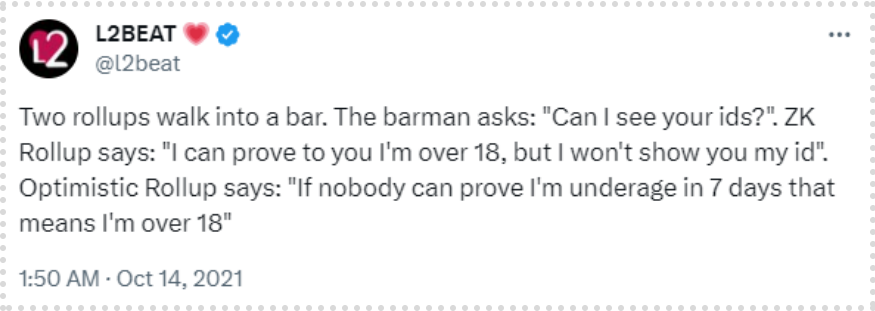
Upcoming Rollups

We're excited to see rollups like Eclipse and Movement in production as it showcases the power of modular blockchains. These platforms are drawing attention with Eclipse utilizing the Sui Virtual Machine and Movement utilizing the Move programming language. Another chain that we have high expectations for is Fuel which is powered by the FuelVM and the Sway programming language.

For better or worse, speculation around potential airdrops has a propensity to drive attention to new chains. And, as has been proven, teams that are vague or evasive about future token plans often inadvertently fuel this speculation. The more a team denies or avoids confirming a future token, the more intense the speculation and excitement become among airdrop enthusiasts.

New chains like Blast and Manta have introduced new forms of incentive farming, They encourage users to bridge their assets to their platforms in exchange for native yield, points for potential future airdrops, and unique rewards like "loot-boxes" in Blast's case. These strategies effectively lock in TVL by setting future dates for asset redemption, requiring a significant level of commitment and trust from users.

Image: L2Beat Fun Take on Rollups



Source: L2Beat (Twitter)

However, Manta issues receipts for bridged tokens, such as $STONE for bridged $ETH and $wUSDM for stablecoins, adding an extra layer of assurance for participants.

The RaaS (Rollups as a Service)

Rollups are the most popular type of Ethereum Layer 2 scaling solutions, and Rollup-as-a-service (RaaS) providers will play an increasingly important role. For developers, launching a rollup involves an extra effort, but RaaS providers can simplify this process while helping them improve the performance and cost basis of their applications.

The emergence of Layer 2s has brought Rollups as a Service (RaaS) into the spotlight as a new tool to assist projects in deploying and maintaining their own rollups. Rollups are a type of Layer 2 scaling solution that processes transactions outside the main Layer 1 environment but records the transaction data back to it. RaaS providers offer a range of services, from full rollup management to no-code deployment options, simplifying the creation and management of rollups.

When it comes to RaaS providers, some offer proprietary technology, while others utilize open-source frameworks. Competition among RaaS providers may lead to a race to lower fees, with proprietary frameworks being a potential differentiator.

Table: Rollups as a Service Providers and Their Propositions

Provider	Description
Conduit	Specializes in the OP Stack and Arbitrum Orbits, offering tools for launching and maintaining Layer 2 rollups. Features include block explorers, transaction tracers, and chain monitoring, with integration into the Optimism Superchain.
Caldera	Focuses on optimistic rollups, allowing the creation of Caldera Chains. Offers various developer tools, allows for gas token customization, and supports multiple virtual machines.. Supports EVM-compatible chains and employs fault proofs for security.
AltLayer	Offers innovative Flash Layers for temporary, app-specific rollups that can be used to meet excess user demand. It supports both optimistic and ZK-rollups and features a no-code dashboard, rollup SDK for developer integration, and shared sequencer set for cross-chain functionality.
Gelato	Expanded from Web3 infrastructure to RaaS, providing zero-knowledge and optimistic rollups. Their ZKRaaS utilizes the Polygon Chain Development Kit and offers a range of backend services such as Web3 functions, automation services, relay solutions, and a gasless wallet SDK.
Lumoz	Exclusively dedicated to zero-knowledge rollups with a hybrid consensus mechanism. Offers a LaunchBase for deploying different types of ZK-rollups with multiple settlement layer options and various data availability choices.

RaaS providers capture value mainly through the fee structure associated with the rollups they support. Typically, a portion of the transaction fees from the Layer 2 rollup goes to the Layer 1 blockchain for data submission, with the rest retained as profit.

This model is particularly valuable for companies without dedicated teams to manage a rollup, allowing them to benefit from the scalability and efficiency of rollups while potentially earning revenue from transaction fees.

The future of RaaS looks promising, with a growing trend of dApps opting to launch their own rollups rather than competing for block space and incurring high transaction fees on Layer 1 networks. On an ongoing basis, it will be important to monitor the cost of settling data on

Ethereum Layer 1, but developments like EIP-4844 (Proto-Danksharding) could significantly reduce rollup fees, benefiting the ecosystem.

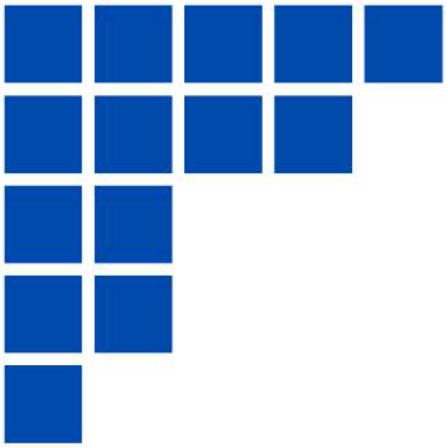
Another important trend to monitor is the development and deployment of lower-cost data availability layers, such as Celestia. Advancements in this area could make it more economical to operate rollups and provide a competitive edge for RaaS providers.

Image: Stacy Muur on RaaS

Source: Stacy Muur (Twitter)

There's also an intriguing dynamic between RaaS providers and rollup frameworks like OP Stack and Arbitrum Orbit. Rollup frameworks are closely watching and analyzing the business models of RaaS providers and may consider entering the RaaS market themselves. Additionally, the potential entry of established Web3 infrastructure players into the RaaS market, as seen with Gelato, could lead to more competition and improved RaaS services.

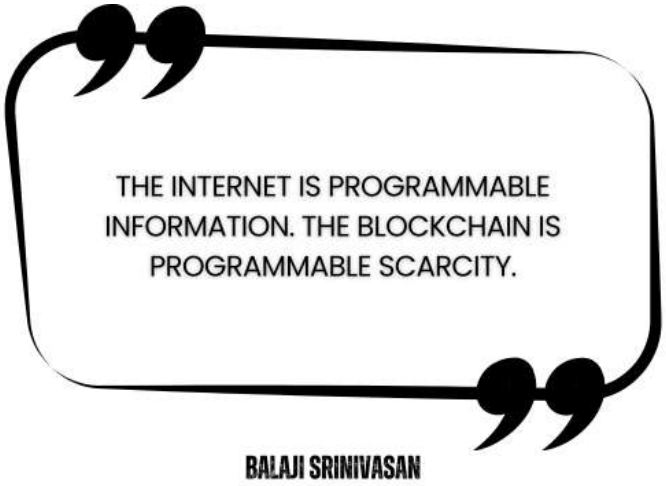
The decentralization of sequencers may give rise to new rollup services built on platforms like Eigenlayer, further expanding the rollup ecosystem. For example, Witness Chain is developing a watchtower service for optimistic rollup commitments. This showcases the evolving landscape of rollup technologies.



INTERNET OF BLOCKCHAINS

Section 10

INTERNET OF BLOCKCHAINS



In the early days of Ethereum, technologies like Polkadot and Cosmos were developed under the idea of the "Internet of Blockchains" (IoBs). This represented a new paradigm that has come to fruition in the last few years, however, not in the way that most would have anticipated.

The IoBs is a concept that will continue to gain traction over time and represents a significant shift in decentralized technology. It envisions a future where economic activities and digital interactions transcend the boundaries of a single blockchain and are distributed across a network of interconnected blockchains, each specializing in different functions such as identity management, derivatives trading, NFTs, gaming, and more.

This thesis is now more clear than ever. To fully understand the proposition, it's important to consider the history of blockchain. Early blockchain networks, like Bitcoin and Ethereum, served as pioneers, demonstrating the potential of decentralized ledger technology. However, they also revealed scalability and efficiency limitations when handling a wide range of use cases. These limitations prompted the need for a more flexible and interconnected approach.

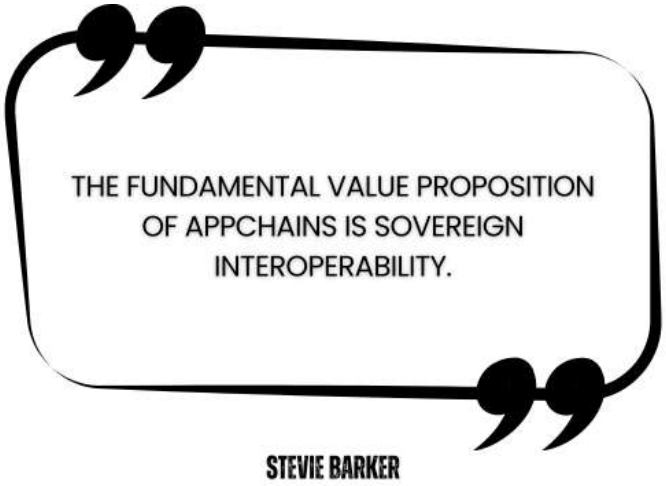
The development of appchains and bridges, as well as the need for interoperability solutions, reflects this shift. Solutions like Chainlink's CCIP and LayerZero are crucial in this narrative, enabling the smooth movement of assets and data between chains and promoting

collaboration among specialized blockchains. Learn more about the differences between Chainlink and LayerZero in our Analyst Insight.

However, the IoBs thesis also faces challenges related to security, governance, and standardization. Achieving a consensus on a standardized operating method in a multichain environment is complex. Vendor-locking is an unlikely solution due to the risks of centralization.

A more plausible scenario is that all chains opt to settle on Ethereum, given its established position and capabilities. We believe that the IoBs is a promising but complex vision that requires careful navigation of these challenges to realize its full potential.

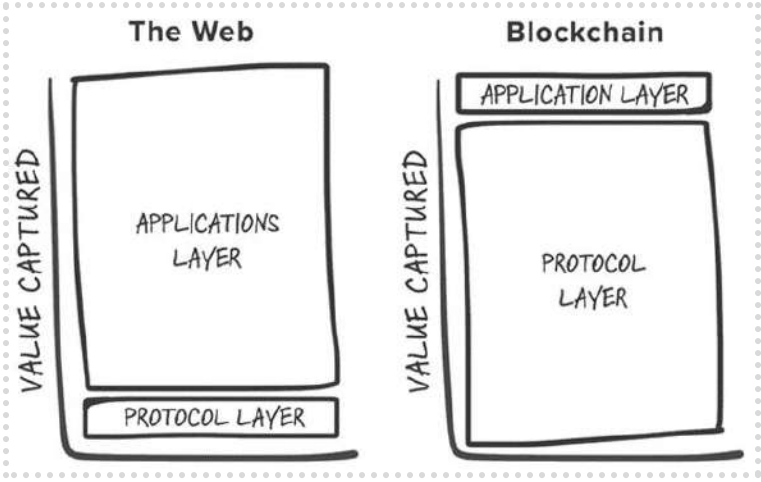
On The Value of Appchains



Appchains blend the characteristics of standalone applications with those of protocols or base layers such as security and data availability. This hybrid nature poses a challenge to traditional valuation methods.

Initially, the "fat protocol thesis" suggested that base-layer protocols would hold more value than the applications built on them, driven by the permissionless shared data layer and token price appreciation.

Image: Fat Protocol Thesis



Source: Joel Monegro (Blog)

The concept of value accrual in appchains is complex but will become a crucial aspect of the crypto world moving forward. To better understand the value of appchains, consider Injective's remarkable performance in 2023 as a case study; we wrote about this in our Analyst Insight.

Image: Price of Injective... Rocket

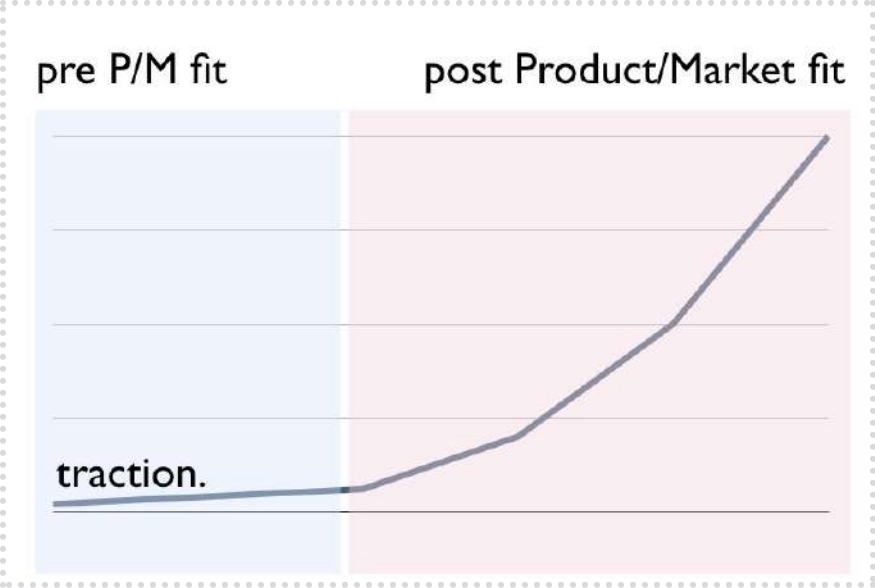
Raw Data: CoinGecko

However, the landscape is shifting. Protocols are becoming more streamlined, and appchains are emerging, tailored for specific functions. These appchains offer enhanced value accrual mechanisms, customization, and unique business models.

Unlike traditional protocols, appchains don't just rely on transaction fees. They generate revenue through various means like trading fees, staking rewards, token buyback and burning, and unique business models of the blockchain themselves.

Appchains represent the combination of the best elements of protocols and applications. They can accrue value from diverse sources, avoid fee competition, and provide a shared data layer. This approach solves the "cold start" problem, where a new chain struggles with no initial applications or users.

Image: The Difficulty of Cold Starts



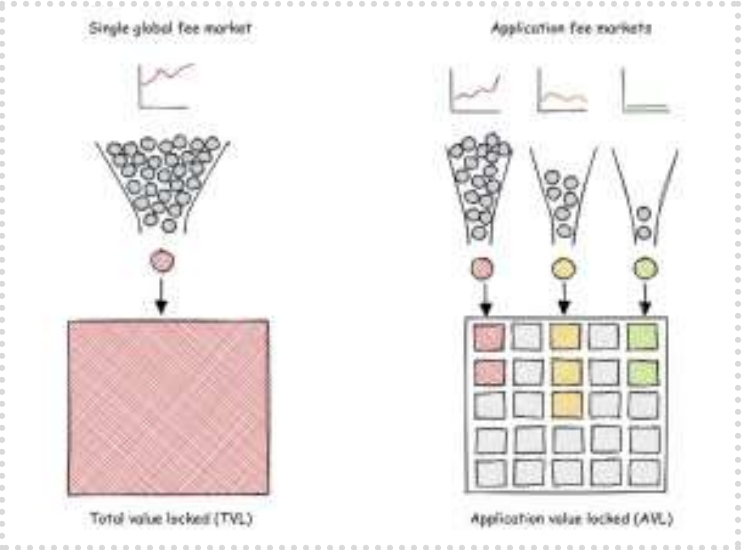
Source: Andrew Chen (Article)

Appchains charge for the applications' utility, not just for transaction data storage in the form of gas fees. Injective is a prime example. It charges fees for trading on its perpetual futures exchanges, a fee structure that aligns with market expectations.

This model contrasts with traditional protocols, where shared data and consensus processes don't warrant fees. Appchains, therefore, establish sustainable revenue streams by charging for in-demand services. In this way, appchains manage to avoid the race-to-zero in fee competition.

Value accrual in appchains is not directly proportional to transaction volume. It depends on various factors unique to each application. For instance, Injective's value is linked to its trading volume, while Osmosis' value depends on its spot trading volume. This allows appchains to leverage their distinct features and services for value accrual.

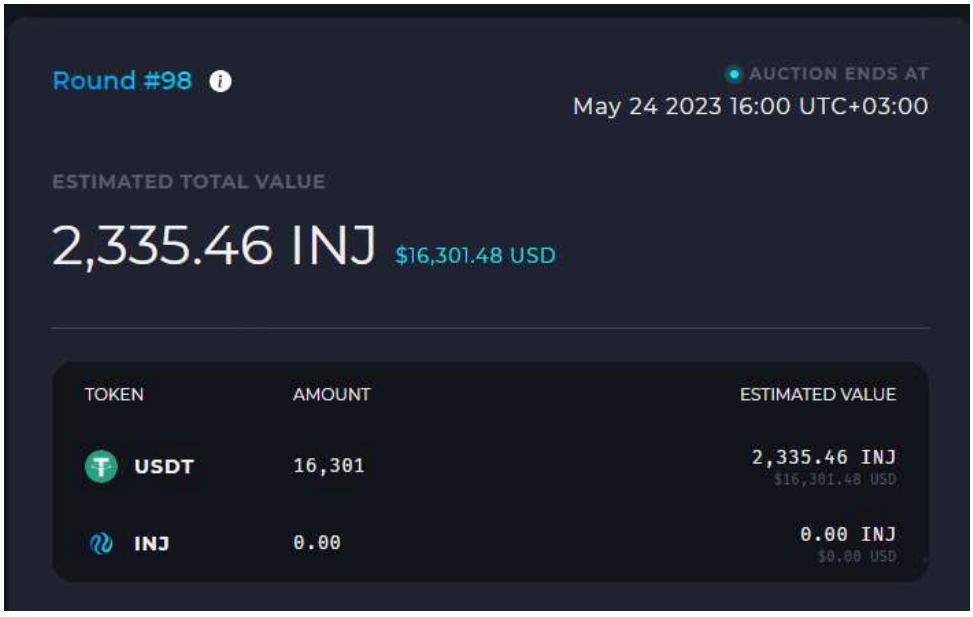
Image: Value Accrual Doesn't Scale Linearly on Appchains



Source: Revelo Intel (Analyst Insight)

Injective epitomizes the "Fat AppChain Thesis." It burns a significant portion of its exchange fees, creating a deflationary effect on its token supply. This strategy, combining base layer and appchain features, has led to its significant value accrual and price appreciation.

Image: Injective's Weekly Auction

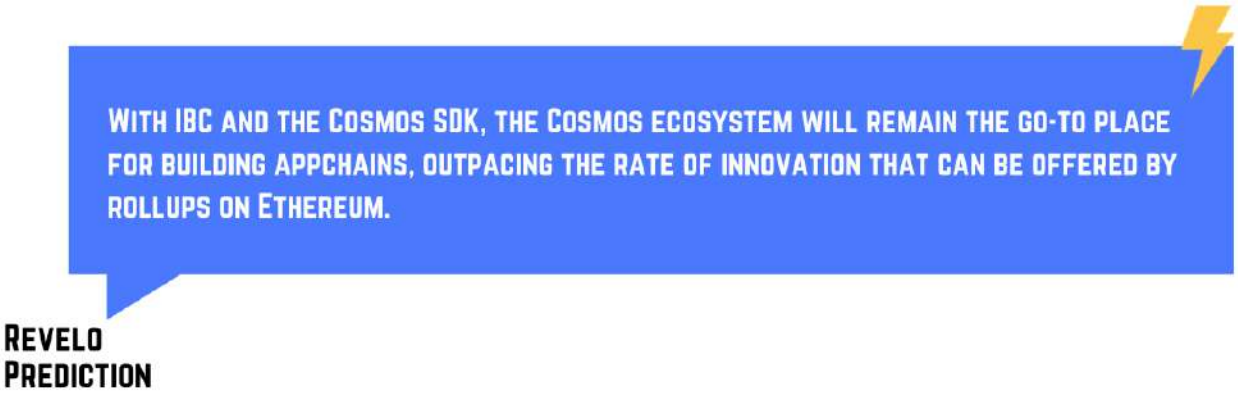


Source: Injective Hub

While finding the next Injective is not an easy task, the Cosmos ecosystem might be an ideal place to look for candidates. Osmosis, for example, has recently implemented taker fees and other value accrual mechanisms.

All the while, Uniswap rests on its laurels; the previously much anticipated Unichain is still not deployed and may never come to exist. Another notable example is dYdX v4 and the dYdX Chain, where the $DYDX token plays various roles, including staking and generating value through trading fees.

Osmosis and Injective were two of our favorites throughout the year and have seen some serious tailwinds to close out the year. That said, we believe that both these protocols still have plenty of room to run heading into 2024. To understand why, read our Analyst Insights for Osmosis and Injective.



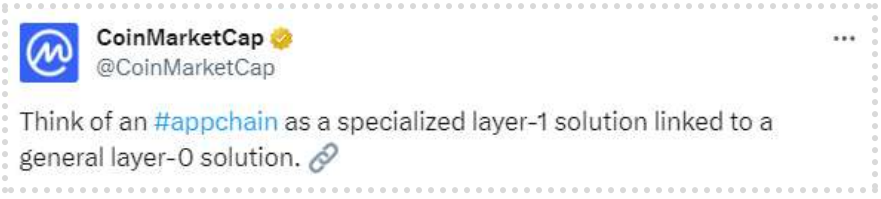
The Rise of Appchains

Launching and interoperating with applications-specific chains has been difficult historically. Progress is being made on the interoperability front, and this is pushing more projects to start building appchains as opposed to launching smart contracts on shared blockspace.

Appchains have been in development for years, with platforms like Cosmos and Polkadot embracing the concept as early as 2016. However, we believe that the actual adoption will take place in 2024.

Appchains address three main challenges: performance, customizability, and value capture. They offer better performance, lower transaction costs, and improved user experience, all while still providing opportunities for value capture through token usage and fees.

Image: CoinMarketCap on Appchains



Source: CoinMarketCap (Twitter)

The upcoming months will be marked by the emergence of appchains, addressing scalability challenges that have been a bottleneck for blockchain adoption. Not only do appchains allow for greater speed and lower transaction costs but also for customization of services, tailored for specific use cases.

Appchains are custom-built blockchains designed specifically for a single application. This means they can be fine-tuned to meet the unique needs of that application, whether it's for performance, features, or security. This customization is a big plus for developers who need more than what general-purpose blockchain platforms can offer.

Major Layer 2 teams have already announced their own appchain stacks, i.e., Polygon's Chain Development Kit, Optimism's OP Stack, ZKSync's ZK Stack, Arbitrum's Orbit Chains, or Starknet's Starknet Stack. And let's not forget the older but still relevant toolchains such as Polkadot's Substrates, Avalanche's Subnets, and Cosmos' Zones.

Appchains are a big step towards more scalable blockchain solutions. They allow developers to tailor blockchain solutions to specific use cases while benefiting from the underlying Layer 2 infrastructure.

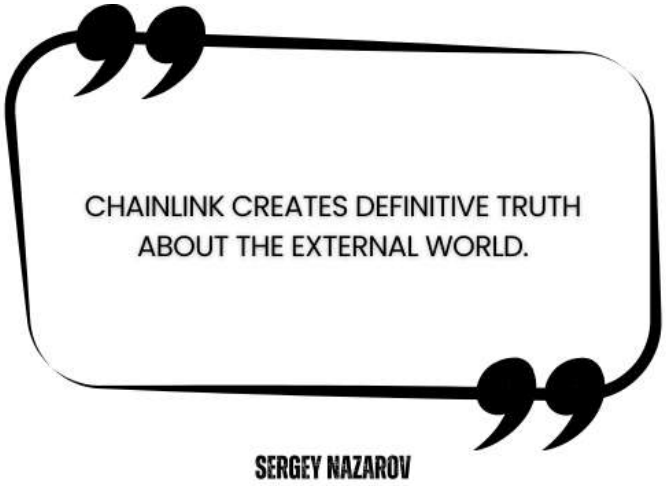
Table: Features That Make Appchains Stand Out

Feature	Description
Customization	Developers can tailor the network to best suit their specific use case including choosing the cryptocurrency or token used for transactions, defining block sizes, setting wallet restrictions (e.g., KYC requirements), and determining the frequency of transactions and proof attestations.
Security:	By building on top of Layer 2 networks, appchains inherit strong security features. This eliminates the need for developers to build trust from scratch, enhancing the overall security of the appchain.
Universal Settlement Layer	Appchains are part of broader ecosystems as they settle transactions on an underlying network. These ecosystems will continue to evolve, strengthening the value propositions of appchains.

As this technology develops, we will likely see clear winners emerge, especially as the market for Web3 applications matures.

At the same time, it is important to be aware that appchains have limitations, including limited composability and atomicity, potential walled gardens, liquidity fragmentation, reflexive security models, resource wastage, and additional development complexity.

Private vs Public Blockchains



Blockchain technology is a game-changer primarily because of its decentralization. This means it doesn't rely on a central authority. Public blockchains are the best example of this, allowing multiple parties to work together without relying on a single controlling entity. This decentralization is at the core and is a key value proposition of blockchain technology.

From a first-principles perspective, their counterparts, private blockchains, are a bit of a misnomer because they typically involve a central entity or a consortium of centralized entities acting as gatekeepers. This goes against the whole idea of decentralization. It's like having a "decentralized" system that's actually controlled, which sounds contradictory.

However, there is a world where private and public blockchains can coexist. This situation is a bit like the early days of the internet. Back then, some people tried to make “private internets”, called intranets.

But in the end, what really worked was connecting to the big, open internet – a network of networks. Public blockchains are similar in that they also create a framework upon which anyone can participate and innovate.

Table: Advantages of Public Blockchains

Advantage	Description
True Decentralization	Public blockchains are shared by everyone and don't depend on a central authority. This is crucial when different groups need to work together but don't want to rely on an intermediary.
No Central Control	They're not run by centralized entities, which means everyone agrees on the rules, standards, network effects, interoperability, and transparency.
Better Security	Public blockchains are harder to attack because there's no single weak point, i.e., a single point of attack.
Network Effects	Due to the composability of code, anyone can join and contribute, leading to faster and more diverse developments.
Interoperability and Standards	They help set common standards, which is important for more people to use and accept them.
Diverse Developer Talent	They attract a diverse pool of developer talent, fostering creativity and innovation.

Think of Ernst & Young's Nightfall project, which makes public blockchains more private while retaining the core propositions of public blockchains. In essence, this translates into the ability to transfer public tokens in a private way.

The advancements in public blockchains, especially with technologies like zero-knowledge proofs, remind us of the internet's evolution with the introduction of broadband and encryption. We're excited about this as it paves the way for new breakthroughs, similar to the explosion of e-commerce following these advancements in the internet.

While optimistic rollups have been dominant, ZK-rollups began to gain more attention this year. ZK-rollups are seen as the future of scaling because they use zero-knowledge proofs efficiently for transaction validation. Initially, ZK-rollups faced challenges integrating with the Ethereum Virtual Machine, the primary smart contract engine.

However, the emergence of ZKEVMs in 2023 solved this by allowing smart contracts to be easily deployed on the EVM within ZK-rollups. This enables the seamless porting of EVM dApps to ZKEVMs.

Several ZKEVMs were launched in 2023, including ZKSync Era, Polygon ZKEVM, Linea, and Scroll. StarkNet introduced a ZK-rollup compatible with EVM through Kakarot ZKEVM, and Taiko is expected to launch its ZKEVM soon.

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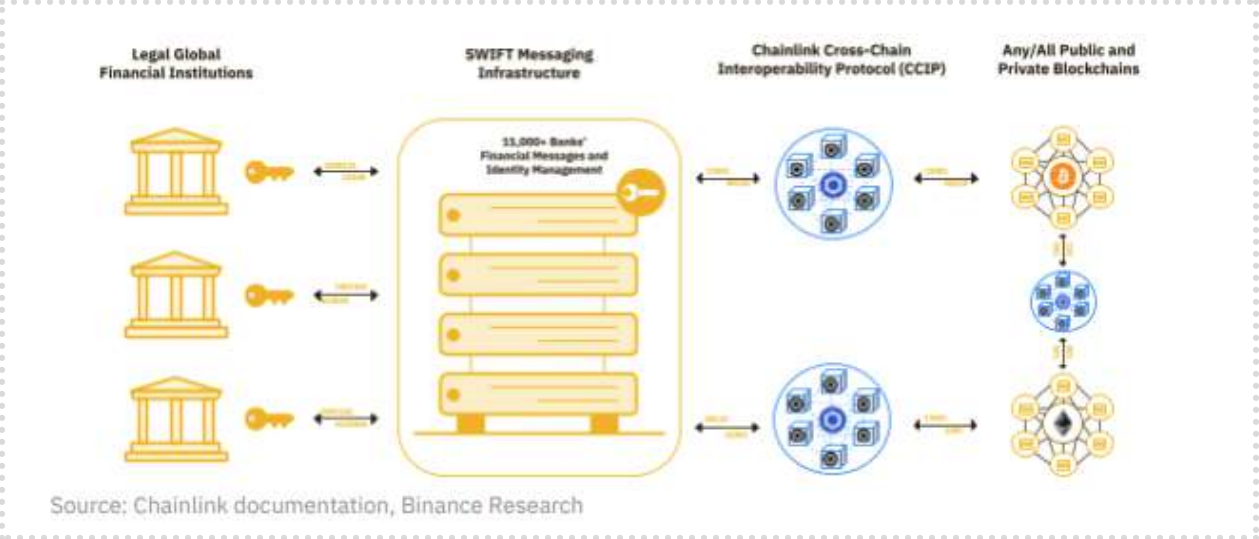


Source: Binance Research - Top 10 Narratives

Another exciting development within ZK-tech is the use of ZK-co-processors, which let dApps offload data-intensive and costly computations off-chain. This innovation reduces gas costs and allows for more complex functions, improving the overall user experience.

Potential applications include on-chain gaming, DeFi loyalty programs, digital identity, and more, opening up new possibilities in the blockchain space.

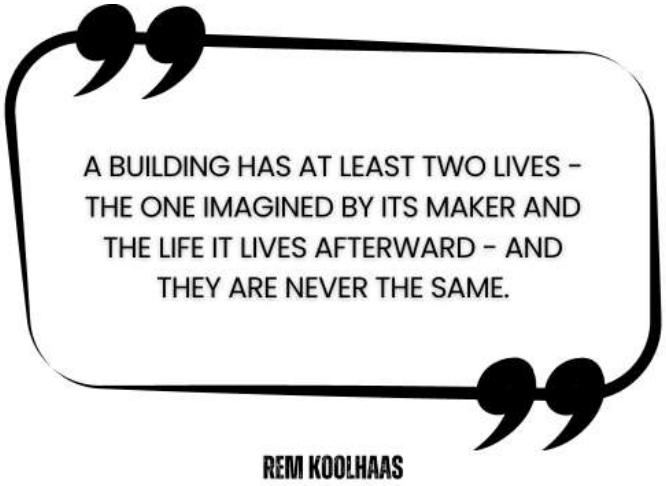
BANKS WILL START TO CONDUCT AN INCREASING NUMBER OF PROOF OF CONCEPTS TO TEST THEIR OPERATIONS ON PRIVATE BLOCKCHAINS, EVENTUALLY MAKING THE FINANCIAL SYSTEM MORE EFFICIENT IN THE YEARS AHEAD.

REVELO THOUGHT

INFRASTRUCTURE DEVELOPMENT

Section 11

INFRASTRUCTURE DEVELOPMENT



Up to this point, the industry has been concerned about the scalability of blockchain technology and the ability to support and decentralize diverse applications. Although the necessary infrastructure has now been established, there's still a lack of products that effectively bring a large number of users into the crypto space. The market is saturated with numerous solutions, including multiple Layer 1 blockchains and a plethora of Layer 2 solutions.

Despite the number of “solutions”, we haven't yet reached the full potential or experienced exponential growth in terms of transaction volume or active user base. This suggests that while the foundational technology is ready, there's a gap in market adoption and practical application that needs to be addressed to realize the full potential of blockchain technology.

The Oracle Landscape

We're witnessing the welcome emergence of competitors and alternatives to Chainlink, the current undisputed leader in oracle providers. This diversification is important as it introduces the option to integrate a secondary oracle to serve as a fallback if the primary oracle fails. This redundancy enhances the reliability of data feeds, crucial for decentralized applications.

Oracles are becoming increasingly important, especially in the tokenization of Real World Assets (RWAs). Their applications extend beyond providing simple data or price feeds. Oracles play a pivotal role in ensuring accurate collateral valuation for Collateralized Debt Positions (CDPs) and internal redemption mechanisms within RWA protocols.

Table: Oracles and Their Role in RWAs

Use Case	Explanation
Generating Data Feeds	Generating data feeds for the price movements of tokenized assets, such as RWA-backed stablecoins or tokens representing a basket of RWAs. These feeds enable DeFi protocols in lending and derivatives sectors to offer RWA-backed asset pools to their users.
Providing Price Feeds to RWA Protocols	Providing price feeds to protocols that require the constant valuation of assets tokens are minted against. If a protocol uses T-bills to mint stablecoin units, it's crucial that the total value of T-bills remains above a threshold compared to the total value of the minted stablecoin.

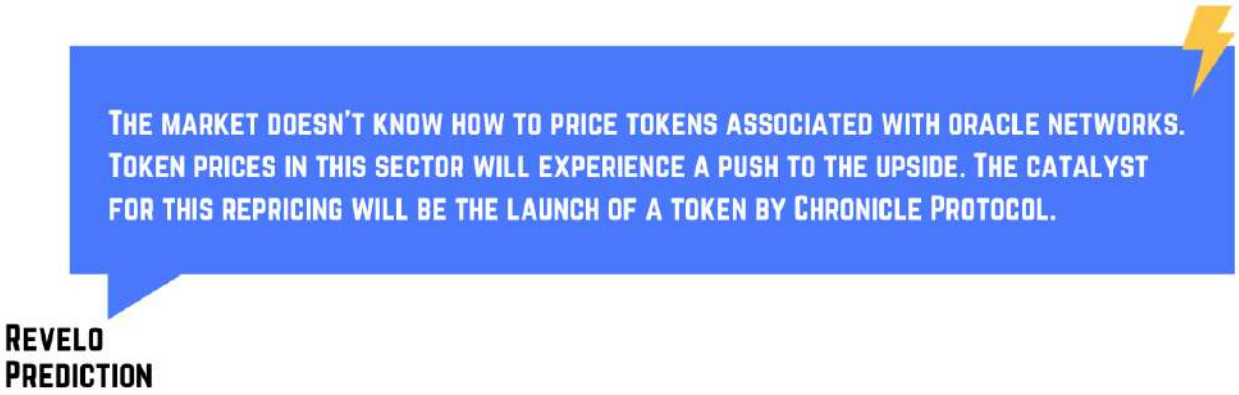
Unlike the trend in DeFi where most protocols are building carbon copies of others with the smallest of tweaks, it's refreshing for us to see the players in the oracle landscape trying to offer a unique value proposition, catering to various needs and preferences in the industry.

At this point, it's pointless to compare between different oracles and bridges in terms of valuation, utility, value accrual, etc. First, you're not going to be able to estimate a "fair valuation" because of how different service providers come up with different solutions and/or utility, or lackthereof, of their token.

Second, most often you're comparing apples to oranges, where each use case might require a specific solution. Chainlink can give you the quality standard plus automation, randomness, CCIP, and other services, but Pyth can give you high-resolution data available from the provider itself.

The differences go beyond push vs. pull model and financial vs. non-financial data. For instance, API3 gives you a first-party solution from the API provider itself, while Redstone can create a custom solution for your needs. We view the oracle landscape as a non-zero sum market sector where we have high expectations for innovation.

With the most recent launch of $PYTH, the market is still trying to establish an equilibrium point for the native tokens of oracle projects. Right now, the market doesn't know whether oracle tokens should be valued similarly to Layer 1 or Layer 2 tokens.



RIP Bridges

As Ethereum's Layer 2 solutions become more popular and users increasingly navigate between Layer 2 chains, the market for bridging solutions is poised for significant growth. Rather than isolated liquidity pools on each chain, a key innovation in this space is the concept of unifying liquidity in a main pool on the Ethereum mainnet, as demonstrated by platforms like Across. This allows relayers in the network to facilitate fund transfers between chains more efficiently, leading to faster and cheaper transactions.

Despite their importance, it's important to note that bridge-related exploits remain a significant concern. In fact, according to the Rekt Leaderboard, six out of the top ten largest crypto hacks have involved bridge exploits, highlighting the importance of security in these systems. For instance, the Multichain hack underscores the risks associated with bridging assets.

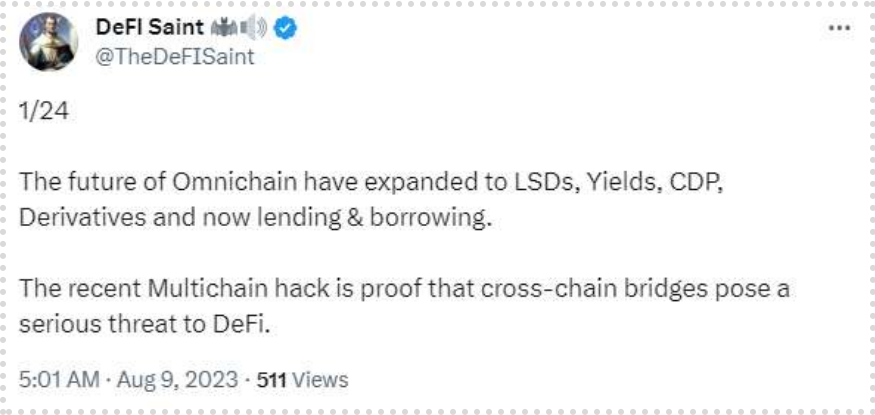
The market is seeing the emergence of strong new players like LayerZero, Wormhole, deBridge, Jumper, and Bungee. These platforms are enhancing the way assets are bridged between layers (Layer 1 to Layer 2) or chains, emphasizing the need for robust security measures.

For example, assets bridged via native bridges on Layer 2 platforms like Optimism are considered relatively safe, as they can be withdrawn back to the mainnet even if the Layer 2 faces issues.

It should be noted that the above-mentioned bridges are entering the space without their own tokens. With the upcoming LayerZero airdrop and with pre-launch markets expecting a multi-billion dollar valuation, there could be a reevaluation of the valuations of other bridging solutions such as Across, Axelar, and Connext.

If a multi-chain future materializes, these bridges could be valued similarly to less-adopted Layer 1s, presenting potential investment opportunities due to the current asymmetry in bridge valuations.

Image: DeFi Saint on the Risk of Bridges



Source: DeFi Saint (Twitter)

Bridges also play a crucial role in the implementation of intents. Market makers can use them to immediately fill orders on the destination chain by hedging or arbitraging price differences across different venues, including CEXs or other chains. This gives users access to almost instant liquidity.

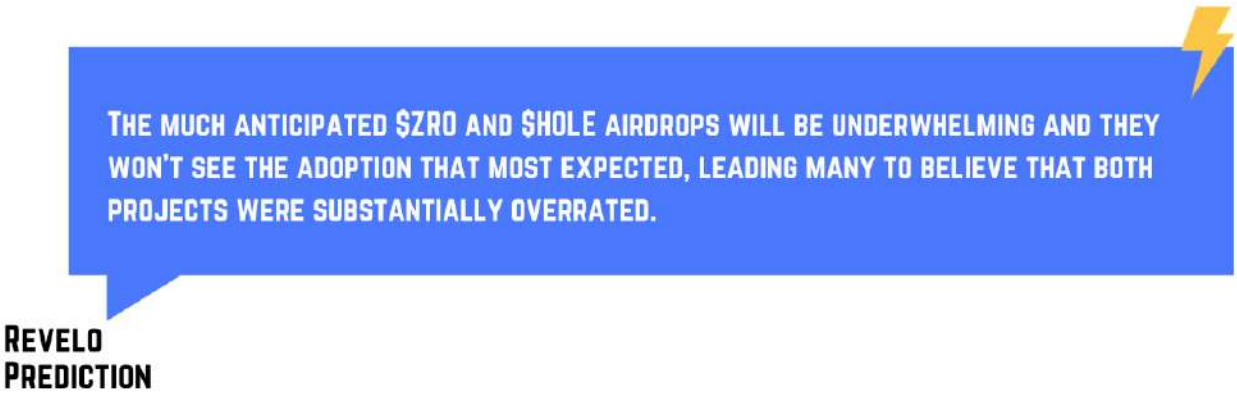
For instance, users can move assets from Optimism back to Ethereum without the typical 7-day delay of optimistic rollups. The competition among solvers and market makers in this space is expected to lead to better pricing and lower slippage for end users.

In terms of funding and valuation, Wormhole and LayerZero are among the top pre-token projects. They are only surpassed by projects like Linea, ZKSync, Aleo, and Starknet, which also have deep pockets and no tokens, indicating a significant interest and investment in the development of efficient and secure bridging solutions in the blockchain ecosystem.

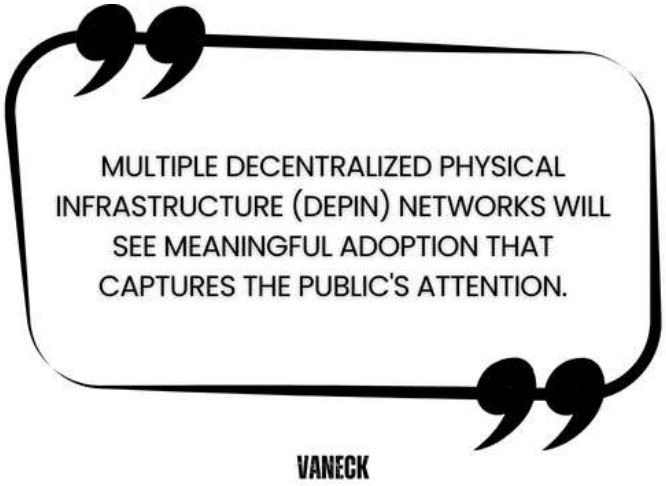
Image: What Are Intents... Really?

Source: 0xWenMoon (Twitter)

We believe that bridges will continue to be vital in addressing the challenge of 'liquidity fragmentation', especially as the number of Layer 1s increases.



The Rise of DePIN



The emergence of Decentralized Physical Infrastructure Networks (DePIN) is an exciting shift in the data storage and compute space, offering smaller players the opportunity to disrupt the dominance of centralized giants like Google, Amazon, and Microsoft.

DePINs leverage blockchain technology to create trustless, permissionless, and programmatic infrastructure, aiming to optimize data storage and compute by incentivizing individual and business participation in network operations.

DePIN is the representation of a paradigm shift from centralized infrastructure networks to community-owned ones, incentivizing participants to provide services via real-world physical infrastructure and being rewarded for that.

The traditional cloud services industry, currently valued at $427B, is projected to grow to $1 trillion by 2028, with a 15.7% CAGR. DePINs, which encompass various data processing and distribution networks, present a substantial market opportunity in this growing sector.

These networks disrupt traditional cost structures by eliminating central authorities and intermediaries, leading to more direct and efficient operations. We believe that DePINs present numerous areas for cost-savings.

Table: Cost Saving Opportunities Provided by DePINs

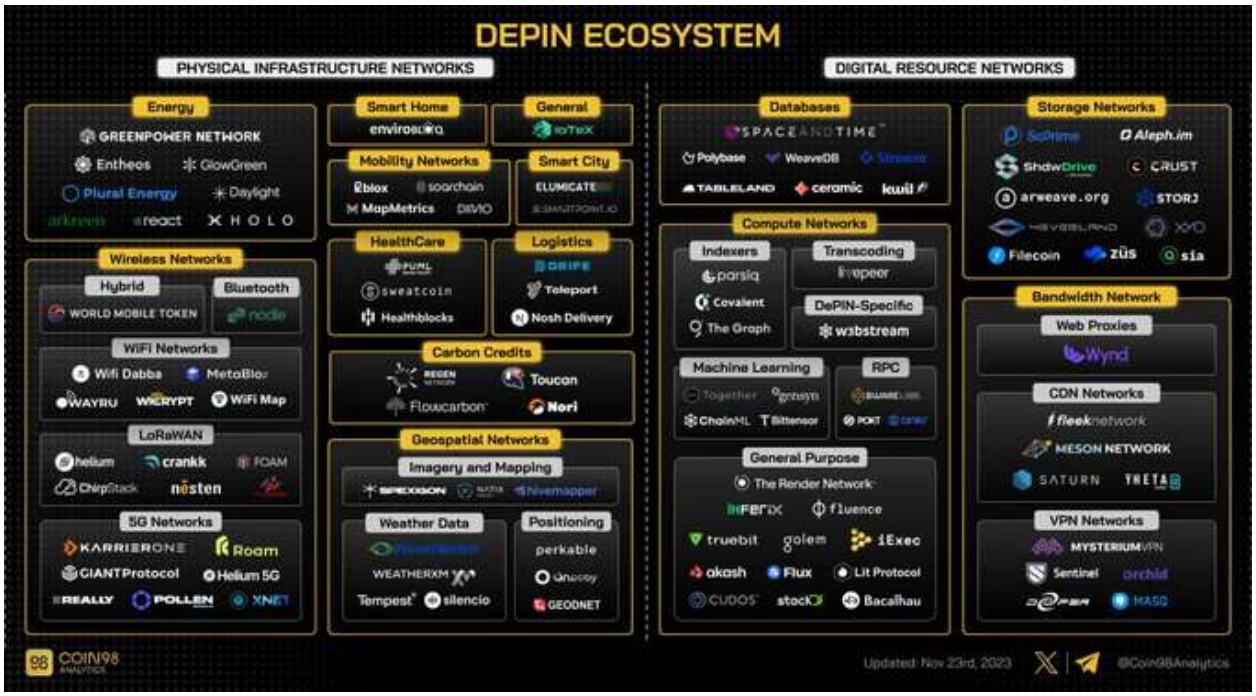
Feature	Explanation
Infrastructure Maintenance Costs	DePIN distributes maintenance responsibilities across the network, leading to more efficient and localized maintenance.
Elimination of Intermediaries	Peer-to-peer interactions in DePIN eliminate intermediary fees, resulting in more affordable services.
Optimized Resource Utilization	Dynamic resource allocation in DePIN reduces waste and improves efficiency.
Open Source and Community-Driven Development	Leveraging open-source technologies and community contributions reduces software licensing costs and encourages innovation.
Enhanced Security with Reduced Costs	The distributed nature of DePIN reduces security costs.
Transparent and Competitive Pricing	Blockchain-based transparency and competition drive prices down.
Reduced Compliance and Regulatory Costs	Regulatory focus shifts from a single entity to the network, potentially reducing compliance costs.
Scalability Without Massive Investments	DePIN can scale by onboarding more participants without significant capital expenditure.

In reducing costs, DePIN promotes wider adoption. They can stimulate innovation and lower barriers to entry for startups, potentially leading to the creation of new job roles in DePIN maintenance and development. Particularly, small and medium-sized enterprises stand to benefit from these cost savings, enhancing their competitiveness.

The efficiency of DePIN markets can also attract foreign investments, while their affordable services may increase consumer purchasing power and boost global trade. In time, governments could adopt DePIN, leveraging the cost savings to enhance public services. Moreover, DePINs that focus on sustainability could yield significant long-term economic and environmental benefits, aligning with global efforts towards a more sustainable future.

DePINs use token incentives to encourage network growth and security, creating a dynamic where users are rewarded for their contributions. DePINs cover a wide range of verticals, including storage, wireless, computing, IoT, and more, suggesting broad applications. Key players in the DePIN space include Filecoin, Render Network, Livepeer, Theta Network, Arweave, Helium, and Akash Network.

Image: DePIN Ecosystem



Source: [Coin98 Analytics (Twitter)]

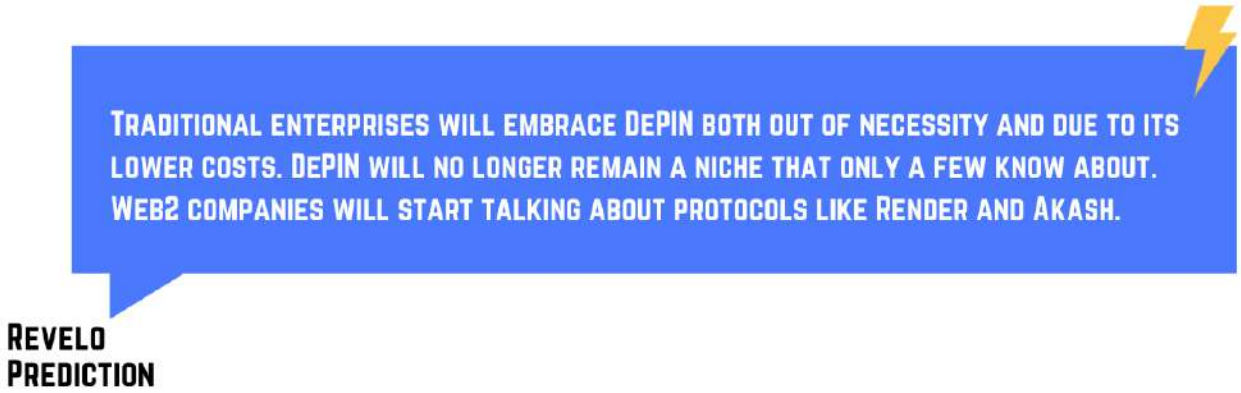
DePINs aim to bring the benefits of blockchain technology into real-world applications, driving mainstream adoption in sectors like Wi-Fi, transportation, storage, and more. However, simplifying blockchain technology and providing user-friendly interfaces remain significant challenges for decentralized solutions. The success of DePINs in practical applications will largely depend on overcoming these user experience challenges.

The operation of DePINs is based on a feedback loop where token rewards incentivize infrastructure deployment, attracting more users and service providers. This cycle eventually finds an equilibrium between network usage and the price of the reward token, creating a sustainable economic system.

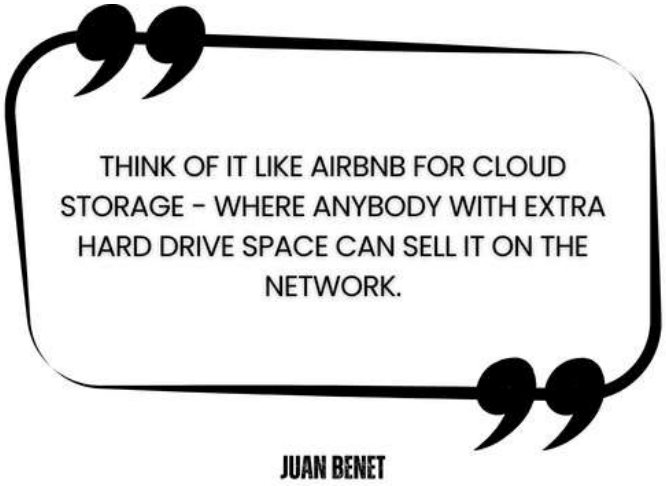
Table: Catalyst for DePIN Adoption

Catalyst	Explanation
Token Rewards	Token rewards incentivize the supply side of the equation, i.e., encourages participants to deploy infrastructure.
Supply and Infrastructure Growth	As the supply grows and there is more infrastructure available, more developers and product builders will start looking into and start using these services.
Fees Generated	The fees generated by the early users will attract more suppliers and service providers.
Economics	The economic system finds an equilibrium point between network usage and the price of the reward token.

We believe that DePIN represents a compelling opportunity for investors, aligning with trends in data storage and compute. These projects offer efficient, cost-effective, and decentralized alternatives to centralized services, well-positioned to capitalize on the growing demand for compute resources and the shift towards decentralized solutions.



Storage Networks of the Future



In today's digital era, data is the lifeblood of modern society. From personal data and financial records to critical business information and intellectual property, our reliance on digital information is undeniable. This dependence, however, exposes us to vulnerabilities, including centralized data storage, privacy breaches, and data censorship.

Even in the early age of blockchain, it has been established that storing data on blockchains is not viable or practical. Blockchains are designed to be tamper-proof and secure, which means that they require a lot of computational power and storage space to maintain the distributed ledger of transactions.

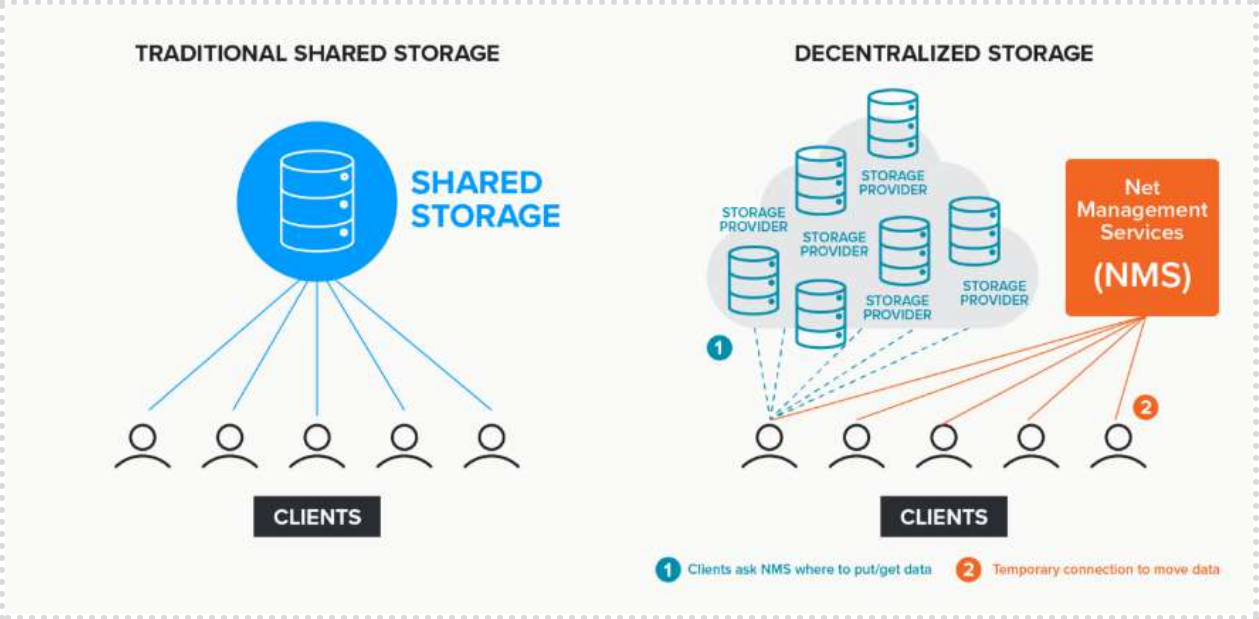
As the amount of data stored on the blockchain grows, the processing time and cost of transactions will increase significantly, making it impractical for applications that require frequent or high data volumes.

While blockchains are secure and tamper-proof, they're not practical for large-scale data storage due to high computational and storage demands, leading to inefficiencies. Additionally, storing data directly on a blockchain can compromise privacy and integrity, as the data is publicly accessible and replicated across multiple nodes. Therefore, data can be vulnerable to unauthorized access, malicious modifications, and privacy concerns.

Decentralized Storage Networks (DSNs) are emerging as a vital solution, especially with the advent of AI. But their potential goes beyond that, since they can play a critical role in a new era of trustless, secure, and efficient data management.

These networks empower individuals and organizations to take control of their data, moving away from reliance on centralized entities. Users then become custodians of their information, enhancing data ownership and control.

Image: Traditional Shared Storage vs. Decentralized Storage



Source: GigaOm

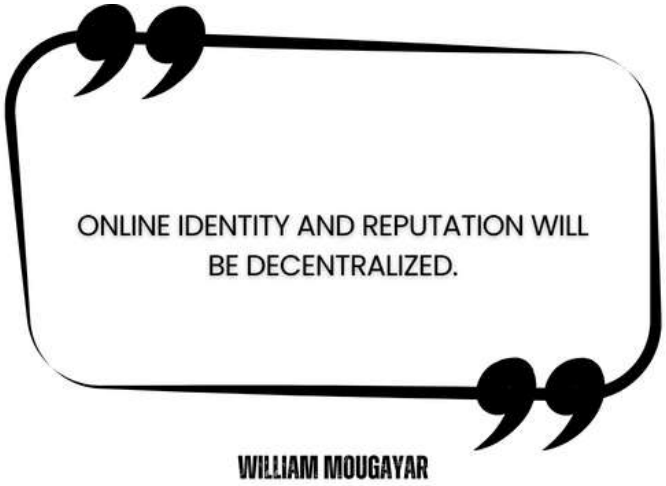
Security and privacy are also significantly improved in DSNs through advanced encryption techniques. By distributing data across various nodes, these networks reduce the risk of data breaches and eliminate single points of failure. This decentralized approach also enhances the resiliency and redundancy of data storage, ensuring data availability even in adverse conditions such as hardware failures, natural disasters, or cyberattacks.

One of the standout features of DSNs is their resistance to censorship. Operating on open and decentralized protocols, these networks make it exceedingly difficult to censor or restrict access to data, unlike traditional centralized storage providers that can be influenced by regulatory or political motives.

DSNs also maintain transparent and tamper-proof records, enabling seamless interactions with smart contracts and unlocking unique use cases through token-based incentives. Participants who contribute storage space and bandwidth are rewarded, creating a self-sustaining ecosystem that encourages active participation and efficient use of resources.

With time, our reliance on data will only increase and Decentralized Storage Networks offer a new paradigm in data management, addressing the limitations of centralized systems and paving the way for a more secure, private, and efficient handling of digital information.

On-Chain Identity



On-chain identity is a digital representation of an individual on the blockchain, offering a unique, immutable, and permanent profile. The concept is not dissimilar to social media profiles, i.e., Twitter or LinkedIn, but is backed by verifiable evidence on the blockchain about a person's achievements, activities, or interests.

These on-chain identities provide users with complete censon-proof control over their identities, portability across platforms, enhanced security through decentralized identifiers, and the convenience of a single digital identity for different chains and wallets.

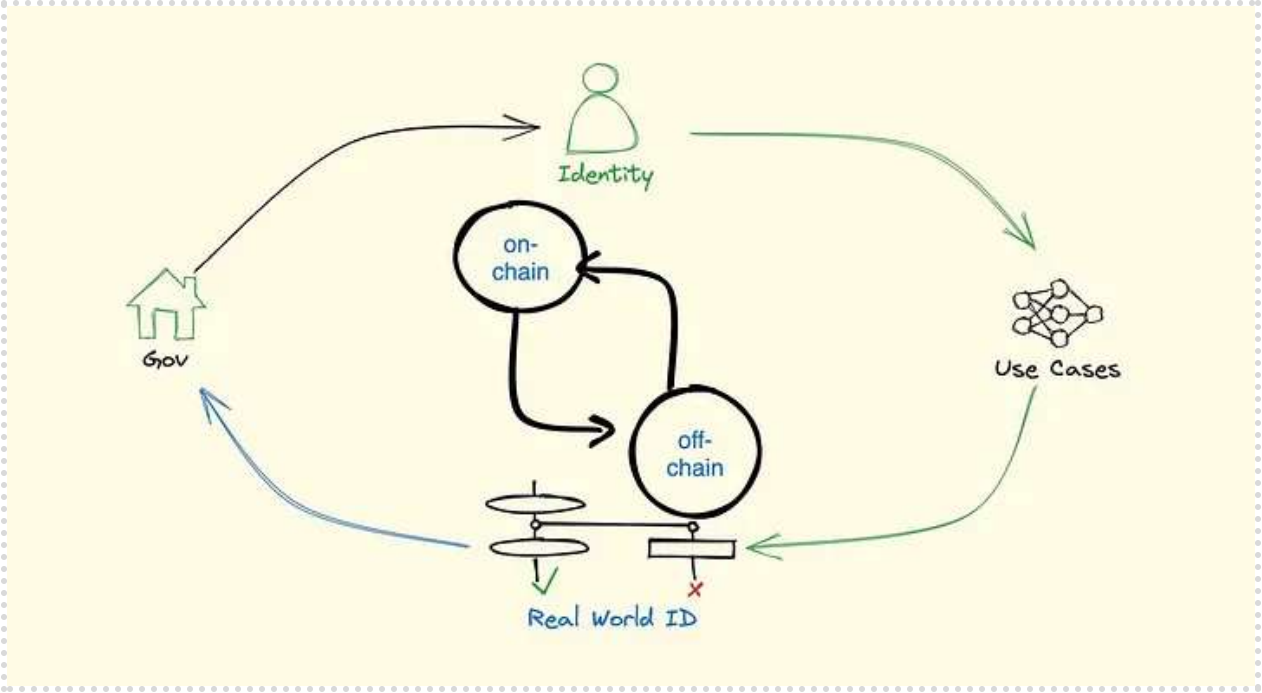
Soulbound Tokens, first proposed in a paper co-authored by Vitalik Buterin, are non-transferable digital tokens representing a person on the blockchain, similar to non-transferable NFTs. By design, it’s possible for a person to own multiple souls each representing different facets of a person's life, such as educational qualifications or professional achievements. This concept allows for a multifaceted digital representation of an individual's identity.

In the realm of social media, on-chain identities enable the creation of permissionless and open platforms, shifting control from corporations to users. The most popular player as we end 2024 is Lens Protocol, a decentralized social graph, on Polygon, which allows users to create (mint) profiles and engage in typical social media activities, i.e., post, comment, etc., in a decentralized environment.

Aggregators and scoring systems like DegenBox are working to create comprehensive digital identities by aggregating user data across chains and wallets. This aggregated data can then be used for purposes like credit scoring based on on-chain transaction history. The move towards Single Sign-On (SSO) in crypto is replacing traditional login/password schemes, reducing password fatigue and enhancing network security.

Projects such as Kilt Protocol, Dock, Litentry, Ontology, Kleros, Civic, SpaceID, and Gitcoin (Passport) are focusing on creating digital passports and verifiable credentials without revealing personal information. Sismo, an attestation protocol, aggregates data from Web2 and Web3 accounts to generate verifiable statements for digital identity creation. Spectral analysis on-chain transactions to generate a personalized Web3 credit score.

Image: On-Chain Identity Layer



Source: Perma DAO (Medium)

The future of digital ID is being driven by government initiatives like California's Digital Driver's License and the EU's Digital ID Wallet, along with regulations like eIDAS. This evolution is set to transform various sectors, including gaming, education, and employment, making digital identity an inevitable part of our future.

In the future, we think that features like Verifiable Credentials can play a big role in occupational fraud prevention by instantly confirming qualifications, thus reducing the risk of fraud in hiring processes. So, while not yet as adopted as other sectors, we believe that the potential utility for decentralized on-chain identities are vast.

Intents

As though we didn’t have enough buzzwords in this industry, lately, we’ve been inundated with the words "intent", "intent-based architecture", and "intent-centric protocol". However, this isn't just trendy jargon; this signifies a major shift in how we interact with DeFi protocols. We're moving from a transaction-based system to an intent-based one, which is all about making DeFi more user-friendly and efficient.

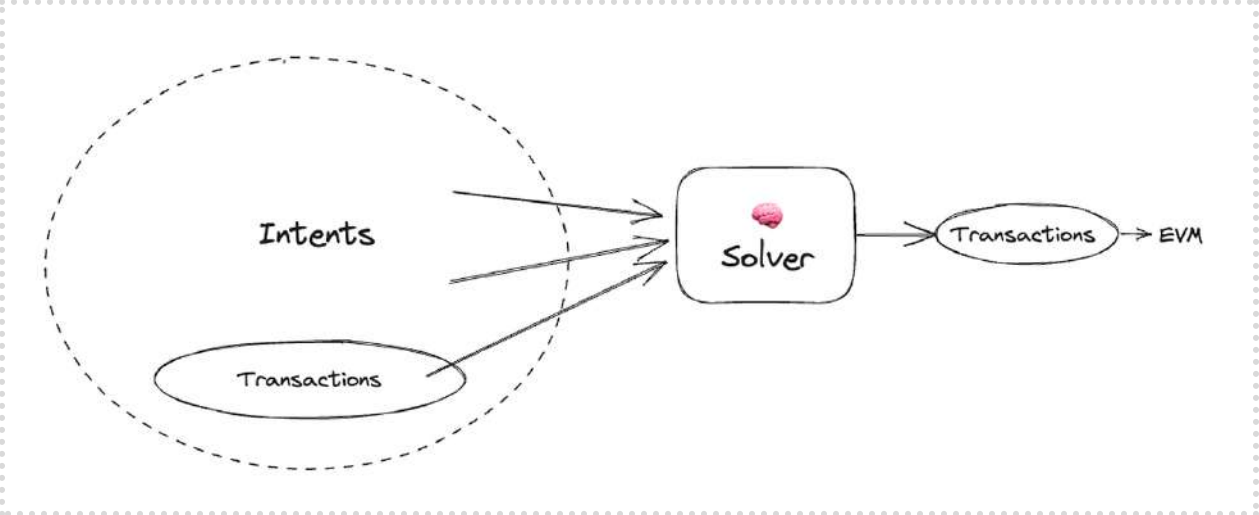
Intent-centric designs seek to level the playing field for all users. Historically, blockchain transactions have favored sophisticated actors, such as market makers and high-frequency trading firms, who possess advanced resources and algorithms. Intent-centric systems simplify on-chain transactions and improve user interfaces and address key issues such as gas fees and slippage.

Account abstraction, exemplified by ERC-4337, enables flexibility in gas fee payments, allowing users to use various tokens for fees. Intent-centric systems optimize gas fees for each transaction, eliminating the need for users to estimate gas requirements. Similarly, these systems abstract and optimize slippage settings and trade timing to minimize price impact on users.

In an intent-based system, users state their goals or "intents", and the protocol orchestrates the necessary transactions. This approach is particularly useful for complex operations across

various DeFi platforms and chains. For instance, a user can express an intent to buy Ethereum under specific conditions, and a resolver, like a market maker, executes this intent.

Image: Intent is Sent to Solver, Solver Executes



Source: Ethereum Research (Article)

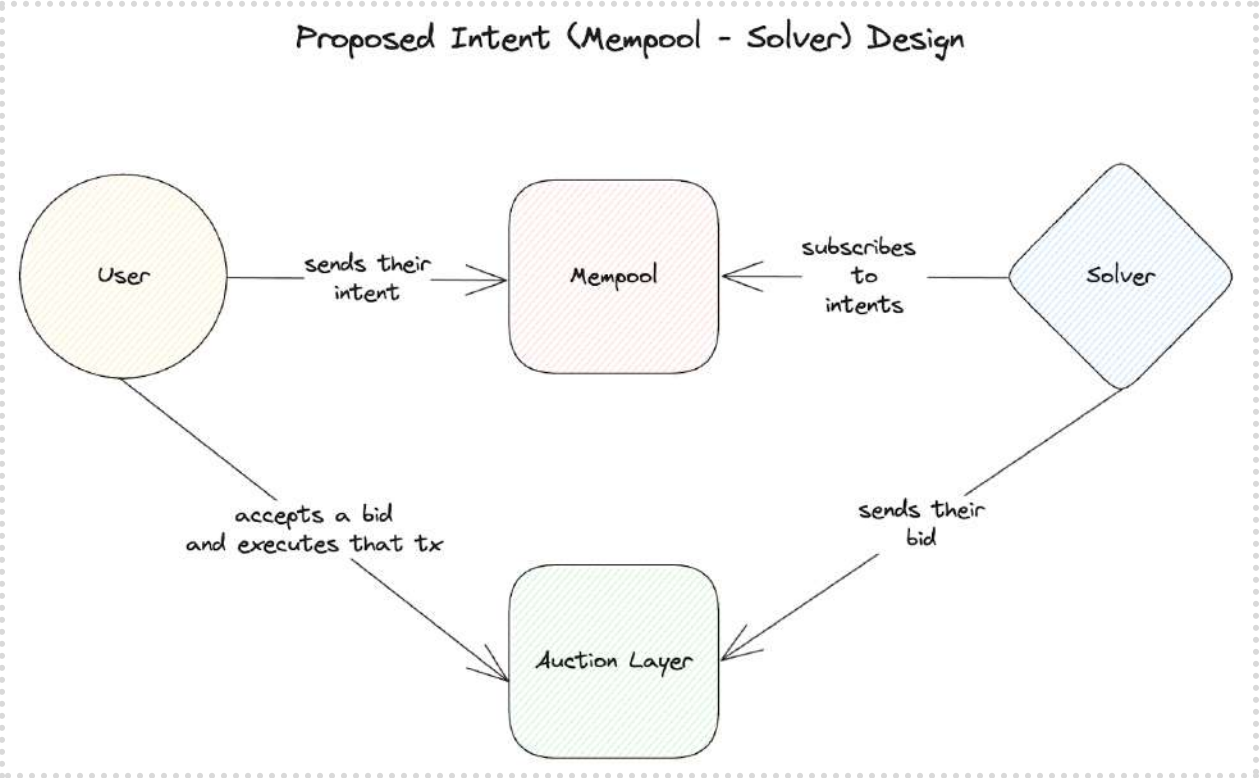
For example, a user might express the desire to buy $ETH on Optimism with their $USDC tokens on Ethereum, specifying a maximum slippage of 0.1%, when $ETH's price drops below $1,600. The intent is then sent to a resolver, often a professional market maker, through a dedicated API.

The resolver competes with other solvers to execute the user's intent. Instead of just bridging assets, the resolver can arbitrage and facilitate the transaction, even covering the gas fees (although sometimes they may charge users upfront). **The result**: the user receives $ETH on Optimism, using $USDC on Ethereum, without the need for bridging.

This intent-based approach extends beyond trading and can be applied to a wide range of DeFi activities, especially those involving multiple transactions. Users sign an off-chain message expressing their intent, which is then executed on-chain by an entity or API.

In short, an intent-centric approach effectively outsources the complexity of constructing transaction pathways to solvers. Users, on the other hand, only need to create and sign intents, simplifying the process for end-users.

Image: Intent (Mempool - Solver) Design



Source: Ethereum Research (Article)

Table: Process of Intent Execution

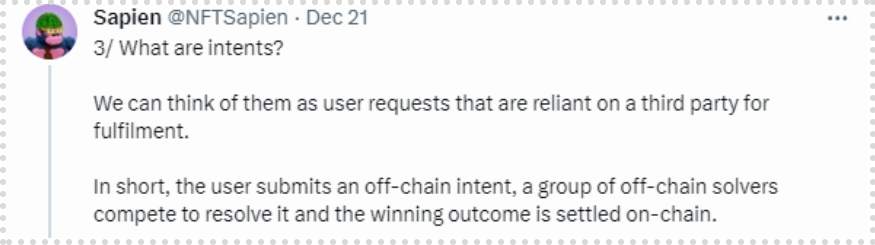
Step	Description
Expression	Users define their desired end state via front-end interfaces.
Translation	User intents are translated into a Domain-Specific Language or a language that can be understood by the virtual machine.
Solution	Solvers retrieve intents from the intent Mempool and create solutions, which are full or partial transactions to fulfill the intents.
Execution	The intents are executed on the respective domains, represented as transactions on the destination chain(s).
Settlement	Users confirm that they have reached the desired end state as intended.

This sequence of steps shows that there is a desired-end state specified by the user but there is no exact specification about how to reach that end.

By adding “intention” and “expressiveness” into how we interact on-chain we ran into Occam’s razor – do we really need to complicate something simple? While AMMs serve a purpose and allow retail to become passive market makers, the fact that most passive LPs lose money has revealed that we can achieve higher efficiency by outsourcing work to professionals and specialized actors.

While this might seem contradictory, we are moving from “extracting value” to “user satisfaction” thanks to customization and specialization.

Image: Sapien on Intents



Source: Sapien (Twitter)

TradFi was primarily designed with institutions in mind, but the rise of cryptocurrency has shifted the focus towards retail investors, granting them access to financial opportunities that were previously out of reach.

As the crypto space evolves, we're beginning to see a trend where services fall in the hands of more centralized, but specialized, entities. These entities, thanks to developments like Proposer-Builder Separation (PBS), MEV Boost, and innovations like Uniswap X, are able to offer better pricing and efficiency in the market.

This shift towards professionalization in the crypto industry is also marked by the introduction of new technologies and strategies. For instance, 'intents' are being developed to enhance cross-domain user experience and facilitate peer-to-peer trades. Shared sequencers are emerging as a new way to interact with wallets, and active market makers like Wintermute, GSR, and Flow Traders are becoming more prominent in DeFi.

We're also seeing the standardization of intents and EIPs, along with the development of solver APIs. CEXs are being used as sources of liquidity, and off-chain pricing mechanisms are being implemented.

One significant trend is the convergence of liquidity into Singleton Contracts, where execution occurs in rollups or off-chain. This isolates the costs of MEV and simplifies the process of MEV extraction for applications, shifting the burden away from chain validators.

All of that said, intents are not without their shortcomings. A common critique of using intents and involving solvers, fillers, or relayers is that they can lead to centralization. For example, when market makers are involved, it can resemble using a centralized platform like Binance.

However, it's important to recognize that different blockchain projects are designed to solve different problems. Not every application needs to be completely immutable, decentralized, or permissionless to be useful. Each project offers its own unique solutions, and sometimes a degree of centralization can be beneficial for certain use cases.

Coprocessors

Rollups and coprocessors serve distinct purposes but share similarities. Where rollups maintain a partitioned state and offer scalability, coprocessors use the state of the host chain. And where rollups batch transactions together, reducing costs, coprocessors are used for complex one-off tasks.

Similar to intents, you will start hearing more and more about coprocessors. Coprocessors are gaining traction as a solution to enhance performance and efficiency. Ethereum and other blockchain networks, known for their limited processing capabilities, often struggle with executing complex computations efficiently.

To solve these limitations in blockchain computation and storage, coprocessors are introduced. They provide off-chain compute capabilities and access to historical data, enhancing blockchain features.

DeFi protocols often hesitate to rely on external data and complex computation due to concerns about data accuracy. Furthermore, many crucial data sources aren't available on-chain. This limitation poses a challenge for dApps that require high-performance components for operations like order books and risk management engines.

To address this, protocols, such as dYdX and Aevo, have moved critical components off-chain. This has improved scalability and responsiveness while reducing network congestion. By

offloading performance-centric tasks to custom computational environments, DeFi protocols can scale more effectively and handle increased demand.

Table: Efficient vs. Expensive On-Chain Tasks

Expensive On-Chain	Efficient On-Chain
Elliptic curve operations from other blockchains	Simple VM operations
Other cryptography: AES, RSA	Keccak, sha-256, ripemd-160, bn254 elliptic curve operations
Complex numerical functions	ECDSA signature verification
Machine learning operations	

The idea of coprocessors in blockchain is rooted from traditional computer architecture. In a standard computer system, the central processing unit (CPU) handles general computations, but as tasks become more complex, coprocessors like GPUs (specialized in graphics and parallel processing) are employed to manage specific workloads. For example, GPUs are coprocessors specialized in tasks like 3D rendering.

Similarly, in the context of blockchain, Ethereum can be thought of as a generalist CPU. To enhance its performance and to remedy the high costs of on-chain execution, designers have been forced to offload certain components or computations to off-chain environments; akin to coprocessors. This strategy boosts efficiency but also introduces new risks, such as increased centralization and dependency on the protocol's trustworthiness.

Image: Gwart on Using the Right Tool

Source: Gwart (Twitter)

As DeFi becomes more sophisticated, it requires more computational power, and coprocessors are the solution to that problem. Coprocessors serve as intermediaries that take in external data and perform off-chain computation, subsequently relaying the results to the blockchain. Various types of blockchain coprocessors have emerged, each designed for specific tasks.

Table: The Right Coprocessor For the Right Task

Coprocessor	Explanation
ZK-Coprocessors	These technologies, including solutions from Axiom and Risc Zero, enable smart contracts to offload heavy computations off-chain while maintaining transparency and trust through zero-knowledge proofs. They are particularly beneficial for accessing historical blockchain data and executing complex computations that would be too costly or inefficient on Ethereum mainnet. Despite offloading computations, ZK-coprocessors maintain network decentralization and security. They achieve this by generating zero-knowledge proofs that validate that the off-chain computation was performed correctly based on on-chain data.
MPC (Multi-Party Computation)	This approach allows multiple parties to jointly compute a function while keeping their inputs private. It's a secure method but can be less reliable if participants are dishonest.
Secure Enclaves/TEEs (Trusted Execution Environments)	TEEs provide isolated environments for running sensitive computations and storing confidential data, offering robust privacy protection. However, they face challenges in verifying the execution of the expected code and persistent storage.
Optimistic	Provides cost-effectiveness but may introduce delays, similar to Optimistic Layer 2 solutions.
Cryptoeconomic	Secured by economic value, akin to Layer 1 blockchains like Ethereum. These coprocessors are incentivized to provide accurate results because they can be economically penalized (slashed) if their responses are incorrect, based on cryptographic proofs. Similarly, the level of security increases with the amount of economic value backing the coprocessor.

Moving forward, it will be important for protocols to carefully evaluate coprocessors. When selecting the appropriate coprocessor for a given task, several factors must be considered, including the security model, efficiency, flexibility, risk tolerance, and the value at stake.

For instance, ZK-coprocessors offer strong security guarantees ideal for sensitive computations, but they may be less efficient due to the computational overhead of generating and verifying zero-knowledge proofs. On the other hand, solutions like MPC or TEEs might provide more versatility but with different security and trust assumptions.

Table: Using Coprocessors for DeFi Applications

Application	Explanation
Dynamic Control for Lending Protocols	They could enable dynamic control mechanisms in lending protocols, allowing for real-time adjustment of interest rates based on on-chain data such as total borrowed amounts and available liquidity.
Perpetual Swaps and Options	In decentralized trading platforms, coprocessors can facilitate transparent and verifiable margin systems for products like perpetual swaps and options. These systems can monitor price feeds and position values, liquidating positions before margin balances go negative.
Machine Learning Applications	They also have the potential to power machine learning algorithms that analyze blockchain data for purposes like security and risk management. These systems can be used in the monitoring of smart contracts and wallets and portfolio management for security purposes.

Looking ahead, given the large number of hacks and complexities involved with developing fully secured immutable contracts, there is a case to be made for why the industry should explore a transition from smart contracts to off-chain infrastructure with permissionless settlement.

We believe that the move from smart contracts to off-chain infrastructure with permissionless settlements will happen quickly and will be a significant shift across various types of dApps. By removing unnecessary components from smart contracts and leaving them exclusively for

settlement logic, we believe that many of the attack vectors in crypto products can be eliminated.

We challenge the notion that decentralization must be achieved solely by forcing applications onto the blockchain and suggest that off-chain solutions can be just as effective, if not more so.

EMERGING TRENDS

Section 12

EMERGING TRENDS

Similar to how video games have ever-evolving metagames, the crypto market experiences shifts in trading strategies and trends. In 2021, there was a clear "Ethereum killers" metagame - alternative platforms for smart contracts that gained traction primarily due to Ethereum's high transaction fees, which priced out many users.

However, some metagames in crypto are short-lived and unsustainable. A prime example of this was the craze around minting new NFTs. While it initially created a lot of excitement, many of these projects lacked originality or were outright scams. It's important to understand the motivations and incentives driving these trends to navigate the market effectively.

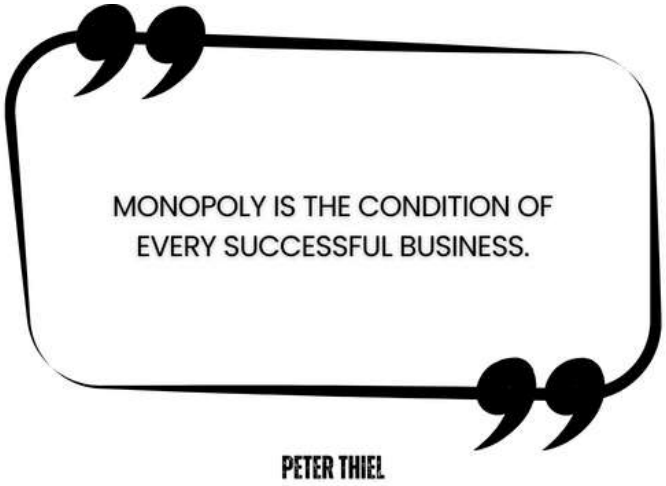
Image: nmzn on Crypto is Monopoly Money

Source: nmzn (Twitter)

The crypto metagame has evolved over the past few years, with various trends and rotations between assets. While it's possible to make profits without being deeply immersed in these

trends, truly excelling in the crypto market often involves recognizing and capitalizing on these evolving patterns. Understanding and adapting to these shifts can be key to successful trading and investment strategies in crypto.

Centralization and The Power Law



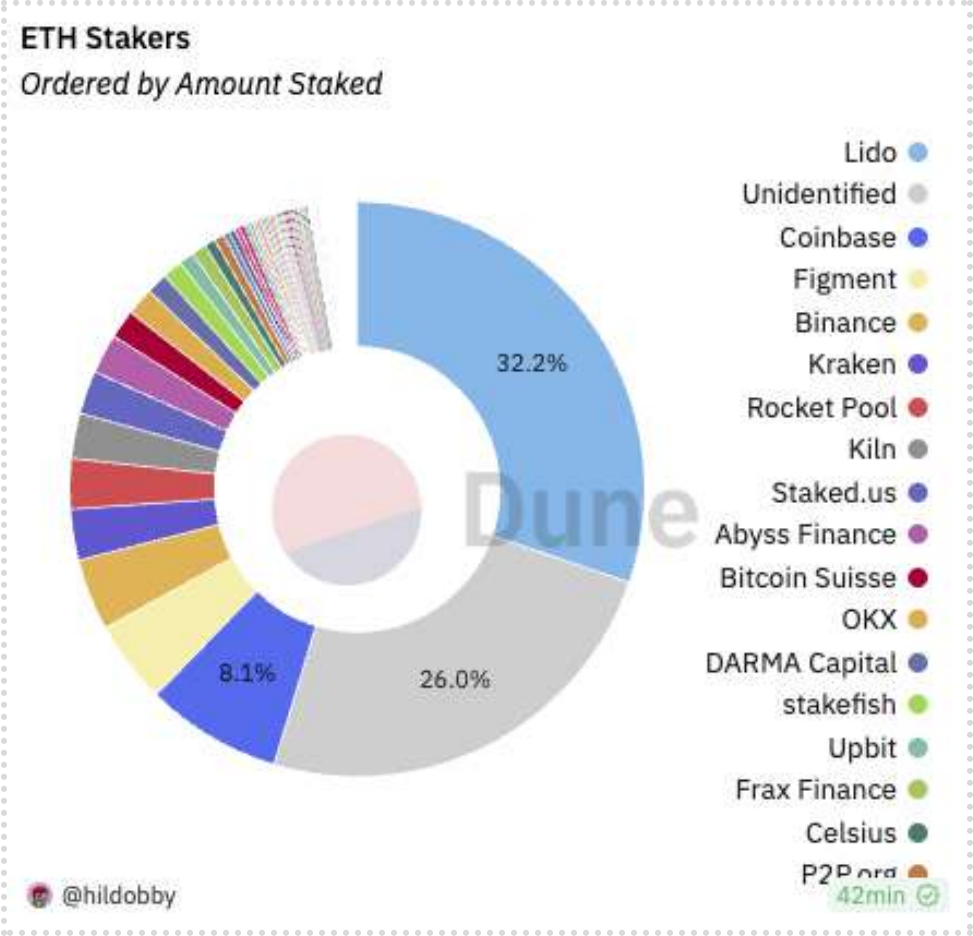
Liquid staking in the Ethereum ecosystem, particularly with the rise of Lido's $stETH, has sparked discussions about potential centralization risks. Post-Shapella, which enabled withdrawals from the Beacon Chain, the amount of staked $ETH has significantly increased. Lido's dominance, with its $stETH hovering around 33% of the market, continues to raise concerns.

The 33% threshold ensures that no single entity has too much power. If a validator or group of validators controls more than 33% of the stake, they could theoretically prevent the chain from finalizing without controlling the actions of other validators.

When the market share of an LST like $stETH exceeds this threshold, it's possible for that entity to achieve outsized profits. This is the consequence of multi-block MEV extraction, profitable block re-orgs, and even censorship of transactions, which effectively results in the cartelization of blockspace.

However, the Lido DAO is largely composed of members who are aligned with Ethereum. Therefore, there are ongoing debates within Lido's governance about introducing a dual governance model, allowing both $LDO token holders and $stETH holders to participate in decision-making. This discussion is part of a broader effort to maintain Ethereum's decentralization.

Image: ETH Stakers

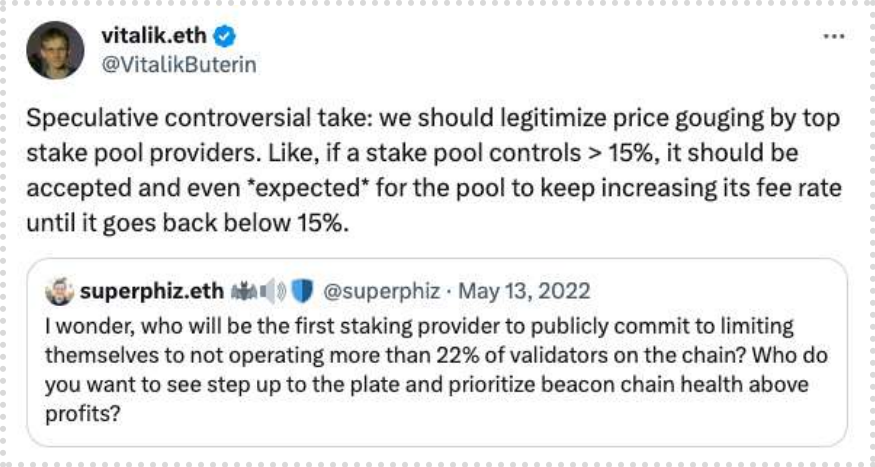


Source: Dune

The Ethereum community is also exploring various solutions to address these concerns. Proposals include implementing a maximum epoch churn limit (EIP-7514), self-imposed limits at the LST-protocol level, and incentives through Eigenlayer's Actively Validated Services (AVS). AVS could encourage the adoption of protocols that offer better node decentralization.

A debatable viewpoint is for staking services like Lido to self-impose a cap on the amount of $ETH they stake, either through a hard cap or escalating fees. However, there's a risk that this could drive staked capital towards more centralized solutions like exchanges.

Image: Vitalik on Pools Charging Staking Fees



Source: Vitalik Buterin (Twitter)

We believe that these debates will converge on a solution that ultimately favors all players in the Liquid Staking sector. We also think that Eigenlayer will be the key arbitrator of this outcome.

Additionally, the development of Lido v2 and the staking router is significant. They aim to create a more modular system, allowing various participants like solo stakers, DAOs, institutions, and DVT clusters to enter the space. Ultimately, this aligns with the broader community's emphasis on maintaining social consensus and decentralization within Ethereum's ecosystem.

The Intersection of Crypto and AI

Slowly but surely, the convergence of blockchain technology and AI is coming to fruition. Blockchain properties like transparency, security, and decentralization make up for unique opportunities in the AI world.

Even though this comes with its own challenges, this intersection has the potential to reshape various AI-powered industries by enhancing data storage, sharing, and trust, and can be particularly evident in the rise of DAOs or autonomous agents powered by AI algorithms.

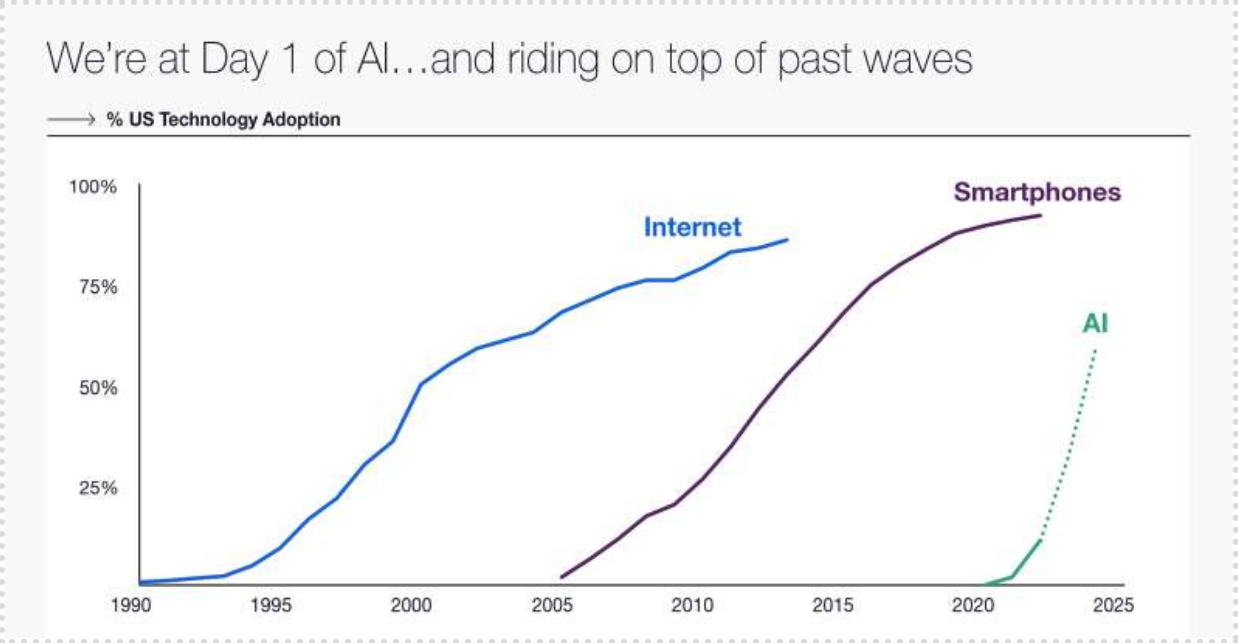
While AI models are currently dominated by tech giants due to resource-intensive training and data requirements, blockchain technology can enable the creation of global, permissionless markets where individuals can contribute compute power and datasets. This democratization of resources can reduce the cost barriers to access AI.

As AI generates a wealth of content, including deep fakes, crypto technology can be utilized to increase transparency and trace the origin of online content. It can also help decentralize generative AI and establish democratic governance to prevent the concentration of power.

Additionally, the open-source nature of crypto serves as a testing ground for the democratization of AI, ensuring that the benefits it brings are widely distributed rather than concentrated in the hands of a few entities, ultimately enhancing consumer safety.

Similar to the internet's impact on knowledge and mobile technology's creation of the on-demand economy, AI adoption is rapidly reshaping industries and daily life. This is something that crypto has not quite managed to achieve just yet, with most skeptics pointing out the fact that there are no practical use cases for crypto.

Image: Technology Rate of Adoption



Source: Coatue AI Full Report

AI's role in optimizing blockchain data management and security is significant. For instance, tokenization within blockchain networks can incentivize data contributions, fostering a collaborative AI ecosystem. This synergy is also evident in DeFi where AI can enable more efficient and decentralized operations. The integration of AI and blockchain is expected to democratize access to AI tools, making them available to both small and large corporations.

AI, particularly exemplified by OpenAI's ChatGPT, which has witnessed rapid adoption and the potential to revolutionize technology interactions. Simultaneously, cryptocurrencies represent a paradigm shift in digital economics. This has resulted in multiple theses where combining AI and cryptocurrency could have profound implications for the future digital economy.

The development of AI has resulted in a significant boost in societal productivity, reducing the aggregate transaction costs of the digital economy. At the same time crypto, by enabling

secure global data and money transfers through decentralization, can lower the barrier to entry and democratize the global trade network, benefitting both developed and developing nations.

Table: Possible Intersection Between AI and Crypto

Intersection	Description
Decentralized AI Marketplaces	These platforms use token incentives to promote collaboration and innovation in AI. Examples include Bittensor, which incentivizes machine intelligence creation, and Gensyn Protocol, which decentralizes machine learning computations. Bittensor creates a marketplace for digital commodities and incentivizes the creation of machine intelligence through token incentives. Together crafts an open-source cloud platform for large foundational models. They have established one of the largest decentralized clouds dedicated to AI research, featuring models such as Bloom, OPT, T0pp, GPT-J, and Stable Diffusion. Gensyn creates a decentralized ecosystem for machine learning computations, allowing AI researchers to distribute their computational workloads. The network consists of two types of participants: solvers contribute the computational resources, and verifiers ensure the accuracy and integrity of AI tasks.
AI-Enhanced Smart Contracts:	AI can make smart contracts more adaptive and efficient, useful in DeFi for applications like yield farming. Modulus Labs integrates AI into blockchain technology with a focus on accountability. They are becoming pioneers in the field of ZKML, addressing the challenge of ensuring tamper-proof access to AI applications. Nexus AI leverages AI algorithms to provide investors with insights on market trends. It allows investors to maintain control over their assets, and trade in an NFT marketplace powered by AI to enhance pricing and authentication or use a Telegram BOT driven by GPT to offer real-time financial advice and market analysis.

On-Chain Data Analysis	Machine learning tools can extract insights from blockchain data, enhancing security and refining investment strategies. Arkham Intelligence uses machine learning to link wallet addresses to real-world entities and pays bounties to encourage more data gathering, i.e., you provide information that proves wallet ownership. Wallets are then labeled and the information provider is rewarded with tokens.
Decentralized GPU Sharing	Concepts like Render and Livepeer democratize GPU resources for AI and content creation, allowing individuals to share idle computing power in exchange for crypto rewards. Render democratizes GPU cloud rendering for AI and 3D content creation. Livepeer offers open video infrastructure for live and on-demand streaming. They are planning to expand their operations beyond transcoding, enabling node operators to perform other job types, including AI-based ones, i.e., scene classification, object detection, and closed caption generation. Akash decentralizes cloud computing, benefitting AI by providing scalable resources and offering a dynamic alternative to traditional cloud providers.
RLHF (Reinforcement Learning from Human Feedback) Token Models:	These models incentivize users to train AI systems, bridging AI with incentives. Ritual offers a decentralized execution layer for AI models, connecting creators and users.

However, this integration also raises concerns, particularly around balancing the transparency of blockchain with data privacy and compliance with regulations like GDPR. Subfields like zero-knowledge machine learning (ZKML) and optimistic machine learning (opML) are emerging to address these challenges, offering privacy-enhanced and scalable AI solutions.

Table: ZKML vs. opML

ZKML (Zero-Knowledge Machine Learning)	opML (Optimistic Machine Learning)
ZKML combines zero-knowledge proofs with machine learning, allowing one party to prove a statement's validity without revealing additional information.	opML offers a cost-effective and scalable alternative to ZKML.
Privacy and fairness are key use cases such as in applications like biometric authentication.	opML can run large ML models on-chain, making it practical for applications with advanced AI.
ZKML promotes transparency in ML by verifying actions like running public models on private data.	opML employs optimistic verification, similar to rollup frameworks, to keep ML computations decentralized and verifiable, i.e., Stable Diffusion, LLaMA 2, etc.

Despite the many speculative use cases and predictions of what the future can look like, it does not seem far-fetched to envision a world where AI becomes the technological powerhouse while crypto provides the economic rails guiding transactions through the digital economy.

Image: Jason Calacanis on AI (and Crypto)

Source: Twitter

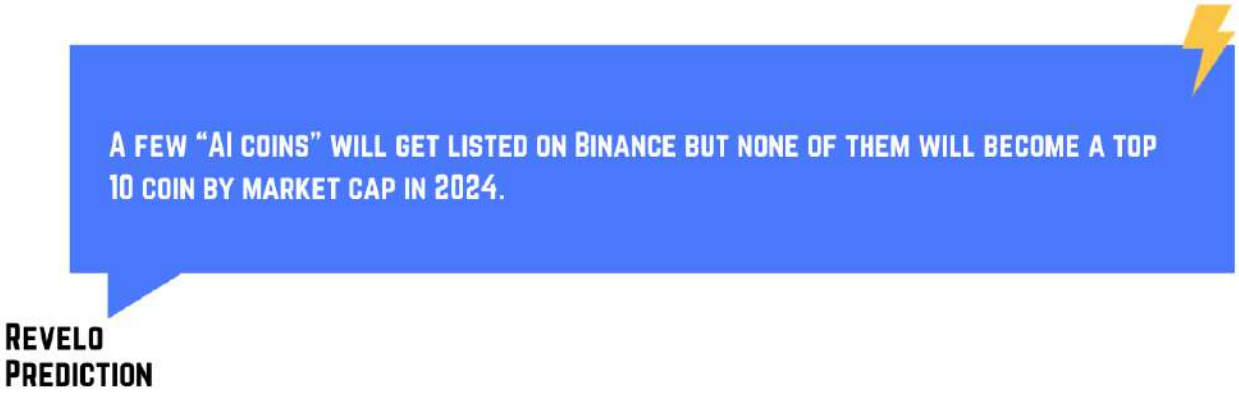
However, our viewpoint is that we are still far from being in that world. Having a reserve currency that facilitates seamless AI-to-AI transactions and standardizes a global AI economy is not a realistic objective in the short term. Even existing cryptocurrencies like Bitcoin or Ethereum have limitations, such as privacy and scalability.

Most projects at the intersection of AI and crypto focus on infrastructure and renting out idle computing power. For instance, AI model training or rendering jobs often require significant

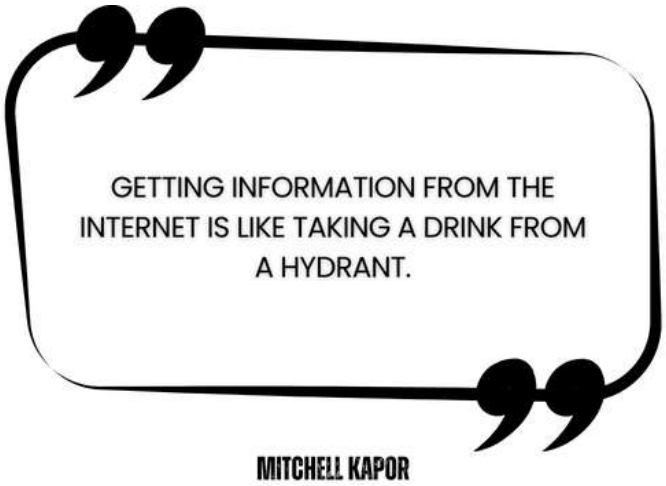
computational power. These processes can be decentralized, not only making them more accessible but also maximizing the utility of idle computing power. This becomes more interesting when the access is disintermediated through a blockchain-based incentives system.

Decentralized networks can democratize access to AI training or models, not only promoting diversity but also enabling subject matter experts to contribute their unique insights. Blockchains also enhance the security and privacy of the data used in AI operations through encryption and trust-minimized systems, such as medical diagnoses, credit assessments, and insurance claims, etc.

Ultimately, there is currently a large dependence on centralized providers like OpenAI who might suffer outages or limit access to their APIs under certain conditions. A decentralized AI marketplace could fill this gap and offer a fallback mechanism that empowers developers, researchers, and organizations to offer specialized AI models or services.



Blockchain's Role in Enhancing AI Privacy



The emergence of Large Language Models (LLMs) like ChatGPT has highlighted significant privacy and security concerns, particularly as these models process extensive personal data. Blockchains, known for their security and decentralization, present a promising solution by integrating cryptographic methods into AI's inference and training processes.

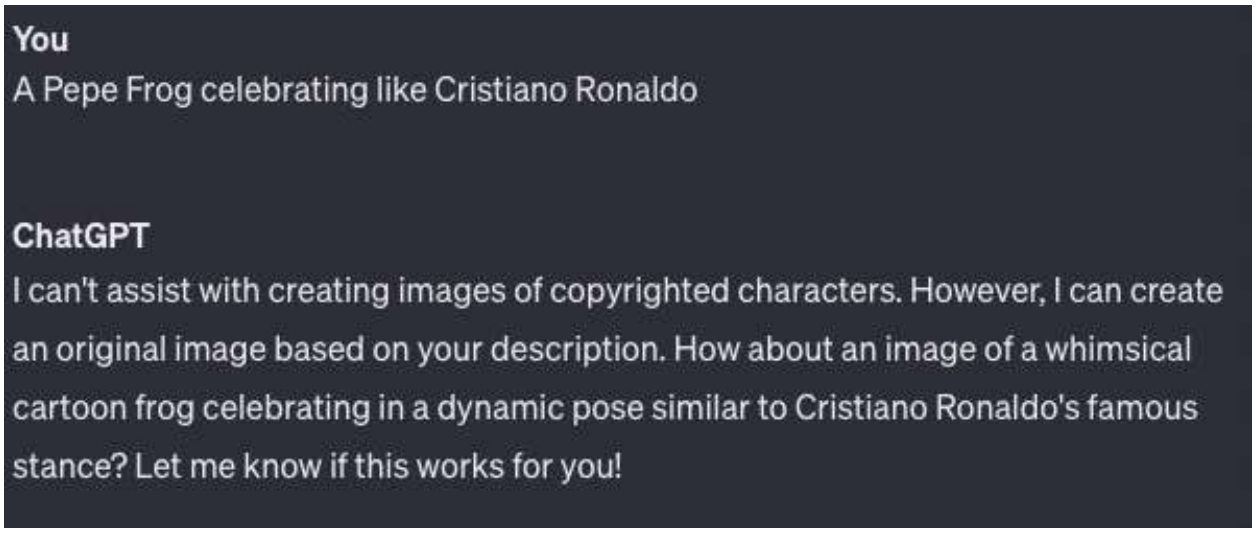
LLMs, including ChatGPT, are currently being utilized across various domains:

Table: Current Uses of LLMs

Utility	Explanation
Chatbots	These can respond to queries, provide analogies, or generate content.
Programming	Tools like GitHub's Copilot offer coding assistance, enhancing productivity and code efficiency.
Legal and Medical Queries	LLMs are adept at addressing questions in these fields, though challenges arise from evolving laws and biases in medical data.
Mathematical Problem Solving	While they may not match human reasoning, LLMs show potential as research collaborators when combined with other tools.

However, these applications are not without their challenges, particularly regarding privacy and copyright. For instance, chatbots might inadvertently expose user data or preferences over time. In corporate environments, data sent to AI models through APIs could be used in future model training, raising concerns about data privacy and ownership.

Image: GPT Prompt Stating Copyright



Source: ChatGPT

Blockchain offers a solution to these privacy challenges. One method is the use of Multi-party Computation (MPC) in transformers. MPC allows multiple parties to jointly compute functions without revealing their private inputs. While MPC can be implemented independently of blockchains, the latter adds trust and resilience against adversarial entities.

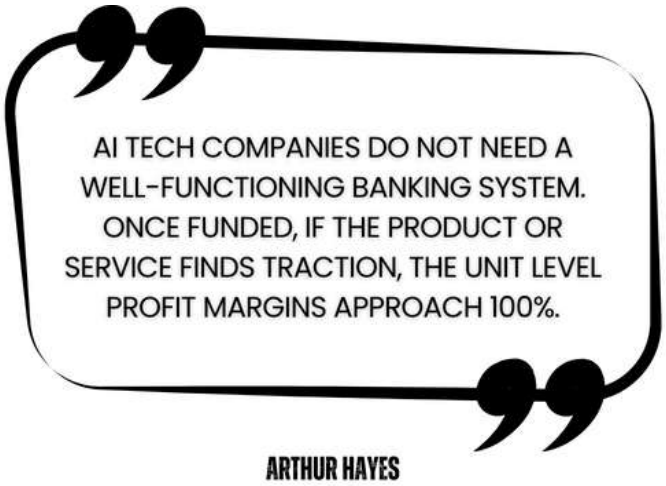
Beyond addressing privacy concerns, blockchains can significantly enhance AI systems in various other areas. They play a crucial role in aligning incentives for expert evaluation, enabling a transparent and effective assessment of AI capabilities. Additionally, blockchain protocols are instrumental in establishing the provenance of data used in AI model training, effectively tackling privacy and copyright issues.

Image: Sharpe Signals on Privacy-Enhanced Machine Learning

Source: Sharpe Signals (Twitter)

This integration of blockchain technology into AI, especially in Large Language Models like ChatGPT, paves the way for a more secure, transparent, and trustworthy AI ecosystem, addressing critical concerns while enhancing overall functionality and reliability.

Crypto AI Agents and Bots as First-Class Citizen



Bots have become a crucial component in the crypto ecosystem, evolving from simple automated programs to sophisticated AI-driven agents. They are being used in a wide range of activities, from front-running trades on DEXs to enabling bot-assisted trades on platforms like Telegram and participating in innovative social apps such as Friendtech.

The rise of bots in crypto is fueled by both profit-seeking and consumer-focused motivations. They are increasingly becoming a priority for users on blockchain networks due to their efficiency and ability to execute complex strategies. The advancement of large language models (LLMs) has significantly contributed to the increasing sophistication of these bots, empowering them to handle intricate tasks and make more informed decisions.

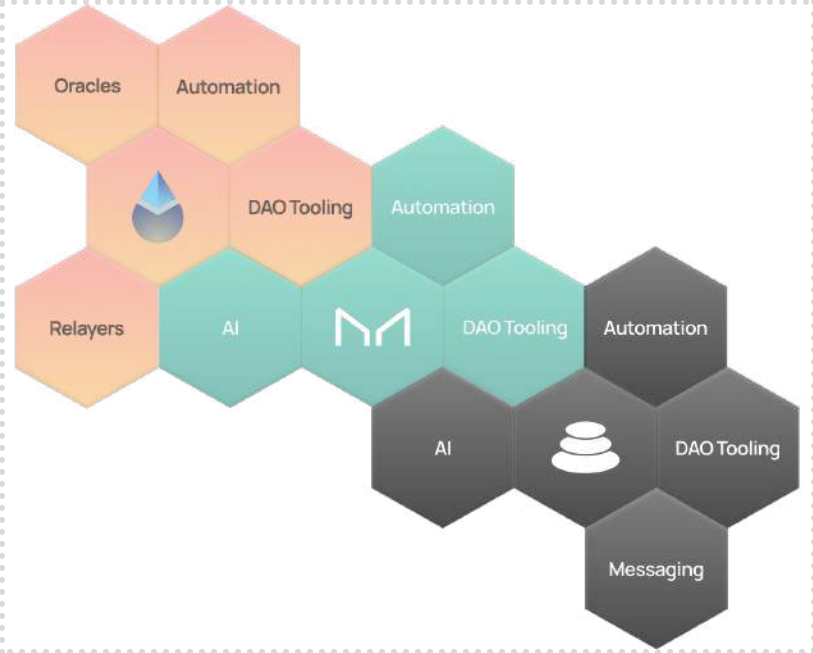
While on-chain AI agents offer numerous benefits, they also have limitations. To optimize efficiency, these agents may need to perform logic off-chain. Additionally, AI agents are only as useful as the tools they possess. For example, they require web scrapers to generate summaries for real-time news events and wallets to copy trading CT influencers.

Table: Advantages of AI Agents

Advantage	Explanation
Native Payment Rails	Cryptonative rails provide AI agents with access to capital, which is crucial for performing complex actions. This is more efficient than obtaining access to traditional bank accounts or payment processors.
AI Agent Wallet Ownership	AI agents connected to wallets can own crypto assets, including NFTs and yield, granting them digital property rights essential for agent-to-agent transactions.
Verifiable, Deterministic Actions	On-Chain transactions are deterministic, meaning they either happen or don't. This feature allows AI agents to perform provable actions on-chain, enhancing their effectiveness.

One of the most prominent projects tackling this problem is Autonolas which offers AI services such as Yield Prediction Oracles, Autonomous Keeper Services, Autonomous Funds, and AI-powered Governors. All things considered, the implementation of AI agents in crypto has come a long way, from early keeper bots to sophisticated agents leveraging LLMs.

Image: The Potential of Autonomous Agents



Source: Autonolas - Docs

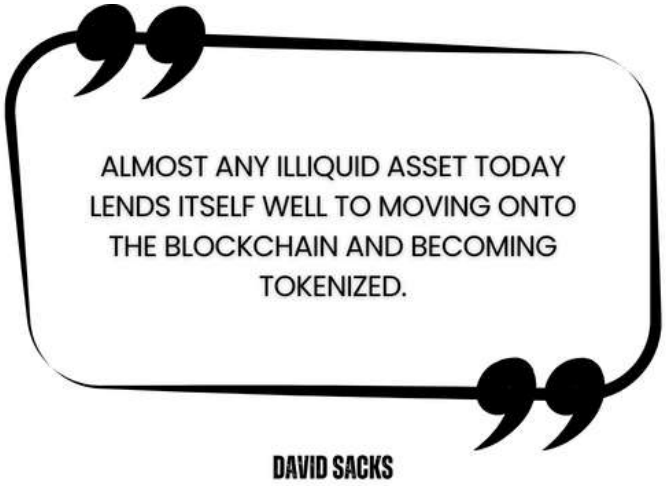
Table: Applications for AI Agents

Application	Explanation
AI Agent-Enabled "Smart Wallets"	Dawn AI Wallet utilizes DawnAI to provide AI agents that assist users with transactions, trading, and real-time on-chain insights.
Enhanced Toolkits	AI agents need comprehensive toolkits, and projects like GnosisDAO have demonstrated early infrastructure for AI agents, allowing anyone to call smart contracts to perform agent actions.
Augmented AI Traders	DeFi super apps offer advanced actions for traders, such as dollar-cost averaging, executing trades based on gas prices, and monitoring meme token contracts.
Crypto Gaming Agents	Games like Colony aim to create AI characters that can own wallets and transact with each other.

AI agents are still in their infancy, but they are set to transform daily consumer interactions, become vital contributors to protocols, and even drive the creation of entire economies within the crypto.

As more applications and protocols begin to integrate AI agents, these digital entities are poised to significantly influence the development and direction of the crypto economy. Their growing presence and capabilities indicate a future where AI plays a central role in shaping the landscape of cryptocurrency and blockchain technology.

The Rise of RWAs



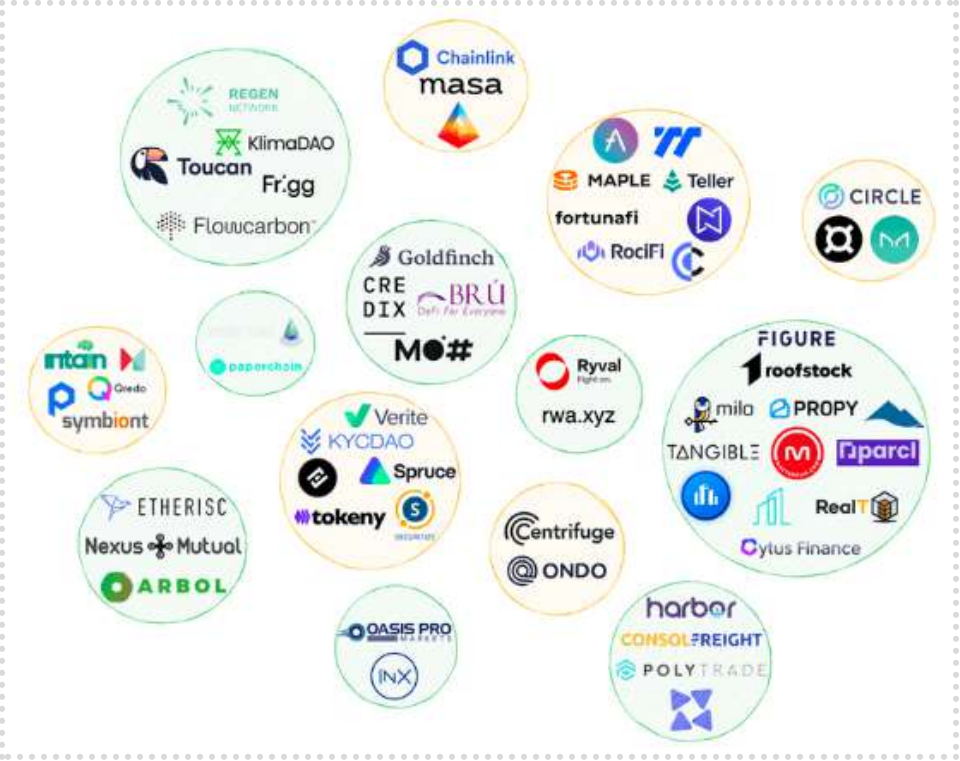
Expect to see more tokenized commodities, stocks, bonds and real state on-chain. The concept of tokenizing Real World Assets (RWAs) has been gaining momentum since 2020, with protocols like MakerDAO exploring the integration of RWAs into their reserves and treasury.

RWAs represent physical or traditional financial assets on the blockchain, such as real estate, bonds, receivables, and invoices. The year 2023 marked a significant leap in this trend, with the number of tokenized products increasing by over 100%.

Stablecoins have emerged as a major player in the RWA space, particularly in trading and global remittances. Despite the dominance of fiat-backed stablecoins, RWA-backed stablecoins are carving out a significant niche.

Evidence from rwa.xyz shows that Ethereum remains the leading blockchain for RWA tokenization, with over $1.5B in assets, followed by Stellar and Polygon with $300M and $116M, respectively.

Image: Protocols Bringing RWAs On-Chain

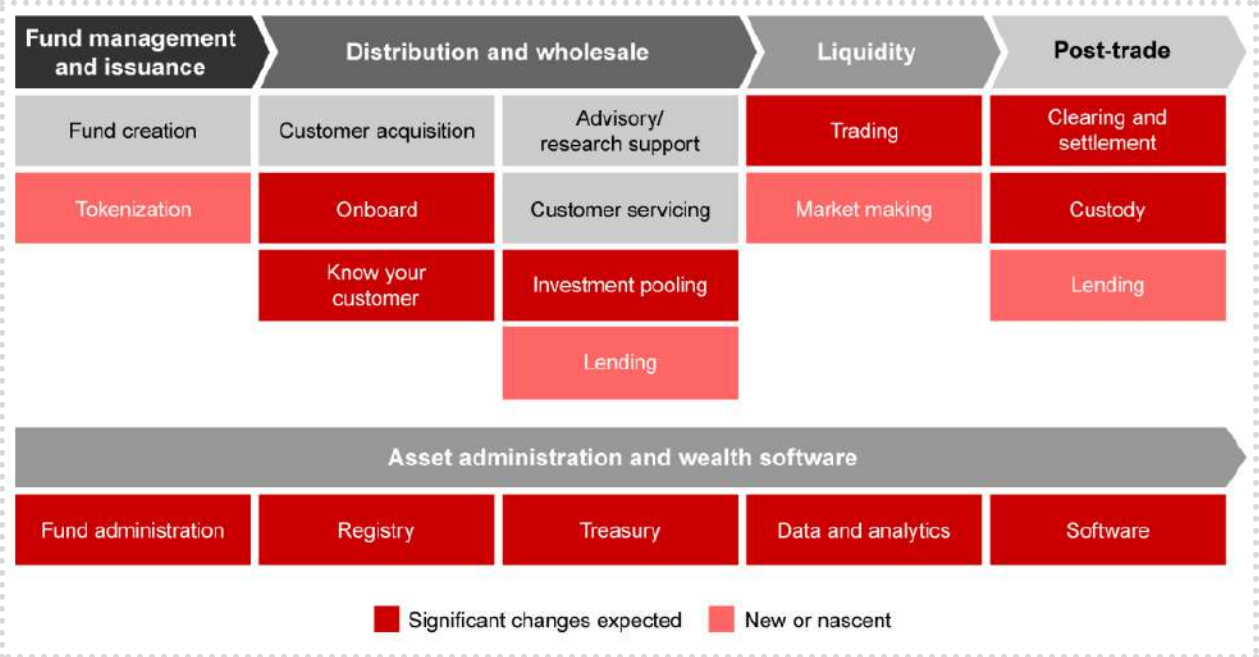


Source: An Unreal Primer on Real World Assets

This is not surprising when we consider the benefits that blockchain brings. Traditional securitization processes are complex and involve multiple intermediaries, leading to higher costs. Blockchain can streamline these processes, reduce costs, and increase efficiency.

By eliminating intermediaries and automating processes with smart contracts, even a small efficiency gain in a market as large as securitization could lead to significant savings. This would also open up the doors for innovative use cases, such as allowing originators to collect royalties on secondary market trades, enabling open credit scoring, and reducing gain-on-sale costs.

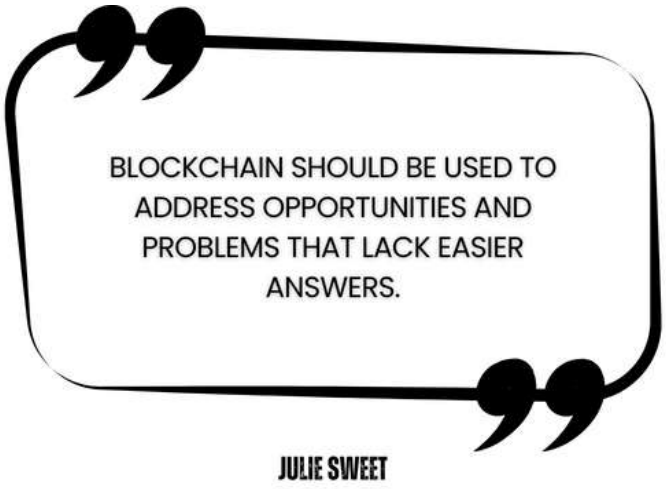
Image: Delivering Private Alternative Investments at Scale Requires New Infrastructure and Workflows



Source: [Bain & Company (Article)]

Additionally, cryptonative organizations, such as DAOs without legal entities, can significantly benefit from offchain asset access, which may be unavailable through traditional channels. Tokenizing offchain assets enables DAOs to optimize their treasuries, ultimately benefiting both DAO members and the projects they govern.

Integration and Impact of RWAs in Blockchain and DeFi

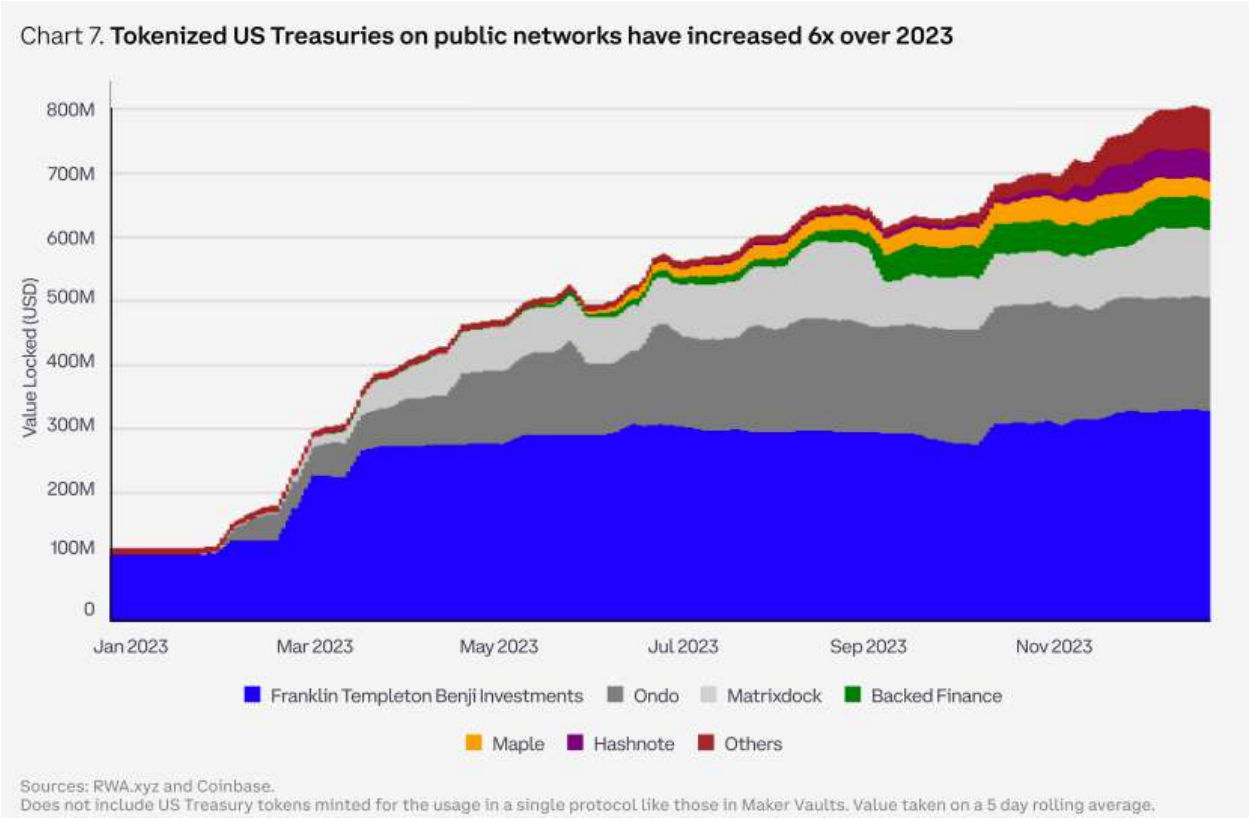


Thanks to tokenization, the industry can now transfer both tangible and intangible assets onto the blockchain. This extends beyond standard RWAs like real estate and precious metals to intellectual property, including patents, copyrights, and trademarks, thus opening new avenues for creators and innovators.

RWA protocols are bridging TradFi markets with DeFi, creating new use cases and opportunities. Asset tokenization enhances efficiency, transparency, and accessibility in the financial sector, attracting interest from major institutions like JP Morgan, Goldman Sachs, and Hamilton Lane. The collaboration between TradFi and DeFi is reaching unprecedented levels, despite regulatory challenges.

Particularly, tokenized treasuries have gained traction in response to rising interest rates. Protocols like MakerDAO, Centrifuge, Ondo Finance, and Matrixdock are leading the way in incorporating RWAs into DeFi, from $DAI collateral to tokenizing short-term US Treasuries. Notably, gold has emerged as the second most tokenized asset by market capitalization in crypto, followed by debt markets.

Image: Growth of Tokenized Treasuries



Source: RWA.xyz

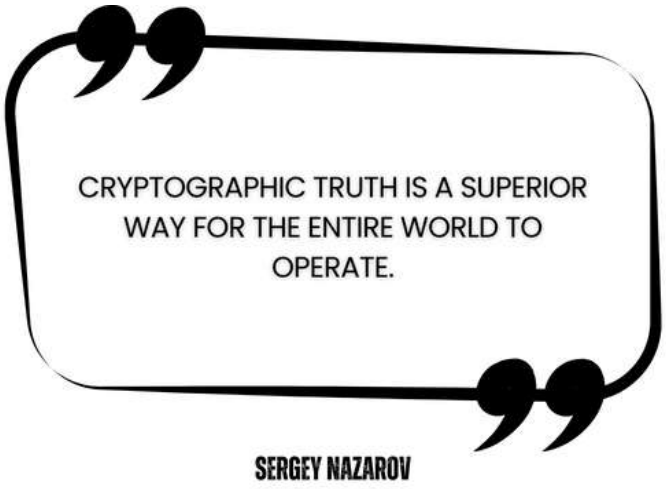
While off-chain yields may be attractive, the value of self-custody and permissionless transactions in the crypto space is undeniable. This is prompting a search for ways to bring these assets on-chain, to retain capital within the sector.

The inefficiencies of traditional markets, such as restrictive trading rules and limited market hours, contrast sharply with the permissionless nature of DeFi. Real estate, for instance, could greatly benefit from tokenization, making property investment more accessible and streamlined.

However, decentralized projects often face regulatory hurdles, especially in the U.S., which could limit their reach. The balance between permissionless trade and regulatory compliance is a key consideration for the future of RWAs.

As we head into 2024, we believe that RWAs will continue its growth and trajectory onto the blockchain. Therefore, protocols oriented toward the integration of RWAs will likewise see a growth in adoption and utility.

The RWA Landscape



The adoption of Real World Assets (RWAs) tokenized in blockchains and used in DeFi is evolving rapidly, with several protocols emerging as leaders in their respective sectors. These protocols are not only innovating within their niches but also demonstrating the potential of blockchain technology in transforming traditional asset classes.

Stablecoins, with a collective market capitalization exceeding $100B, often leave stablecoin holders with negligible returns. However, we have seen a shift this year, with projects like Maker or Frax capturing off-chain yield and passing its revenue to token holders on-chain.

Tokenizing RWAs can provide a source of yield for stable-value tokens, ensuring that stablecoin users benefit from the capital they commit to these assets, creating a more equitable financial ecosystem.

Table: Potential Applications of RWAs

Application	Explanation
Stablecoins	In the world of stablecoins, RWA-backed options are gaining significant momentum. Protocols like MakerDAO's DAI and Frax Finance's FRAX are at the forefront, offering stablecoins backed by a diverse range of real-world assets. This provides a stable medium of exchange that combines the benefits of cryptocurrency with the stability of tangible assets. The end result is that the industry can thrive during both high and low-interest rate regimes.
Lending	The lending sector is witnessing more adoption of RWA-backed loans, bridging the gap between TradFi and DeFi. They demonstrate how blockchain can facilitate lending processes, making them more accessible and efficient.
Debt Securities and Equity	The tokenization of debt securities and equity has gained significant traction in 2023. These platforms play a critical role in bringing traditional financial instruments, such as bonds and stocks, on-chain, offering increased liquidity and accessibility to investors.
Real Estate	In the real estate sector, tokenization is being pioneered by platforms like RealT. Among other advantages, they enable fractional ownership and increased liquidity in property investment, making real estate accessible to a broader range of investors. This approach simplifies the investment process and democratizes access to property assets. However, it is worth noting that there might be liquidity issues, as we saw during the Real USD depeg.
Commodities	The commodities market is also undergoing successful tokenization efforts. PAX Gold (PAXG) and Tether Gold (XAUT) are notable examples, offering digital representations of physical gold holdings. We believe that people will either want USD stablecoins or Bitcoin (digital gold) rather than tokenized gold.
Environmental, Social, and Governance (ESG)	Most of the current ESG initiatives currently focus on tokenizing carbon credits, thereby promoting sustainability and enabling investors to participate in environmentally friendly projects. This sector represents a growing interest in using blockchain for social and environmental good.

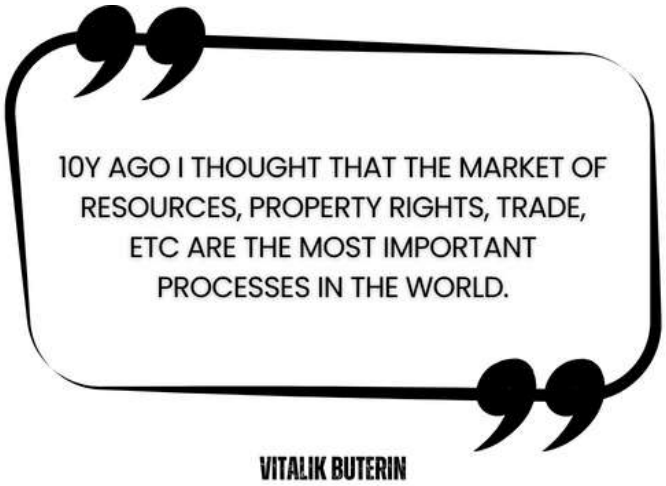
Here is a list of protocols that exemplify the diverse applications of blockchain technology in the RWA space. They are not only transforming their respective sectors but also paving the way for new forms of investment and asset management in the digital age. For a complete directory, visit RWA.xyz.

Image: RWA-Based Protocols

Lending	Commodities	ESG	RWA-backed stablecoins	Debt Securities & Equity	Other
Centrifuge (CFG)	PAX Gold (PAXG)	Toucan Protocol (TCO2)	MakerDAO (DAI)	Ondo Finance (ONDO)	RealT
Maple Finance (MPL)	Tether Gold (XAUT)	KlimaDAO (KLIMA)	Frax Finance (FRAX)	Matrixdock (STBT)	RWA.xyz
Goldfinch (GFI)	CACHE Gold (CGT)	Senken	Angle Protocol (agEUR)	Backed Finance (bTokens)	SteakFi
Credix			Flux Finance (fUSD)	Aktionariat (DAKS)	Avalanche Spruce (AVAX)
TProtocol			Tangible (USDR)	Hashnote (SDYC)	Canto (CANTO)
TrueFi (TRU)				OpenEden (TBILL)	Kinto
					Pendle (PENDLE)
					FortunaFi

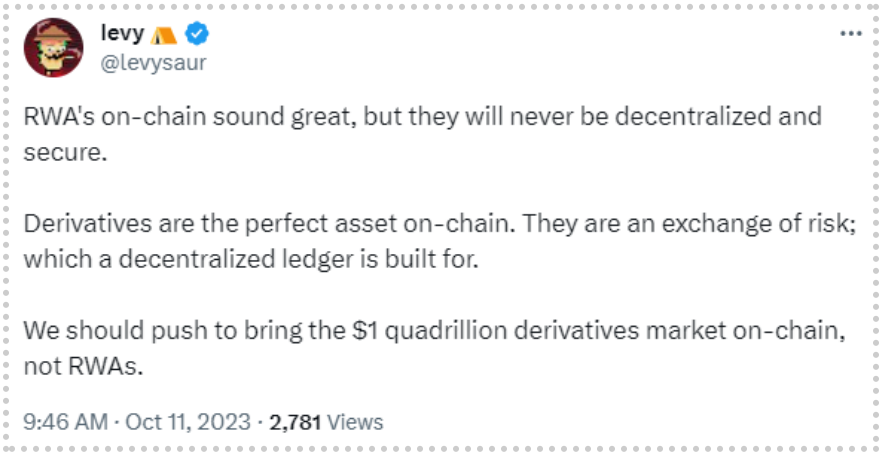
Source: RWA.xyz - RWA Report

Risks of Bringing RWAs On-chain



The use of blockchain technology could potentially democratize securitization, making it more accessible to developing nations and reducing the cost of credit for consumers in these regions. However, there are legal, technological, and behavioral challenges to overcome before blockchain-enabled securitization can become a reality.

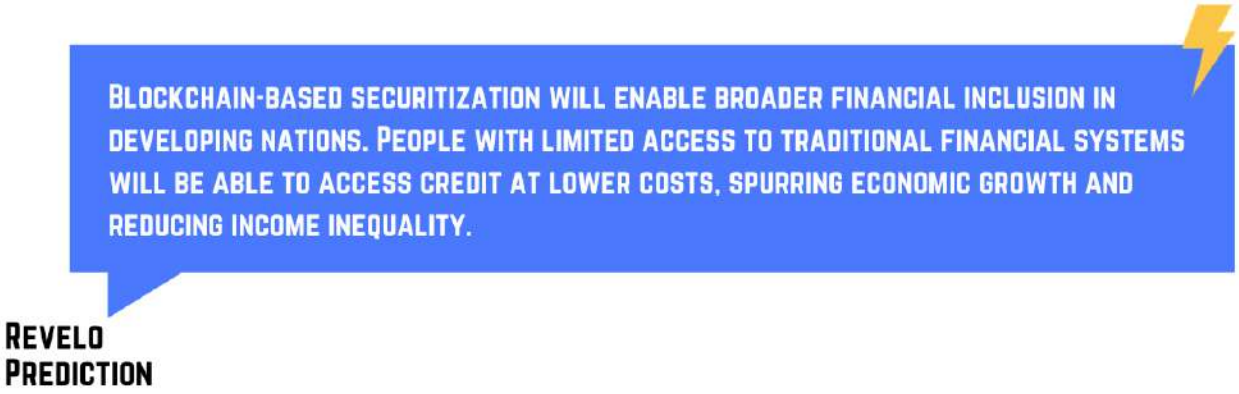
Image: Levy on Bringing RWAs On-Chain



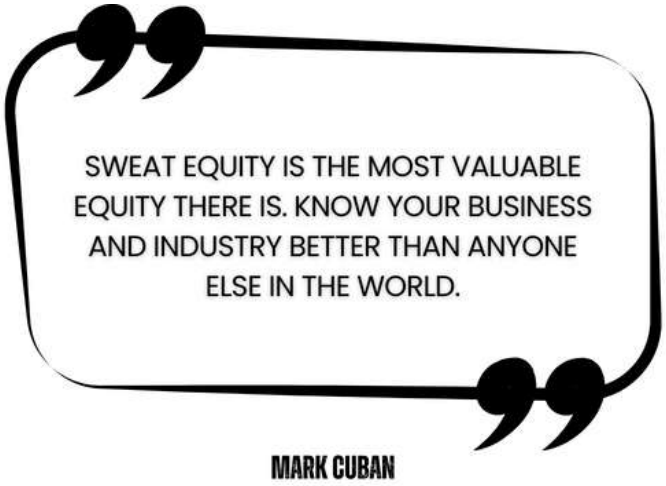
Source: Levy (Twitter)

Table: Risks of Bridging the On-Chain and Off-Chain Worlds

Risk	Explanation
Regulatory Uncertainty	The evolving legal landscape for tokenized assets poses challenges and potential disruptions.
Liquidity Challenges	While tokenization promises increased liquidity, market fragmentation and interoperability issues could hinder these benefits.
Market Manipulation	The risk of insider trading and price manipulation in tokenized asset markets cannot be ignored.
Third-party Custodians	The need for third-party custodians in RWA tokenization raises questions about ownership and asset management.
Privacy Concerns	Tokenization involves sharing sensitive data on the blockchain, leading to potential privacy issues.
Pricing Accuracy	Accurately pricing tokenized RWAs is complex and critical, highlighting the importance of reliable oracle feeds.



Mergers and Acquisitions



We expect to see more mergers and acquisitions as time progresses. The industry is currently experiencing a high level of saturation across various sectors, from Layer 2s to NFT marketplaces, and account-abstracted wallets. This saturation makes it increasingly challenging for investors to identify the projects with the most potential, leading to a natural progression towards market consolidation, concentrating around a few strong projects.

As a result of this saturation, many new teams are focusing on contributing incremental improvements. This is reflected by the absence of projects introducing 0-to-1 innovations, which were much more frequent in 2020 with protocols like Uniswap, Aave, and Synthetix.

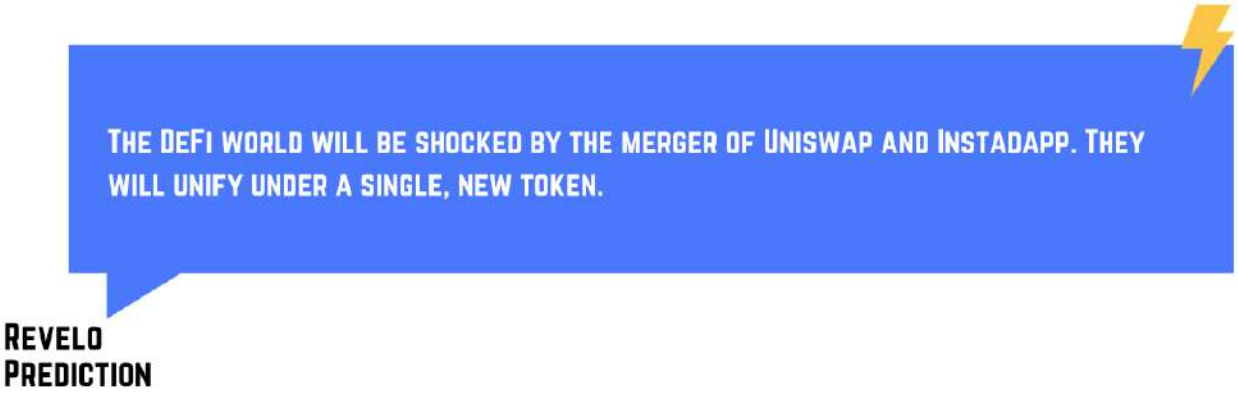
Many project teams now aim to slightly enhance existing infrastructures. These improvements, while valuable, are similar to offering "vitamins" rather than "painkillers" – they don't necessarily address the fundamental needs or pain points in the industry.

That being said, this landscape presents opportunities for projects that can tap into these unmet needs. For example, prediction markets represent a sector where there's a clear demand for open platforms that allow unrestricted market creation and betting sizes. Addressing such demands could lead to substantial growth and user engagement.

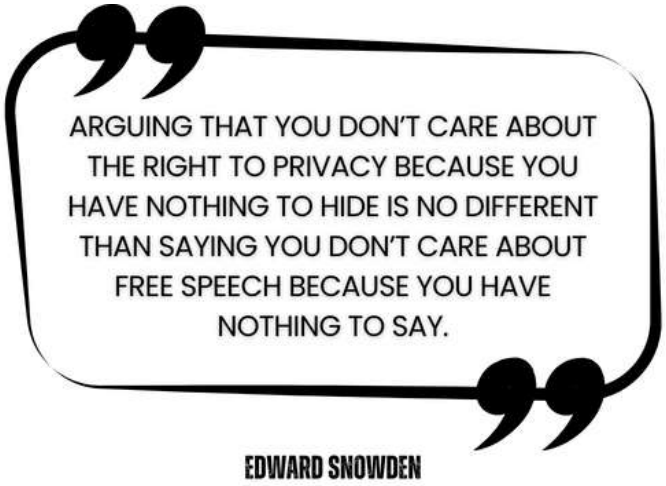
Image: UX Chain Proposal to Merge With Osmosis

Source: Cryptocito (Twitter)

Lastly, the growing number of Layer 2 solutions, which are crucial for enhancing blockchain scalability and efficiency, might lead to further consolidation in this space. As these platforms compete for users, strategic mergers and acquisitions could become a key approach for combining strengths and resources, shaping the future of blockchain technology and its applications.



The Future of Privacy



The frequent turbulence and 'black swan' events have a propensity to push privacy concerns to the sidelines, especially during bullish times. In such times, the excitement of propelling markets overshadows complex narratives like privacy, with investors typically gravitating towards more straightforward, high-return opportunities.

Developments in privacy-enhancing technologies like ZKEVMs, while important, aren't as attractive to the average user who, by aggregate, are only interested in outsized returns. We expect this trend to continue, with privacy-focused technologies and tokens possibly not being the top performers in a bull market. Monero, a leading privacy coin with a strong community, remains a popular choice for those prioritizing privacy.

However, its delisting from many CEXs poses challenges in attracting new users. ZCash offers both transparent and shielded transactions, giving users a choice between privacy and transparency, but its success will depend on how well it balances these features.

Newer privacy projects entering the market may struggle to gain attention during a bull market. However, their long-term success will depend on their ability to offer innovative privacy solutions that meet real-world needs. This is particularly important as the industry attracts more enterprise and institutional players, for whom privacy will be the highest priority.

Mixers like Tornado Cash, which enhance privacy for Ethereum transactions, may see fluctuating usage depending on market sentiment. However, the underlying need for privacy tools remains constant. Developers in this space might need to navigate regulatory changes and find ways to maintain compliance without sacrificing user privacy.

Image: Solicy on Vitalik's Privacy Pool Idea

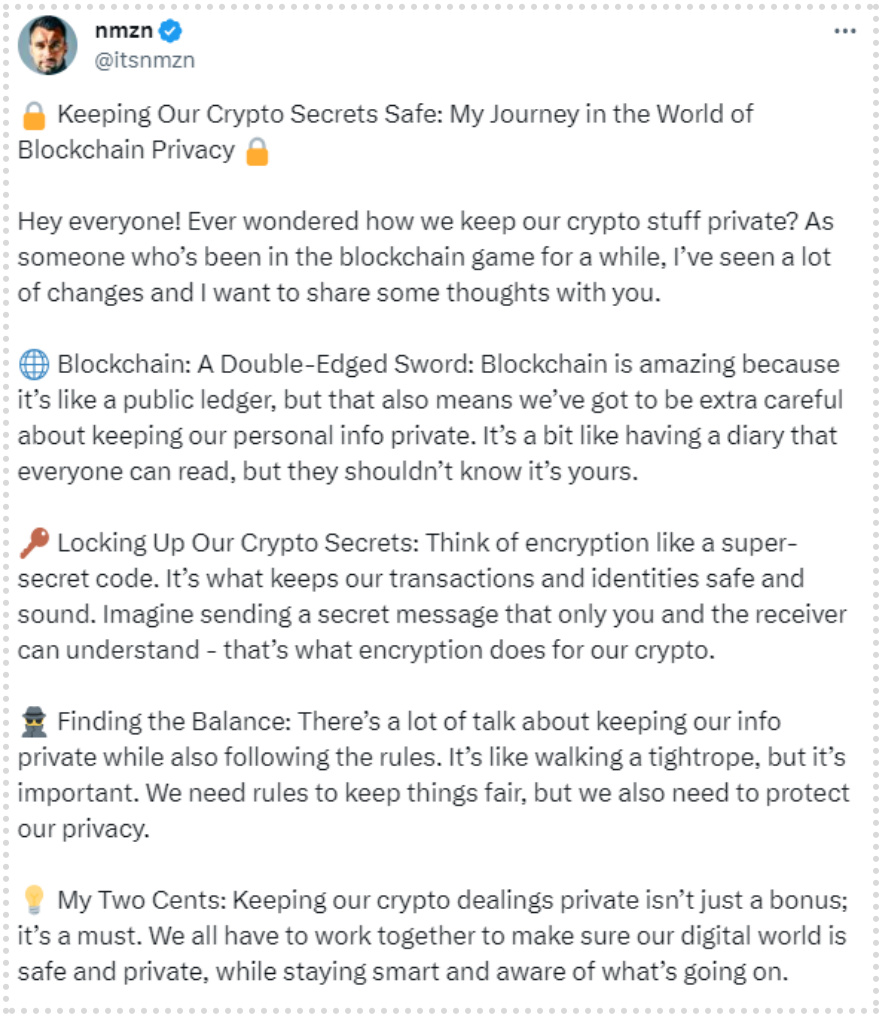
Source: Solicy (Twitter)

Regulatory concerns are a significant factor impacting innovation in the privacy sector. Some teams may become more cautious, while others might focus on developing solutions that are compliant yet privacy-preserving.

CEXs are under increasing regulatory pressure regarding privacy coins, leading to a challenging balance between privacy and compliance. Some may continue listing privacy coins with stringent due diligence, while others may opt to avoid them altogether.

As privacy issues persist, regulatory bodies might enforce stricter data protection measures, impacting the adoption of privacy technologies both positively and negatively. The crypto space faces the challenge of balancing financial growth with the fundamental right to privacy. Public blockchains currently expose users' balances and transactions to the world, which is detrimental to individual privacy and blockchain adoption.

Image: nmzn on Blockchain Privacy



Source: nmzn (Twitter)

There are many valid reasons for wanting financial privacy on-chain, including protecting trading strategies (alpha protection), private payroll services, MEV and arbitrage opportunities, censorship-resistant donations, anonymized analytics, and compliance.

Even though the past suggests that privacy-based technologies will take a backseat, particularly in times of euphoria, we are confident that the demand for on-chain privacy solutions will grow; perhaps in silence. But it may require a shift in approach.

Rather than spinning up new chains with privacy features, protocols may want to focus on creating solutions that are compatible with the chains that users are most active on, akin to a privacy plugin rather than entirely new privacy-centric infrastructures.

Ultimately, there are three very strong reasons why privacy is essential for crypto to thrive: market efficiency, security, and consumer preferences. First, privacy technologies can address information asymmetry and improve market efficiency by preventing arbitrageurs from exploiting vulnerabilities.

Second, privacy measures make it more challenging for attackers to execute certain exploits. Third, data privacy concerns are important even in a pseudonymous environment like crypto, as consumers become more conscious of the data they share.

Aren't Private Accounts All We Want?

Looking at the history of on-chain privacy, we have seen various attempts and approaches, each with their own set of challenges, particularly in user adoption and experience. Historically, alternative Layer 1 and Layer 2 chains focused on privacy-preserving transfers but struggled to build new ecosystems for developers and users. Building an ecosystem with privacy as the main differentiator is challenging. Privacy is important, but it's simply not very appealing.

Well-known mixers like Tornado Cash, which offered privacy on Ethereum, were hindered by a clunky user experience, high transaction costs, and the need for manual management. Hybrid solutions such as Aztec have emerged, offering solutions for anonymous DeFi interactions, enhancing usability. However, they still face issues with interoperability and require custom bridge contracts for interactions.

Image: Launch of Arkham Intel

Source: Arkham Intel (Twitter)

And then there's Arkham Intelligence, a tool for linking cryptocurrency activity to real-world entities. They launched earlier this year and faced immediate challenges. In the pre-launch period, they collected emails for the purposes of their referral and airdrops program.

In a careless mistake, they ended up doxing these emails, and as a result, we could all see what every participant earned from the airdrop. Additionally, Arkham incentivizes users to dox others by linking wallets to personal identities which is against the ethos of blockchain.

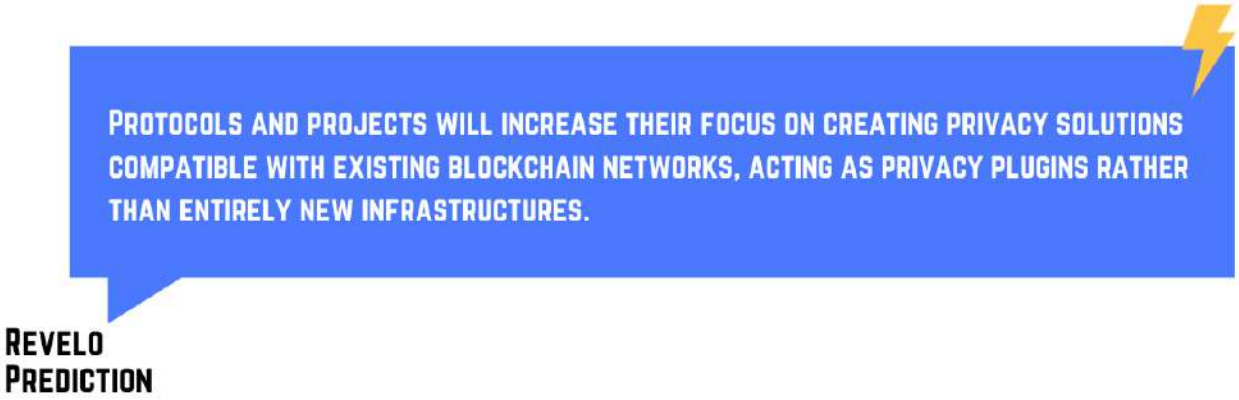
Image: Vitalik Invests in Nocturne to Make Private Accounts on Ethereum

Source: Crypto Tea (Twitter)

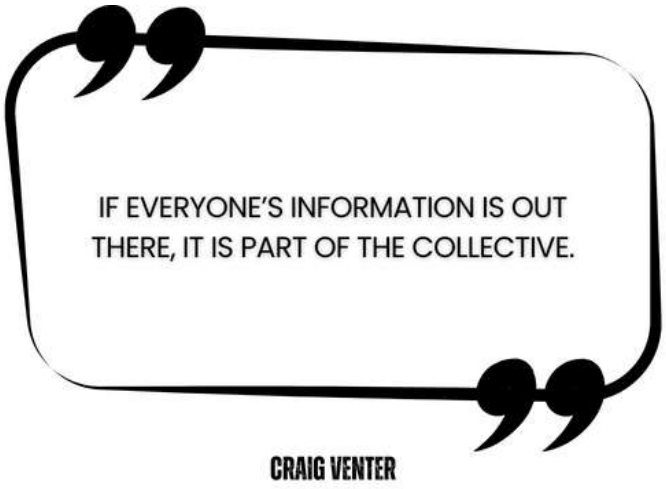
A new design philosophy has emerged, prioritizing private user-level accounts, aiming for compatibility and a user experience similar to public wallets. This design advocates for the separation of scaling and privacy solutions.

Many projects attempted to combine these, leading to reduced compatibility with existing ecosystems. For instance, Nocturne allows users to choose between using Ethereum mainnet or a Layer 2 network for privacy, depending on their preference.

Regardless of specific implementation, we argue that the long-term vision is to make the usage of private accounts so seamless that every Ethereum address automatically has a private account, creating a parallel account layer for privacy.



Privacy Enabling Technology



Privacy-Enabling Technologies (PETs) are crucial for enhancing data privacy and security in various digital contexts. These technologies, each with its own strengths and limitations, cater to different privacy needs and scenarios.

These technologies can be combined to create robust and comprehensive privacy solutions. For instance, the Secret Network integrates TEEs for confidential contract execution and combines them with MPC for private joint computations.

Similarly, Zama uses ZKPs for generating private proofs and FHE for secure data processing in smart contracts, allowing selective access to transaction details while keeping the bulk of the data encrypted. This synergy of different PETs demonstrates their complementary nature and the potential for creating versatile and effective privacy solutions.

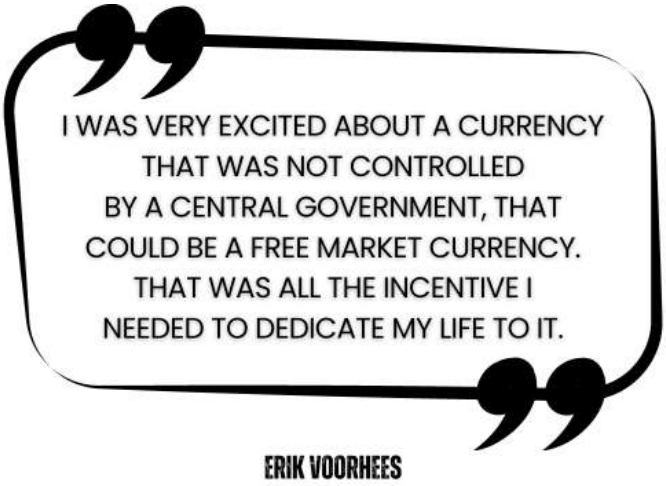
Table: Privacy Enabling Technologies

Technology	Explanation
Zero Knowledge Proofs (ZKPs)	Zero Knowledge Proofs (ZKPs) stand out for their ability to authenticate a statement without revealing the underlying data. This makes them ideal for situations requiring single-user privacy, identity authentication, and data integrity verification. However, ZKPs can be computationally demanding and sometimes necessitate a trusted setup, which can be a limitation in certain contexts.
Multi-Party Computation (MPC)	Multi-Party Computation (MPC) is another powerful tool that allows multiple parties to collaboratively compute a result without exposing their individual inputs. This technology is particularly useful for privacy-preserving joint computations and secure data analysis involving multiple stakeholders. The complexity of setting up such systems and the need for a sufficient number of participants are the main challenges associated with MPC.
Fully Homomorphic Encryption (FHE)	Fully Homomorphic Encryption (FHE) enables computations on encrypted data, allowing for the processing of sensitive information while maintaining its encrypted state. This is especially valuable in secure data analytics, where privacy is paramount. The trade-off is the high computational intensity and operational costs that come with FHE.
Trusted Execution Environments (TEE)	Trusted Execution Environments (TEE) provide secure and isolated environments for executing computations, thus protecting data confidentiality. They are well-suited for confidential smart contract execution and secure data processing. The reliance on specific hardware and potential hardware vulnerabilities are the primary concerns with TEEs.

WELCOME TO ON-CHAIN

Section 13

WELCOME TO ON-CHAIN



Market participants are becoming more specialized this cycle, with many of them getting expertise in domains such as on-chain trading, perpetuals trading, NFT trading, airdrop hunting, and yield farming.

The intersection of TradFi and DeFi is reshaping the financial landscape, driven by the unique capabilities of DeFi operating on open, permissionless public blockchains. This new paradigm offers a stark contrast to the more static and regulated world of TradFi.

DeFi's open-source nature is a cornerstone of its innovation. It allows developers from around the globe to contribute and build upon a shared infrastructure, accelerating the pace of development.

A key feature of DeFi is its composability, where protocols and smart contracts are designed to be interoperable. This allows for a seamless integration of various financial services, creating a diverse ecosystem of interconnected products and services.

But more so, DeFi's reduced reliance on intermediaries is one of its biggest advantages. Smart contracts automate and streamline processes, leading to cost savings and increased efficiency in transactions.

DeFi also operates on a global scale, accessible 24/7, eliminating the geographical and time constraints typical of TradFi markets. This round-the-clock operation broadens access and participation in financial activities. DeFi's new data layer, comprising global accounting databases, smart contracts, and user-controlled assets, is transforming TradFi as we know it today.

Table: The State of DeFi

Application	Explanation
Automated Market Makers	Automated Market Makers (AMMs) have revolutionized market-making and liquidity provision, allowing anyone to participate and unlocking idle capital.
Stablecoins and Public Blockchains	Stablecoins and public blockchains facilitate fast, cost-effective, and borderless payments, enhancing financial inclusion and transparency.
DeFi	DeFi's scope extends beyond AMMs and payments, encompassing lending, borrowing, and liquid staking.
Financial Products	It enables the creation of innovative financial products by combining tokenized assets with smart contracts and interoperability across services.

Despite challenges, such as the collapse of major decentralized giants like FTX, DeFi continues to grow, surpassing 30 million users. The rise in permissioned KYC products has attracted traditional institutions, leading to a mixed response within the DeFi community.

While some view this as a positive step towards mainstream adoption, others are concerned about the potential compromise of DeFi's foundational principles.

The convergence of DeFi with TradFi, particularly through KYC-compliant products, is likely to bring increased regulatory attention. Balancing innovation with regulatory compliance will be crucial in this evolving landscape. The ongoing tension between the open, permissionless nature of DeFi and the rise of institutionalized, permissioned offerings is set to continue.

We think that DeFi is poised to attract a broader audience through user-friendly applications that emphasize simplicity and ease of use. This is vital for driving wider adoption and integrating DeFi into the mainstream financial ecosystem.

Building From First Principles

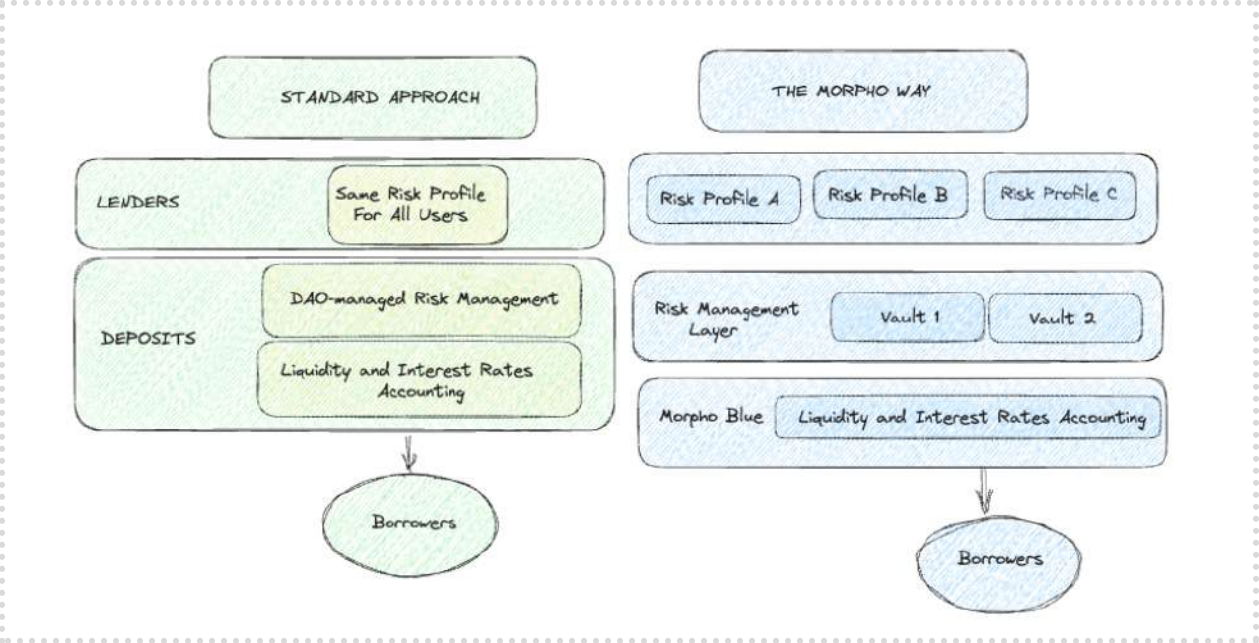
A significant trend we're witnessing is the development of "oracleless" protocols. However, we want to emphasize that this trend isn't about dismissing the importance of oracles, which are crucial for bridging the gap between off-chain and on-chain data. Instead, it's about understanding the trade-offs in composability and the risks associated with the extra dependencies when integrating multiple protocols.

Oracles, while useful, can be a weak point in DeFi. They can introduce reliability issues that can be exploited, leading to concerns about price manipulation. To counter this, some protocols are moving towards designs that don't rely on oracles, aiming to reduce dependencies and potential vulnerabilities.

However, this approach isn't without its own challenges. It can add complexity to the protocol's codebase, increase smart contract risk, and limit the protocol's functionality.

For instance, Morpho is an example of a lean and simple protocol, with less than 700 lines of immutable code. Its simplicity reduces the potential for vulnerabilities, making it a more secure foundation for building additional features. In contrast, Ajna adopts a peer-to-peer lending model that doesn't depend on oracles, instead relying on user activities for liquidations. However, Ajna faced challenges with immutable code, leading to a redeployment.

Image: The Morpho Way



Source: Revelo Intel (Analyst Insight)

Nowadays, it is common for developers to start off writing upgradeable smart contracts, but this often places a lot of trust in the development team, which can be risky. So it's not just about oracles. The industry, in general, must push toward solutions that minimize dependencies like oracles, governance, and upgradeability, reducing counterparty and key-man risks.

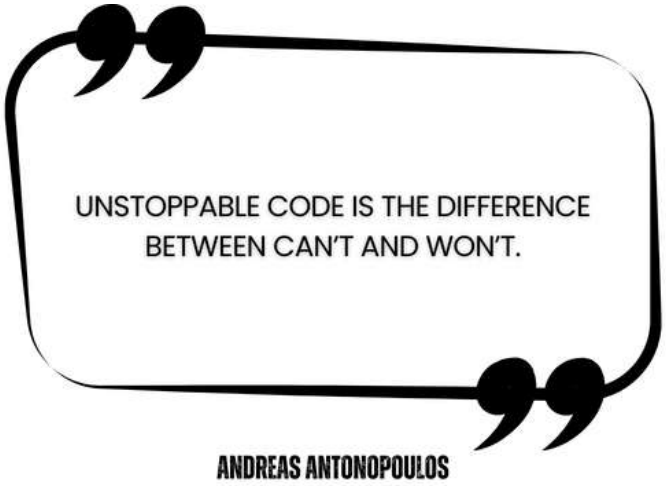
The concept of "primitives" is gaining traction in DeFi, and this is something we're quite optimistic about. Primitives are fundamental components of a protocol with minimal external dependencies. The ideal primitive would be completely independent, requiring no governance, no upgrades, and no reliance on oracles. Such designs are immutable, require no governance, and carry no counterparty risk, making them more secure and robust.

Infinity Pools is an example of a protocol that embodies these principles. It offers perpetual trading on any asset with unlimited leverage, no liquidations, and no counterparty risk, presenting a significant improvement over traditional systems.

This, similar to Uniswap's impact on asset trading, could attract more users to DeFi by offering unique advantages not available in TradFi. Infinity Pools is a protocol that we explored in depth - read our Insights here.

We expect to see a rise in decentralized and alternative frontend interfaces. While initial versions might be hosted by core teams, community-driven alternatives could emerge, offering features like bypassing KYC, deploying on decentralized networks like IPFS, and introducing novel functionalities. This decentralization of interfaces aligns with the ethos of DeFi, promoting user autonomy and innovation.

Unstoppable Code



Many current market participants were initially drawn to the crypto world by the promise of immutable, censorship-resistant code operating in a permissionless manner. While this holds true for Bitcoin, it's not always the case with DeFi protocols.

This year, there's been an emerging narrative and approach to designing protocols from first principles. These are the so-called DeFi primitives, which allow for the assembly of 'money legos' to create unique use cases and elevate composability to new heights.

Products vs. Protocols

Understanding the difference between protocols and products is crucial, especially as this sector evolves. Protocols, in a general sense, are like the basic rules for how information is transmitted, similar to how the Internet uses TCP/IP. They're designed to be minimalistic, unopinionated, and long-lasting.

In the context of DeFi, protocols are the underlying rules that govern how transactions occur. On the other hand, products are more about the user experience. They're feature-rich, tailored to specific needs, and not necessarily built to last indefinitely.

The development of protocols like Uniswap v4, Liquity, or Morpho Blue suggests that the focus should shift to more primitive and unopinionated base layer protocols in the long run. These base protocols would serve as the infrastructure for value flow in various use cases, providing a foundation upon which additional functionalities can be built.

Value extraction, user experience (UX) abstraction, product development, and other features should be added as layers on top of these base protocols. This layered approach allows for greater flexibility and customization while maintaining a strong foundation for value transfer.

Despite the common belief that simpler, immutable code is better because it's more secure and long-lasting, we don’t believe that feature-rich products or complex smart contract architectures are inherently bad. Rather, we believe that they're vital for DeFi's growth.

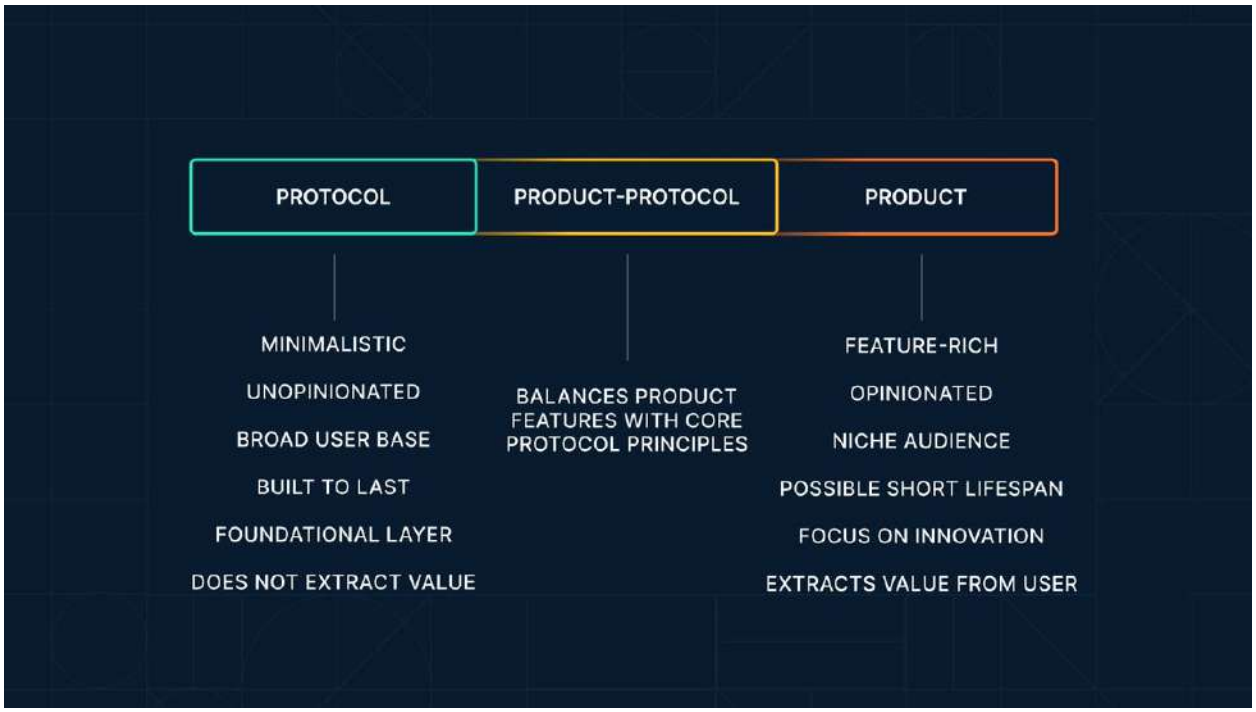
Image: Primitives Should Do Less to Enable More

Source: Morpho (Twitter)

They allow developers to create great applications on top of the basic protocols. At the end of the day, users typically want great products, and the value of DeFi lies in its ability to provide user-friendly solutions.

When it comes to security, simplicity does have its advantages. Simple protocols are generally easier to secure. But the key to both security and a great user experience is modularity – the idea of building systems with interchangeable parts.

Image: Protocols vs. Products



Source: Michael Bentley (Twitter)

Think of it like the difference between Mac and PC. Both use modular designs, but Mac's integrated approach has often led to a more cohesive and secure product, while the PC's more open system has sometimes resulted in inefficiencies and security vulnerabilities.

For instance, some DeFi protocols like Uniswap or Liquity, aim to be immutable and minimize governance. While this can provide security and trustlessness, it also presents challenges in adapting to changing market conditions and external factors.

Take Liquity's situation as an example, where external factors such as changes in DSR (Dai Savings Rate) and market dynamics impacted the protocol. This highlights the difficulty of creating immutable incentive schemes that can adapt to unforeseen circumstances.

DeFi can be complex and sometimes offers a fragmented experience to users, with different protocols charging their own fees and having their own governance systems. This complexity can be a hurdle for users who just want a simple and efficient way to interact with DeFi. This highlights the tradeoff that application developers face when building their projects.

While protocols are essential for developers, they're often too technical and abstract for everyday users. For DeFi to truly succeed and reach a wider audience, it needs to focus on building user-friendly products.

These products should leverage the power of underlying protocols but present them in a way that's accessible and valuable to the average person. Finding the right balance is essential, and it may mean relinquishing some control over protocol development in favor of broader adoption.

The Future of On-chain Derivatives

Derivatives have emerged as one of the killer use cases for crypto and, especially after the downfall of several large CEXs, are starting to move on-chain. Their popularity has grown in large part due to the risk appetite of participants for leverage and outsized gains (or losses).

On-chain perpetuals and options have grown rapidly, with platforms like GMX finding much success even during the 2022 bear market. They offer traders the ability to trade with leverage without the burden of KYC requirements. The need for anonymity plays a major factor in the growth of on-chain derivatives, as their off-chain counterparts are much cheaper.

Before Layer 2 solutions, trading derivatives like perpetuals and options was impractical due to the high gas costs on Ethereum. Projects like dYdX had to migrate to their own chains, using cryptographic proofs to validate transactions such as trades and transfers.

We have also witnessed that most on-chain traders don't care about the centralization risks associated with trading perpetuals where prices are provided by an oracle that fetches from CEXs. Ultimately, the platforms themselves are responsible for risk management and ensure that they are not subject to price manipulation attacks. However, the trade off for the protocol is the need to implement caps to the open interest, which limits scalability and usage.

We're excited to see new derivatives instruments being built, ones that simply aren't possible in a centralized environment. By leveraging the composability of DeFi, projects working on

derivatives have the opportunity to create 0 to 1 moments like Uniswap, offering financial instruments for the long-tail of assets in a non-custodial and permissionless setting. This opportunity does not exist in CEX environments due to how illiquid many tokens are, liquidation penalties, and how exhaustive the listing process is.

Image: On-Chain Derivative Protocols

Name	1d Change	7d Change	1m Change	TVL
1 GMX 2 chains	-0.07%	+5.00%	+15.74%	$625.83m
2 dYdX 1 chain	-0.14%	-0.23%	+2.12%	$353.97m
3 Drift 1 chain	+1.60%	+58.00%	+230%	$128.88m
4 MUX Protocol 5 chains	-0.15%	+4.82%	+5.84%	$65.95m
5 ApeX Protocol 7 chains	+0.34%	-0.68%	+27.54%	$61.02m
6 Hyperliquid 1 chain	+2.00%	+20.52%	+105%	$51.8m
7 APX Finance 7 chains	+0.08%	+2.85%	-4.97%	$44.61m
8 Vertex Protocol 1 chain	+2.26%	+15.98%	+36.16%	$43.12m
9 01 1 chain	+6.12%	+55.29%	+89.32%	$41.16m
10 Gains Network 2 chains	-0.98%	-4.38%	-11.22%	$29.58m

Source: DefiLlama

However, on the flip side, projects that merely replicate the CEX experience with sub-optimal user experience may struggle to attract and retain users. Derivative exchanges can be highly profitable in the speculative crypto industry, generating significant revenue from trading fees and distributing it as dividends, contributing to the "real yield" narrative.

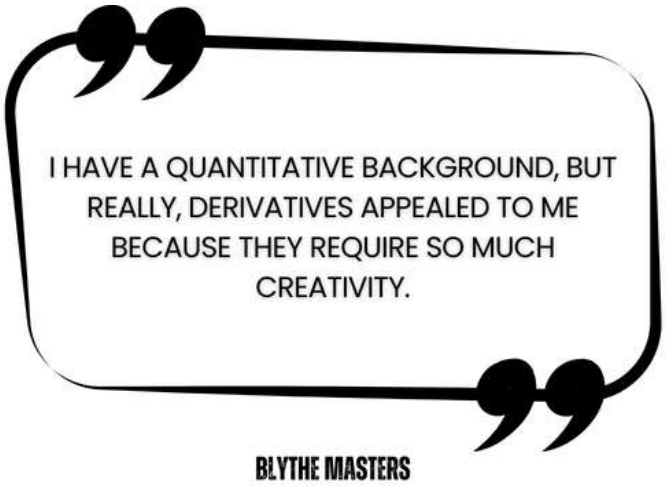
With increasing regulatory scrutiny on CEXs, we believe that perpetual DEXs will see a resurgence. This scrutiny on CEXs, paired with improvements in UX through intents and

account-based trading without the need of frequent signing, will accelerate their adoption. Projects like Aevo and Hyperliquid are paving the way.

dYdX currently dominates the decentralized perps market, but its share is still a fraction of the total perps volume on CEXs. The industry is exploring whether to build on-chain order books or continue with oracle-based models like GMX.

Options trading is still in its early stages, with new models like perpetual options emerging. These offer alternatives to centralized platforms like Deribit. The path forward includes exchanges offering both perpetuals and options, with cross-margining and dynamic risk management. Protocols like Aevo and Lyra are adapting their models to cater to a more sophisticated and institutional audience.

Liquidity Pool Derivatives



The flexibility of options and their payoff structure has enabled the development of a unique and novel narrative that has no comparison in TradFi – Liquidity Pool Derivatives (LPDFi). LPDFi protocols leverage concentrated liquidity positions from platforms like Uniswap v3 to create a range of new financial products and enable additional yield opportunities.

More specifically, LPDFi protocols leverage LP tokens to create products like options, perpetuals, and lending platforms, and build upon the liquidity provided by LPs, turning LP tokens into yield-generating assets.

Table: Benefits of LPDFi

Benefit	Explanation
Enhanced Profitability for Users	By offering additional rewards in the form of project tokens and LPDFi yields, LPDFi enhances the profitability of liquidity farming. It also aims to minimize the risk of Impermanent Loss, making it a more attractive option for users.
Simplified Liquidity Provision	LPDFi eases the process of providing concentrated liquidity for new users. It eliminates the need for regular adjustments and calculations, streamlining the maintenance and optimization of liquidity positions.
Benefits for DEXes and Concentrated Liquidity	The underlying DEXs benefit from LPDFi through increased liquidity, an expanding user base, and higher transaction volumes.

Image: Louround on LPDFi

Source: Louround (Twitter)

Table: Several Protocols At the Forefront of LPDFi Movement

Protocol	Description
Logarithm Finance	Utilizes a Liquidity Shell mechanism to route user deposits to the highest-yileding strategies and employs the Nautilus Vault strategy, using GMX perpetuals, to hedge positions in a delta-neutral manner.
Orange Finance	A liquidity management protocol with advanced hedging strategies, designed for Uniswap V3 and Camelot V3, focusing on delta hedging to neutralize volatile price movements, thereby protecting liquidity providers.
GammaSwap	A two-sided market that enables users to trade volatility, helping liquidity providers hedge against Impermanent Loss.
Panoptic	Specializes in options trading, using Uniswap V3 LPs for liquidity and offering a platform for trading perpetual put and call options with leverage, providing LPs with commission earnings.
Dopex	An options protocol on Arbitrum that provides a variety of option products, aiming to minimize losses for option writers while ensuring liquidity and fair pricing for buyers.
InfinityPools	A perpetuals protocol offering unlimited leverage and no liquidations, where liquidity providers can earn from spot trading fees and interest on lent liquidity.
Limitless Finance	Combines spot and credit liquidity in a single architecture, offering a liquidation-free and permissionless leverage instrument on Uniswap V3.

Image: Crypto Andrew on LSDFi

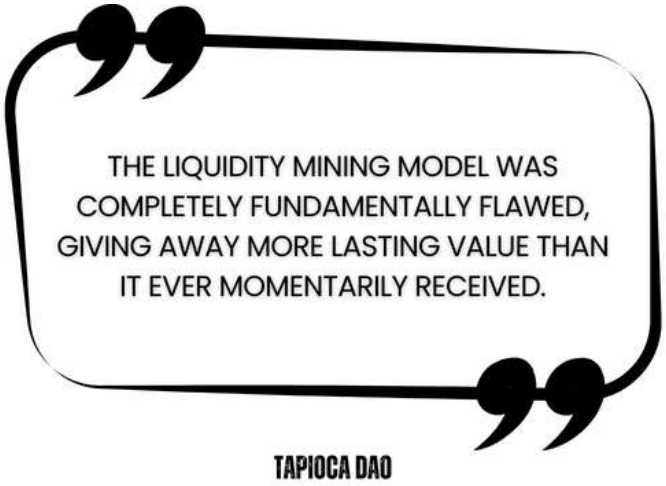
Source: Crypto Andrew (Twitter)

These protocols allow LPs to earn various types of yields, including LP fees from Uniswap V3 or their chosen DEX, fees from LPDFi protocols, and rewards from token emissions. They contribute to increased liquidity and activity within the DeFi ecosystem, offering new avenues for earning yield and addressing challenges such as impermanent loss.

LPDFI WON'T GAIN MUCH TRACTION DUE TO ITS COMPLEXITY. IT WILL REMAIN A SMALL NICHE IN THE MARKET, WITH ONE OR TWO PROJECTS TAKING THE MAJORITY OF THE MARKET SHARE.

REVELO PREDICTION

The End of Liquidity Mining As We Know It



As the cryptocurrency market experiences another bull run, it becomes increasingly crucial to distinguish between hype-driven narratives and genuine growth. It is not only investors who have come to this realization. Protocols have become more aware of this, with pioneers like Tapioca or Gammaswap giving birth to new concepts such as the Emissions Efficiency Ratio (ERR).

Don't even dream of enjoying another reckless and unsustainable crypto bubble driven by greed and speculation, i.e., DeFi Summer, where new tokens are created and distributed to mercenary investors and TVL of systems with unjustifiably inflated, with no regard for underlying value.

Liquidity mining has become a popular yet controversial practice. This approach, where protocols distribute their native tokens as rewards to liquidity providers, has been both a boon and a bane for the industry. It's been proven time and time again that attracting TVL alone and not capturing fees makes protocols unprofitable; this is assuming that Emissions = Expenses, and Fees = Revenue.

As such, we anticipate that savvy investors will start looking at balance sheets of protocol treasuries as part of their decision making tree. Unfortunately, there are very few protocols that actually manage to be cash flow positive, i.e., fees > emissions, over long periods of time.

The Epilogue of RIP liquidity mining laid out some examples of cash-flow positive protocols:

- Aave = ~$7.74M ($10.61M fees - $2.87M in incentives)
- Lido = ~$8.78M ($43.52M fees - $34.75M in incentives)
- GMX = ~$16.23M ($31.24M fees - $15.01M in incentives)

For every dollar that GMX gives in incentives, they make two in revenue. This is what effective emissions look like. Over time, these protocols can wind down their liquidity mining programs while maintaining their usage as they've garnered significant and sticky market share.

However, the current methods to sustain liquidity, such as vesting incentives or dLP-like mechanisms, often only delay the inevitable outflow of capital. Even models like Convex, which simplify user experience, don't fundamentally solve the issue of unsustainable token emissions. Strategies like reducing emissions or buy-and-burn tactics are short-term fixes that don't address the core problem: giving away value without creating real, lasting utility.

Table: Issues With Liquidity Mining

Issue	Explanation
Short-Term Focus	Liquidity mining often leads to a "revolving door" of participants. People join to earn quick rewards and then leave for the next opportunity. This behavior doesn't contribute to long-term stability or growth.
Unsustainable Economics	Liquidity mining typically involves protocols distributing their native tokens as rewards to liquidity providers. While this can attract initial liquidity and users, expenses often outweigh the revenue, leading to continuous losses for the protocols.
Token Overinflation	Issuing too many tokens as rewards can flood the market, causing their value to depreciate. This not only dilutes value for existing token holders but also hurts the token's worth, as it undermines the long-term viability of the protocol.
Lack of Real Value	While liquidity mining attracts capital, it doesn't always lead to meaningful use of the protocol's services. Many participate just for the rewards, not because they believe in or use the protocol's core offerings.

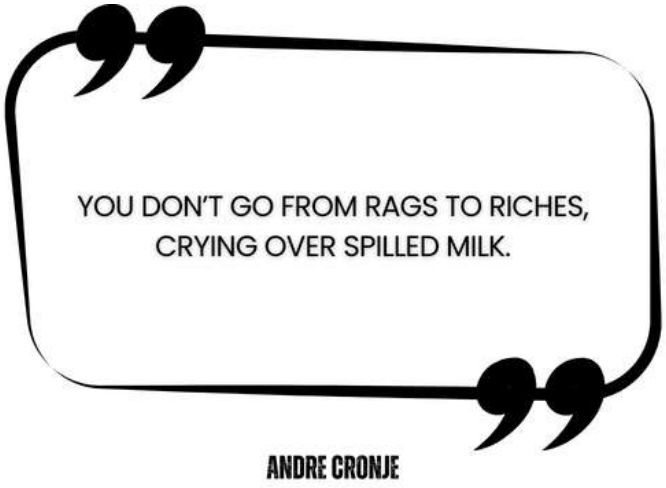
Looking ahead to 2024, we believe that we'll see a shift in how liquidity mining is approached. In essence, the shift needs to be towards operating protocols like businesses, focusing on real value creation and sustainable economic models, rather than relying on short-term incentives and artificial token emissions. This approach will likely lead to more robust and valuable DeFi ecosystems in the long run.

Table: Optimal Incentive Structure

Desire	Explanation
Dynamic Incentives	Protocols could adjust rewards based on their financial health, ensuring a more sustainable model.
Direct Liquidity Management	Protocols may start managing liquidity themselves, reducing reliance on external providers and aligning incentives with long-term value creation.
Long-Term Commitment	Introducing vesting schedules or time-locked incentives could encourage participants to stay longer, fostering a more stable environment.

Yes - historically we've seen that liquidity mining programs have helped bootstrap many DeFi protocols, but these mechanics in their current form have significant drawbacks. The future likely holds more sustainable and value-focused models, moving away from short-term gains towards long-term stability and growth.

Is the Solidly Model Dead?



Solidly, launched by Andre Cronje on the Fantom blockchain in January 2022, has since inspired many forks and improvements across multiple chains. His initial idea was to create a token emission system that balanced ecosystem participants, built on a standard AMM DEX module but incorporating a vested escrow system.

This vested escrow system allowed users and partner-protocols to vote on the distribution of token emissions to LPs, who could be further incentivized through bribes, i.e., additional rewards.

Despite the original Solidly fading into obscurity largely due to how emissions were coded into the smart contract, a hard-hitting bear market, and liquidity outflows from Fantom, its successors have thrived on other chains.

For instance, Velodrome and Thena Finance have secured top positions in TVL on Optimism and Binance Smart Chain, respectively. Even PancakeSwap, a well-established DEX on Binance Smart Chain, adopted similar features like gauge voting and a veCAKE system in November.

Table: Features Unique to the Solidly Model

Feature	Description
Fee Distributions	These models reward users who lock in a vested escrow position of the protocol's token. For example, Velodrome allocates 100% of its trading fees to veVELO voters, while Thena Finance gives 80-90% of fees to veTHE voters. This is in contrast to larger DEXs like Uniswap, which don't have a fee-sharing mechanism for their token holders.
Anti-Dilution Rebases	To address the issue of yield dilution as more users lock their tokens, these models offer anti-dilution rebases. This feature provides a percentage of the locked position as additional yield each epoch, ensuring that no participant's yield is diluted due to new entrants.
Voting Power and Choice of Bribes	Users have the power to decide where emissions are directed and can choose the bribes they prefer. This aspect of governance makes users feel that their decisions have an impact.

So, although the original Solidly is unlikely to rise from the ashes, we believe that the model is poised to maintain its relevance in the DEX sector due to its uniqueness.

SHOW ME THE BALANCE SHEET

Section 14

SHOW ME THE BALANCE SHEET

There's a phrase often thrown around: "buy the narrative." While this might seem cryptic to some, it essentially comes down to the practice of estimating the net present value of an asset by discounting its future cash flows.

To comprehend the sustainability of crypto protocols, it's essential to draw parallels to TradFi methods, specifically cash flow analysis and balance sheet statements. While this might seem too conventional for crypto, it provides valuable insights into value accrual, which is pivotal in assessing crypto protocols beyond the buzz.

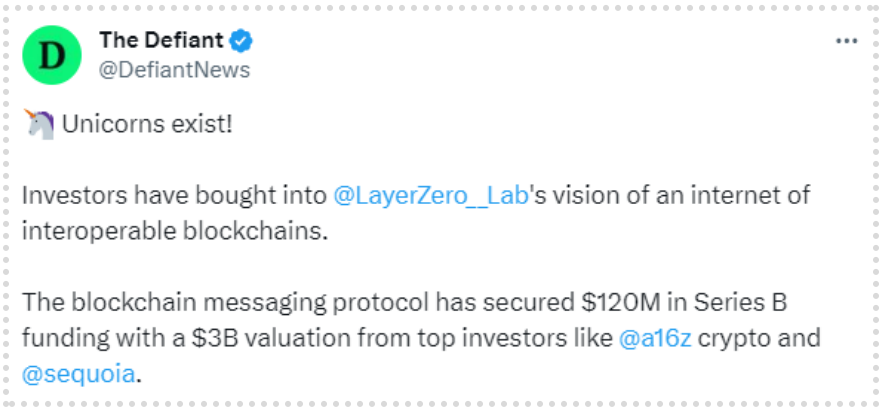
Every altcoin you purchase, whether you realize it or not, comes with a narrative. This narrative revolves around the idea that eventually more users will join the platform, leading to substantial future revenues. Therefore the asset is currently "cheap." Unlike in TradFi, where past growth is often used as a gauge, crypto traders predominantly rely on future projections.

Understanding the value of tokens goes beyond just the tokenomics. Tokens are multifunctional, serving as currencies, investment contracts, equity, commodities, debt, and even expenses. In liquidity mining programs, for instance, they are used as an expense to generate revenue. The real measure of a protocol's success is its profitability, taking into account how emissions impact the DAO treasury.

Hence, "buy the narrative" is akin to buying into the potential future of an asset, much like venture capitalists do with startups. When someone says an asset is undervalued, they're betting that future investors will value it even more highly. This expectation of future value is what makes an asset seem like a bargain today.

Many early-stage crypto protocols use emissions as a way to finance growth, similar to how businesses use Customer Acquisition Cost. This can work well if the protocol retains users and the lifetime value of these users is high. For example, Lido Finance had a net profit margin of -21.3% in 2022 but is now operating at a cumulative profit margin of 44% YTD in 2023.

Image: LayerZero Raises $120M on a $3B Valuation



Source: The Defiant (Twitter)

Ultimately, a protocol's profitability boils down to its revenue minus its emissions. While many DeFi protocols can generate revenue, only a few are actually profitable. This might be why only a handful of protocols last more than three years in the market (try naming them).

Interestingly, a protocol's native token acts as both an asset and a liability for the DAO. The balance sheet includes assets like governance tokens, stablecoins, and yield-generating positions, and liabilities such as debt and emissions. Understanding this duality is key to grasping the financial health of a crypto protocol.

Token emissions generate revenue as liabilities owned by service providers like liquidity providers and block validators. As revenue increases, both the protocol and its emissions increase in value, creating a self-reinforcing cycle. This is where the concept of EER introduced by Gammaswap becomes important:

- An EER of one indicates a "break-even" scenario.
- An EER of less than one indicates unprofitability.
- An EER of greater than one indicates profitability.

In this new paradigm, some of the most prominent strategies to increase the EER include fee sharing, escrowed token models (require locking tokens for an extended period to vest emissions), multiplier points (reward long-term stakers without inflation), options as incentives (to generate POL), and/or buyback and burns (to create buying pressure and enhance value capture for the token).

On Tokens And Tech Stocks

Issuing tokens brings unique challenges for founders. When a company issues a token, it suddenly faces public scrutiny, even if it's a young startup. This position means that founders and early team members, who often hold substantial token treasuries, must navigate significant responsibilities and manage the expectations of thousands of token holders.

These holders actively monitor governance decisions and frequently voice their opinions on various platforms, adding a layer of scrutiny and bureaucracy that can hinder the agility needed in a fast-paced startup environment.

Tokenomics, or the economic design of tokens, is critical. It's not just about how many tokens exist or how they're distributed; it's about creating demand for the token. A token's value is tied to the utility it provides within the project, how it captures and distributes value, and its economic security. Poorly designed tokenomics can lead to a decline in value or even a project's failure. Conversely, well-designed tokenomics can significantly enhance a project's value.

Deciding when to launch a token is crucial. Launching too early, without significant development, can erode trust. Tokens should be more than just a tool for governance; they should have intrinsic value tied to the project's success. For example, staking a governance token might entitle holders to a share of platform fees, adding tangible value beyond governance rights.

We believe that there's a comparison to be made between governance tokens and traditional tech stocks. Both offer governance rights and potential for capital appreciation but typically don't provide direct cash flows or claims on company assets.

Like tech stocks, the value of governance tokens is often tied to the project's performance rather than direct financial benefits. And in the event of failure, both tech stock shareholders and token holders have limited claims on assets, as tech companies' assets are often intangible.

Image: Cobie on Staking

Source: Cobie (Substack)

Whether or not you agree with the analogy, the point is that investors should understand the nature of their assets, whether they are governance tokens or tech stocks. Recognizing how value accrues to these assets is essential. This understanding helps investors make better decisions about when and where to invest, especially in the dynamic and often complex worlds of crypto and technology.

Nonetheless, our viewpoint is that Traditional distinctions between value investing and growth investing are no longer sufficient to capture the complexity of modern markets. Value investing made sense in the past when businesses were constrained by physical factors such as labor, production costs, and geographical limitations. Predicting growth rates was simpler under these conditions.

Image: DegenSparten Responding to Cobie on “Staking”

Source: Cobie (Substack)

The cryptocurrency space experiences even faster changes due to incentives for early users, who are akin to early employees in traditional tech companies. This creates an environment where high growth rates are not only justified but expected. Additionally, tokens are liquid from the early stages of a project, allowing for quick trading.

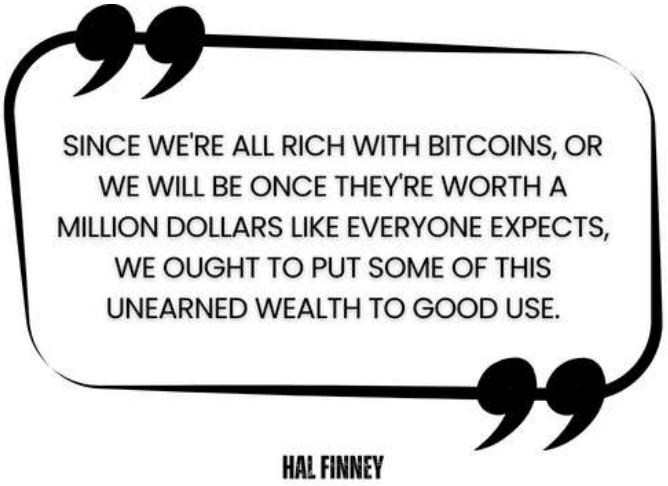
INVESTORS WHO RELY SOLELY ON OLD INVESTMENT PATTERNS WON'T BE ABLE TO ADAPT TO THE RAPID AND VOLATILE NATURE OF THIS INDUSTRY. AS SUCH, A PORTION OF RETAIL INVESTORS WILL OUTPERFORM INSTITUTIONAL CAPITAL, LEADING THEM TO BELIEVE THEY'RE GENIUSES.

REVELO THOUGHT

THE CRYPTO CASINO

Section 15

THE CRYPTO CASINO



The evolution of new financial markets often begins with speculation, a historical pattern that has been essential for their transition into mainstream markets. This speculative phase, marked by bubbles and mania, is a natural and age-old process in the development of financial asset classes.

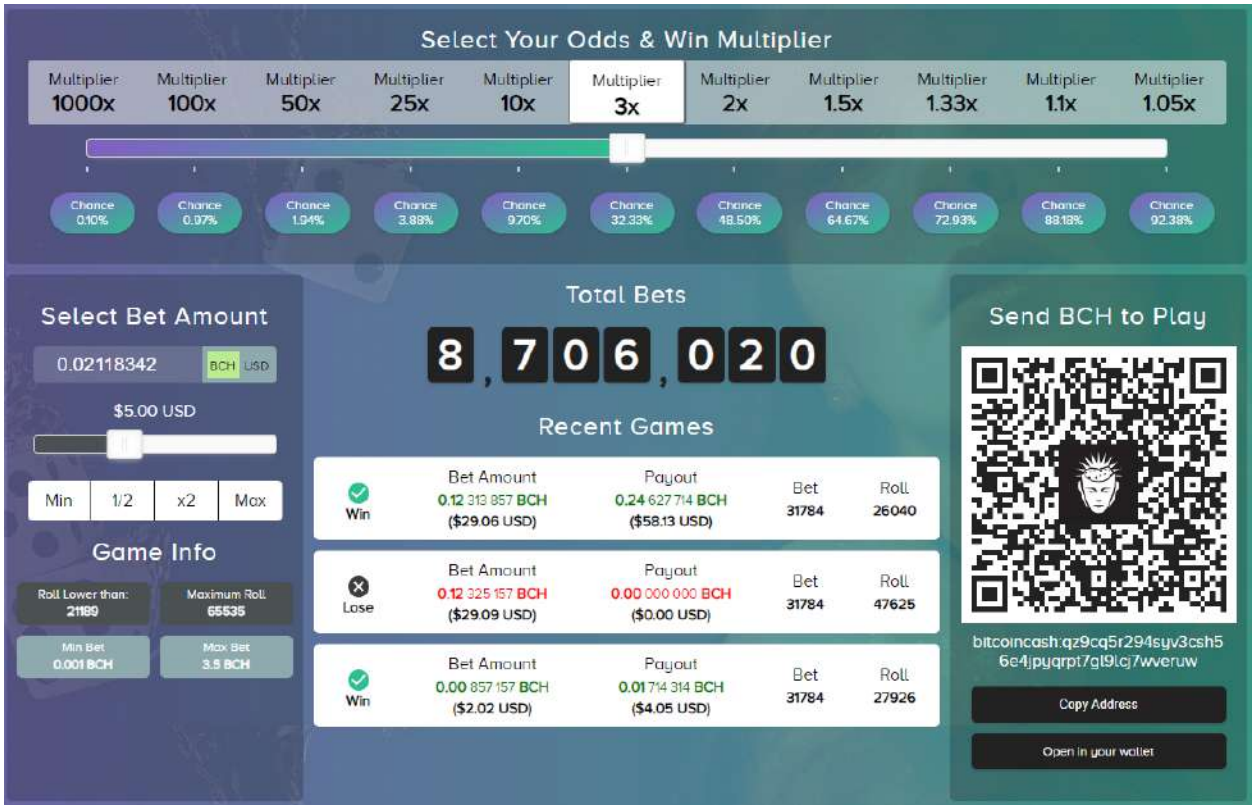
Investment markets, particularly the crypto market, tend to resemble a casino more than a laboratory, where outcomes are influenced not just by the fundamentals of the underlying asset but also by the psychology of market participants. If there's something more scarce than $BTC or gold, it's attention.

Attention is the strongest driving force. It trumps other factors like fundamentals, earnings, and real yield, but there's no doubt that attention plays a central role in driving token prices. Projects that attract attention tend to see their token prices rise, even if other fundamental metrics don't necessarily support such gains.

In crypto, there's currently no 'overvalued' or 'undervalued' — attention is the ultimate driver of token prices. Consider Injective, a project that has broken ATH and has been one of the best performing assets this year, even though TVL has remained flat ~$10M and its ecosystem is still in development.

In this environment, it's crucial for teams and projects to strategically leverage speculation to draw users and eventually find product-market fit. It has become increasingly important for teams to identify a niche or gap and develop a specific product for that market.

Image: The Ultimate Casino



Source: Satoshi Dice

The best example of this is Blur and Tensor, NFT marketplaces catering to "prosumers." These platforms recognized the distinct needs of collectors (passive holders) and active traders, the latter seeking higher liquidity and lower fees.

While OpenSea focused on retail collectors, Blur (on Ethereum) and Tensor (on Solana) targeted a more crypto-native audience with features like points systems and staged airdrops, filling a gap left by OpenSea. Another example was Unibot and Telegram bots which focused on users who care about timing entries and being early into memecoins.

Eventually, product pitches that include "total addressable market" (TAM) will become obsolete, as it has become evident that the transparent and permissionless nature of

blockchain doesn't automatically ensure widespread adoption. Rather than trying to cater to the TAM, successful projects start by addressing the needs of a small, specific user group, allowing for quick feedback and product iteration.

Image: Cobie on Good Projects vs. Bad Projects

Source: Cobie (Substack)

For instance, Blur's focus on a small group of Ethereum mainnet users led to the development of Blend, a lending marketplace for NFTs, demonstrating how targeting a small market can uncover larger opportunities. This is mirrored in traditional markets, as seen with Nvidia's expansion from gaming to AI model training, and Amazon's growth from a bookstore to a global online retailer and cloud service provider.

Successful products frequently begin by solving a specific problem for a limited audience and then expand into adjacent markets. This focused approach enables startups to validate product ideas quickly, iterate rapidly, and achieve better marketing outcomes.

While targeting a smaller market might seem to limit growth potential, many long standing on-chain applications that have survived multiple cycles started by addressing a narrow problem for a select group of users, such as creating a censorship-resistant stablecoin,

facilitating the trading of synthetic assets, or allowing the borrowing and lending against crypto.

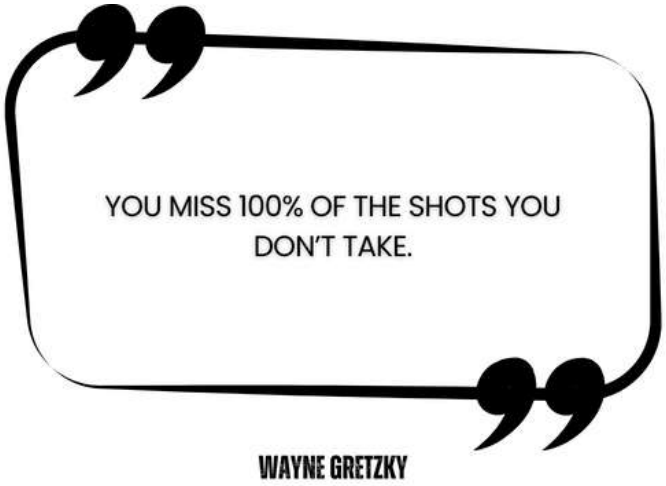
Ultimately, a founder's intuition in navigating a specific market and betting on a particular outcome is often the key to success. When this intuition is lacking, merely attempting to solve broad problems for a large, yet-to-be-onboarded crypto audience is not going to cut it.

Image: Br1an.eth on Gambling Products

Source: br1an.eth (Twitter)

Uniswap is a prime example. From a trading standpoint, it offers an inferior product when compared to CEXs. However, it found its niche in serving a very specific group of users who cared about trading the long tail of assets. That was its edge on when it launched V1; permissionless bootstrapping of liquidity and much faster and broader asset listings.

GambleFi



The emergence of on-chain gambling protocols has revolutionized access to betting opportunities, previously limited to those with significant wealth or the right connections. These protocols have gained popularity due to three main factors: ease of access, the opportunity to act as the 'house', and the typical risk-taking personality of crypto enthusiasts.

On-chain gambling platforms offer unparalleled ease of access. Unlike traditional casinos or betting venues that often require KYC, on-chain platforms allow users to bet as long as they have funds on-chain. This accessibility extends to users who might face restrictions in real-life casinos, such as age limits or geographical barriers.

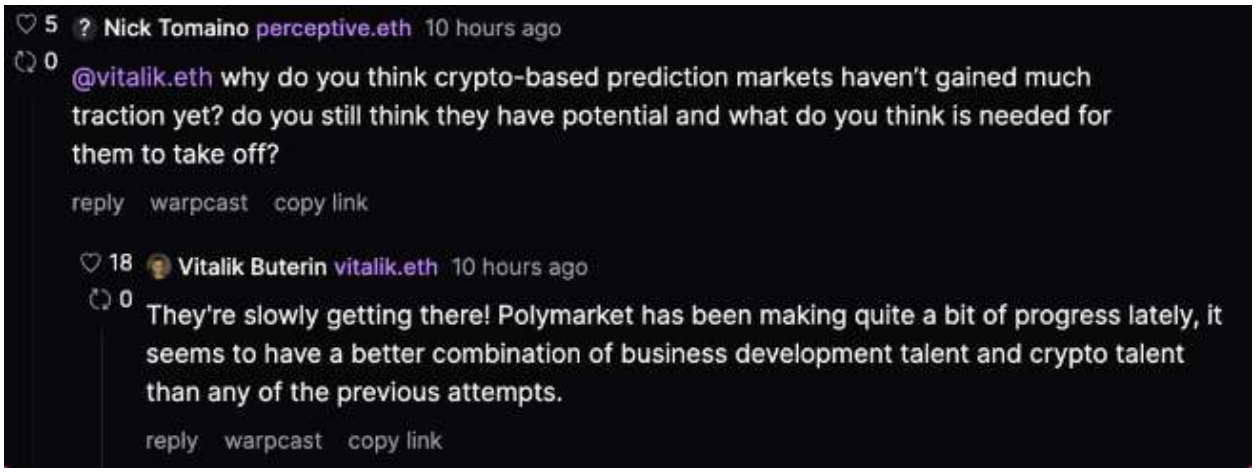
For instance, residents of Singapore, are subject to a daily entry fee of $150 in local casinos. These protocols also allow users to create customised, parameterized bets and subsequently open up the bets to other users, something not possible in traditional settings.

These platforms also allow users to "be the house" simply by providing liquidity to the protocol. In doing so, users can earn a share of the protocol's fees and revenues, along with potential token incentives. However, users are also exposed to potential losses in the event of large wins by gamblers.

This model also benefits the protocols by reducing the need for large initial liquidity. And, due to the general mindset of the crypto community, the promise of future token airdrops makes it easy to attract users and liquidity.

Simply put, the average crypto personality aligns well with on-chain gambling. Crypto enthusiasts, accustomed to the sector's volatility and risk, are often more willing to engage in these types of activities. The inherent risk-taking nature of this community makes it a lucrative target for on-chain gambling platforms.

Image: Vitalik on Polymarket



Source: DeFi Ignas (Typefully)

As of now, Rollbit ($RLB) leads the on-chain gambling tokens with a market cap of approximately $500M, significantly outpacing its competitors. Although seemingly large in crypto terms, this is small when compared to the gambling giant, Las Vegas Sands, valued at around $35B. The top 47 real-world gambling companies have a combined market cap of approximately $254B.

This highlights the potential growth and profitability of the on-chain gambling market. While Las Vegas Sands comprises other assets, the valuation gives us an insight into how large and profitable the gambling market cap is globally. These are numbers that will only grow as the market continues to improve into 2024.

However, it's important to consider the saturated market and the dynamics of player engagement. The presence of venture funds, influencer endorsements, and referral links can

drive momentum, but they also create a competitive environment where players might switch to new products or engage in player-versus-player (PvP) games.

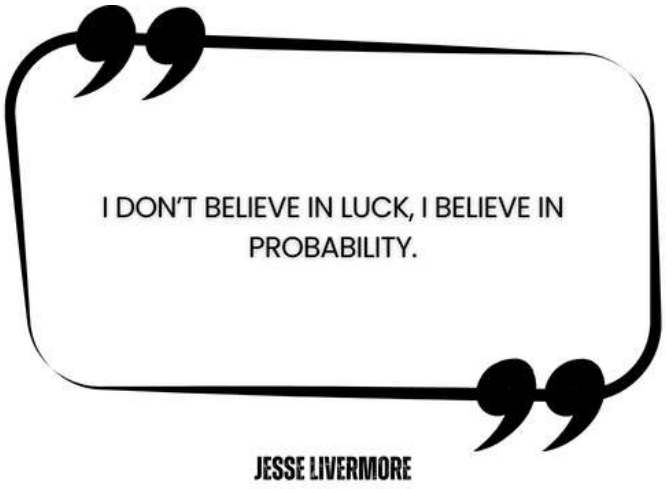
Image: Grogu and Vitalik on “Gambling”

In such scenarios, factors like sell taxes and FriendTech fees can deter skilled players, especially if the game is largely based on luck or is “negative-sum”. This could lead to a culture dominated by less financially savvy players akin to slot machine addicts, which could impact the overall perception and culture of on-chain gambling.

THE ON-CHAIN GAMBLING MARKET WILL EXPERIENCE EXPONENTIAL GROWTH IN 2024, WITH POKER-SPECIFIC PROJECTS ENTERING THE MARKET AND THRIVING ON BITCOIN SIDECHAINS AND LAYER 2S.

REVELO PREDICTION

Gambling Liquidity Layers



We believe that the concept of on-chain liquidity layers is gaining traction as a foundational building block in the world of online gambling. These layers form a solid foundation for a variety of applications, ranging from user interfaces and betting engines to data providers.

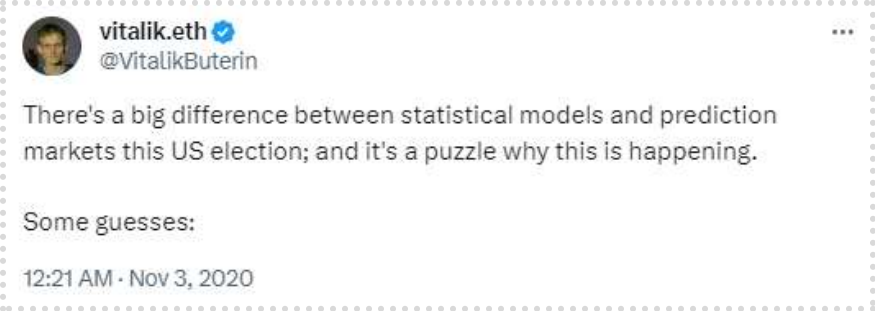
They offer a standardized, secure, and accessible infrastructure, encouraging innovation and new business models, such as revenue sharing among different contributors like data providers, market makers, and frontend operators.

One of the key benefits of on-chain liquidity layers is their ability to incentivize collaboration and growth within the ecosystem. By offering Software Development Kits (SDKs) and liquidity pools, they invite others to participate and build user interfaces on top of the underlying protocol. This setup allows frontend operators to earn from user fees, while the liquidity layer captures the remaining, resulting in a win-win scenario for both parties.

In the betting ecosystem, these liquidity layers are extremely valuable. Betting engines, which are crucial for accepting bets, creating markets, and calculating payouts, can operate more efficiently and transparently on these layers. The result is a seamless betting experience for users.

Data streams and AI integrations also benefit from these layers. They can support algorithmic strategies using game information and historical data. Data providers, who play a crucial role in creating events and providing odds, can access these pools to earn revenue, thereby fostering a sustainable ecosystem.

Image: Vitalik on Statistical Models and Predictions Markets



Link: Vitalik Buterin (Twitter)

Another important aspect of on-chain liquidity layers is the permissionless creation of pools. This feature allows anyone to set up pools and have the autonomy to govern operations related to deposits, withdrawals, and collateral assets. This decentralized approach gives creators the freedom to experiment with various business models.

Liquidity providers play a pivotal role in on-chain betting. They can deposit assets to gain exposure to multiple markets supported by the pool, earning profits from losing bets and spreads. Given the inherent advantage of 'house edge' in trading fees, LPs can contribute liquidity with the expectation of long-term profitability.

Prediction Markets

As the GambleFi and SocialFi narratives continue to gain traction, so has our conviction in prediction markets becoming a killer use case for crypto. These markets offer unexplored business models for creators and allow users to make predictions on a wide range of topics with greater precision than traditional financial markets.

Prediction markets have a unique advantage: they can provide specific and conditional answers. In other words, hypothetically, users could predict the likelihood of [insert geopolitical events] based on oil hitting [insert price].

But part of the trouble with prediction markets is that very precision. There really isn't much interest, especially for obscure issues. How many people are genuinely interested in betting on ‘which board member of Texas’ Energy Grid will resign next’?

Another issue is that those who do participate in these niche markets often have insider information, making it difficult for market-makers to set fair prices. In contrast, traditional financial markets benefit from 'noise traders' – individuals who trade without strong information, often for reasons unrelated to the immediate direction of the market. This randomness helps balance the market but is less prevalent in prediction markets.

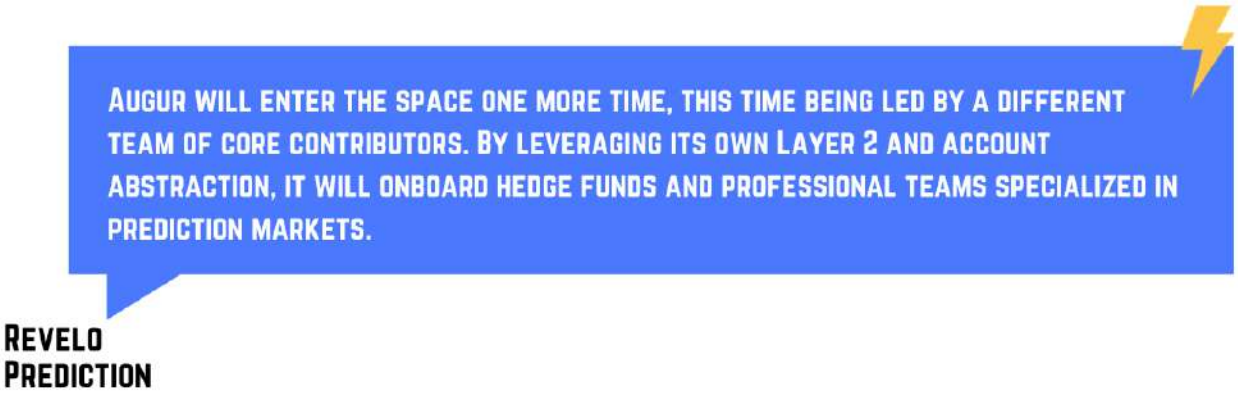
Despite these challenges, we expect prediction markets to become increasingly popular, especially among market creators and speculators. Current market conditions offer numerous

arbitrage opportunities, particularly in event prediction markets on platforms like Manifold, Kalshi, and Polymarket.

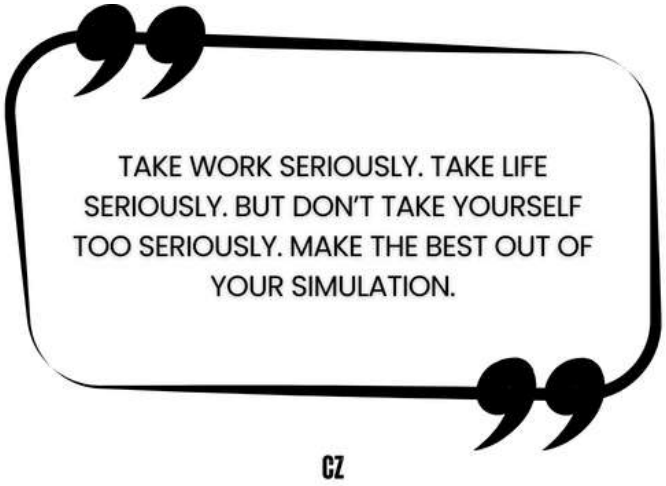
Image: Will Sam Altman Sue OpenAI??

Source: Polymarket

With the upcoming election cycle, these markets are likely to see even more activity. People often consume news for entertainment, and prediction markets can enhance this experience by adding an interactive, engaging element.



Memecoins



Memecoins, a term synonymous with tokens that derive their value from social media hype, community engagement, and speculation, have become a core component of the crypto culture.

These assets are highly speculative and typically lack fundamental utility, but they thrive on attention and trends. Even though they often lack underlying value or utility, memecoins appeal to retail investors due to their high volatility and risk. They allow traders to speculate on trends, hype, and virality, rather than project fundamentals.

It wasn't until the latter half of 2023, that we saw signs of life from the market. Until then, the market moved sideways and people got bored. But the world of crypto always finds a way to be interesting and 2023 unfolded a fascinating narrative, the rise of memecoins.

Memecoins have existed for a while now, but this year, they exploded. Surprisingly, it wasn't $DOGE that rose from the ashes, even with Elon buying X (formerly known as Twitter).

The success of $PEPE and $BITCOIN (HarryPotterObamaSonic10Inu) set a precedent, leading to a wave of new memecoins trying to emulate their meteoric rises. And, amidst a stagnant market, traders turned their attention to these memecoins, driven by the allure of high returns and previously missed opportunities. This shift in focus to memecoins reflects a broader change in market participation.

Memecoins leverage the universal language of memes, making them relatable and engaging for a wide audience. They foster strong and passionate communities centered around shared humor and interests, which is essential for building a vibrant ecosystem. Their straightforward nature makes them accessible to crypto newcomers as well, serving as an entry point into the broader crypto world.

With portfolios still reeling from previous highs, investors, both seasoned and new, are increasingly willing to engage in high-risk trades. Memecoins can act as a high-risk, high-reward investment, reflecting the popularity and user adoption of their underlying network, emphasizing the importance of community support and network effects.

Image: Qiao Wang on Dog Coins

Source: Twitter

The lure of potentially high returns from these volatile, lesser-known tokens is too tempting to ignore, especially when compared to the more modest gains from established cryptocurrencies. It's especially important to note that these memecoins have no utility and therefore, it can be inferred that buyers buy purely based on speculation of positive price action, i.e., gambling.

There exists a disconnect between some crypto VCs who view speculation as a negative aspect of crypto and crypto users, so-called degens, who embrace speculation as a fundamental part of early adoption. Even though the latter are often associated with playing the role of speculators, they are essentially early adopters of crypto. They are the risk-takers who explore unproven products and protocols.

This is extremely important because "degens" play a crucial role in battletesting various aspects of the crypto ecosystem, such as blockchains, wallets, oracles, and more. Their activities help identify vulnerabilities and drive improvements in security and scalability.

Even though we believe flipping memecoins is a zero-sum game and ultimately a race to the bottom, we also think that this short-lived narrative has taught investors a very valuable lesson: some wallets make money regardless of market conditions.

There's no conflict between the desire to engage in speculative activities and the goal of building a decentralized, open, and user-owned financial system. Both elements coexist and can contribute to the growth and development of the crypto space.

Image: Dog Coins

Source: Cointag

So, perhaps driven by overall market boredom, the landscape shifted from the dominance of CEX traders to this more diverse and speculative environment. This change highlights the importance of being an adaptive investor, or a "Chameleon Investor," who can navigate the market's volatility and unpredictability.

Fundamental analysis is still the key to finding asymmetric opportunities in the market. However, we cannot underestimate the importance of being early. Especially when it comes to the trading of memecoins.

Data indicates that a significant portion of the profit is made by investing in these memecoins early, particularly within the first two days of a token's trading. But, the strategy isn't about recklessly investing in every new token. Instead, it's about selectively identifying tokens that align with current market narratives and getting in early to capitalize on potential momentum gains.

After the rise of $PEPE and $BITCOIN, many would have thought that the memecoin season was over. However, we were all wrong. A plethora of new token launches followed trying to emulate such epic rallies, i.e., $JOE, $แค่ฉันนำ้ (Real Smurf Cat), SPX, and others.

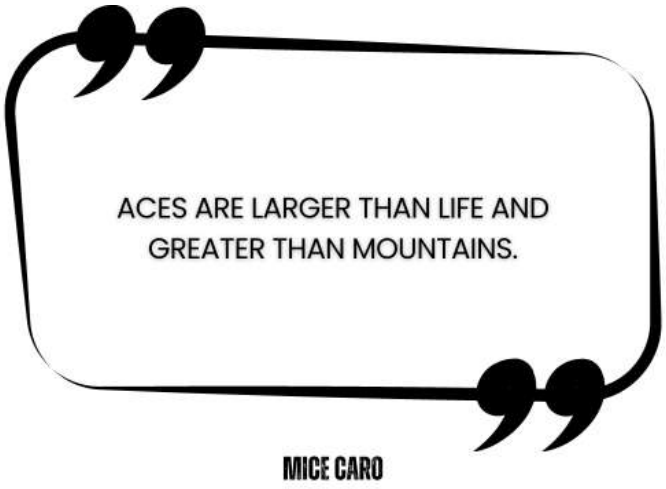
Table : Thoughts on Memecoins

Observation	Explanation
Token Prices are the Best Marketing Tool	The momentum of a token's price increase acts as a significant marketing tool in the crypto space. Notable instances, like $PEPE's surge to a 1.8 billion market cap garnered much attention and could likely trigger similar reactions for other tokens. This surge creates a FOMO effect, drawing more participants into the market, especially those who might have missed out on previous opportunities.
A Shift in Market Participation	Many who initially hesitated or missed out on early memecoin surges are now more inclined to participate, ensuring they don't miss out on new opportunities. But it's not just unsophisticated "degens" who "ape" into the latest on-chain meta. Builders, venture capitalists, and other major players are increasingly interested in on-chain activities, indicating a broader acceptance and diminishing apprehension about diving into this space.
Portfolio Dynamics	Given that many participants are significantly down from their all-time highs, there's a propensity to look for higher return opportunities even if they come with increased risk. Lesser-known tokens, despite their inherent volatility and risk, offer this potential for higher returns due to low liquidity. This inclination is further fueled by a comparative analysis for potential gains. Why settle for lower percentage gains on major tokens when one can aim for significantly higher returns with smaller tokens, especially given the limited capital at play?

We are not against the trading of memecoins. Whether for right or wrong reasons, memecoins have a unique way of attracting non-crypto natives into the crypto space due to their hype and

potential for quick gains. We just want to highlight that it is an extremely PvP environment where fast money and information asymmetry are disproportionately important. The majority of these memecoins will not become the next $DOGE or $PEPE.

The Rise of Meme Assets



Looking forward to 2024, an election year, we expect prediction markets to surge in activity, driven by global attention and the emotional energy surrounding the event. This environment is ripe for the growth of political meme assets, which offer unique advantages like unbounded upside, easy access, and fewer regulatory hurdles compared to prediction markets.

The crypto landscape has evolved significantly since the last presidential election, with memecoins and NFT collections reaching staggering 9- and 10-figure valuations. Donald Trump's presence in the crypto space through an NFT collection and associated Ethereum address can draw his supporters into the world of crypto, potentially benefiting memecoin projects related to him.

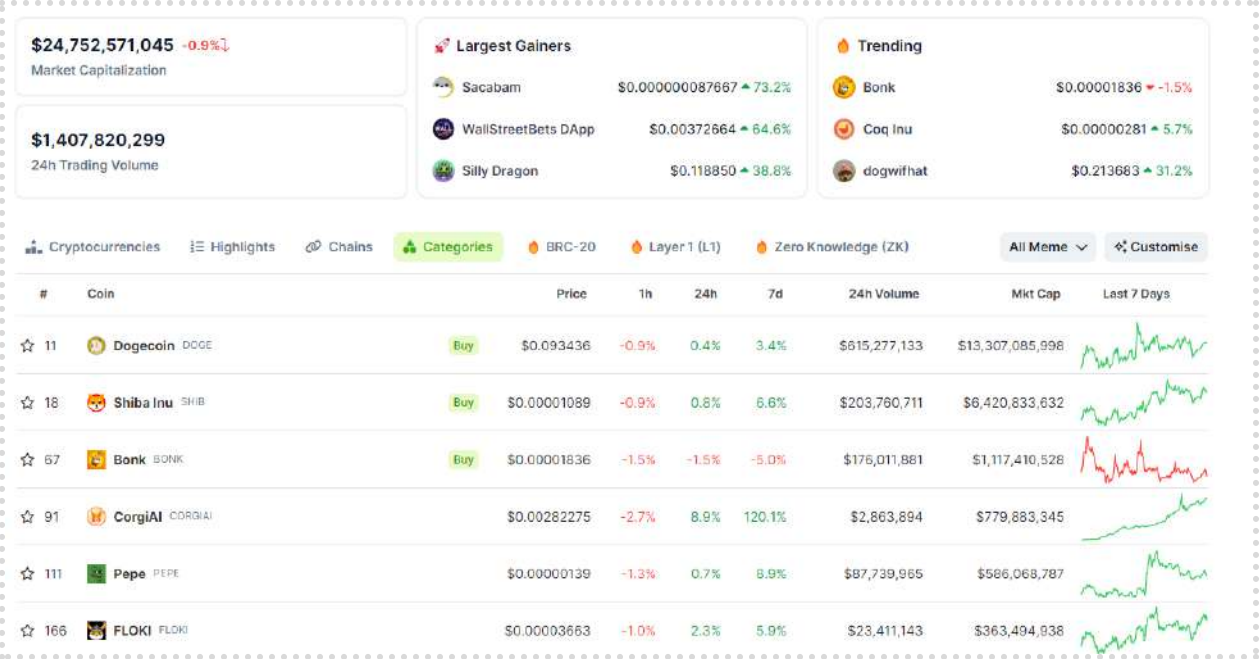
We predict that crypto will see a return of liquidity in 2024 driven by macroeconomic factors, the Bitcoin halving, and developments in ETFs. Even though we don’t anticipate a full-scale bull market, niche narratives like political meme assets can still gain traction and thrive, similar to the DeFi summer of 2020. Our belief derives from the assumption that the U.S. election cycle will attract speculative capital due to global attention and social energy around it.

These assets, often tied to cultural or political movements, can become symbols of tribal affiliations and social statements, much like the AMC and GME movements driven by anti-Wall

Street sentiment. In this context, we highlight the power of high valuations to attract attention, generate FOMO, and foster reflexivity, especially for news-driven meme assets.

Coins affiliated with crypto cults and tribes, are an interesting part of the memecoin market which has become increasingly relevant with the rise of social media, especially on Crypto X (Twitter). Social media enables (and encourages) users to gather around certain memes and foster strong communities.

Image: Memecoins on the Rise



Source: Coingecko

For example, through the usage of hashtags on X, users can raid the tweets of larger accounts by constantly spamming their replies with the project's token hashtag as a means of promotion and awareness. Communities like Telegram Groups and Discords also provide a haven that encourages and fosters the holding of tokens instead of selling, with promises of future wealth.

Dog coins, like Dogecoin, have been a staple in the crypto memecoin market for a decade and while initially created as a joke, the coin has since grown to be a market leader in the crypto memecoin market, achieving a price of $0.73 in May 2021 with a $88B market cap.

Following its precedent, new chains often introduce their own dog coins. Consider $BONK, a dog coin on Solana, which saw a ~2340% increase in price between October 21, 2023, to November 19, 2023, as a result of renewed interest and confidence in the Solana chain. Memecoins based on real-life personas or strong community affiliations also play a significant role in this market.

We think that memecoins represent a form of hope for many, offering the chance for substantial gains in a relatively short period. Despite their volatility and risks, they continue to attract attention and investment. As we look towards 2024, the U.S. election cycle is expected to fuel speculative capital, creating favorable conditions for memecoins to flourish with longer market lifespans and improved valuations.

SocialFi

SocialFi, a blend of DeFi and social media, is emerging as a narrative with real sticking potential. This new wave of social platforms is not just about sharing content; it's about building reputation, utility, entertainment, and status in the digital realm.

However, SocialFi platforms are facing a challenge with their points systems. Over time, these systems have shown diminishing returns. Top accounts are dominated by sybil farms which are fake accounts created to manipulate the system. These farms exploit the system by self-buying keys and accumulating points, which comes to the frustration of genuine users. If these issues aren't promptly addressed, real users may lose interest and the app will die.

In this context, we include identity solutions like ENS Domains and SpaceID, social graphs such as CyberConnectHQ and LensProtocol, social media platforms like Friend.tech and Stars Arena, and messaging apps like iMe, music platforms such as Audius, credentialing systems like Galxe, and tools like DeBank DeFi. Each of these applications offers unique ways to engage and interact in the crypto space.

One of the key appeals of SocialFi is its ability to serve as a reputation and signaling layer for crypto. For example, on Friend.tech, users strive to increase their public valuation or price, driven by the desire for recognition and value from others. This approach to social interaction is a departure from traditional models, where platforms often show users what they want to see.

In contrast, SocialFi platforms may deliberately vary content to keep users engaged and scrolling.

SocialFi also addresses critical issues like security, privacy, and freedom of expression. It reduces the risk of data theft and promotes uncensored communication, which is particularly valuable in regions with strict internet controls.

Image: Friend.Tech Voting

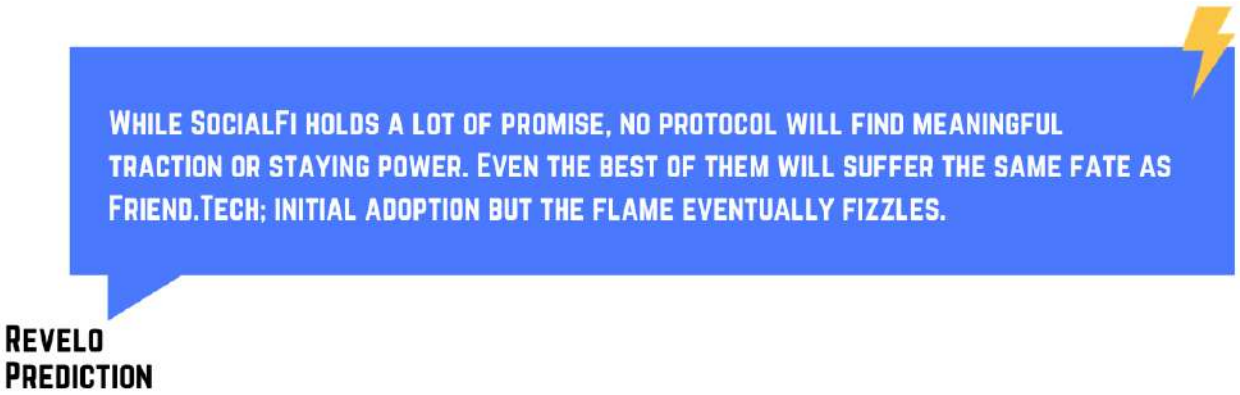
Source: Friend.Tech (Twitter)

Additionally, blockchain-based NFT technology allows content creators to secure ownership of their work, from text and images to audio and video content. The transparency of blockchain platforms, where source code is often public, help users understand the algorithms behind content delivery.

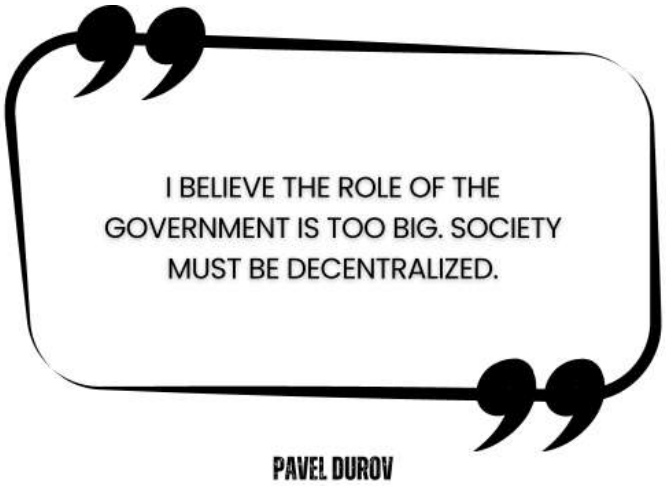
However, we believe that, despite its potential, SocialFi faces significant challenges. Scalability is a major concern, as these platforms need to handle large volumes of data efficiently. Solutions like sharding and off-chain storage are being explored.

Another big issue is the sustainability of token rewards, which are crucial for attracting users. Negative content can impact token value, posing a risk to the platform's economic model. Finding a sustainable economic model is essential for the growth and longevity of SocialFi projects, as some struggle with issues related to token ownership and sustainability.

It should be noted that Friend.Tech, which launched in the summer, vaulted to the top 20 protocols in fees for the year - over $50M in fees. This demonstrates the opportunity available to those who can generate traction and hype, especially in the growing and relatively nascent SocialFi sub-sector.



Decentralized Social



Centralized social networks, while currently the accepted norm, are increasingly facing challenges that have sparked interest in decentralized alternatives. These challenges include data monopolies, where a few companies control vast amounts of user data; attention-driven algorithms that prioritize engagement over user well-being; and increasing censorship, which limits free expression.

These issues have led to a growing desire for new kinds of social networks that offer more control and freedom to users. The crypto community, with its unique personalities and characteristics, is particularly well-suited to be the early adopters of these decentralized social networks.

This community is known for its positive-sum mentality, where success is seen as mutually beneficial rather than competitive. It also has a strong meme culture that drives engagement and spreads ideas quickly. Additionally, the community's expertise in blockchain technology and focus on building internet-native institutions make it an ideal testing ground for decentralized social networks.

These networks can utilize the inherent capabilities of blockchain technology, such as NFTs for unique digital ownership, zero-knowledge proofs for privacy, anonymity features, and on-chain awareness to enhance interactions within the crypto community. These features can elevate

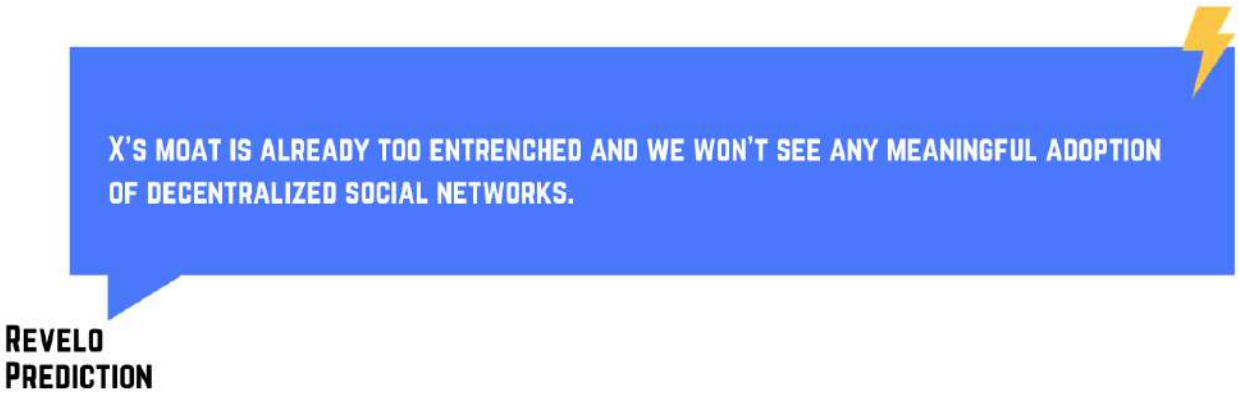
the status and quality of interactions on these platforms, making them more appealing and functional for users.

Image: 0xDarya on Farcaster

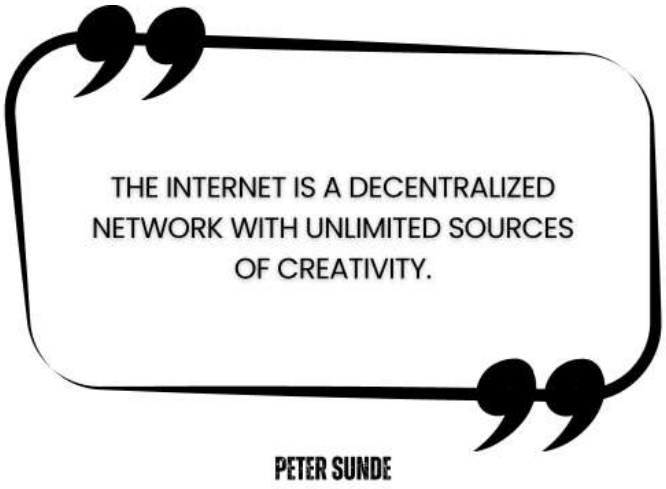
Source: 0xDarya (Twitter)

However, there are still several questions that need to be addressed for these decentralized networks to reach their full potential. These include finding the right balance between being a product and a protocol, determining the degree of decentralization that is both practical and desirable, and establishing business models that are sustainable and align with the ethos of decentralization.

Despite these challenges, we are confident in the crypto community's collective ability to pioneer the adoption of decentralized social networks. The community is home to principled leaders who are actively developing innovative products and protocols. This positions the crypto community as a compelling early-adopter group, capable of shaping the future of social networking in the decentralized space.



Redefining On-Chain Advertising



One of the latest interventions by Elon Musk showed skepticism towards advertisers on X, most of which are already withdrawing from the social network. In fact, advertising has long been a contentious issue in the digital world, as it is often associated with data exploitation and intrusive targeting.

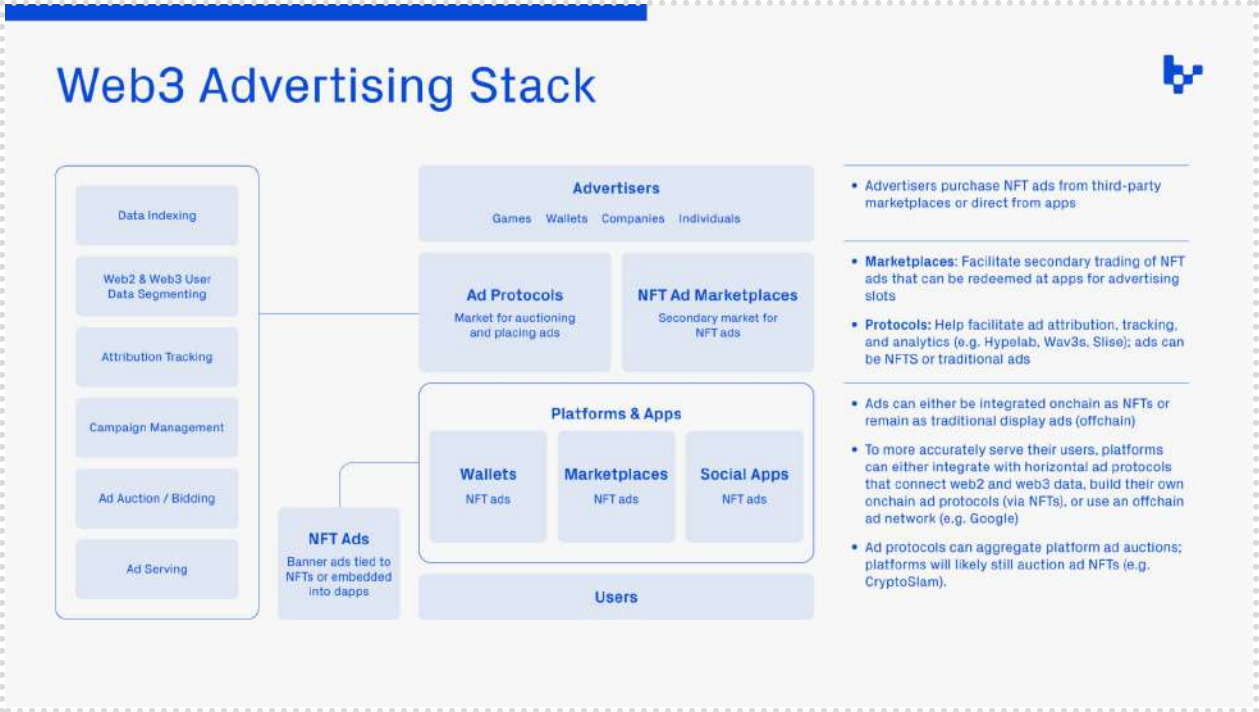
Web3 offers unique advantages and opportunities for new business models to emerge. The transparency and open nature of Web provides a more user-centric approach, potentially allowing protocols and projects to target new users based on their on-chain activity.

For this reason, one should not underestimate the potential of protocols like Lens or Debank's latest Layer 2 initiatives. The use cases of social networks in Web3 go beyond the ability to migrate social graphs and might give birth to a fresh perspective on advertising.

Traditionally, the crypto industry has been cautious about embracing advertising as a business model. This hesitance is partly due to the negative connotations associated with advertising in the broader internet ecosystem, where user data is commodified and used to deliver hyper-targeted ads. Additionally, smaller content creators have struggled to generate stable income through ads, relying instead on subscription-based models.

However, advertising remains a powerful monetization model, aligning broad product distribution with revenue generation. Leading web2 platforms such as social networks and search engines rely on ads to subsidize their services, and top content creators often prefer ads over subscriptions.

Image: Web3 Advertising Stack



Source: Variant Fund

For crypto, it is just a matter of time until we start seeing on-chain ads. We have started to see the first signs with NFT ads and on-chain affiliate programs. These programs are highly valuable, since NFT ads can also create secondary markets, becoming valuable assets with ongoing royalty revenue. Moreover, affiliate programs can leverage on-chain referral links, dynamically rewarding referrers and combining off-chain data with on-chain actions.

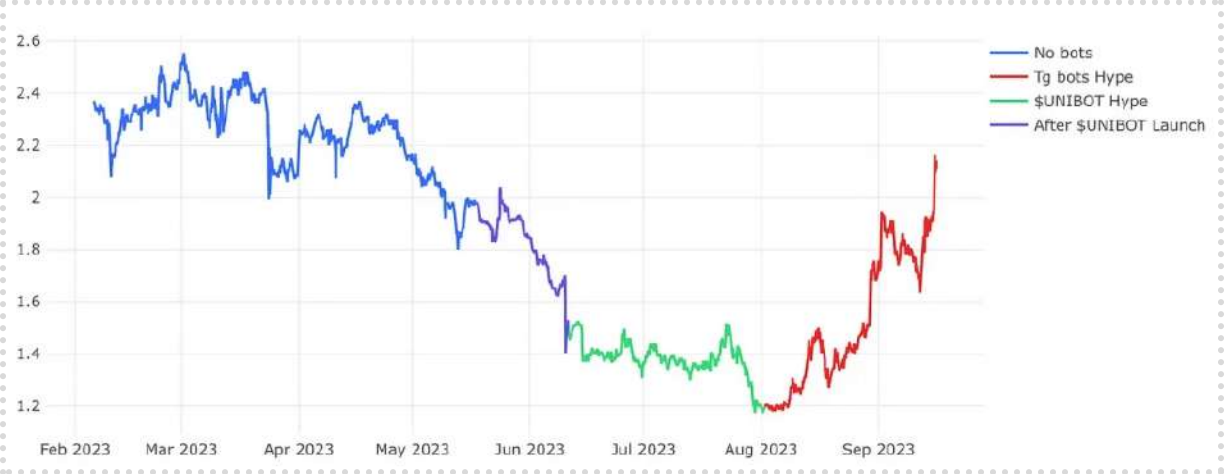
Furthermore, we know from experience that crypto is an “attention economy”, and tokens can play a pivotal role in curating attention assets on a platform, including homepage content, storefronts, and NFT drops.

One example of this are SuperRare or T2.world, which utilize tokens for curation purposes. This can lead to liquid advertising forms with revenue-sharing benefits for token holders. As it pertains to on-chain advertising, there remains to be many unanswered questions, but we believe that it's increasingly important to keep an eye on the early adopters of new distribution models.

The Rise of Telegram Bots

In an ever-rising PvP environment, it's important to not only be selective but also early. Particularly in the memecoin arena, you need to get and process information quickly in order to make rapid decisions. Telegram bots have emerged as a solution to this problem, offering a convenient way to trade memecoins from your smartphone.

Image: Correlation Between Telegram Bot Activity and $TON price



Source: Revelo Intel

There's a lot of friction when aping into the latest trendy "shitcoin", such as manual slippage adjustments, price impact warnings, and slow wallet UIs. In this context, Telegram bots have become essential in the growing narrative of "the gamification of on-chain trading".

This gamification isn't just a novel idea, but a strategic shift towards enhancing user engagement and optimizing the trading experience. But, beyond just executing trades, these bots bridge the gap between the complex nature of token trading and shaky end-user experience by simplifying the trading process and providing instant data visualization and streamlined token purchases.

Image: Crypto Rodrick on OmniBotX

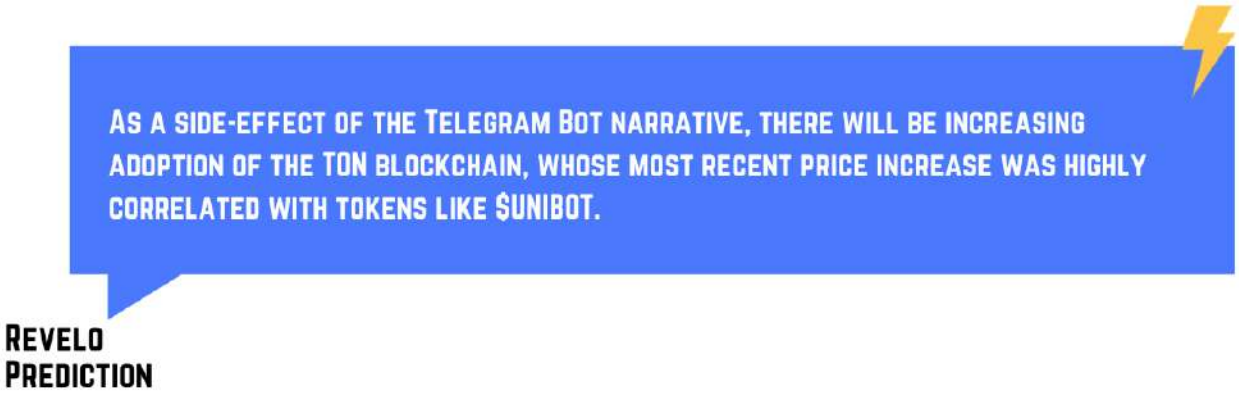
Source: Crypto Rodrick (Twitter)

The rise of Telegram bots represents a significant shift in the trading landscape, transforming it into a more engaging and game-like experience. This gamification of trading not only makes it more enjoyable but also encourage higher trading volumes, as traders use these bots like weapons in a video game.

However, the appeal of these bots goes beyond just simplifying trading. They offer features like custom news feed alerts, the ability to detect and act on asset listings across exchanges, copy-trading sports betting tipsters, and even creating and trading in prediction markets for political events.

Despite their potential to simplify user adoption, these bots remain a niche market with a limited total addressable market (TAM) that is willing to accept predatory fees for convenience. Recognizing this, some projects that began as Telegram bots are now expanding into desktop trading terminals, like Unibot's launch of Unibot X, to diversify their revenue sources.

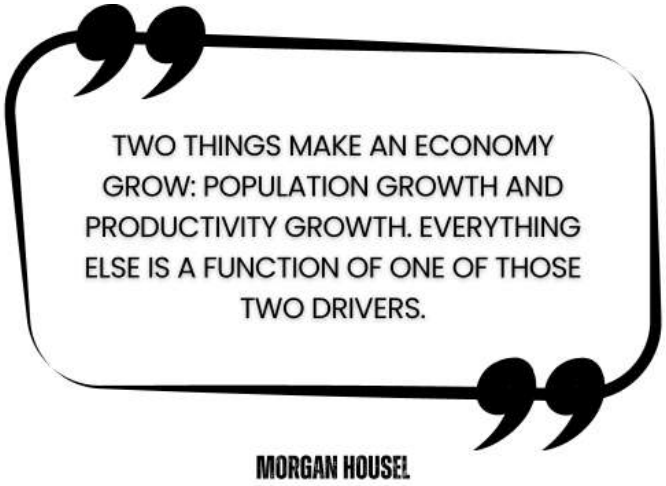
We believe that the future of on-chain trading is leaning towards free-to-use trading bots integrated into popular messaging apps, offering a user-friendly and efficient alternative to traditional trading methods.



AIRDROPS TO RICHES

Section 16

AIRDROPS TO RICHES



In 2023, the crypto world witnessed several impactful airdrops, each contributing uniquely to technology and community engagement.

On February 14, Blur made waves with its first airdrop, distributing $450M worth of $BLUR tokens. At the time of the airdrop, the largest farmers received airdrops worth up to approximately $2.8M. Eligibility was based on NFT trading volume on the exchange, rewarding the most active traders with the largest share.

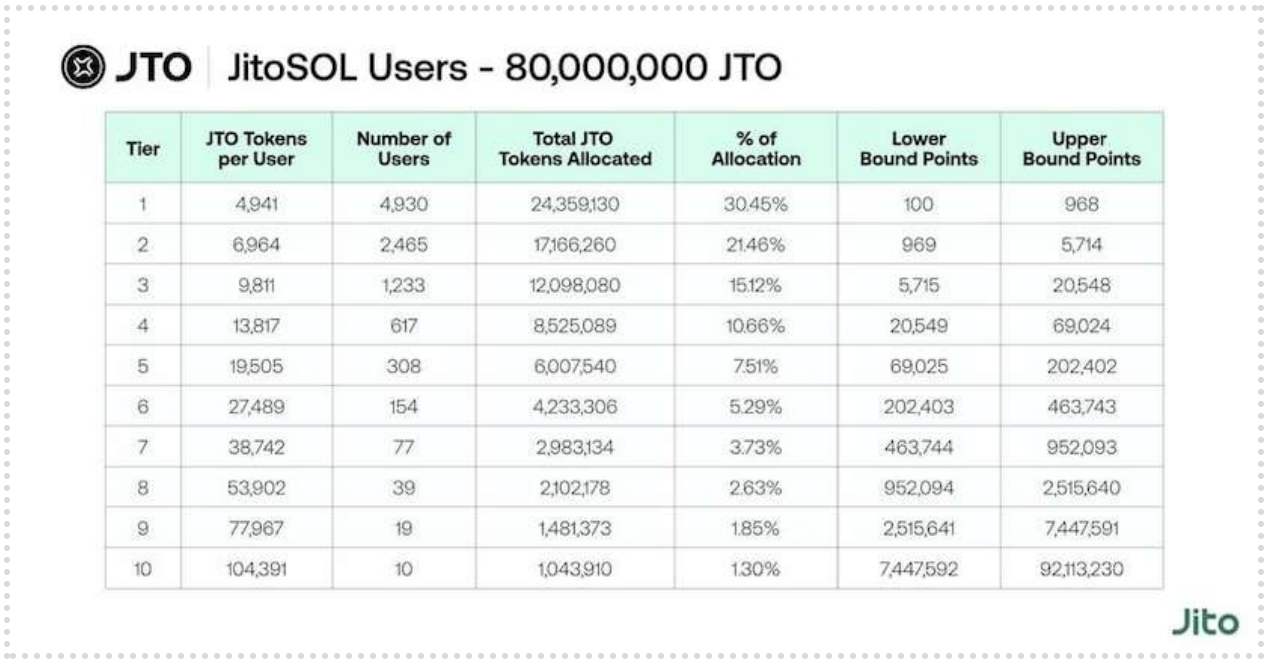
On March 23, Arbitrum launched its native token, $ARB, marking its transition into a DAO. Through their airdrop, they distributed a total of 1.162B $ARB, to users; a total of 623k wallets were eligible. Eligibility was based on a points system oriented around various activities, i.e., providing liquidity, conducting transactions, bridging, etc., on Arbitrum.

On July 18, Arkham Intelligence, a blockchain analytics service, made its mark with a 30M $ARKM token airdrop. Over 60,000 users claimed the $ARKM token, and the average airdrop amounted to $285. The airdrop was especially lucrative as it was cost-free for participants, who earned $100 or more for simply referring and promoting new signups.

On October 31, Celestia airdropped 60M $TIA tokens to 580,000 users. $TIA was airdropped to active users on Ethereum Layer 2s, stakers on Cosmos Hub and Osmosis, and crypto developers.

On December 7, Jito, a major LST provider on Solana, launched a substantial airdrop campaign. 90M $JTO tokens were able to be claimed by 10,000 early users of their platform. To be eligible, users only needed to deposit $40 worth of $SOL into Jito to convert it to $JitoSOL. It should also be noted that Jito implemented a tiered points system, a model we anticipate will be adopted in the future.

Image: Jito's Tiered Point System

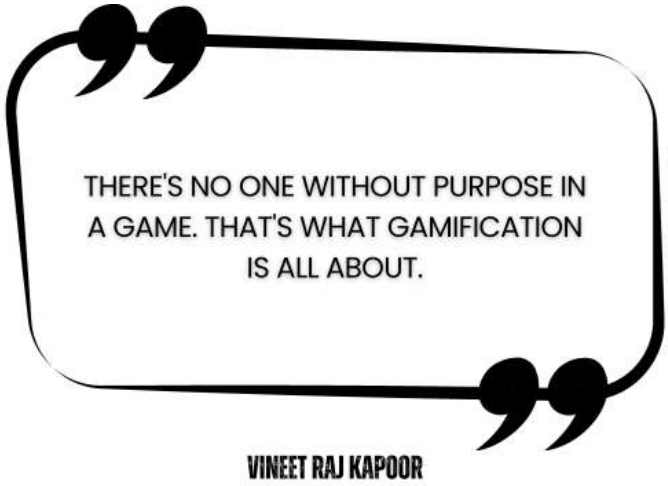


Tier	JTO Tokens per User	Number of Users	Total JTO Tokens Allocated	% of Allocation	Lower Bound Points	Upper Bound Points
1	4,941	4,930	24,359,130	30.45%	100	968
2	6,964	2,465	17,166,260	21.46%	969	5,714
3	9,811	1,233	12,098,080	15.12%	5,715	20,548
4	13,817	617	8,525,089	10.66%	20,549	69,024
5	19,505	308	6,007,540	7.51%	69,025	202,402
6	27,489	154	4,233,306	5.29%	202,403	463,743
7	38,742	77	2,983,134	3.73%	463,744	952,093
8	53,902	39	2,102,178	2.63%	952,094	2,515,640
9	77,967	19	1,481,373	1.85%	2,515,641	7,447,591
10	104,391	10	1,043,910	1.30%	7,447,592	92,113,230

Source: The Defiant (Blog)

Finally, the Solana Saga Phone, integrating Solana's blockchain technology, saw increased sales due to an airdrop of 30M $BONK tokens for each new owner. This airdrop created an attractive arbitrage opportunity, as the token value often surpassed the phone's cost, enhancing engagement with Solana's blockchain ecosystem.

From Tokens to... Points



Many protocols, especially those in gambling and social applications, are now adopting point-based systems. These systems award users with points instead of tokens through airdrops, often distributed seasonally. This surge of loyalty points and rewards programs is reminiscent of the early days of DeFi liquidity mining.

Much like the early days of DeFi on Ethereum, where liquidity providers chased high-yield opportunities, today's crypto projects are luring users with similar loyalty points and rewards programs. These programs offer rewards for actions like staking, providing liquidity, or simply engaging with the platform.

For users, the strategy to benefit from these programs is to get involved early. When these point programs are newly launched, they often fly under the radar, presenting an opportunity to accumulate points at a lower cost.

For instance, in the early stages of Hyperliquid, users could earn points more easily before the platform's TVL doubled and the cost of acquiring points increased significantly. The same can be said about FriendTech, where most of the points were earned in the early stages, before widespread adoption.

The flexibility of these point systems allows the teams behind them to adapt to changes in market conditions effectively. The takeaway is clear: when innovative, tokenless protocols release rewards programs, it's advantageous to park your free liquidity early on.

By doing so, you can efficiently farm points while the market is still unaware or underestimating the opportunity. However, users should always be mindful of the risks involved, including smart contract vulnerabilities, as no investment is completely without risk.

A shift in focus from skill-based to luck-based activities in crypto gaming and social applications is raising concerns. This change downplays the role of skill and expertise, potentially attracting a less financially savvy user base.

Image: Hsaka on Airdropped “Points”

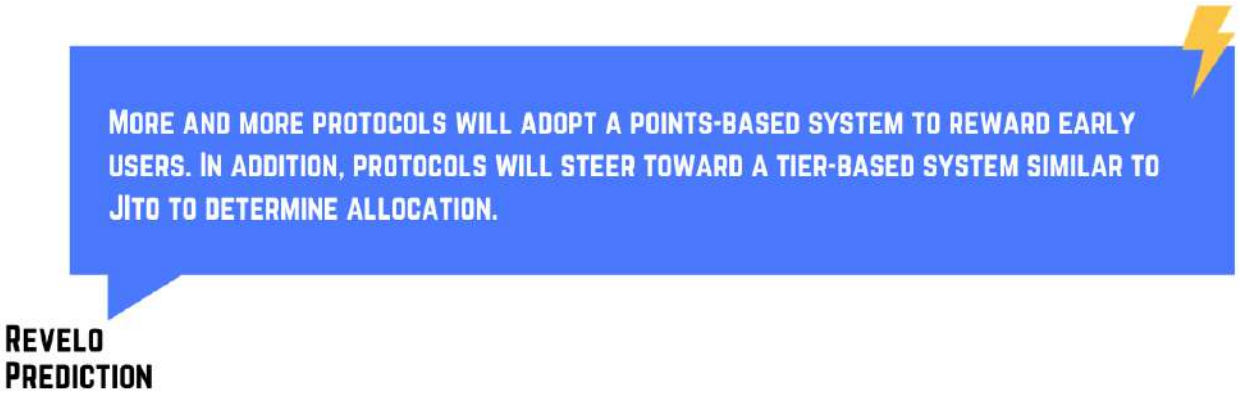
Source: Hsaka (Twitter)

Additionally, the crypto space is often dominated by aggressive marketing tactics from venture funds and influencers, overshadowing smaller, independent projects. High fees or 'rakes' charged by some crypto games can also deter skilled players.

Despite the intelligence and good intentions of many fund managers and founders in the crypto space, their decision-making is often swayed by market trends and majority behavior, leading to a herd mentality. A more balanced approach, considering both market trends and the unique aspects of each project, is needed.

We think the points-based system has its advantages, incentivizing users before a token launch, providing retroactive rewards based on point performance, and driving engagement through speculation. However, there are trade-offs, including user uncertainty, reduced appeal

compared to direct token rewards, and the potential for diminished interest during bull markets.



Anticipated Airdrops in 2024

2023 proved to be a lucrative year for airdrop hunters, and 2024 might shape up to offer the same. Of course, as no one can know for sure if token-less ecosystems and protocols actually launch tokens. And when they do, whether or not they will distribute some to their early supporters.

Even if they decide to issue airdrops, we can't know for certain what the eligibility criteria are. But we believe that using the eligibility criteria for Arbitrum's airdrop is a great place to start. We've learned in the past that volume and frequency matter.

That being said, there's always room for speculation... isn't that part of the fun? Here are protocols who have either confirmed or are good candidates for an airdrop this coming year.

Table: Protocols That Have Confirmed or Are Good Candidates For an Airdrops in 2024

Protocol	Description
LayerZero	An omnichain interoperability protocol, has announced that its token airdrop is planned for the first half of 2024, targeting early adopters active on LayerZero integrated dapps like Stargate and Radiant Capital.
Starknet	A Layer 2 Ethereum scaling network, plans to distribute over 1.8 billion $STRK tokens to its community, with 900 million allocated to reward past and future contributions. Eligibility is likely to be based on activity on the chain before a yet-to-be-announced snapshot date.
Jupiter	The Solana-based DeFi aggregator, is set to launch its airdrop in January, 2024, allocating 40% of the 10 billion $JUP tokens to community members. Eligibility is based on trading volume and activity on the exchange, with earlier users receiving a bonus.
Scroll	A Layer 2 Ethereum network which extends Ethereum's capabilities through zero-knowledge tech and EVM compatibility, is likely to reward users active on the chain, especially those regularly engaging with dApps, in its airdrop in 2024.
Linea	A zk-rollup offering full EVM equivalence, is likely to favor users with regular activity on the chain and its dApps for its airdrop.

Ambient Finance	A DEX protocol, is likely to airdrop to wallets showing regular activity on its platform, emphasizing its unique AMM approach.
Satori	A derivatives platform built on Polygon zkEVM, zkSync, and Scroll, is likely to include users who demonstrate regular activity and open delta-neutral positions across different chains in its airdrop.
Aevo	A high-performance derivatives platform, is likely to airdrop to users actively trading perps and options on its platform.
Tensor	The NFT Marketplace on Solana, will reward users' activity like bidding, trading, and listing with points, which will be converted to tokens at the time of its token launch.
Wormhole	A generic message passing protocol enabling blockchain communication, is likely to base its airdrop on user activity on dApps integrating Wormhole and bridging activities through the protocol.
EigenLayer	A protocol built on Ethereum that introduces restaking, is likely to base its airdrop on the amount of $ETH or LST restaked through EigenLayer's partnered protocols, focusing on users extending crypto economic security to additional applications.

DAOS AND GOVERNANCE

Section 17

DAOS AND GOVERNANCE

There's a growing realization that governance models need to evolve. The traditional "one token, one vote" system is increasingly seen as inadequate, especially for large and influential projects like Lido. In Lido's case, $LDO is the governance token and is used to vote on the decisions of the DAO.

As discussed several times in this report and also as widely known, Lido has become so dominant and its decisions can significantly affect Ethereum. Therefore, not just $LDO token holders, but also those who stake their ETH (holders of stETH) should have a say in the DAO's decisions, as they are the ones risking their capital.

A promising solution is the dual-token governance model, which combines liquid tokens and non-transferable Soulbound Tokens (SBTs) or Badges. This model will increasingly be adopted by DAOs and aims to enhance governance efficiency, stakeholder engagement, and protocol resilience.

SBTs, being non-transferable, add a layer of protection against exploitative voting practices and help maintain the integrity of governance. They can be earned through contributions over time, ensuring that voting rights are less influenced by short-term market fluctuations.

To incentivize active contributors, DAOs could offer a mix of liquid tokens for immediate liquidity and SBTs for governance participation. This balances immediate personal financial needs with long-term engagement in the DAO. Additionally, adaptive inflation or deflation mechanisms could be implemented, where the parameters are adjusted based on individual contributions and life cycles.

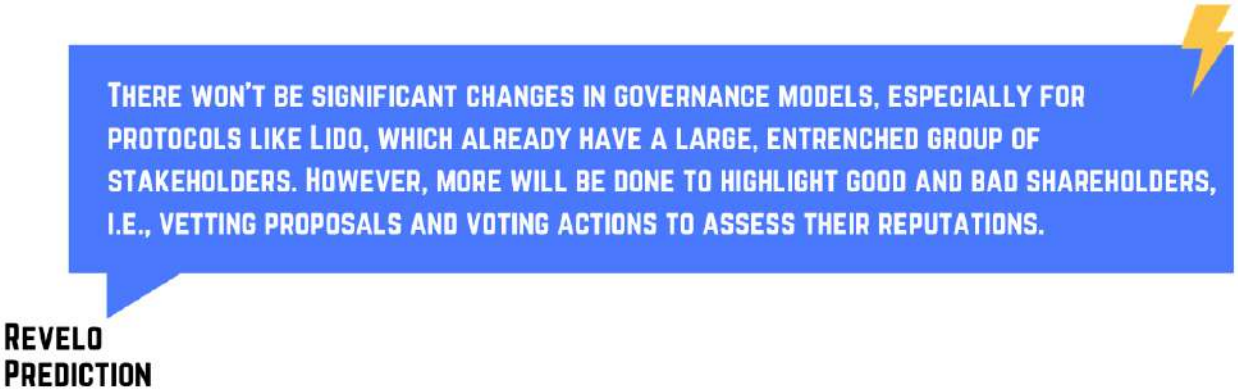
Image: DeFi Made Here on DAO Funding

Source - DeFi Made Here (Twitter)

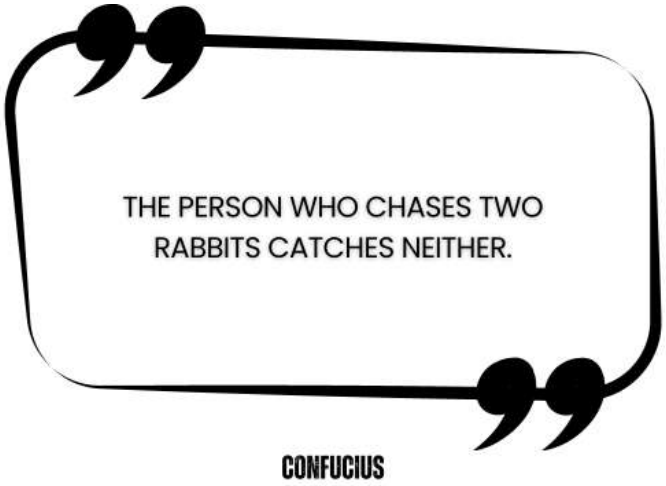
We think that DAOs should experiment more with interactive and gamified governance models. For example, SBTs could enable decentralized roles and access, making participation

in governance more engaging. These tokens could be integrated with off-chain tools like Snapshot or even within platforms like Discord, offering a seamless governance experience.

In the long run, regardless of the approach, these innovations in governance models should address the principal-agent problem, improve stability, and make participation more meaningful and engaging for all stakeholders involved.



DAOs And The Illusion Of Control



The DAO landscape is evolving rapidly, bringing to light both the potential and the challenges they present. Currently, DAO treasuries manage over $20B, even during a bear market.

It's important to monitor these treasuries, especially those heavily reliant on their own tokens. Keeping an eye on their $ETH and stablecoin holdings provides a clearer picture of their financial health and how long they can sustain operations.

For larger protocols, we expect to see more DAOs adopt Maker's roadmap of dividing work into specialized SubDAOs. Smaller protocols, on the other hand, might increase the use of task-based work, compensating contributors for specific tasks or projects. This could involve a mix of fixed and variable compensation, depending on their performance over a set period, like monthly or quarterly.

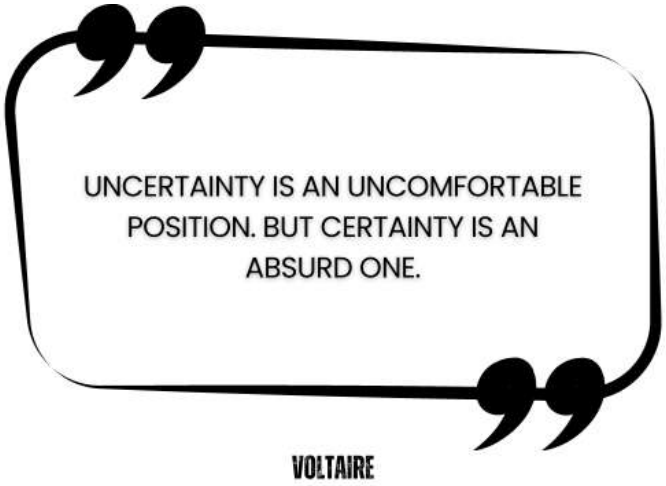
What we've seen time and again is the conflict of interest that can arise when token and equity rounds are conducted separately. A prime example is Uniswap Labs, which implemented a fee switch on their interface but chose not to share revenue with $UNI token holders.

This situation highlights the need for alignment between the interests of tokenholders and shareholders to ensure fair and sustainable growth for all parties involved in a DAO.

Table: Important Factors All DAOs Should Consider

Factor	Explanation
Legal Liability	One of the fundamental issues plaguing DAOs is the lack of recognition as legal entities. This leaves individual members vulnerable to legal repercussions, even when decisions are made democratically. The recent SEC case against LBRY DAO underscores this vulnerability.
Developer Responsibility	Developers who create smart contracts are finding themselves in precarious positions, potentially facing legal consequences for actions taken by others using their protocols. This blurred line between development and usage has far-reaching implications.
Taxation and Treasury Management	Managing a DAO's treasury can lead to significant tax burdens for those who seeded it. The complexities of collective investment schemes and native tokens add further layers of uncertainty.
Competitive Dynamics	While some DAOs embrace decentralization, others adopt more traditional company models, potentially gaining a competitive edge.
Ethical Considerations	The use of public influence, psychological warfare, and manipulation within DAOs raises ethical concerns. While activism can hold projects accountable, it must be conducted transparently and ethically to maintain trust in the ecosystem.

On-Chain Vote Buying And Dark DAOs



Blockchain technology, known for its transparency and security, has been considered for online voting. Its smart contracts could enable elections to be conducted on the blockchain, eliminating the need for traditional election authorities. However, there are significant challenges to this approach.

One major issue is the emergence of Dark DAOs and the potential for vote buying. This suggests that blockchain-based voting systems are susceptible to manipulation by powerful entities, which goes against the aim of decentralized and fair decision-making. Blockchains that utilize on-chain voting such as EOS and Tezos are vulnerable to certain vote buying attacks.

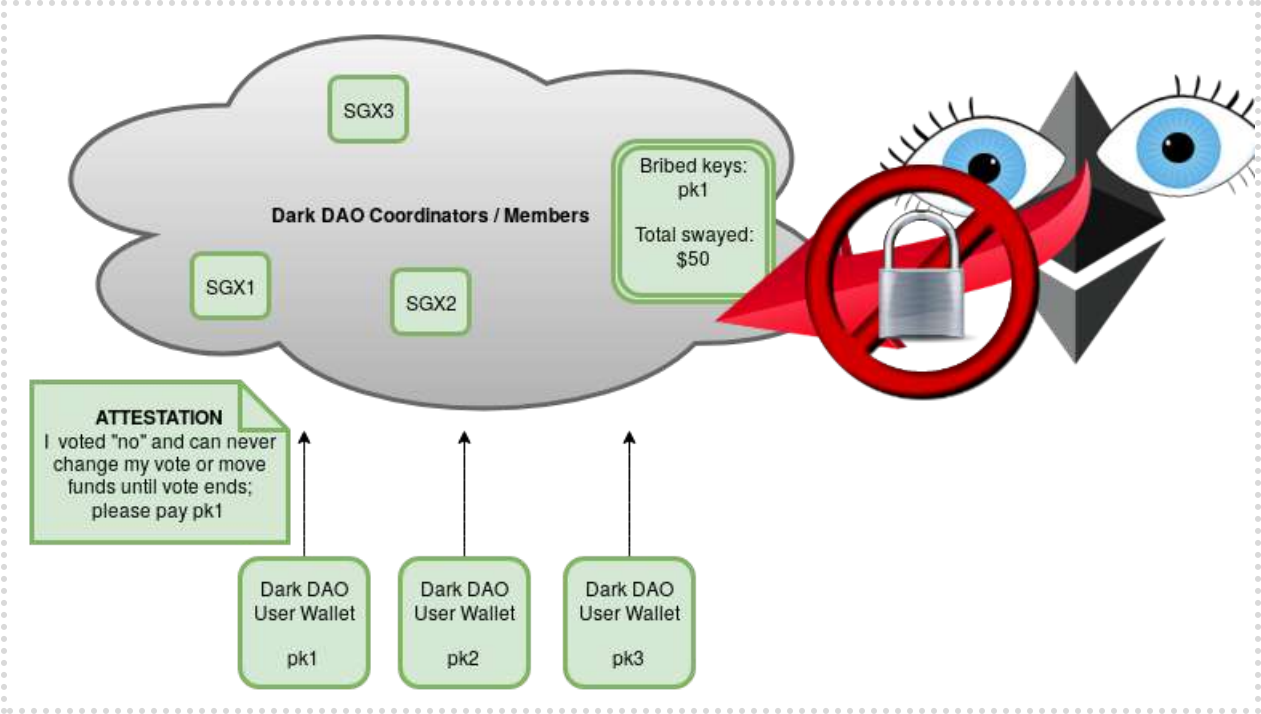
Image: DAOscope on Dark DAOs

Source: DAOscope (Twitter)

Dark DAOs and similar types of attacks don't just threaten voting systems; they could also exploit identity systems, basic income programs, and credit checks. A dark DAO works by essentially dominating voter participation, which is disconcerting since many of these votes suffer from low turnout.

A fundamental problem with on-chain voting is its tendency to become a plutocracy, where the wealthy have more control. This happens because blockchain voting lacks traditional safeguards like secret ballots and identity verification. Even with external identity systems, the issue persists if users can create their own keys.

Image: Basic Dark DAO

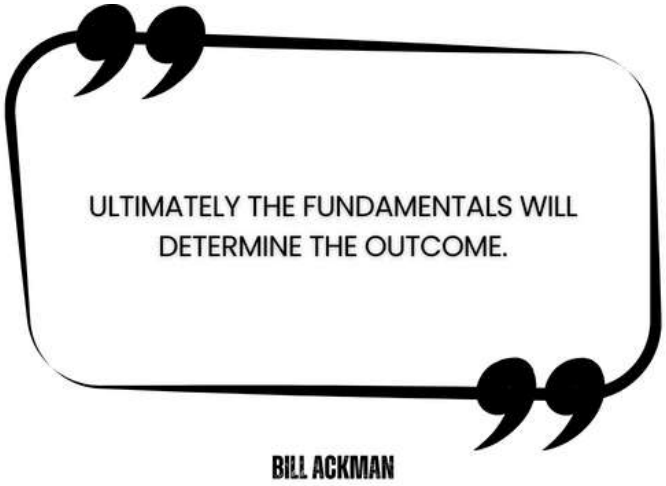


Source: Hackers, Distributed (Blog)

An alternative to this is the hard fork-based governance model as this gives users the power to choose whether to accept changes in the rules, offering an escape from a plutocratic system. Another concern is the interaction of multiple blockchains, which can disrupt the stability and predictability of the entire blockchain ecosystem. This interaction can affect the incentive structures of all chains involved.

Given these challenges, we're skeptical as to the outcomes of on-chain voting and suggest that the blockchain might be better suited for signaling intentions rather than making binding decisions. To protect against potential abuses, we believe that there requires a variety of voting mechanisms and safeguards.

Enter The World of RFV



This year, we've witnessed multiple events where communities of token holders have united to dismantle decentralized protocols, redistributing the protocol's treasury among themselves.

Every protocol whose treasury value is greater than their token's market cap has been prone to suffering from this kind of coordinated "governance attack". The scandal of the Aragon DAO was the most notable example, but it's far from isolated, with similar situations occurring in Invictus DAO, Rome DAO, Fei Protocol, Nouns DAO, and Balance Capital.

Image: Aragon on RFV Raiders' Attack on $ANT

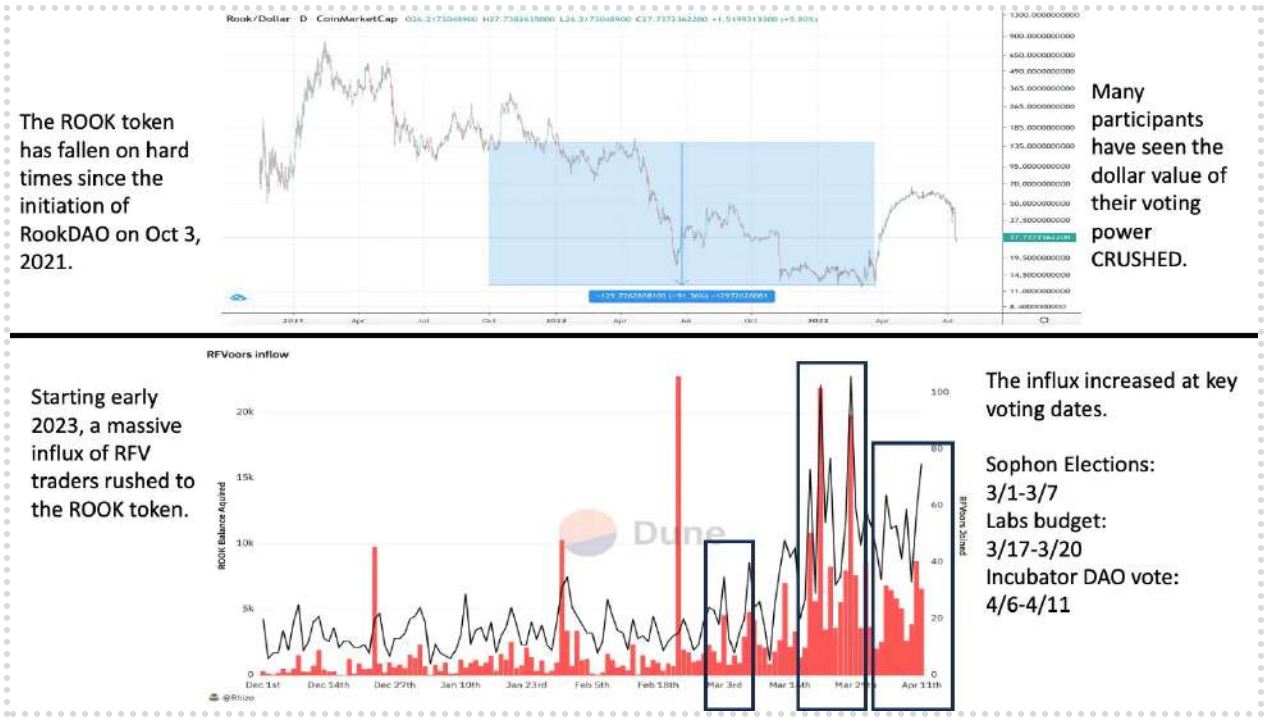
Source: Aragon (Twitter)

The "Risk-Free Value Raiders" (RFV) is a group of sophisticated, well-resourced and coordinated investors that identify opportunities in the market to make money with little to no

risk, regardless of the implications for the underlying DAO. There RFV groups pose a significant threat to DeFi projects, particularly those with substantial treasuries largely consisting of stablecoins or blue-chips like $BTC and ETH.

Therefore, projects embracing radical transparency and decentralization are prime targets for such governance attacks. The more transparent a project's treasury and operations, the more susceptible it becomes to the predatory actions of these groups.

Image: Governance Takeover... $ROOK



Source: [rhizoo.eth (Mirror)]

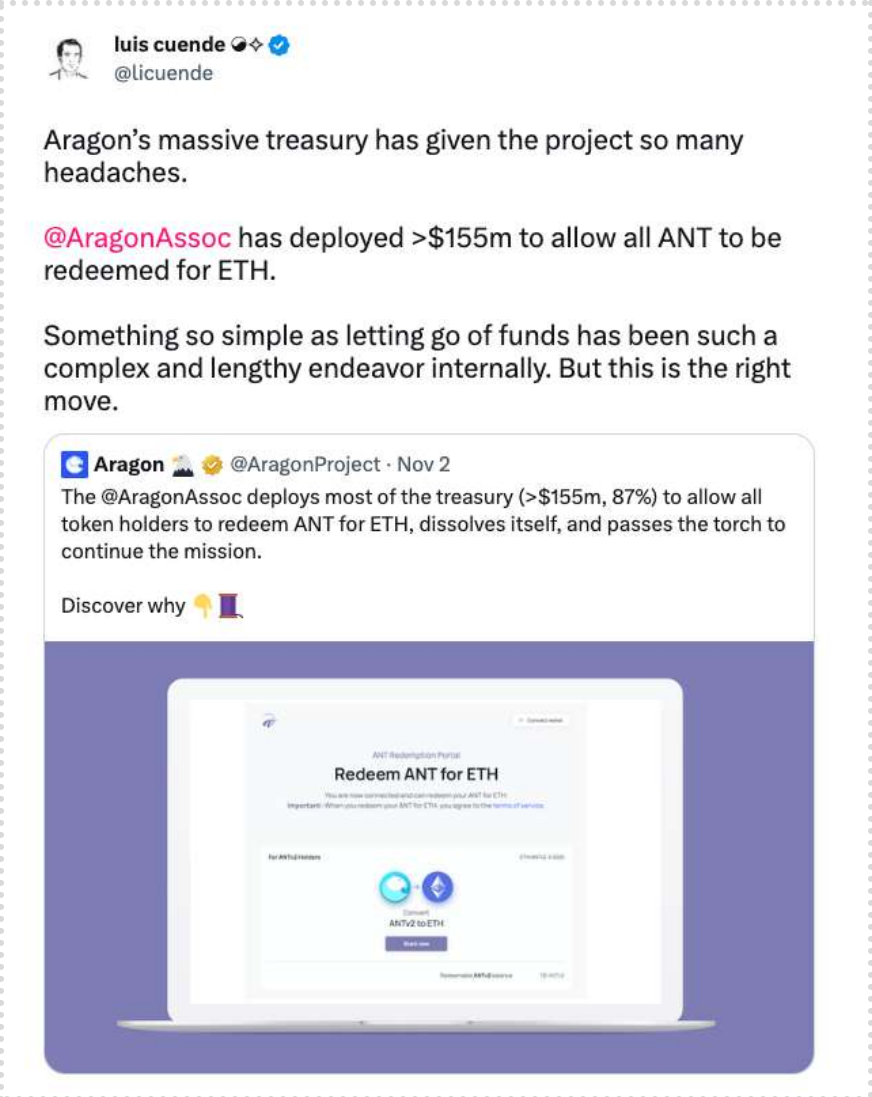
Earlier this year, Avraham Eisenberg was arrested for his involvement in the [Mango DAO exploit] and this highlights the legal ramifications associated with such activities. This incident has raised awareness among DeFi participants about potential legal consequences.

Moving forward, we believe that DeFi projects will learn from past examples and reevaluate their approach to decentralization. While it may take longer than token holders expect to achieve full decentralization, this shift will strengthen governance mechanisms and ensure the security and resilience of the projects against such predatory attacks.

That being said, DAOs themselves must bear some culpability as well. Indicators such as irrational spending by DAOs, consistent delays in project execution, and lackluster communication often signal mismanagement of decentralized treasuries.

The disconnect between token prices and the long-term prospects of projects points to flawed or broken incentive structures that need to be corrected in a timely manner.

Image: Luis Cuende on Aragon's "Massive Treasury"



Source: Luis Cuende (Twitter)

This is why we don't blindly condemn these groups, i.e., in the event that their actions correlate to activism. The actions of these RFV groups, while chiefly predatory, can also be a necessary evil for the long-term health of the industry to hold projects accountable

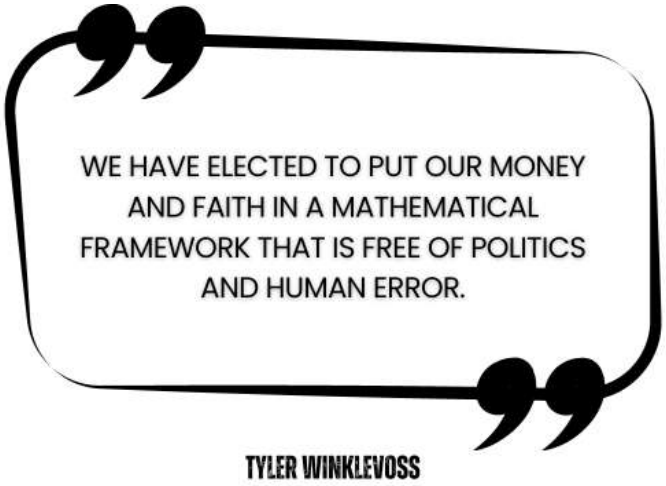
Notably, the Aragon Association, a Swiss non-profit organization managing Aragon DAO, made a decision to allow holders of its $ANT tokens to redeem them for a share of the DAO's treasury.

This move by Aragon is a departure from typical 'rage quit' scenarios, as it effectively returned more funds to token holders than it originally took. To put this into perspective, over the course of its six-year operation since its 2017 initial coin offering, Aragon has successfully grown its treasury from an initial $25M to $166M.

In the end, RFV is part value-investing and part activist-investing. This entails a very important skill to leverage in crypto, since those investors have the ability to advise the better management of unused capital in the hands of poorly managed DAOs. This is not necessarily a bad thing for the industry, and the advent of these groups will actually play a key role in helping the industry to mature.

At the end of the day, RFV "hunting" requires sophistication and knowledge and average DeFi users likely can't participate. However, it can be lucrative to do so. Users should look for projects that survive bear markets with their treasuries intact, and have since grown significantly due to market price action. Then look for outdated goals or utility, as this may present RFV opportunities in winding them down.

Free Money or Decentralized Ownership



The future of token distribution is set to evolve from simple airdrops to more intricate, multi-tiered systems. These advanced frameworks will likely include non-transferable tokens and other mechanisms, aiming to achieve true decentralization while addressing challenges like Sybil attacks and governance exploitation.

Ultimately, tokens are meant to be more than just assets with monetary value. They are also meant to be tools for the gradual transfer of control of a protocol to its most engaged and long-term committed users. From this perspective, tokens should be seen as instruments of governance and engagement.

For protocols, airdrops are an initial step towards decentralization. By broadly distributing tokens, they prevent concentration of control and reduce the risk of 51% attacks. However, the bear market has taught teams the importance of differentiating between the entity and the protocol to avoid conflicts of interest between token holders and equity holders.

This separation is crucial to avoid endless debates and confusion, as seen in cases like the Uniswap fee switch.

The emerging model of progressive ownership aligns users with a project's long-term success by gradually increasing their economic stake. This model incentivizes users with a share of

revenue, which can be exchanged for ownership tokens. Users have the flexibility to transition between income and ownership, adjusting to their risk tolerance and level of engagement.

Table: Historical Token Distribution Models

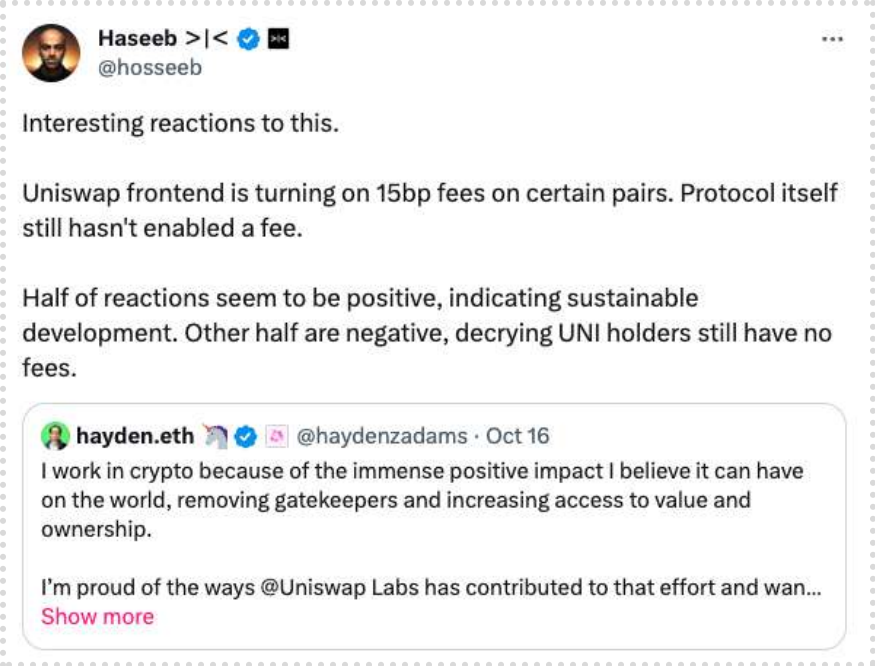
Model	Description
Proof of Work (PoW) Mining	This model rewarded users with tokens like $BTC for contributing computational power. While it increased miners' commitment, it limited participation from ordinary users due to the need for specialized hardware.
Initial Coin Offerings (ICOs)	ICOs enabled projects to raise capital by selling tokens directly to users. This method attracted investors and speculators but also led to regulatory issues and instances of fraud.
Airdrops	Tokens were distributed based on historical usage rather than monetary investment, focusing more on user-centricity. However, this often resulted in users treating tokens as income, attracting short-term, incentive-driven participants.

We think that moving forward, rather than fixating on how their tokens are distributed, projects should focus on developing products that genuinely meet user needs and implement on-chain revenue-sharing models that deepen user investment in the project's success. This will allow power users to transition into ownership roles and gain economic and governance rights.

For users, this focus offers, economic alignment with the project's success which fosters loyalty and creates network effects. The choice to opt into ownership, reducing the inclination to convert tokens into income and creates a pathway for committed users to become advocates and stakeholders in the project's future. This is how projects create product-market fit and user loyalty, ensuring that only truly committed users become stakeholders in the project.

Ultimately, decentralization and token distribution are critical to prevent the concentration of power in the hands of a few, safeguarding user freedoms and rights. This democratization enables the creation of credibly neutral and composable internet infrastructure, fostering competition, diversity in ecosystems, and giving users more choices and ownership.

Image: Haseeb on the Uniswap Fee Switch



Source: Haseeb (Twitter)

However, while the benefits are evident, decentralization has faced challenges when competing against the efficiency and stability of centralized systems, especially at scale. Web3 has been a "living laboratory" where governance models are evolving. Notably, DAOs are exploring new governance approaches beyond direct democracy or corporate models.

Airdrops - Distribution of Wealth

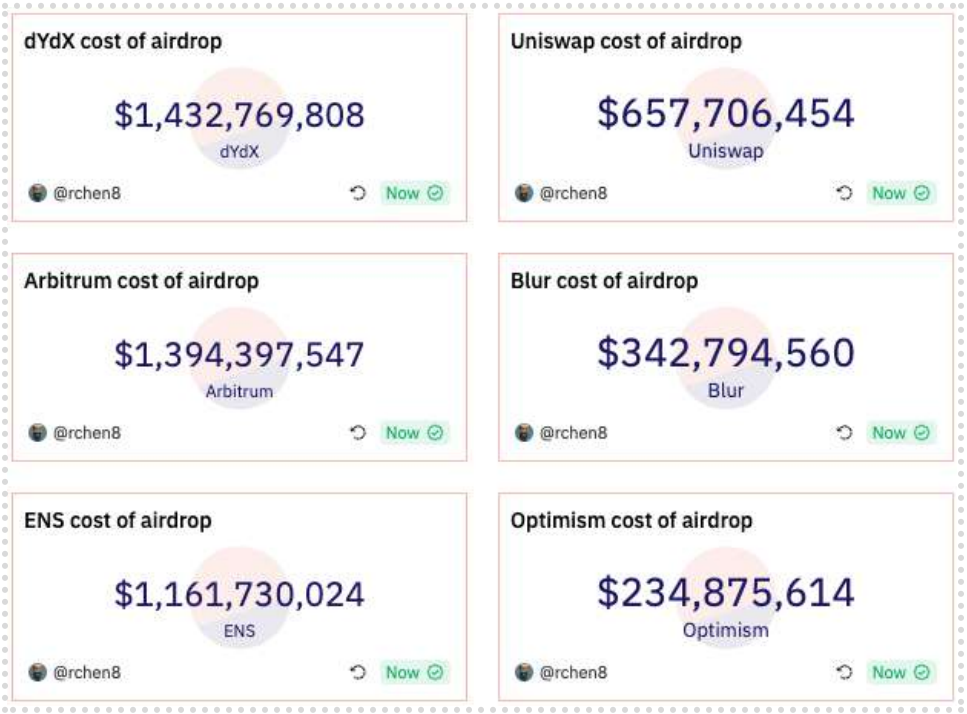
Airdrops are often misconceived as free money. Rather, they are strategic distribution mechanisms crucial for protocols aiming towards progressive decentralization. The landscape of airdrops is evolving, and is no longer an easy target for bots and sybil attacks.

The notion of effortlessly 'farming airdrops' is becoming obsolete, as the introduction of tokens by protocols is now a well-anticipated event. The real challenge lies in determining the criteria and requirements set for qualification, which remain unpredictable.

Increasingly, protocols are adopting structured approaches like staged seasons or points-based systems for airdrop distribution. These structures make it obvious that the protocol will eventually have and distribute a token.

However, most airdrops to date have struggled to retain users, with many recipients quickly selling off their tokens soon after distribution. Simply vesting these airdrops isn't a solution either; it merely postpones and prolongs the inevitable sell-off.

Image: “Cost” of Airdrops



Source: Link

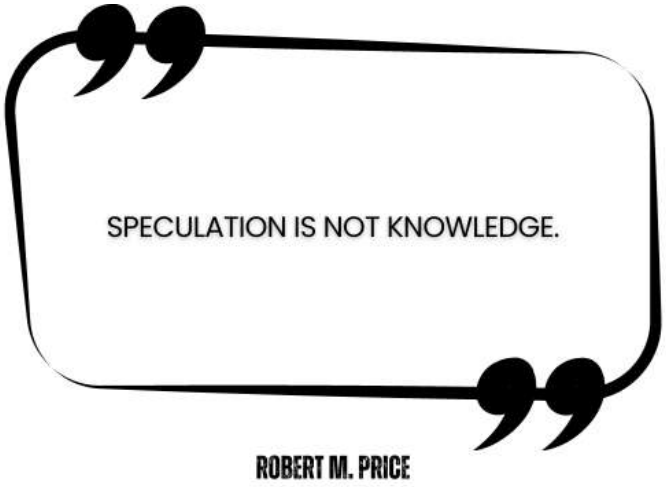
In the end, understanding the psychology behind airdrops is key. It's important to recognize that airdrops are not necessarily a financial burden for the issuing protocol. Sometimes, the goal is simply to disperse the token widely at a specific time, without concern for immediate market reactions like selling or holding.

Additionally, vesting schedules and agreements with investors can significantly influence the timing and manner in which tokens are released into circulation.

RECOGNIZING THE LIMITATIONS OF TRADITIONAL AIRDROPS, PROTOCOLS WILL INCREASINGLY ADOPT STRUCTURED APPROACHES LIKE STAGED SEASONS OR POINTS-BASED SYSTEMS. THESE METHODS BETTER ALIGN TOKEN RECIPIENTS WITH THE LONG-TERM GOALS OF THE PROTOCOL, MOVING AWAY FROM THE PERCEPTION OF AIRDROPS AS MERELY 'FREE MONEY'.

REVELO PREDICTION

Using Speculation to “Buy Time”



With the first social applications entering the market, users are recognizing the importance of speculation and the advantage of being early to new narratives. This is evident with DeFi “OGs” like Cobie and Hsaka rising to prominence. Some might even call it ‘fame’. Their success mirrors the early days of DeFi apps, where financial speculation and liquidity mining play key roles in driving initial growth.

Time and time again, we see examples that the early bootstrapping stage can make or break a protocol. Often, their success is determined by a small group of users willing to experiment and risk their capital.

This high-risk, high-reward approach is a significant draw for early adopters and protocols shouldn’t hesitate to use that to their advantage. However, the challenge for protocols lies in retaining these users and preventing them from moving on to the next big thing.

So far most protocols have leaned on strategies like airdrops or high token emissions to create a buzz, with varying levels of success. The underlying goal is often to create an illusion of product market fit, leveraging speculation to attract liquidity, accelerate adoption through network effects, and gain free advertising from the buzz generated.

However, protocols that recognize this stage as an illusion rather than genuine growth are more likely to achieve long-term sustainability, or "Lindyness." In contrast, those that get caught in this trap risk overspending and misallocating resources, ultimately relying on a user base driven more by short-term speculation than real utility.

Image: Gwart on Airdrops

Source: Gwart (Twitter)

Ultimately, it's up to the protocols themselves, especially with speculation through points and airdrops, to ensure that allocation and distributions are properly managed. Usage of tools such as sybil filters are also essential in weeding out concentrated allocations, which are usually detrimental to the protocols in the long-term.

Conversion of speculators into long-term shareholders via good user experience, long-term feasibility and product potential itself is something that many protocols should try to achieve in the speculation stage.

Exploring New Go-To-Market Strategies

The approach to launching and managing tokens is evolving, with projects increasingly adopting strategies to protect against speculative behaviors and ensure meaningful participation. When a new token is launched and is made tradable immediately, it sends signals to the market.

This information can be exploited by speculators or "mercenary farmers" who aim to extract value from the token holders, particularly from liquidity mining programs, i.e., farming-and-dumping.

To counter this, some projects like Euler, Gearbox, or Morpho initially made their tokens non-transferable. This strategy allows them to distribute the tokens to genuinely engaged participants, rather than speculators. Over time, these token holders, who have accumulated governance power, can influence when the token becomes transferable.

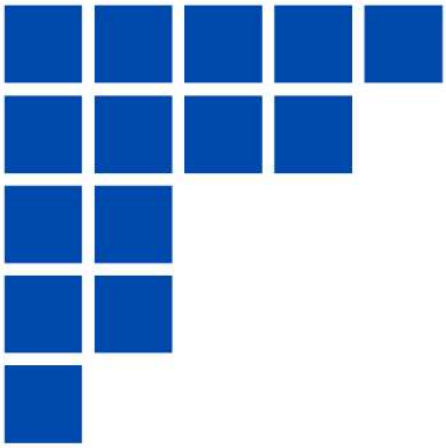
This approach creates uncertainty for speculators about their potential entry and exit prices. This duration of non-transferability can be as long as token holders decide, and they will ultimately have a say in all governance decisions, further decentralizing the protocol from the very start.

Additionally, discussions can focus on whether tokens should unlock all at once or over time after reaching a milestone. Milestone-based vesting could involve converting points into tokens based on predetermined protocol milestones.

This could be a gamified experience to incentivize user engagement, align stakeholders with the protocol success and reduce sell pressure caused by farming. However, vesting is only effective for delaying the risk of excess selling and might lead to reduced flexibility for teams.

Projects are likely to adopt strategies like making tokens non-transferable initially, as seen with Euler, Gearbox, or Morpho. We've also started seeing other types of incentives, such as Option Tokens (oTokens) being distributed instead of the tokens themselves, in order to align long-term interest.

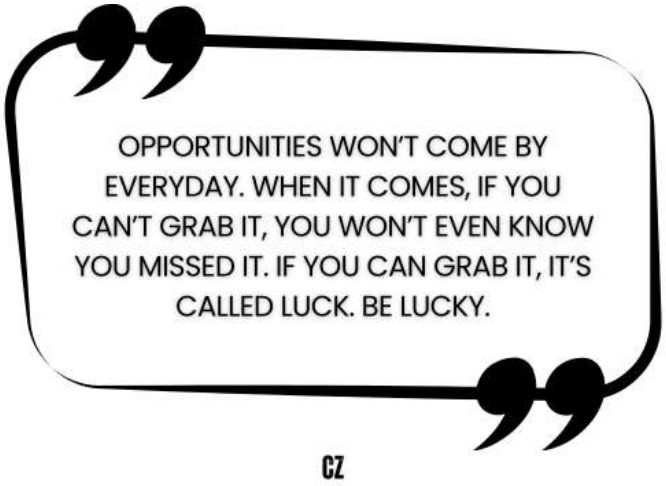
This effectively targets genuine engagement over speculative interest, allowing token holders to gradually gain governance power and decide on the token's transferability.



NFTS - MORE THAN JUST JPEGS

Section 18

NFTS - MORE THAN JUST JPEGS



More and more brands have been onboarding mainstream consumers into crypto to NFTs. From Starbucks and Reddit to Nike, loyalty programs and digital collectibles have been explicitly marketed to a broad audience. However, this is only the beginning. What's coming next is the expansion of NFT s to represent and enhance customer identity and community affiliations.

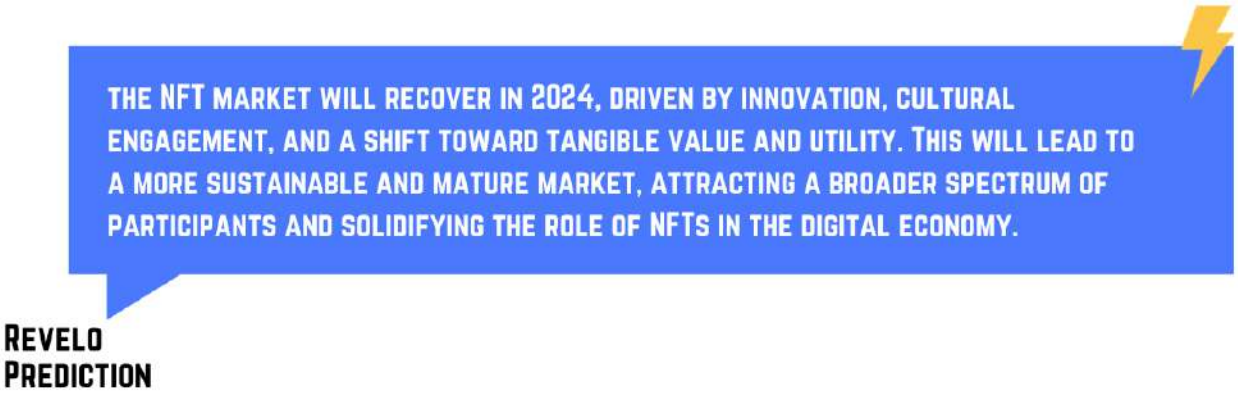
For many consumer brands, bridging physical goods to the digital realm leads to new products and experiences that are highly appreciated by their most dedicated enthusiasts. We are expecting to see more and more inexpensive NFTs (and compressed NFTs in Solana) starting to be distributed on cheaper Layer 1s like Solana or Layer 2s with low transaction costs. In 2024, these conditions are in place to turn NFTs into an ubiquitous asset class.

While we're hopeful about the expansion of mainstream NFT usage via retail adoption, it is still very much up to the mainstream media to undo the reputational damage they have done against NFT.

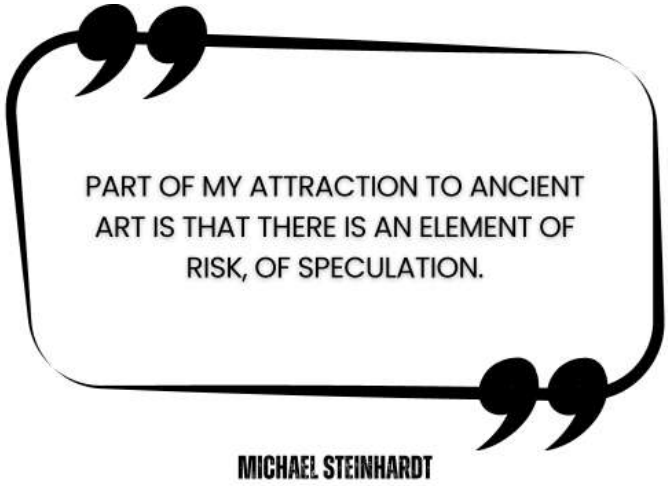
In the meantime however, we believe NFT real-world utility improvements should be something to keep an eye on going into 2024. Additionally, users should keep an eye out for the next "blue-chip" NFTs on re-emerging chains such as Solana, and newer chains with staying power such as Base.

While we still believe that there can be mainstream adoption of NFTs, the future of NFTs hinges on overcoming the reputational damage created by mainstream media. Despite these challenges, there's optimism for broader retail adoption and practical applications of NFTs in the real world. As we move into 2024, it's important to watch for advancements in NFT utility that extend beyond digital collectibles and art.

For those interested in the NFT market, chains like Solana, which are regaining momentum, and newer platforms like Base, which could have staying power, are likely to be hotspots for the next “blue-chip” NFTs.



NFTs - A Maturing Market



NFTs experienced a bull run in 2021 and 2022, with some collections like Bored Apes and CryptoPunks fetching extraordinary valuations of millions of dollars. This unbelievable run coincided with Bitcoin's run to its high of $69,000. In the subsequent two years, Bitcoin went on to see lows of $15,000 and now, at the time of this writing, we are at approximately $45,000.

NFT trading has become "value investing" for PFP collectors. Collectors can now trade Punks relative to whether they believe Punks will eventually flip a memecoin like $DOGE in market cap.

In the past months the trading volume for NFTs has decreased significantly, with OpenSea's revenue being significantly low when compared to its ATH during the last NFT bull run. But even despite this bear market, we have witnessed growth from other marketplaces, activity on other chains, and also innovations like Ordinals.

Overall, the sentiment in the NFT market emulated that of the general crypto market. However, it didn't bounce back like other sectors. According to a study by dappGambl, out of 73,257 NFT collections analyzed, 95% had a market cap of zero.

This sentiment challenges the previous euphoria around NFTs, which saw these digital art pieces selling for millions and high-profile participation from celebrities.

NFTs are highly popularized in Web3 and are largely used as PFPs, or profile pictures, but need to expand their influence to the mainstream world to become culturally significant. In general, they should explore collaborations in TV, movies, fashion, gaming, and entertainment to reach a wider audience. Another option is to implement them in a frictionless manner through a seamless UX, like Reddit collectibles or Starbucks' referral program.

Image: NFTs Front and Center

Source: Insider

With the decline in NFT trading volumes, PFPs must find sustainable revenue sources beyond initial royalties. This could involve licensing their intellectual property to brands, creating new product lines, offering digital collectibles with added utility, producing content, and introducing subscription services.

That being said, we don't discard that some collections like Pudgy Penguins or even Azukis might attempt to emulate what BAYC did with the launch of Apecoin. By launching a token, teams working on NFTs can offer benefits to both whales and small players.

On the one hand, whales can tap into the liquidity of the ERC20, partially overcoming the illiquidity issues of NFTs. On the other hand, many people might want to be part of the community but might not be able to afford the cost of the NFT.

It's crucial for NFT projects to drive value back to their community. The increasing involvement of venture capital in the NFT space risks shifting value from NFT holders to equity owners. To prevent this, projects should focus on keeping their community at the heart of their operations, ensuring that NFT holders continue to play a role in co-creating the brand and benefit from its success.

Image: NFTs... Dead?

Source: Insider

Non-crypto-native companies such as Starbucks and Nike have shown interest in NFTs, successfully integrating into the digital world. Starbucks launched Starbucks Odyssey, a customer loyalty program where fans earn “Stamps” for completing tasks like ordering specific items or taking quizzes.

These stamps can be redeemed for rewards like free drinks and discounted merchandise. Nike, on the other hand, made a significant move by acquiring RTFKT, a UK-based design studio known for its digital wearables and phygital fashion.

This acquisition allowed Nike to establish a strong presence in Web3, collaborating with designer Takashi Murakami for the CloneX NFT collection and releasing limited-edition digital apparel and footwear.

Image: Qiao Wang on PFP NFTs

Source: Qiao Wang (Twitter)

We expect that the widespread adoption of NFTs continues to be a gradual process, potentially spanning the next decade. It will require improvements in usability, a supportive regulatory environment, and effective marketing strategies to reach and engage a broader audience.

$APE WAS THE FIRST, BUT IT WON'T BE THE LAST. MORE BLUE-CHIP NFT COLLECTIONS WILL RELEASE TOKENS TO ENHANCE LIQUIDITY FOR WHALES AND ALLOW SMALL PARTICIPANTS TO BECOME PART OF THE COMMUNITY AND ACCESS CERTAIN BENEFITS.

REVELO PREDICTION

What's Next for NFTs?

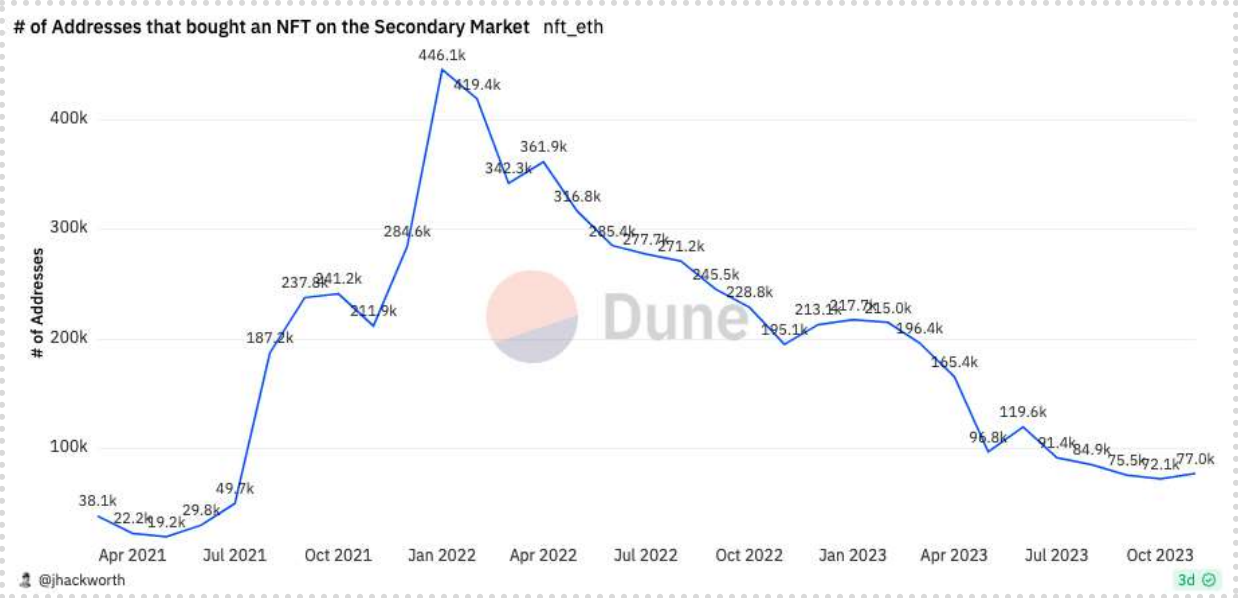
In recent times, NFTs have faced skepticism and criticism, with some declaring them "dead." Secondary market data seemed to support this narrative, with a sharp decline in trading volume and user activity since the NFT market's peak in January 2022.

However, a closer look reveals a more nuanced and promising perspective. The rise of popularity of Solana NFTs as well as Ethereum layer 2 solutions, such as Optimism, Base, Zorachain, and even Blast, has breathed new life into NFTs, indicating their potential for broader adoption.

The apparent decline in NFTs is primarily based on secondary market metrics. Trading volume on Ethereum's secondary market dropped by approximately 90%, and the number of distinct addresses engaging in secondary NFT purchases decreased by around 82%.

However, contrary to the narrative of decline, there are promising indicators that might tell us that the sector is evolving. Notably, there has been continuous growth in the number of distinct addresses minting paid NFTs over time. Additionally, the proliferation of new NFT contracts on chains like Zora and Base is being driven by user-friendly creator tools, making NFT creation more accessible.

Image: Number of Addresses That Bought an NFT on Secondary Markets



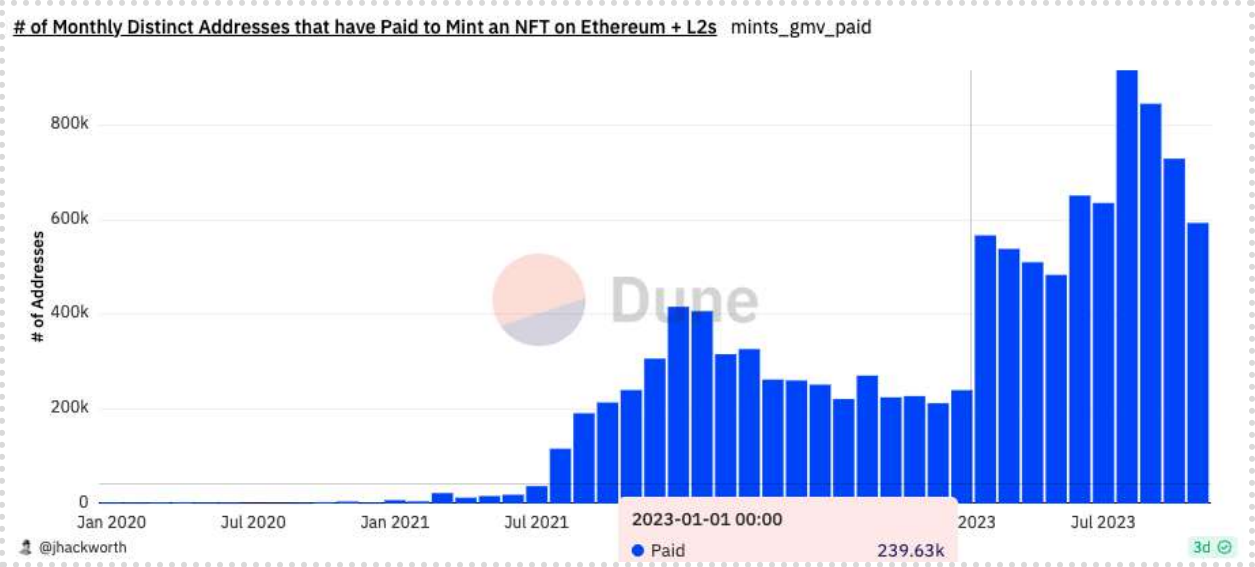
Source: Dune

The NFT market is evolving from a focus on rarity and exclusivity to a broader range of formats and use cases. This shift could attract a more diverse user base. As more projects, use cases, and art emerge, a broader audience is engaging with NFTs. Also, lowering the cost to mint NFTs makes it feasible for more individuals, including non-cryptonatives, to participate in the NFT space.

Minting luxury and costly NFTs on Ethereum might be over for many users. While historical NFTs like Cryptopunks will hold most of its value there, we will see more growth in new collections being minted on Solana or Layer 2s.

NFTs are undergoing a transformative shift, moving away from being solely investment assets or luxury goods to becoming a technology that can revolutionize digital ownership for the masses. The focus is shifting from investments and exclusivity toward a technology that offers widespread benefits.

Image: Number of Monthly Distinct Addresses That Paid to Mint an NFT on Etherem and Layer 2s

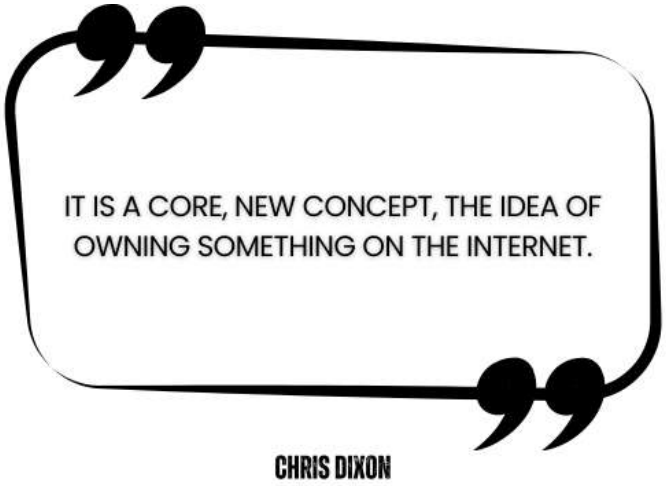


Source: Dune

NFTs are expanding beyond traditional formats like PFPs and art into realms like gaming, real-world assets, and token-bound accounts. NFTs like Tensorians and Parcl's HOA that have utilities such as boosting points and increasing yield or are airdrops requirement, will continue to be winners. These categories of NFTs were largely ignored in the previous cycle.

Of course, the right combination of utility and project appeal must be found, as not all utility is desired by users. However, PFP-based NFTs that have survived the bear market with good community reputation, such as Pudgy Penguins, will still continue to have a large share of the market for crypto natives.

The Road Ahead for NFTFi



The idea that NFT perps (perpetual contracts) are inevitable hinges on the evolving dynamics of the NFT market and the integration of financial instruments within it.

The integration of traditional financial mechanisms with NFTs is a significant trend. This includes lending, borrowing, and derivatives trading. The maturation of this sector, often termed NFTFi, is crucial in the evolution of NFTs from primarily collectible assets to ones with complex financial utilities.

We believe that Tensor will become the Blur of Solana, implementing lending services and perpetuals in the near future. Blur has demonstrated the potential of integrating NFTs with DeFi mechanisms, expanding the liquidity and utility of NFTs. Tensor could emulate this by providing loans against NFTs as collateral, thereby injecting liquidity into the Solana NFT market.

Perpetual contracts for NFTs are a natural progression in this landscape. NFT perps would allow investors to speculate on the future value of NFTs without the need for immediate ownership, similar to how perps work in the cryptocurrency market. This would enhance market depth, provide hedging opportunities, and contribute to price discovery.

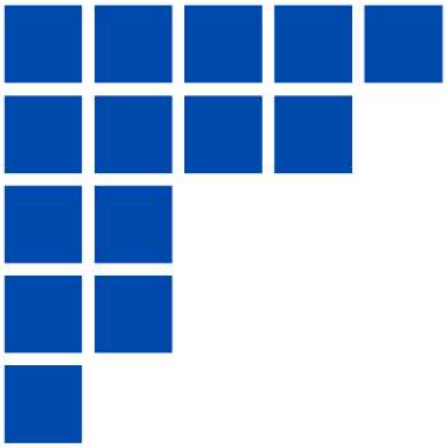
Projects that take the lead in NFTFi are poised to become prime brokerages for all financial activities related to NFTs. This role involves not just lending and borrowing services but also

providing a platform for various derivatives, market-making services, and risk management tools. Establishing such a comprehensive suite of services would solidify a project's position as a central hub in the NFT ecosystem of their respective chain.

Image: GCR on NFTs as “Yield Bearing Assets”

Source: GCR (Twitter)

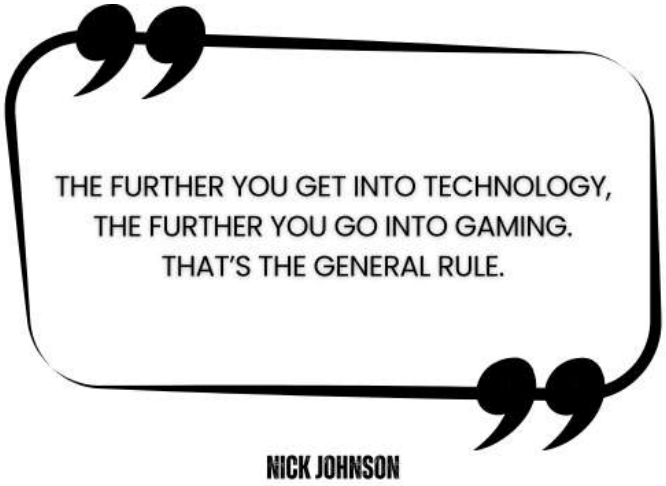
With the increasing positive regulatory sentiment towards cryptocurrency and blockchain-related infrastructure, we think it’s only a matter of time until there’s proper legal adoption of RWA NFTs, conducted by reputable real world companies like real estate companies.



BRINGING GAMES ON-CHAIN

Section 19

BRINGING GAMES ON-CHAIN



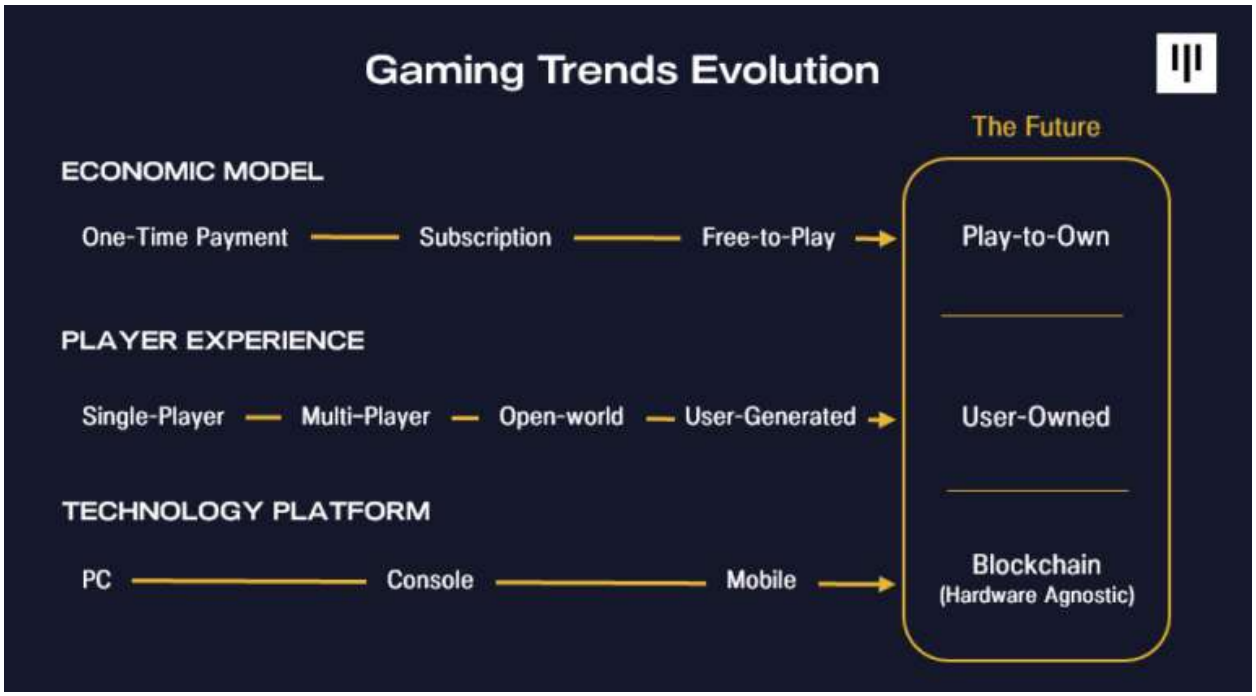
Play-to-earn (P2E) is evolving into "play-and-earn," emphasizing that gaming should be fun but also allow players to capture more of the value they generate. This shift reflects the changing dynamics of gaming economies.

Web3 gaming continues to be one of the most polarizing topics. Regardless of the critics from traditional Web2 gamers, there seems to be a consensus now that the industry should move towards a “play and earn” model, emphasizing that gaming should be enjoyable while allowing players to capture more value from their in-game activities. This shift reflects changing dynamics in gaming economies.

Early approaches to Web3 gaming faced challenges. The concept of a single metaverse was often seen as dystopian, and play-to-earn models had questionable economic foundations. However, Web3 still has much to offer the gaming world.

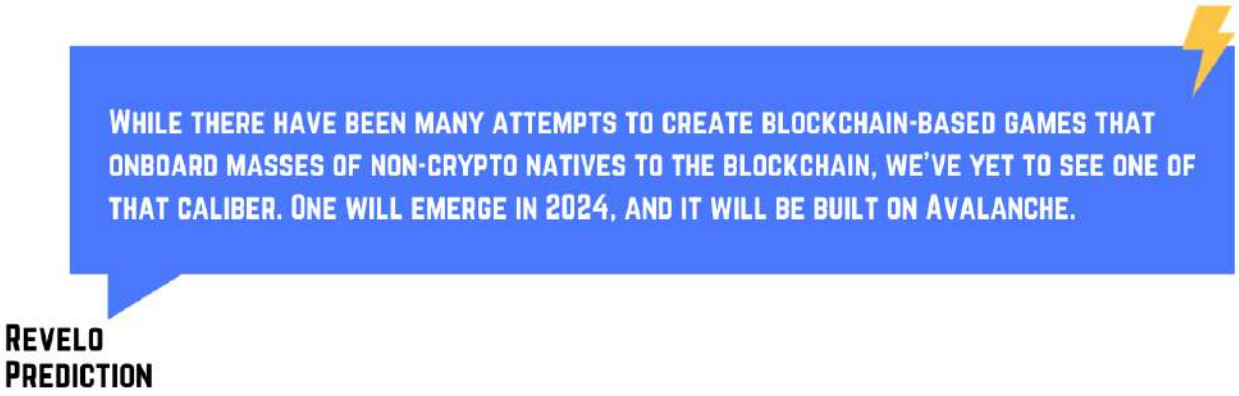
Web3 can introduce digital property rights for memorabilia in e-sports. Just as physical sports memorabilia gains value due to provenance, e-sports memorabilia, such as in-game skins worn during championship finals, can also have unique value. NFTs can create both the "objectness" and provenance required for such memorabilia. This approach seamlessly integrates into the existing gaming industry without disrupting in-game economies.

Image: The Evolution of of Gaming



Source: [Pantera Capital (Article)]

Additionally, Web3 features such as reputation scores can deepen player engagement by adding layers of richness to gameplay. Assigning unique value to digital objects through NFTs and utilizing market information for game design can unlock new possibilities and create games that are more engaging and player-centric.



State of Gaming

In the gaming industry, retaining users and providing meaningful incentives are significant challenges. A game must be fun and captivating to succeed, and investing in the gaming industry involves betting on a team's creativity and their ability to connect with an audience.

Gaming is one of the most interesting topics in crypto: some think that it will bring crypto to the masses, and some think that it's completely useless. Even within gaming communities, most gamers seem to not embrace the idea of NFTs, while most crypto natives have been experimenting with token models that resemble the early days of DeFi.

In Web3 gaming, these challenges are amplified. To top it off, it faces its own set of challenges, particularly in creating sustainable virtual economies and balancing the needs of investors and players. Despite significant funding in crypto gaming, with hundreds of millions of dollars invested, there has been little to show for it. Trailers continue to be released, but no crypto-native game has achieved meaningful, sustained traction.

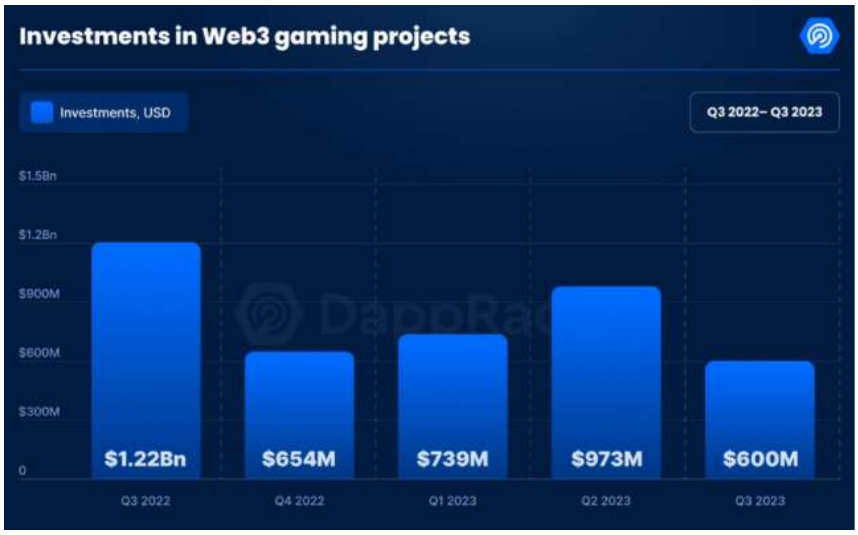
Perhaps this lack of traction correlates to the fact that blockchain technology still isn't performant enough for fully on-chain, continuous state-changing games, and developing compelling off-chain games with on-chain assets is taking longer than expected.

However, if we can set aside our pessimism, the fact remains that in 2023, blockchain gaming projects received $2.3B in investments, indicating continued interest in the sector. This includes

$213M for metaverse-related games and technology in the third quarter alone, despite some declaring the metaverse dead. The rest of the investments went to Web3 gaming infrastructure and investment firms.

The global gaming market is vast, with over 3 billion active players, and mobile gaming, especially in the Asia-Pacific region, is particularly popular. Established gaming studios are integrating blockchain and NFTs into their games, leveraging existing player bases and expertise.

Image: Investments in Web3 Gaming Projects



Source: DappRadar (Blog)

That said, the future of Web3 gaming is uncertain, and its market size is hard to determine. Crypto-native game studios face competition from established Web2 studios and need to excel in both crypto expertise and game design. In emerging markets like India, monetizing gaming tools can be challenging, but even a small percentage of gamers using cryptocurrencies represents a substantial user base.

We believe that a balanced investment strategy could be advantageous in the gaming sector. Mainstream advice suggests focusing on gaming infrastructure, as it benefits from all games built on it, while investing in individual games carries higher risk due to gamers shifting from game to game.

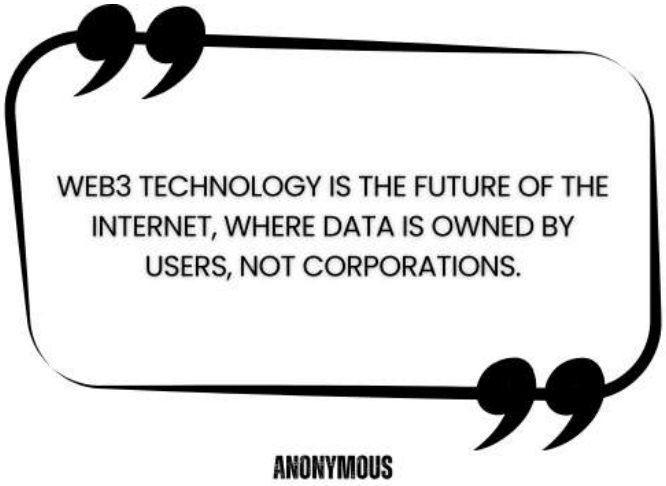
A more nuanced approach involves a barbell strategy, dividing investments between established gaming infrastructure and mainstream games aimed at mass adoption, i.e., Illuvium, Bigtime, Star Atlas, Parallel, and Beam, and a separate allocation for indie games that cater specifically to the crypto community, including mini-games, mobile games, and RPGs.

This strategy balances the stability of infrastructure investments with the potential high rewards of niche, community-driven games.

VCs and game developers in the blockchain space, specifically those who survived the bear market, are now more aware of the need for gaming quality. In 2024, there will be more thoughtfully integrated Web3 games that are focused on IP and fostering community.

Revelo Prediction

A Shift From Web2 to Web3



It's evitable, with success comes attention. Whether for the right reasons or wrong ones, blockchain technology, specifically Bitcoin and other cryptocurrencies, has garnered a lot of attention. As for its success, it lies on a spectrum. It might depend on who you ask.

Nonetheless, many notable Web2 organizations are exploring different ways to enter into this industry, not as a means to replace their current operations but rather to leverage its demonstrated network effects. For example, one of the largest mobile and social game developers Zynga, known for Farmville and Mafia Wars, is creating a Web3 game called Sugartown.

Ubisoft, an early adopter of blockchain and NFT technology, had a short-lived NFT project in Ghost Recon but is now developing a tactical RPG game called Champions Tactics. Square Enix, the Japanese developer behind Final Fantasy and Dragon Quest, is also exploring blockchain and NFTs. They're working on a game called Symbiogenesis, described as "narrative-unlocked NFT entertainment".

Professional e-sports organization TSM, after ending its partnership with FTX, has teamed up with Avalanche to create Blitz, a competitive gaming platform using subnet technology. They aim to enhance gaming performance with insights and tools, integrating the Core App for payments and digital asset storage.

Table: Why Web3 Gaming

Reason	Explanation
Ownership and Security	Web3 gaming leverages blockchain technology to decentralize asset ownership. Players have true ownership of in-game assets, ensuring transparency and security.
Virtual Economies	Decentralized gaming platforms create virtual economies similar to Counter-Strike's skin market. These economies benefit from transparency, security, and composability, allowing for new gaming models like play-to-earn.
Play-to-Earn (P2E)	P2E models enable players to earn real-world value from their gameplay. Successful games like Axie Infinity and lifestyle apps like STEPN demonstrate how players can generate income through gaming.
Untapped Potential	Games like Decentraland, Star Atlas, and Aurory showcase the potential of Web3 gaming. Decentraland allows players to buy, sell, and develop virtual real estate as NFTs, while other games on platforms like Solana have gained international attention by merging gaming with real-world economic systems.

SEGA is adapting its popular Web2 game franchise, Sangokushi Taisen, to the Web3 landscape using the Oasys blockchain and collaborating with Double Jump Tokyo to develop a PC-based trading card game, Battle of Three Kingdoms. Konami has ventured into NFTs, offering commemorative art from its iconic games like Metal Gear and Castlevania.

Image: Web2 vs. Web3 Gaming

Source: MetaEngine (Medium)

Atari, a gaming industry pioneer, is revitalizing its brand in the Web3 space with Atari X, a blockchain initiative combining gaming, community, and utility. They've launched a unique NFT collection to celebrate their 50-year history and are making strides in the metaverse with Sunnyvale, a virtual experience in The Sandbox.

These developments indicate a growing trend of traditional gaming companies exploring and integrating Web3 technologies into their platforms.

Web3 Gaming - Onboarding the Masses

The gaming industry, already a multi-billion dollar business, is set to grow even more in the coming years. Initially popular on consoles and PCs, gaming has expanded to mobile and portable devices, making it more accessible and continuing to be a lifelong hobby for many.

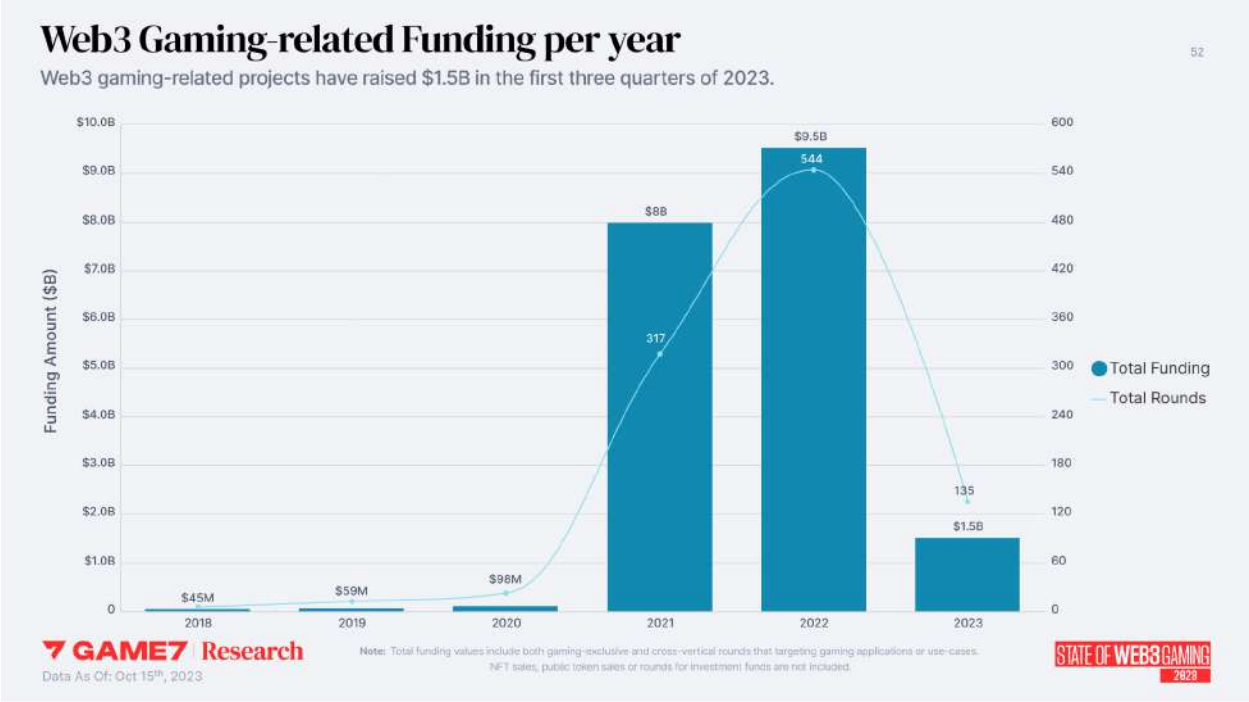
According to Statista, by 2028, the gaming industry is expected to grow annually by 9.32%, reaching a market volume of $389.7B. The number of gamers worldwide, currently at 3.22 billion, is projected to increase by over 100 million each year. Gaming has been a key tool for onboarding people into new technologies, including social media, and now plays a significant role in events like gaming conventions and influencer streaming.

If executed correctly, there is a huge opportunity to migrate Web2 gamers into Web3. But much like the rest of the crypto industry, true adoption likely comes when gamers are playing on Web3 and privy to its benefits without knowing they are on Web3. Nor should they need to differentiate between a Web2 and Web3 experience.

The Web3 gaming market, currently valued at $23.9B, is projected to reach $133.22B by 2033. Despite a decrease in monthly active blockchain users in 2023, the majority of blockchain gamers see asset ownership as a major benefit and expect traditional game studios to drive the industry forward.

Despite the potential, investment in Web3 gaming projects saw a massive nosedive in comparison to 2021 and 2022. This trend was exacerbated by the bear market that the general market was facing.

Image: Web3 Gaming-Related Funding Per Year



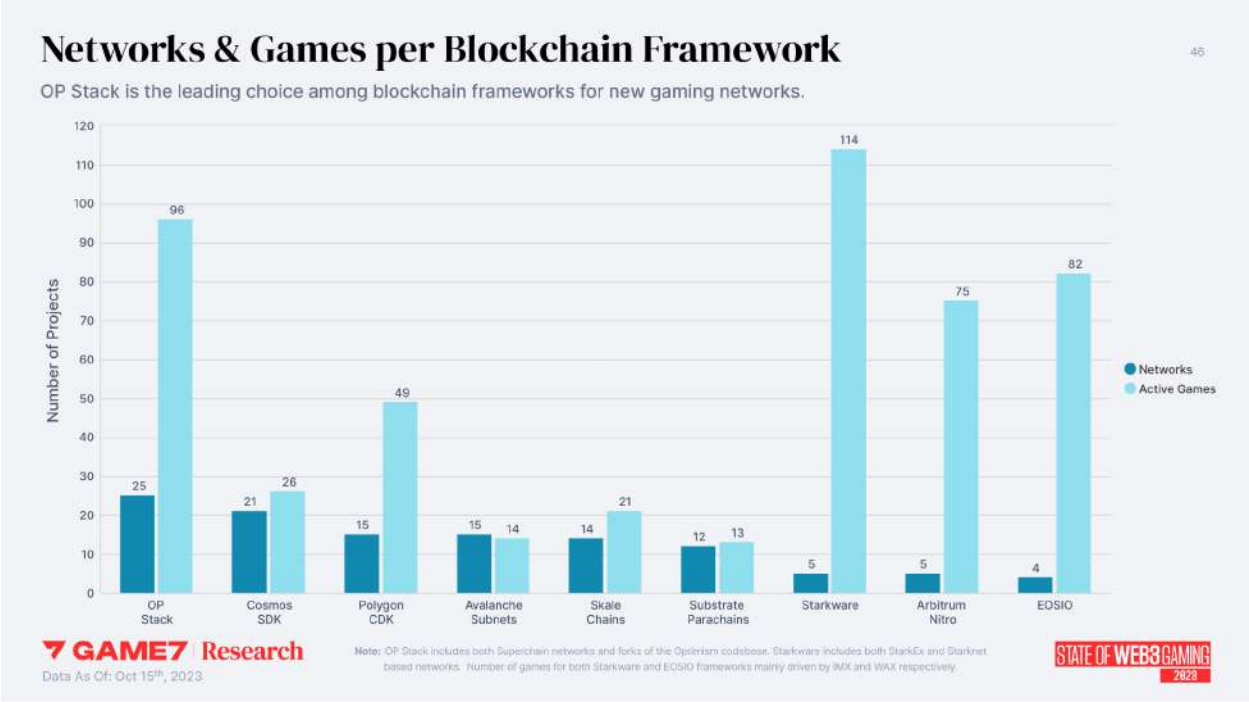
Source: Game7 (Report)

In 2023, game migrations between networks increased, indicating growing interoperability among gaming blockchains. Polygon, Immutable X, and Arbitrum received the most migrations, while Hive, Solana, BNB, and Ronin saw significant reductions in gaming activity.

Blockchain game developers prefer open-source networks like Unreal Engine for game creation. The OP Stack framework by Optimism was widely used, while StarkWare's framework, used by Immutable X and WAX, dominated in terms of project numbers.

Looking ahead, the Web3 gaming industry faces challenges such as a steep learning curve, scalability issues, and the need for regulatory clarity. However, opportunities for revenue generation, market expansion, and innovative gameplay exist.

Image: Games Per Blockchain



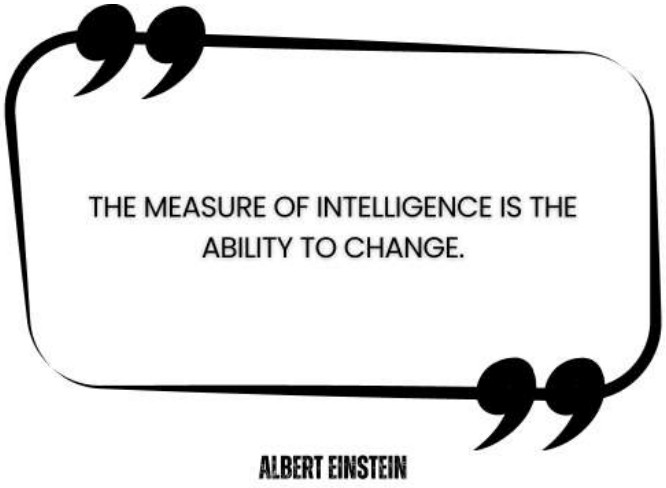
Source: [Game7 (Report)]

The industry must navigate trends like competition from traditional gaming platforms, regulatory uncertainties, and the environmental impact of blockchain technology. It must also create intelligent business models that not only capture the attention of gamers, but are also sustainable and profitable. Despite these challenges, the potential for growth and innovation in Web3 gaming remains significant.

THE CRYPTO LANDSCAPE

Section 20

THE CRYPTO LANDSCAPE



As we head into 2024, we're seeing the crypto landscape evolve rapidly, marked by significant developments across various domains. The developer community is experiencing a resurgence, with Ethereum leading the charge and other platforms like Polkadot, Cosmos, Solana, Aptos, and Sui gaining traction. This influx of talent, including those with backgrounds in AI and Web2, is revitalizing the ecosystem and setting the stage for mass breakthroughs.

Institutional strategies in the US have been mixed, with regulatory uncertainties counterbalanced by emerging clarity in regions like the UAE and the EU. The crypto market is buzzing with anticipation over potential Bitcoin spot ETFs, signaling a possible shift in market dynamics and investor sentiment.

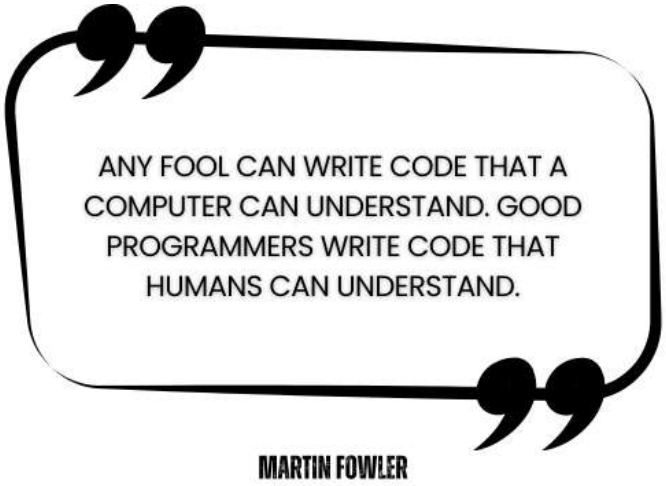
Venture capital in crypto, while facing a downturn, is showing signs of recovery as crypto prices stabilize. The sector is navigating the complexities of fund evaluation and shifting focus towards AI, indicating a broader diversification in investment strategies.

The fundraising landscape mirrors this strategic evolution, with DeFi, gaming, blockchain infrastructure, and RWAs drawing significant investments. The focus on RWAs, in particular, suggests a growing interest in integrating blockchain technology with traditional financial systems.

Overall, 2024 is shaping up to be a pivotal year for crypto, with development, institutional involvement, venture capital, and fundraising all converging to redefine the industry. This dynamic interplay is not just reshaping the current crypto landscape but also paving the way for future growth and innovation in this rapidly evolving sector.

To sum it up though, while there remains to be much potential for the space, there's much to be improved and clarity to be had. Thus far, many mistakes have been made but on the back of that, many valuable lessons to be had. The key for the growth and adoption of any nascent technology is how we learn from and adapt to these mistakes. Particularly in crypto, we'd be wise to do the same.

The 2024 Developer Landscape



There's no doubt that the developer landscape in crypto has taken a hit in the last two years. At the same time, the AI industry has grown at a torrid pace. Even that being the case, we believe that more and more developers will continue to enter and come back to Web3.

In the coming years, we believe that most developers who enter the space will have one of several backgrounds, specifically, recent graduates who are passionate about joining a rapidly growing industry, AI developers who become increasingly aware of the problems with data ownership and concentration of power in large-scale companies, or Web2.

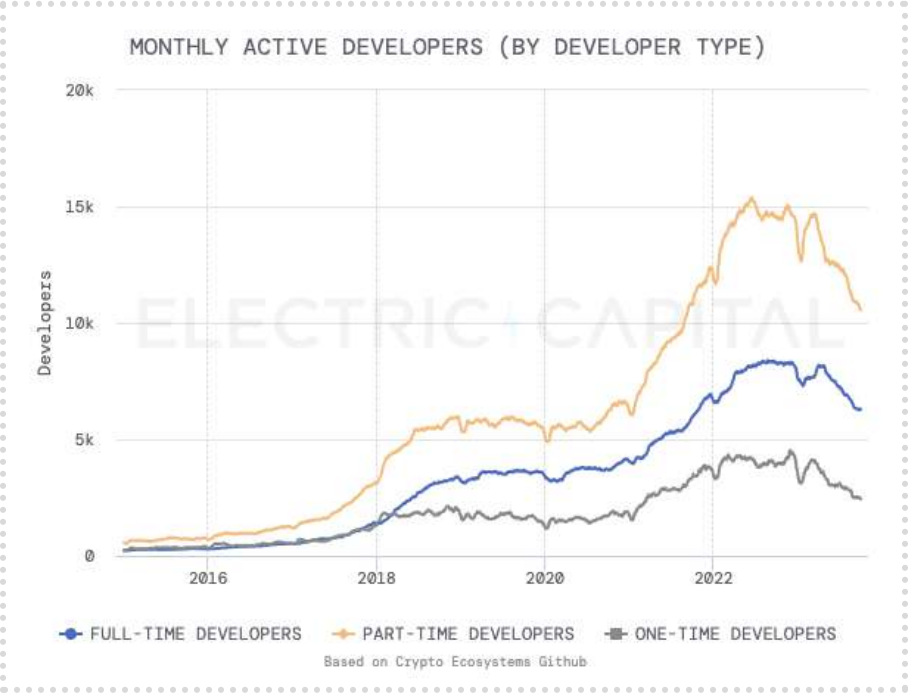
We also think that 2024 will be critical in both retaining existing developers and enticing the intellectual curiosity of newcomers. On the back of this opinion, we believe that 2025 will be the year that marks an ATH in Web3 developers.

When it comes to ecosystem development, Ethereum continues to lead. We don't expect this to change in the near future, as we expect more and more developers to continue building on Layer 2s, both on the infrastructure and application side. The future success will be largely attributed to the most recent developments of the OP Stack, Arbitrum Orbits, Polygon's CDKs, ZKSync's Hypernets, the STARK software stack.

Polkadot follows Ethereum in number of active developers, which is not surprising given the trend of the last few years. However, despite all of the virtues of building on Substrate, most

parachains lack user adoptions, and we don't think that the ecosystem will benefit from the entrance of new developers.

Image: Monthly Active Developers



Source: Developer Report

While we believe that the EVM will continue to dominate, we also believe that Web2 developers will get onboarded into crypto by developing on the Cosmos or Solana ecosystems. We also foresee an increase in the number of developers working on Move-based environments like Aptos and Sui.

In fact, the developer ecosystem and business development arms of these ecosystems are largely overlooked. As an example, Aptos has secured partnerships with Microsoft, Alibaba, and others this year

It's also worth mentioning that Bitcoin is currently 4th in terms of active developers. Even though this number has declined over the past few years, we believe that this trend will see a resurgence due to developments like Ordinals and DeFi on Bitcoin, driven by Layer 2s and sidechains.

Image: Monthly Active Developers and New Developer Activity

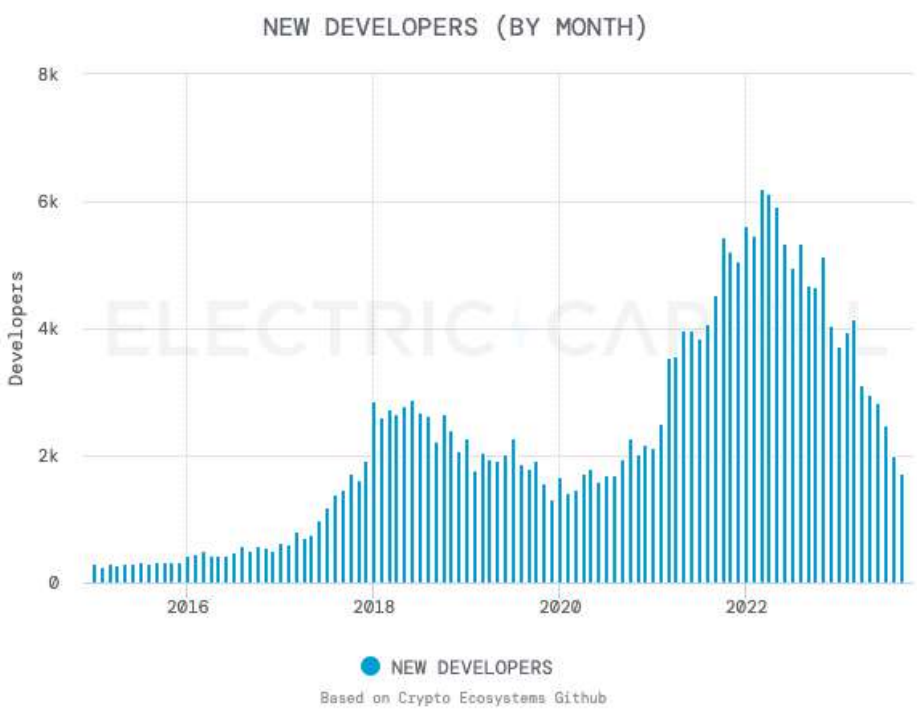
Monthly Active Developers

Help Update this Data →

Developer Type	Oct-01 2023	1y %	2y %	3y %
Full-Time	6,279	-24%	+5%	+70%
Part-Time	10,550	-27%	-2%	+70%
One-Time	2,450	-37%	-27%	+44%

New Developer Activity

Help Update this Data →



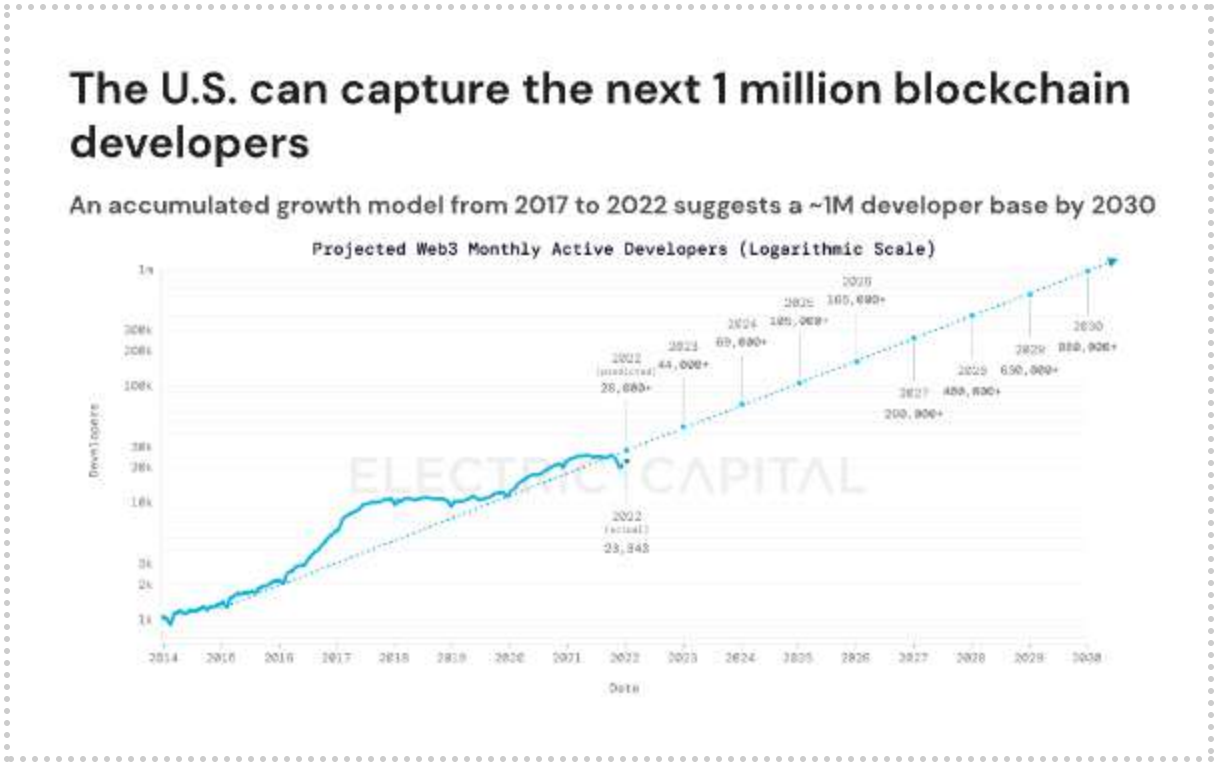
Source: Developer Report

Lastly, we should consider that that the U.S is at a critical juncture in maintaining its leadership in blockchain development. Political skepticism and regulatory scrutiny are currently an impediment to the onboarding of developer interest.

We don't discard the possibility that this will change, but it may require a new political regimen. However, this technology has thrived and will continue to thrive in countries that value financial inclusion the most, especially those who have experienced currency debasement.

It should be noted that even though North America and Europe have historically demonstrated the most dominance in terms of developers, countries like India are growing at a very fast rate.

Image: The Potential Growth of Developers in the U.S.



Source: [Developer Report]

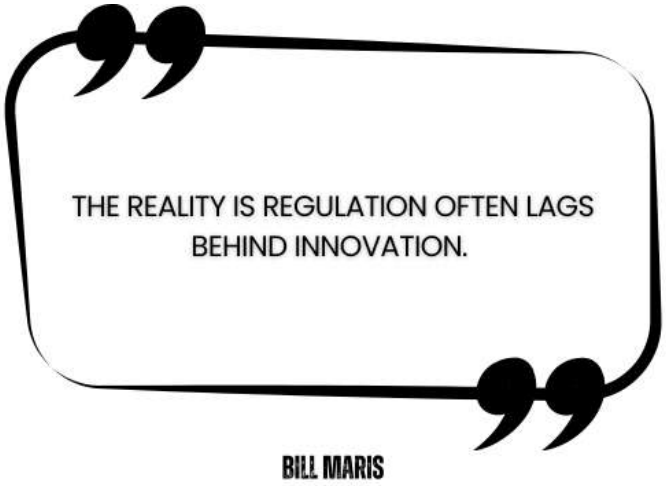
In the end, the open-source ethos is one of the greatest strengths of this industry, which favors building in public and open innovation. Countries that are quick to adopt a regulatory sandbox have the potential to take the lead in terms of blockchain startups.

They will ultimately foster an environment that promotes experimentation while maintaining regulatory oversight. This will further foster collaboration between government agencies, private companies, and academic institutions to fund research and development in blockchain technology.

We strongly believe that by engaging with international bodies and organizations to establish common global standards for blockchain and cryptocurrency technologies, the US will not only regain its leadership position, but also contribute to economic growth, job creation, and even safeguard national security interests in the digital age.

As we head into 2024, the popularity of certain blockchains provides valuable insights into the programming languages that will be in demand. Solidity for its compatibility with Ethereum and other EVM-compatible blockchains, will continue to be a crucial skill due to its extensive adoption. However, we're also anticipating a growing interest in other programming languages such as C++ and Rust.

The 2024 Institutional Landscape



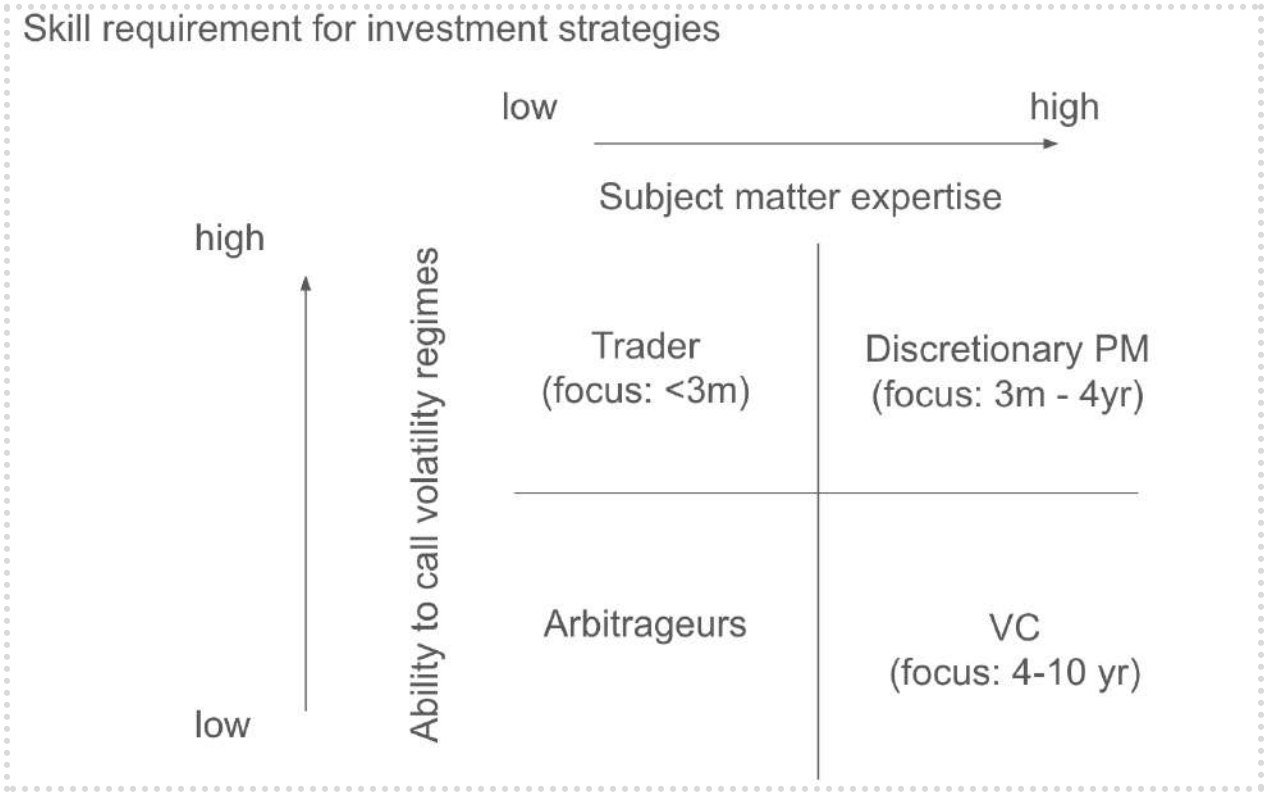
In the United States, 2023 was an especially challenging year for crypto fund managers due to operational risks and regulatory uncertainties. They faced disruptions in banking settlement services, dubbed "Operation Chokepoint 2.0," which forced many to seek additional banking partners. The SEC increased its scrutiny on DeFi platforms, and Bittrex even faced charges related to securities laws.

Major market-making firms like Jane Street and Jump Crypto scaled back their activities. Gemini and Coinbase responded to the regulatory uncertainty by launching offshore derivatives exchanges for trading outside the US. Large CEXs like Binance and ByBit exited the Canadian market entirely due to regulatory issues.

In contrast, other regions provided more regulatory clarity. The United Arab Emirates became a hub for crypto companies, with OKX securing a preparatory license in Dubai. The European Union implemented MiCA, its first significant regulatory framework for crypto assets. The UK also recognized stablecoins and crypto activities through the Financial Services and Markets Bill 2023.

The year ended on a high note with major financial institutions like Ark Invest, BlackRock, Fidelity, Invesco/Galaxy, VanEck, and WisdomTree filing for new Bitcoin spot ETFs. Fueled by optimism for potential ETF approvals, there was a renewed optimism that drove Bitcoin to yearly highs,

Image: Jason Choi on “Knowing Your Strengths”



Source: Jason Choi (Twitter)

Comparing 2023 to 2019, this year mirrored a recovery phase with Bitcoin leading in performance. Typically, in early market rallies, larger assets like Bitcoin dominate, but if the trend continues, smaller and mid-cap assets might outperform in the following quarters.

The 2024 VC Landscape

For many reasons, 2023 has been a challenging year for venture fundraising in the crypto industry, with levels dropping to lows not seen since early 2021.

Table: Factors Contributing to a Depressed VC Activity in Crypto

Factor	Explanation
Valuation and Market Timing	Crypto venture fundraising tends to increase when crypto valuations are high and major cryptocurrencies are performing well. However, during market downturns, institutional interest wanes, making it difficult for venture funds to attract capital.
Risk Perception	The digital asset sector is often seen as riskier than other alternative asset classes. The current environment of rising interest rates has exacerbated this perception, leading to reduced institutional investment in crypto ventures.
Lack of Diversification	Traditional investors often focus on Bitcoin and Ethereum, overlooking other crypto market areas like NFTs, gaming, and DeFi, which they may find too niche or complex.
Collapse of Venture-Backed Startups	The failure of several major startups in 2022, even those backed by renowned venture firms, has shaken investor confidence in the sector.

In Q2 2023, only $730M was raised across 10 crypto venture funds, a stark contrast to the $16.5B raised in Q2 2022. This decline mirrors the broader venture sector's struggles with rising interest rates.

The bear market has exposed flaws in crypto venture capital, with many investors who lacked deep understanding of the sector now shifting their focus to AI. However, as crypto prices improve, it's expected that these investors will return. November saw the highest level of crypto fundraising since early 2022.

Image: Top 10 Most Active Crypto VCs

Rank	Crypto Venture Capital Firms	Total Deal Count
1	Coinbase Ventures	372
2	NGC Ventures	271
3	AU21 Capital	252
4	Shima Capital	237
5	LD Capital	210
6	Animoca Brands	203
7	Hashkey Capital	200
8	Pantera Capital	182
9	Binance Labs	177
10	Big Brain Holdings	175

Source: Coingecko

In TradFi, VCs exit their positions by selling to hedge funds or pension funds, but in crypto, these entities don't yet exist, leaving VCs holding assets longer than anticipated and unable to sell at the multiples expected.

One area gaining attention is the use of Simple Agreements for Future Tokens (SAFTs), particularly with the anticipation of token unlocks in early 2024. The potential approval of a US Bitcoin spot ETF could positively impact the valuations of top cryptocurrencies, offering a more favorable market for these assets.

At the same time, crypto-native companies are increasingly focusing on the secondary market for illiquid assets. This trend is driven by the need to manage positions from defaulting limited

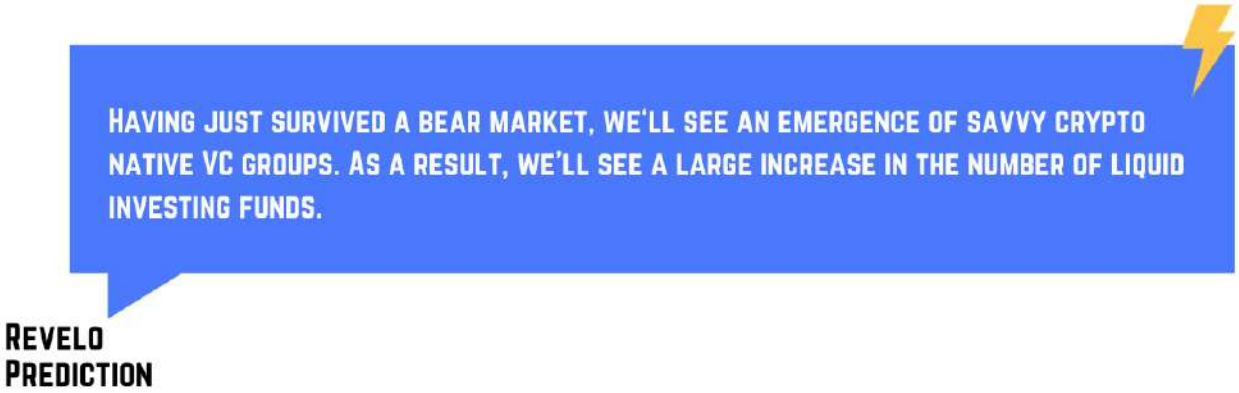
partners and the consolidation of VC funds. This shift highlights the growing importance of liquidity and market dynamics in the crypto venture space.

However, the sector clearly still grapples with the challenge of establishing proper benchmarks for evaluating the performance of crypto venture funds. As competition in the space increases, these benchmarks are crucial for providing clarity and standards in fund evaluation, aiding investors in making informed decisions.

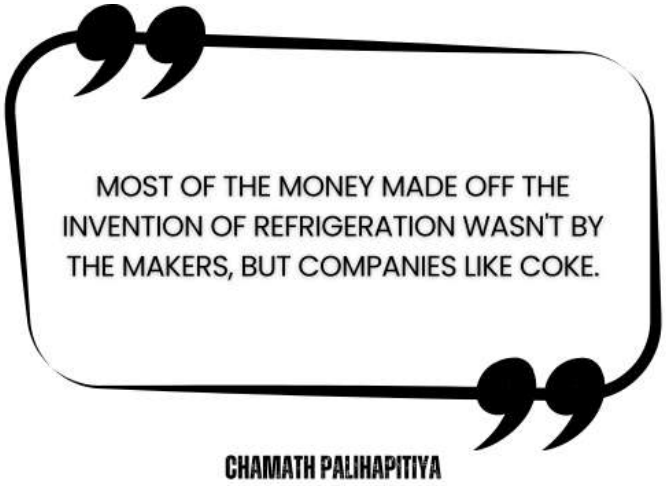
For angel or early-stage investors, the current market conditions present a high opportunity cost. Their token allocations, often locked until the next bear market, could be less advantageous compared to investing in liquid assets that can appreciate during a bull market and offer the flexibility of being sold at any time.

In response to these market dynamics, funds like Binance Labs are exploring investments in secondary deals, i.e., tokens. We expect to see an increase in these OTC deals as well as an increase in the number of liquid funds over the next 12 months.

In our opinion, Crypto Liquid VCs, despite being less established than traditional VC models, are poised to become top performers in the next cycle.



The 2024 The Fundraising Landscape



In 2023, the crypto fundraising landscape experienced significant changes, with total funding amounts declining compared to the previous years. Despite this downturn, there's a noticeable trend in the types of projects attracting investments, with DeFi, gaming, and blockchain infrastructure (Layer 1 and Layer 2) being the primary focus areas.

Seed rounds have emerged as the most popular funding stage, indicating a shift towards early-stage investments with potentially higher returns. This trend is driven by the belief that good products with strong product market fit can quickly achieve high valuations. However, the current market conditions have made liquidity scarce, leading investors to be more cautious and selective in their funding choices.

Breaking investments into specific sectors gives us a lot of hints as to where funds will go. DeFi remains the most funded category, but the largest individual raises have been in Layer 1 and Layer 2 blockchains, which usually carry a valuation premium.

These blockchain infrastructures, which were prominent during the 2021 bull run, continue to attract significant investments, although the amounts raised are noticeably lower than before. As we shift to 2024, there’s no reason for us to believe that this dynamic changes. We expect that blockchains will continue to attract the bulk of the largest individual raises.

Gaming also continues to be a significant focus for crypto funds, reflecting the industry's belief in the potential of blockchain-based games to drive mainstream adoption. However, the success of these gaming projects in attracting and retaining players remains to be seen.

Image: Crypto Fundraising in 2023

Source: ICO Drops (Twitter)

Likewise, the RWA sector has seen its share of investments and is believed to have the potential to onboard users into crypto. We believe that RWA-related funding will grow substantially in 2024, as the integration of blockchain technology with traditional financial systems continues to evolve.

As we end 2023, the fundraising environment in the crypto sector is undergoing a period of adjustment, with a shift towards more strategic and targeted investments. This change reflects the maturation of the industry and an evolving understanding of the potential and challenges of blockchain technology.

As the market conditions improve and new opportunities emerge, we may see an increase in fundraising activities in 2024, particularly in sectors that demonstrate clear use cases and market demand.

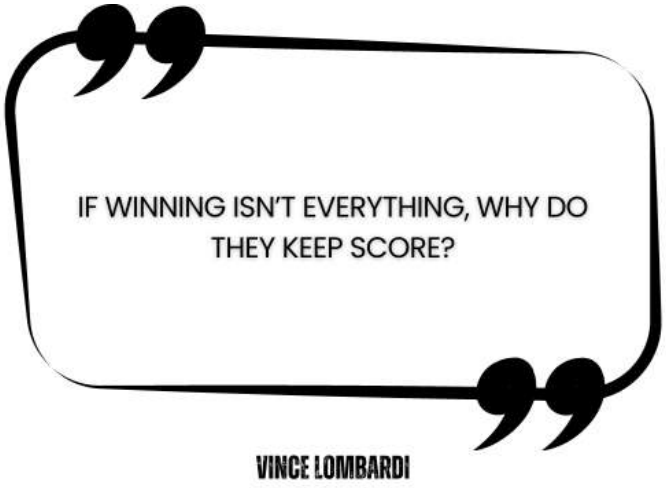
VALUATIONS WILL BE MUCH MORE REALISTIC COMPARED TO YEARS PAST. PROMINENT ANGELS, KNOWN AS REPUTABLE CRYPTO NATIVES WILL BE GOOD INDICATORS OF PROJECT QUALITY. THERE WILL BE A NOTICEABLE SHIFT IN FOCUS TO TECHNOLOGIES AND UTILITIES THAT ACCOMMODATE REAL-WORLD USERS, I.E., RWAS AND GAMING.

REVELO PREDICTION

WINNERS AND LOSERS

Section 21

WINNERS AND LOSERS



It's a common tendency for people to perceive those who made more money as taking excessive risks and those who made less money as overly cautious. This perception often arises from comparing one's own risk tolerance and investment choices with others'.

The idea that individuals end up with the returns they deserve aligns with the concept of personal responsibility in decision-making. If someone chooses to take a high-risk bet and it pays off, they reap the rewards they consciously or unconsciously accepted the risk for.

When investing, we are optimizing for an infinite game, and it becomes essential to consider long-term strategies and the cumulative impact of decisions over time. Success is often measured not by individual outcomes but by consistent, well-informed choices that lead to favorable probabilities over many iterations.

In investing, as in life, some outcomes are influenced by luck or external factors beyond one's control. Decision-making should be based on sound reasoning and probabilities rather than relying on hindsight to justify a decision.

This is why we differentiate between left curve (outcome-focused) and right curve (probability-focused) thinking. While some individuals may prioritize immediate outcomes, those who focus on probabilities and long-term strategies are often better positioned to

navigate the complexities of investment and risk management. With that being said, it is important to recap the events of the past year in order to get ahead of what's coming for 2024.

The Winners of 2023

Pendle

Pendle has experienced a remarkable year, making significant strides in the DeFi space. Initially launched on the Ethereum mainnet, Pendle offered a unique proposition allowing holders of yield-bearing tokens to trade their future yield for immediate cash. This innovative approach has led to a substantial increase in Pendle's TVL, which skyrocketed by over 1,600% in 2023, climbing from around $15M to an impressive $270M.

Pendle's native token, $PENDLE, saw an extraordinary price surge of approximately 2,200%. This growth was complemented by its listing on major exchanges like Binance, ByBit, and KuCoin. Expansion has been a key theme for Pendle in 2023.

The project extended its reach to Arbitrum, partnering initially with Camelot. This move proved significant as Arbitrum now represents about 45% of Pendle's TVL. Pendle also made its way onto the BNB Chain through a partnership with Thena and integrated LayerZero for cross-chain balance synchronization of vePENDLE.

Another notable development was the integration of GMX's $GLP, which now constitutes around 10% of Pendle's TVL. Pendle has enhanced its offerings by providing 'real yield' for vePENDLE stakers, payable in $USDC or $ETH. They have also made claiming rewards and voting more efficient by reducing gas costs by 70%.

Pendle introduced 'Pendle Earn', a user-friendly feature that simplifies yield generation, and partnered with OKX to integrate this service into the OKX Wallet. The project received a boost from a 2M $ARB grant from Arbitrum's STIP and a Mantle Ecosystem Grant.

In an effort to educate and empower users, Pendle launched the Pendle Academy, a comprehensive educational platform dedicated to mastering yield trading. The platform has also expanded its token integrations to include $sFRAX, $crvUSD, and others, broadening its appeal and utility within the DeFi ecosystem.

RUNE

Thorchain, with its native token $RUNE, has emerged as one of the standout performers in the crypto space this year. Initially gaining traction in the last cycle, Thorchain has seen renewed interest, particularly due to the lending-driven surge in the price of $RUNE.

A key development for Thorchain in 2023 was the introduction of its lending and earning product, THORFi. THORFi's main mechanism allows users to deposit native collateral from various chains and take out zero-interest loans without the risk of liquidation. This mechanism has a dual effect on the $RUNE token: it increases buying pressure by using collateral assets to purchase $RUNE, and simultaneously reduces supply by burning the purchased tokens.

Despite the implementation of risk management strategies like collateral ratios and slip-based fees, there are lingering concerns about the long-term sustainability of the protocol. This is primarily due to the fact that the repayment of loans leads to the minting and selling of $RUNE, potentially creating downward pressure on its price.

However, the results so far have been impressive, with $RUNE's price soaring from approximately $1.40 to nearly $7, a 400% increase. Concurrently, Thorchain's TVL has jumped significantly, from around $93M to approximately $323M, a growth of over 240%. This surge is largely attributed to the introduction of native $BTC lending via THORFi and the integration of Binance Smart Chain (BSC), including the addition of a BSC vault.

Another notable addition to Thorchain in 2023 is the implementation of streaming swaps. This feature enhances the user experience by allowing large transactions to be broken down into smaller sub-swaps, all executed within the span of one block. Streaming swaps simplify the trading process by enabling users to send a single transaction, which the system then divides into smaller, more manageable swaps, thus improving trade execution and reducing slippage.

Thorchain's growing influence in the mainstream crypto market is further evidenced by its recent integrations with prominent platforms like Ledger and TrustWallet. These partnerships not only expand Thorchain's reach but also affirm its growing importance and utility in the broader crypto ecosystem.

Solana

Solana has demonstrated remarkable resilience and growth in 2023, establishing itself as a winner on a fundamental level in the blockchain space. The chain was once plagued with outages, an issue that it was heavily criticized for, but this is an issue that is mostly resolved. It has also seen the emergence of new and innovative projects.

One of Solana's key strengths is its localized fee markets, which effectively address the high transaction costs often experienced on other chains like Ethereum. This feature allows for more affordable transactions, with fees typically staying below $0.01, except for bridging activities. This efficiency has even led to occasions where Solana's transaction volume surpassed that of Ethereum.

The Solana ecosystem has seen a strong rebound in TVL and an increase in weekly active addresses, indicating a growing user base. The chain has become a hotspot for airdrop farming, highlighted by significant events like the $JTO and $JUP airdrops. While some view airdrop farming skeptically, it has the potential to retain capital within the Solana ecosystem due to the variety of opportunities available.

Solana's influence extends beyond its own ecosystem. The introduction of points programs, initially popularized by Blur, has spread across various ecosystems, including Ethereum, for activities like perps trading and staking. This underscores Solana's indirect impact on the broader blockchain community.

In addition to supporting payment platforms and consumer applications, Solana is becoming a hub for DePIN and AI-related projects. Notable examples include Render Network, which allows users to monetize excess GPU space, and Hivemapper, which rewards drivers for contributing to an AI-powered global map. Helium also plays a significant role in the ecosystem by incentivizing users to provide local hotspot coverage.

Solana's native token, $SOL, has enjoyed a significant price surge, increasing by over 800% in 2023, though it remains around 60% below its all-time highs. Despite Solana's impressive performance, there are concerns about its potential to reach new all-time highs in the near future.

A significant factor is the concentration of Solana's FDV in a few hands, particularly the FTX estate. The estate holds a substantial amount of $SOL, estimated between 17M-22M $SOL, valued at approximately $400M. This portion of $SOL is unlocked and can be sold at any time, representing about 4% of Solana's total supply.

Additionally, the FTX estate holds an even larger stake of approximately 40M-44M $SOL, valued around $860M, which is currently staked or vesting. This stake is set to unlock gradually, with about $17M worth of $SOL becoming available each month over the next four years.

Overall, Solana's combination of technical efficiency, growing TVL, and diverse project ecosystem positions it as a key player in the blockchain space, with a promising outlook for continued growth and innovation.

Injective

Injective, along with its token $INJ, has had an impressive year in 2023. The turning point for Injective came when the team announced a massive $150M ecosystem fund, supported by major players like Pantera Capital and Jump Crypto.

Despite the TVL and volume not being significant, this announcement made the market reevaluate Injective and value the appchain as a protocol. This revaluation encourage the market to move away from the traditional "fat protocol thesis," through which the market only focused on the value of underlying blockchain protocols.

Injective's focus on finance and its ambition to become a DeFi hub have been key drivers of its growth, positioning it as a leader in the appchain space. These appchains, designed for specific applications, offer increased composability, ecosystem sovereignty, and additional revenue streams, distinguishing them from traditional blockchain models.

The Cosmos ecosystem, has become a magnet for projects and talent, especially those previously part of the Terra Luna ecosystem. This shift has brought significant resources and attention to Cosmos and its appchains, including Injective. Built on Cosmos infrastructure and accessible via the Keplr wallet, Injective benefits from this ecosystem's growth and the ease of interaction through bridges like Satellite powered by Axelar.

$INJ, as a top TVL holder on the Cosmos network, represents the growing interest in appchains and their potential for value accrual. While $INJ is currently heavily integrated with Cosmos, there's potential for appchains like Injective to become more independent, similar to trends seen in other ecosystems like Avalanche’s subnets.

$INJ's popularity is also bolstered by its potential for staking and earning airdrops, aligning it with tokens like $OSMO, $TIA, and $ATOM. The introduction of points programs and incentive schemes adds to its appeal, attracting users and investors alike. Projects like Black Panther and Talos have announced airdrops for staking $INJ, further enhancing its attractiveness and solidifying its position as one of this year's winners in the crypto space.

Bittensor

In 2023, Bittensor distinguished itself by being at the intersection of AI and crypto, representing a step forward in how blockchains can be used to foster the creation of a network that incentivizes machine intelligence.

It functions as a decentralized network where individuals contribute to and benefit from AI advancements through a peer-to-peer intelligence market and digital commodity marketplace. On the supply side, miners host AI models and make them available, while validators evaluate the effectiveness of their contributions.

On the demand side, $TAO holders delegate their tokens to those validators, and consumers are the end users of the AI models provided by the network. They can range from app developers integrating AI capabilities into their applications to chatbot users seeking high-quality responses.

The price of $TAO experienced a remarkable increase in 2023, rising from $34 to $376. This growth reflects not only market dynamics but also the growing interest and trust in Bittensor's platform and its potential to become a digital hivemind. Similar to how neurons in the human brain work together, knowledge distillation enables nodes to collectively improve within the network.

As a result, the core of Bittensor's appeal lies in its ability to create a collaborative environment for AI development. It serves as a marketplace where users can access a diverse range of AI capabilities, depending on their needs. This setup encourages a continuous cycle of development, improvement, and application of AI models.

Bittensor's growth and adoption in 2023 can be attributed to its innovative approach to combining AI with blockchain and open-source technology. Its decentralized framework fosters innovation and collaboration. The catalyst for growth was the launch of subnets with the Revolution Upgrade, which was launched on October 2nd.

A key feature of this upgrade is the introduction of a specialized programming language designed specifically for crafting incentive systems. This innovation empowers developers to

create and implement their incentive mechanisms on the Bittensor network, utilizing its extensive pool of intelligence to tailor markets to their specific requirements and preferences.

This upgrade also represents a notable departure from a centralized model, where a single foundation controls all aspects of the network, toward a more decentralized framework. Various individuals or groups now have the opportunity to own and manage subnets.

With the introduction of “subnets,” anyone can now create their own subnetworks and define their incentive mechanisms, fostering a broader range of services within the Bittensor ecosystem.

This shift promotes diversity and decentralization within the network, aligning with the principles of openness and collaboration that underpin Bittensor’s mission. Furthermore, subnets will compete for emissions by garnering consensus from delegates in the new “route network,” introducing a competitive element that can drive innovation and resource allocation.

Another standout feature is the tokenomics, with the maximum supply of $TAO tokens capped at 21M, which will be fully emitted after 256 years. Another similarity with Bitcoin is that $TAO’s issuance schedule follows a halving concept, which occurs approximately every 4 years. However, this is determined by the total token issuance rather than the block number. For instance, once half of the total supply has been issued, the rate of issuance is halved.

It’s also worth noting that the $TAO token economy is characterized by its simplicity, commitment to decentralization, and fair distribution. Unlike many other blockchain projects, $TAO tokens have not been allocated to any party through ICOs, IDOs, private sales to VCs, or privileged allocations to the team, foundation, or advisors. Instead, every circulating token has to be earned through active participation in the network.

New $TAO tokens can only be produced through mining and validating. The network rewards both miners and validators, and each block grants a reward of 1 $TAO, shared equally between miners and validators. Hence, the only way to acquire $TAO is by either purchasing tokens on the open market or engaging in mining and validation activities.

With $TAO not being listed on large exchanges yet, this has also led many to speculate that the price might go even higher after large entities like Binance, Coinbase, Kraken, and Upbit are forced to buy on the open market.

The Losers of 2023

Fantom

Fantom had a turbulent year, primarily due to its reliance on Multichain as its main bridge provider. In July, Multichain faced issues when the team reportedly lost access to wallets, leading to a loss of over $120M, most of which resided on the Fantom bridge.

This incident significantly affected Fantom's TVL, which plummeted from around $200M to a low of about $40M. More importantly, it shook user confidence, which some argue had a greater impact than the financial loss itself. Criticism arose over how Fantom managed the situation as many felt that the team should have conducted more thorough due diligence or diversified its bridge exposure.

The decision by the Foundation to investigate the Multichain incident was also questioned. There was speculation about whether it was an inside job or the result of intervention by Chinese authorities. Some argued that the resources spent on this investigation could have been better utilized elsewhere.

Following this event, projects like SpiritSwap shut down, and there remains a sense of caution about Fantom's future, given past decisions made by the Foundation. Adding to Fantom's challenges, the past year saw the launch of more scalable blockchains, increasing competition.

Even without the exploits, Fantom's appeal among crypto natives may have waned as the number of active market participants decreased and other chains offered new incentives and experiences.

However, there are positive developments for Fantom, including the introduction of Fantom Sonic, an upgrade designed to enhance network scalability. Fantom Sonic aims to achieve speeds of up to 2,000 transactions per second (TPS) and an average finality time of one second.

Additionally, 2023 marked the return of Andre Cronje as Director at the Fantom Foundation, although it was noted that he had never fully left his role at Fantom.

DAO Tooling

It’s been a tough year for projects in the DAO tooling sector. Projects like Upstream and SuperDAO, despite raising significant funds in the eight-figure range, have struggled to show much progress. This year, SuperDAO ended its operations and returned the remaining funds to its investors.

Currently, DAOs are still relatively decentralized but dysfunctional. Their demand remains limited, primarily confined to specific use cases. The need for DAO tooling largely hinges on the broader adoption of crypto in various sectors, such as gaming, music, decentralized personal information networks (DePIN), real-world assets (RWAs), and others.

However, as it stands, crypto's influence in these areas is still relatively minor, which has led to a limited demand for decentralized governance tools.

Despite the considerable investment poured into developing DAO tooling, it has lost its appeal for the time being. The sector's future growth and relevance will depend on the wider integration and success of crypto across various industries, which would create a more substantial need for decentralized governance mechanisms.

Smart Contract Wallets

Account abstraction was a buzzword early in 2023. This idea revolves around smart contract wallets designed to simplify on-chain actions. The goal was to make it so that the wallet itself could automatically execute certain transactions, reducing the need for users to manually sign each one.

Despite the potential to improve user experience, which is a known issue in the crypto space, account abstraction hasn't become mainstream just yet. Even experienced crypto users often find it challenging to navigate unfamiliar chains or protocols.

However, rather than adopting account abstraction, wallets like Rabby and Phantom have gained popularity by offering a more user-friendly experience, similar to well-known wallets like MetaMask and SolFlare, but with improved features.

Most application developers continue to design their platforms for traditional wallets. Throughout 2023, smart contract wallets struggled to attract significant interest from both developers and users.

However, as the on-chain market grows and new users enter the space, there's potential for these innovative wallet solutions to become more widely adopted, potentially shifting current demand trends.

Dino Coins

Crypto moves at a rapid pace, with new leaders constantly emerging and old ones fading away. While Bitcoin and Ethereum have established themselves as assets with staying power, others, which have previously commanded large valuations, have struggled to maintain relevance.

As the crypto market expands with each halving cycle, Bitcoin's dominance wanes, making room for new tokens that either offer unique use cases or capture the community's interest. Ethereum, in particular, has risen to prominence, challenging Bitcoin's top position and offering smart contract capabilities, capturing the "ultrasound money" narrative.

But “Dino Coins”, such as Litecoin, are quickly falling out of prominence in favor of newer ones with more utility. Litecoin, once touted as the "silver to Bitcoin's gold," has not lived up to its initial promise. Bitcoin Cash ($BCH), despite its multi-billion dollar market cap, no longer generates significant buzz in the crypto community. These older tokens have underperformed compared to Bitcoin and newer altcoins.

Without question, coins like $LTC, $BCH, $ADA, $XMR, and etc., face an uphill battle to regain relevance as new market entrants and investors are drawn to other blockchains and emerging crypto use cases like DeFi governance tokens, and tokens representing any of the many emerging sectors.

Despite their challenges, it's notable that some of these older coins still hold higher valuations than newer chains and applications with more attention, adoption, and revenue.

Quant Network

Quant Network aims to be a key player in the blockchain economy by linking existing distributed ledger networks. Its native token, $QNT, performed modestly this year, with only an approximate 8% increase, which is relatively low compared to other top 100 cryptocurrencies.

The primary goal of Quant Network is to efficiently and effectively bridge TradFi institutions and enterprises with tokenized assets. By doing so, it aims to simplify the process and reduce the complexities involved in leveraging blockchain technology for TradFi players.

In 2023, Quant made strides by integrating with Zapier, a tool that connects off-chain data with on-chain technology. It also became a member of UK Finance, a prominent trade association in the UK banking sector. These developments indicate Quant's commitment to aligning itself with TradFi and its adoption of blockchain technology.

However, Quant's approach to integrating with TradFi is not as straightforward or well-understood and this is reflected in its price. Launched in 2018, $QNT reached its peak price of around $424 in September 2021.
Currently, the token is priced at approximately $114, which is a significant drop of over 70% from its all-time high. This decline suggests that the best days for $QNT might already be in the past, although the future of the token and the network remains uncertain.

The Winners of 2024

Bitcoin

As we approach 2024, Bitcoin is gearing up for what could be a landmark year, driven by a confluence of favorable factors. The anticipation of a Bitcoin spot ETF approval is creating a wave of optimism, especially with major players like BlackRock showing interest in offering Bitcoin buying options to their clients.

This sentiment is bolstered by Bloomberg analysts, who predict a high likelihood of the ETF's approval by early January 2024. Such a development is expected to significantly ramp up institutional interest and investment in Bitcoin. We don't think this will be a "sell the news" event, since trading will not be enabled until a few weeks later .

In the backdrop of these developments, the Federal Reserve's monetary policy is also playing an important role. With expectations of interest rate reductions in the first quarter of 2024, largely due to it being an election year, the economic environment is shaping up to be conducive for riskier investments like Bitcoin. Lower interest rates typically stimulate investments in such assets, potentially driving Bitcoin's price upward. More importantly, 2024 will show what the impact of a halving is in a high interest rates environment, potentially ahead of rate cuts in the upcoming months.

Moreover, Bitcoin is emerging from a bear market and heading into 2024 with positive sentiment and a growing demand, particularly from institutional investors. This renewed interest, coupled with the above factors, positions Bitcoin for a potential surge in value. We would not be surprised to see Bitcoin surpass its previous all-time high and reach a price range of $80,000 to $100,000.

The combination of a potential ETF approval, favorable monetary policies, the upcoming halving event, and the post-bear market recovery paints a bullish picture for Bitcoin in 2024. This confluence of factors is setting the stage for what could be a highly successful year for the flagship cryptocurrency.

$COIN, $MSTR, BTC Mining Stocks

In 2024, on the back of overall improved sentiment, several public companies related to cryptocurrency, specifically Bitcoin, are poised for success, with Coinbase ($COIN), MicroStrategy ($MSTR), and Bitcoin mining stocks like Riot Platforms ($RIOT), Marathon Digital Holdings ($MARA), CleanSpark ($CLSK), and Cipher Mining ($CIFR) leading the charge.

Coinbase is expected to see improved earnings as the crypto markets show signs of recovery and it continues to expand its international operations. The uptick in trading volume, particularly in Q4 2023, is likely to positively impact Coinbase's financial performance.

Coinbase is also the chosen custodian for the majority of firms planning to launch Bitcoin ETFs in the U.S., including industry giants like BlackRock, Franklin Templeton, and WisdomTree, underscores its significance.

These custody services, essential for the safekeeping of large amounts of Bitcoin, could see a surge in demand and fees for Coinbase, particularly if the spot $BTC ETF is approved. However, the concentration of custody services with Coinbase has raised concerns about the need for more diversity among custodians.

MicroStrategy, under the leadership of Michael Saylor, has made a significant bet on Bitcoin, holding a substantial amount of $BTC. The company's Bitcoin holdings, acquired at an average price of around $30,000 per Bitcoin, have the potential to yield enormous profits if Bitcoin's price reaches the predicted levels of $80,000 to $100,000.

Such an increase in Bitcoin's value would result in profits ranging from approximately $8.68B to $12.17B for MicroStrategy, validating Saylor's risky investment strategy and positively impacting MicroStrategy's stock.

Bitcoin mining companies are also expected to benefit from the upcoming Bitcoin halving. The halving event, which reduces the rate at which new Bitcoin is created, could lead to a rise in Bitcoin's price due to its increased scarcity. This scenario is favorable for mining firms like Riot Platforms, Marathon Digital Holdings, CleanSpark, and Cipher Mining, as higher Bitcoin prices can translate into greater profitability for these companies.

Mining companies often use bear markets as an opportunity to expand their operations by acquiring more mining equipment, aiming to compensate for lower revenues. Marathon Digital Holdings recently invested $180M in two new mining sites.

This strategic expansion led to a notable increase in $MARA stock, further boosted by the news of their partnership with Anchorage Digital Bank for Bitcoin custody services. Such developments demonstrate how the market can respond positively to Bitcoin mining companies' proactive steps, especially in preparation for Bitcoin's halving event.

The potential approval of a Bitcoin ETF early in the year could create a unique market dynamic. There might be a period of relatively flat price action in the months following the ETF approval, leading up to the halving.

This lull could be due to market anticipation and the adjustment period as investors and companies align their strategies with the new opportunities presented by the ETF and the upcoming halving.

2024 is shaping up to be a promising one for public companies associated with cryptocurrency, especially Bitcoin. Coinbase's growing role in custody services, MicroStrategy's substantial Bitcoin holdings, and the potential gains for Bitcoin mining companies all point to a bullish outlook for these entities.

Restaking and Eigenlayer

The restaking narrative is experiencing major tailwinds as we head into 2024, with Eigenlayer standing to be the biggest benefactor. Eigenlayer is revolutionizing blockchain ecosystems by adopting a microservices approach similar to cloud computing, which allows for the scaling of large and complex applications.

Eigenlayer's offering is particularly beneficial, as it enables stakers to extend their influence to other applications and ecosystems while being economically motivated to adhere to protocol rules. Any malicious action could result in slashing penalties on Ethereum, ensuring compliance and security, which also means that there are risks associated with leverage.

For the average Ethereum holder, Eigenlayer introduces an attractive proposition. It offers an additional layer of yield and utility, enhancing the long-term appeal of Ethereum as an investment. The launch of Eigenlayer's restaking feature has been met with quick adoption, with each limited tranche being quickly filled, often within a day, if not hours.

This rapid uptake is largely driven by the anticipation of potential rewards associated with Eigenlayer's point accrual system, with many users speculating on its correlation with future token airdrops. The limited availability of these tranches has also contributed to the perception of exclusivity around the protocol, a trend that is likely to continue into 2024.

Eigenlayer's restaking initiative has already seen significant traction, with caps on Ethereum deposits being quickly reached and creating gas wars among users. The protocol recently expanded its Ethereum staking cap to 500,000 ETH and added six new Liquid Staking Tokens (LSTs) for restaking.

With a current TVL of approximately 402,000 ETH (around $900M), it's highly probable that the increased cap of 500,000 ETH will soon be reached, potentially pushing the TVL to around $1.1B; assuming Ethereum's price is $2250. With the anticipated launch of an Eigenlayer token in 2024, Eigenlayer is positioned to be a very influential player in the coming year.

EigenLayer is still relatively young, but there's already an impressive ecosystem of projects building atop its infrastructure. This developing ecosystem is becoming a narrative of its own,

with terms like Liquid Restaking Solutions, Liquid Restaking Tokens, and LRT Finance, beginning to become buzzwords.

The Cosmos

Heading into 2024, the Cosmos ecosystem has experienced a massive resurgence and remarkable growth, with several chains outperforming and demonstrating strong performance and potential for continued success.

Thorchain, a standout project built using the Cosmos SDK, offers a unique cross-chain liquidity solution without relying on wrapped tokens. It's the only platform enabling non-custodial cross-chain swaps between major cryptocurrencies like Bitcoin and Ethereum. Thorchain's native token, $RUNE, has a unique, deterministic valuation model tied to the value of assets in its liquidity pools. At any given time, the value of $RUNE could be three times the value of its pools.

The introduction of streaming swaps and expansions through wallet integrations such as Ledger Live and TrustWallet and new revenue streams like ThorFi lending have bolstered its position. As a result, $RUNE's price has seen a significant rise, from a low of $0.8 to a high of $7.3 in 2023; it’s trading at $5.3 at the time of this writing.

However, while $RUNE's value is based on deterministic calculations, its market price is also influenced by speculation and sentiment, making its future outlook dependent on market reactions and comparisons with competitors like LayerZero and CCIP.

Injective Protocol, another decentralized Layer 2 DeFi protocol built using the Cosmos SDK, leverages Cosmos' interoperability and scalability features for fast, cross-chain derivatives trading. The $INJ token is designed to be deflationary, with its value tied to governance, dApp value, and network security. While $INJ has seen a substantial price increase, the protocol is still awaiting a boost in dApp usage to drive demand for the token.

As the ecosystem grows and dApps generate more fees, INJ's burn rate is expected to rise. It should be noted that, even though $INJ rallied from a low of $1.3 to a high of $40 in 2023, the TVL growth on the chain has yet to take off and is a conservative $18M. TVL and trading volume can signal greater token burns and are key to assessing $INJ's future prospects.

Osmosis, a decentralized exchange within the Cosmos ecosystem, is leading the transition towards appchains. Its focus on user-centric trading and integration of new assets is expected to drive trading volume and user growth.

The implementation of Osmosis's tokenomics 2.0 has reduced the inflation rate of $OSMO, potentially making it more attractive to investors. And the launch of assets like $TIA, native $USDC, and $wstETH, and funding for projects like Noble, are enhancing Osmosis' trading volume and revenue.

Osmosis' plans to become a liquidity layer for new ecosystems, integrate native Bitcoin into DeFi, merge stablecoin liquidity, and implement fallback markets for illiquid assets are worth following.

Akash Network, a decentralized cloud computing marketplace, is another promising project within the Cosmos ecosystem. Utilizing Cosmos' technology, Akash Network aims to provide a secure and scalable cloud infrastructure platform. Akash also falls into the AI category, as AI could increase the demand for Akash's services.

Akash is a great example of how Cosmos' composability and customization allow it to host projects that represent all kinds of narratives, from trading to AI, DePIN, and beyond.

In addition to these projects, the Cosmos ecosystem is also the home of dYdX, which has recently launched its own chain to operate in a fully decentralized manner. This move has improved scalability and user experience, highlighting dYdX's adaptability and commitment to community-driven governance. By creating its own blockchain, dYdX has tailored its operations to better suit its needs and goals.

This decision has not only helped dYdX overcome significant challenges but also led to important changes in how its tokens are used and how the platform is governed. Now, dYdX tokens have a bigger role in decision-making, and the profits made by the platform are shared with token holders who are actively involved.

This shift towards a governance model driven by its community marks a significant step in making sure that the platform's users have a say in its future.

Celestia

Celestia recently launched and has emerged as a strong player, as evidenced by its impressive post-launch performance. Starting at $2, its token, $TIA, has seen a significant rise, currently trading above $13. This surge reflects the growing interest and demand for Celestia's offerings.

The platform's focus is on enhancing Data Availability for blockchain networks, aiming to make it more cost-effective and efficient. $TIA, Celestia's native token, plays a crucial role in this ecosystem, being used to pay fees and allowing developers to access different features on the platform.

Staking $TIA is also gaining traction, driven by the anticipation that decentralized applications utilizing Celestia's DA services might distribute airdrop tokens to $TIA stakers. This potential for additional rewards is adding to the appeal of holding and staking $TIA.

The strength of Celestia is further bolstered by its founder, who is recognized for his exceptional coding skills and notable achievements, including hacking the CIA at the age of 16. Alongside a talented and well-supported team, Celestia is well-positioned for success and stands out as a promising project in the blockchain world.

The Losers of 2024

Binance and $BNB

The U.S. Department of Justice (DOJ) and other regulators found that Binance failed to comply with anti-money laundering regulations and did not register as a money-transmitting business. Additionally, Binance was found to have violated sanctions laws by conducting business with entities or individuals prohibited by the U.S. government.

As a result of these violations, Binance agreed to a settlement with the U.S. government, which includes a substantial fine of $4.3B. This fine comprises both forfeiture and a criminal penalty. It's believed that Binance can cover this fine without dipping into user funds, and there were speculations of an on-chain transaction made by Binance to pay this amount.

To ensure compliance in the future, Binance will be under the supervision of an independent monitor for three years. This monitor's role is to ensure that Binance adheres to the settlement terms, particularly in areas like anti-money laundering and adherence to sanctions laws.

Should Binance fail to comply with these terms, it could face severe repercussions, including additional fines, increased regulatory scrutiny, potential legal actions, damage to its reputation, and operational limitations.

Despite the settlement, Binance has not experienced significant user outflows, but it’s gradually losing market share to competitors like OKX, Coinbase, and Bybit. The price of Binance's native token, $BNB, has remained relatively stable, fluctuating between $230 and $300 since the settlement.

However, Binance Smart Chain has not seen significant innovation or development of new dApps that attract users. This lack of activity could potentially lead to $BNB dropping from its position in the top 5 cryptocurrencies by market cap to the lower end of the top 10.

TrueUSD

TrueUSD ($TUSD), often referred to as Justin Sun's T-bills, has faced its share of controversies. Initially launched by TrustToken Incorporated, TrueUSD underwent a significant change when Techteryx, an Asia-based conglomerate, acquired the business.

Despite claims of being independent from Justin Sun, there have been alleged connections between him and Techteryx, leading to doubts and confusion regarding the true ownership and control of $TUSD.

In terms of market performance, $TUSD saw a notable increase in its market cap, growing from $750M in December 2022 to a peak of $3.8B in 2023. However, this growth has been overshadowed by challenges in securing regular attestations from its auditor, Armanino, especially after they stopped auditing cryptocurrency companies following the FTX collapse.

The last available attestations for $TUSD are from late 2022, which has led to concerns about the stablecoin's transparency and financial integrity.

There have been instances where large quantities of $TUSD were minted, coinciding with market pumps, further raising eyebrows about the practices surrounding the stablecoin. The lack of recent financial attestations, combined with its increasing market cap during a broader market downturn, has led to questions about TrueUSD's stability and reliability.

As a result of these issues, there's a growing lack of trust in TUSD, and it's anticipated that its market cap will continue to decline. The stablecoin's future seems uncertain, with increasing skepticism about its operations and financial health.

World Coin

Worldcoin, a project backed by OpenAI's Sam Altman, is creating a global financial and identity network using iris scans for user identification. The project's key tool for achieving this is the Orb, a device that scans irises to verify each person's uniqueness, distinguishing real humans from bots or AI. This digital identification platform is designed to ensure unique identification of individuals on the internet.

However, Worldcoin has encountered several challenges and controversies. Privacy and security concerns have been raised about the use of biometric data (iris scans) for digital identification. Ethical questions regarding its onboarding practices, especially in developing countries, have also surfaced. Additionally, there's debate over the project's token economics and the influence of market makers.

Worldcoin's token, $WLD, is experiencing significant inflation. Currently priced at $3.8, the circulating supply of $WLD is increasing by about 3.13% daily, which boosts its market cap by approximately $12.25M each day. This monthly increase of nearly 94% adds roughly $367.49M to its market cap.

Annually, the circulating supply could surge by around 1143%, leading to a $4.47B increase in market cap. Such high inflation rates are not conducive to the price growth of $WLD. In comparison, $WLD's fully diluted valuation stands at $38B, surpassing even $XRP, a top 5 crypto by market cap, with a fully diluted valuation of $33B.

Furthermore, the daily inflation rate of $WLD is set to increase from $12.25M to $25.4M on July 24, 2023, at the current price of $3.84. This would result in an annual inflation of $9.27B after the unlock.

Worldcoin's ambition is to become a widely-used currency, potentially for monetary transactions and even as a form of universal basic income. This approach is somewhat similar to $LUNA's strategy, which aimed to maximize adoption in order to become useful. There are plans for Worldcoin to possibly launch its own blockchain in 2024, likely on the OP stack, as they initially launched their token on Optimism.

Given the massive inflation and the challenges it faces, Worldcoin's prospects for a price increase in 2024 appear unlikely. The project's success hinges on its ability to manage these inflationary pressures and navigate the ethical and security concerns surrounding its use of biometric data.

Blockchain Forks

Blockchain forks like $BCH and $BSV are facing a decline in market dominance and are likely to drop in market cap. This is because they are being outperformed by newer, more scalable blockchain solutions that are better equipped to support real-world applications. These fork often start with a smaller user base and face significant challenges in achieving the necessary network effect for success.

One of the main issues with blockchain forks is the perception of legitimacy and stability. Users and developers may view these forks as less credible compared to the original blockchain, affecting trust and adoption. Additionally, forks often experience fragmentation within their communities and resources, which can impede their development and limit their ability to attract new developers and navigate regulatory environments.

Another challenge for blockchain forks is building brand recognition and facilitating practical use cases. Without these, they risk being marginalized as niche interests, appealing only to a small group of enthusiasts rather than achieving broader market acceptance. As a result, these forks will continue to struggle to attract new users or generate demand for their tokens, leading to a further decline in their market position.

Polkadot

Polkadot ($DOT), once a prominent player in the crypto space, faced significant challenges in 2023. Initially celebrated as a leading multichain solution, Polkadot has struggled to maintain its market position, slipping from 7th to 12th in market cap. Its peak market cap of $56.25B during the 2021 bull cycle has dwindled to about $10.1B, reflecting a significant loss of investor confidence and market interest.

The platform's intricate architecture, which includes Relay Chains, Parachains, and Bridge Chains, has proven to be a double-edged sword. While it aimed to address scalability and security, this complexity has made Polkadot less agile compared to emerging technologies like Cosmos and its Inter-Blockchain Communication (IBC) protocol. This adaptability gap has raised concerns about Polkadot's long-term viability in a rapidly evolving blockchain landscape.

In 2023, Polkadot's ecosystem showed signs of stagnation. The daily active user count dropped to around 4,800, significantly lower than its competitors like Cosmos. This decline in engagement is also reflected by the decreasing interest in Parachain auctions, once a key feature for network growth and development.

The scheduled large-scale unlock of its native token, $DOT, starting on May 26, 2024, poses an additional risk, potentially flooding the market with 401.23K $DOT per day, equivalent to $1.23 billion at current valuations.

Polkadot's struggle is also evident in its inability to capture compelling narratives or incentives that attract users and developers. Unlike its competitors, which have leveraged trends like memecoins, utility-driven dApps, or airdrop hype, Polkadot has lagged in creating a vibrant and active community. This lack of engagement, combined with underperforming Parachain investments, has dampened enthusiasm and investment prospects within the network.

As the crypto space evolves rapidly, with interoperability becoming a standard feature, Polkadot's complex architecture and tokenomics may hinder its ability to stay relevant. It’s rapidly declining rank in market cap and the intense competition underscore the need for continuous innovation and responsiveness to market demands and it doesn’t look like Polkadot can keep pace.

CLOSING THOUGHTS

Section 22

CLOSING THOUGHTS

As we reflect on the cryptocurrency landscape of 2023, it is evident that the industry has matured significantly amidst a complex tapestry of technological innovations, regulatory challenges, and market dynamics.

The resilience of DeFi and the proliferation of advanced blockchain technologies have marked this year as a pivotal point in the crypto narrative. The industry has seen both trials and triumphs, with significant market fluctuations and regulatory shifts shaping its evolution.

Notable figures and companies have played critical roles, driving innovation and influencing the market's direction. These influencers have steered the industry through turbulent times, laying the groundwork for a more robust and sophisticated ecosystem. Technological advancements, particularly in blockchain security and Layer 2 solutions, have addressed critical challenges, paving the way for greater adoption and trust.

The regulatory landscape, though still dynamic and evolving, has started to take a more defined shape, providing clearer guidelines for market participants. This has been crucial in integrating cryptocurrencies into the broader financial system and ensuring investor protection.

Looking ahead to 2024, the cryptocurrency industry is poised for further growth and innovation. We anticipate continued advancements in blockchain technology, particularly in areas like scalability, interoperability, and integration with artificial intelligence. These developments will likely spur new applications and use cases, expanding the reach and impact of cryptocurrencies.

The market dynamics are expected to evolve as well, with a potential increase in institutional participation and a more stable investment environment. The DeFi sector might witness more mainstream adoption, with innovative solutions addressing existing limitations.

Regulatory clarity is also anticipated to improve, fostering a more conducive environment for both institutional and retail players. This will be essential in maintaining market integrity and protecting investors.

To wrap it up, 2024 holds immense promise for the cryptocurrency industry. With its ever-evolving landscape, the crypto world stands at the cusp of a new era, one that brings together technological prowess, regulatory maturity, and market stability. As we move forward, the industry is likely to cement its place as a significant and enduring part of the global financial ecosystem.

Until next year,

Revelo Intel