State of Crypto

An overview report
<table>
<thead>
<tr>
<th>01.</th>
<th>02.</th>
<th>03.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The first era of the modern internet — roughly 1990-2005 — was about open protocols that were decentralized and community-governed. Most of the value accrued to the edges of the network: users and builders.</td>
<td>The second era of the internet — roughly 2005-2020 — was about siloed, centralized services. Most of the value accrued to a handful of large tech companies.</td>
<td>We are now beginning the third era of the internet — what many call web3 — which combines the decentralized, community-governed ethos of the first era with the advanced, modern functionality of the second era. This will unlock a new wave of creativity and entrepreneurship.</td>
</tr>
</tbody>
</table>

Source: [https://cdn.aphorism.xyz/0GBv9WRj-LQ6F4r2gGczG6AVeFINx3HEY1ZSA93U](https://cdn.aphorism.xyz/0GBv9WRj-LQ6F4r2gGczG6AVeFINx3HEY1ZSA93U)

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What is web3?
Why Web3 Matters
The internet as we know it is flawed.
After friendly beginnings, web2 companies have become more extractive and less cooperative.
Web3 gives people property rights: the ability to own a piece of the internet.
Web3 aligns network participants to work together toward a common goal — the growth of the network.
Web3 empowers a collective owned future over a corporate or government owned future.
Cycles of Innovation
The crypto market develops in cycles
These cycles appear chaotic from the outside but have an underlying order.
The result is consistent long-term growth, driven by a feedback loop between interest and innovation.

Source: CoinMarketCap, GitHub, Pitchbook, Twitter

Data is as of 12/31/2021

1 Developer activity based on stars of crypto-related repositories on GitHub.
2 Startup activity based on crypto-related initial funding rounds via Pitchbook.
3 Social media activity based on crypto-related comments on Twitter.
Layer 1 Blockchains
Blockchain computers are composed of nodes: physical computers, like PCs, joined together via a consensus mechanism.
Web3 is multi-chain; developers have many options when it comes to building on blockchains

<table>
<thead>
<tr>
<th>Layer 1 Blockchains</th>
<th>Ethereum</th>
<th>Solana</th>
<th>Polygon</th>
<th>BNB Chain</th>
<th>Avalanche</th>
<th>Fantom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Addresses</td>
<td>5.5M</td>
<td>15.4M</td>
<td>2.6M</td>
<td>9.4M</td>
<td>609K</td>
<td>308K</td>
</tr>
<tr>
<td>Daily Transactions</td>
<td>1.1M</td>
<td>15.3M</td>
<td>3.4M</td>
<td>5.0M</td>
<td>832K</td>
<td>743K</td>
</tr>
</tbody>
</table>

Source: Nansen; Active addresses is measured over a 30-day period as of 5/12/2022; Daily transactions is represented by a 30-day average as of 5/12/2022.
While other smart contract platforms rival Ethereum in users and usage, the demand for block space is unmatched.

Transaction Fees Paid by Users (7D Average)

- Ethereum: $15,249,254
- BNB Chain: $1,304,470
- Avalanche: $821,128
- Fantom: $192,604
- Polygon: $93,890
- Solana: $62,041

Source: https://cryptofees.info; Data is as of 5/12/2022.
With Ethereum L1 as the hub, a significant amount of value is being deposited into bridges.
Ethereum continues to attract the most developers, but several emerging ecosystems are on a similar trajectory.

Monthly Active Developers
Since Launch

Source: Electric Capital 2021 Developer Report
Data is as of 12/31/2021
Note: Some projects were omitted due to unclear, unavailable, or imprecise data.
State of Crypto

Layer 2 Scaling
A layer 2 is a separate blockchain that extends the base layer and inherits its security guarantees.

Optimistic Rollups
Transactions are assumed to be valid, but can be challenged if necessary

- More production-ready
- Correctness relies on game-theoretical incentives
- Finality on L1 depends on a 1-week challenge period
- Easier to program
- EIP-4844 (proto-danksharding) can make these rollups very cheap for users

Zero-Knowledge Rollups
State transitions are computationally verified off-chain using validity proofs

- Less production-ready
- Correctness is mathematically guaranteed
- Finality on L1 is instant
- Harder to program
- Proofs can be computationally expensive, though this is rapidly improving

zkSync
STARKNET
Arbitrum
Aztec
Optimistic rollups are the most popular L2 tech today, but **ZK rollups** are just beginning to come online.

Total Value Locked on Ethereum Layer 2s

Source: https://l2beat.com/
Data is as of 5/12/2022.
L2 rollups pay for Ethereum’s security

Today, L2 rollups contribute to ~1.5% of all fees paid on Ethereum.

Source: https://l2fees.info/, Data is as of 5/12/2022.

L2 Rollups
One Day Security Costs

- zkSync: $17,883 (4.1%)
- Loopring: $18,471 (4.3%)
- Starkware: $21,041 (4.8%)
- Optimism: $70,823 (16.2%)
- dYdX: $111,447 (25.4%)
- Arbitrum: $194,866 (44.5%)
L2 rollups are competing hard against each other to bring transaction fees down.

**Layer 2 Scaling**

<table>
<thead>
<tr>
<th>Name</th>
<th>Send ETH</th>
<th>Swap Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meta Network</td>
<td>$0.01</td>
<td>$0.07</td>
</tr>
<tr>
<td>Loopring</td>
<td>$0.20</td>
<td>$0.48</td>
</tr>
<tr>
<td>zkSync</td>
<td>$0.22</td>
<td>$0.54</td>
</tr>
<tr>
<td>Polygon-Hermesz</td>
<td>$0.25</td>
<td>-</td>
</tr>
<tr>
<td>Boba Network</td>
<td>$0.72</td>
<td>$0.94</td>
</tr>
<tr>
<td>Optimism</td>
<td>$0.88</td>
<td>$1.30</td>
</tr>
<tr>
<td>Arbitrum One</td>
<td>$2.27</td>
<td>$3.15</td>
</tr>
<tr>
<td>Aztec Network</td>
<td>$3.09</td>
<td>-</td>
</tr>
<tr>
<td>Ethereum</td>
<td>$4.48</td>
<td>$22.41</td>
</tr>
</tbody>
</table>

Source: https://l2fees.info/
Data is as of 5/12/2022.
DeFi
A huge part of the world is underserved by existing financial institutions.

Sources:
The Global Findex Database, 2017 Report;
The World Bank (2020 and 2021 data)
DeFi has grown from nearly zero to over $100 billion in less than two years.
Newer blockchains are trying to replicate the success of DeFi on Ethereum.

Source: Defi Llama; Data is as of 5/12/2022.
Token exchange and lending protocols are the most popular DeFi use cases today.
Proof-of-stake is coming to Ethereum

12.6M ETH
Total ETH Deposited

73K
Unique Depositors

392K
Unique Validators

Total ETH Staked to Beacon Chain

Top ETH 2 Deposit Addresses

Source: Nansen
Data is as of 5/12/2022.
DeFi would represent the 31st largest US bank by total assets under management.

Source: Defi Llama, https://www.federalreserve.gov/releases/lbr/current/; Bank AUM data is as of 12/31/2022; DeFi TVL data is as of 5/12/2022.

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Stablecoins
There are three primary categories of stablecoins, though the lines between them are blurry.

<table>
<thead>
<tr>
<th>Fiat Backed</th>
<th>Crypto Backed</th>
<th>Algorithmic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backed by fiat currencies, cash equivalents, or other assets</td>
<td>Backed by crypto assets held in smart contracts</td>
<td>Algorithmically balances supply and demand</td>
</tr>
</tbody>
</table>

- Decentralization
- Stability
- Capital Efficiency
Increasing use of stablecoins demonstrates demand for a digital dollar

Source: CoinGecko
Data as of 5/12/2022.
Only includes stablecoins that are believed to be fully collateralized.

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The on-chain velocity (i.e., rate of turnover) for today’s top stablecoins varies drastically.

<table>
<thead>
<tr>
<th>Stablecoin</th>
<th>Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dai</td>
<td>110.74</td>
</tr>
<tr>
<td>USDC</td>
<td>60.38</td>
</tr>
<tr>
<td>Tether</td>
<td>2.52</td>
</tr>
</tbody>
</table>

Source: Coin Metrics; Data is as of 5/12/2022.
Stablecoins represent just a tiny fraction of the world's money supply.

Data is as of 5/12/2022; updated to correct error in source data on 5/19/2022
NFTs
We’ve seen several categories of NFTs emerge, but it’s still very early days

<table>
<thead>
<tr>
<th>Profile Pictures</th>
<th>Art &amp; Music</th>
<th>Gaming</th>
<th>Utility</th>
<th>Virtual Worlds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Images displayed on social media that represent an online identity</td>
<td>A more efficient and transparent way for artists to monetize their work</td>
<td>Unique assets designed to be used within a game</td>
<td>Items that grant special access, benefits, rewards, or memberships</td>
<td>Ownable properties that exist in new virtual worlds</td>
</tr>
</tbody>
</table>

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The NFT market remains hot, and we are beginning to see mainstream adoption.
Web3 platforms have drastically lower take rates than the internet giants today

“You know something is profoundly wrong with our economy when Big Tech has a higher take rate than the mafia.”

– Ritchie Torres, U.S. Congressman representing the South Bronx
NFTs offer creators a whole new way to monetize directly with their fans

Estimated Creator Revenues by Source* (2021):

**NFTs**

$3.9 billion

22,400 creators

$174K Avg Per Creator

**Spotify**

$7 billion

11 million artists

$636 Avg Per Artist

**YouTube**

$15 billion

37 million channels

$405 Avg Per Channel

**Facebook**

$300 million

2.91 billion users

$0.10 Avg Per User

* Totals were estimated based on the reported 15% of NFTs (the estimated primary sales of ERC-721 or ERC-1155 tokens) transacted on secondary sales or Opensea in 2021. The number of creators is estimated by the count of unique ERC-721 and ERC-1155 NFT tokens that had a mint event on Opensea in 2021.

Sources:
1. *a16z analysis of public data on the Ethereum blockchain.*

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There is incredible innovation happening in the NFT space.
Web3 Gaming
We are just beginning to see the potential of web3 gaming
The video game industry has seen massive growth, driven by the layering of new platforms and business models.

When the internet came along, video games responded by embracing new genres like MMOs and battle royale, new business models like free-to-play and virtual goods, and new complementary behaviors like streaming.

The music industry responded by spending decades filing lawsuits against innovators, and eventually accepting the incremental improvement of allowing users to subscribe to bundled content via streaming platforms.

Source: MatthewBall.vc

Source: MatthewBall.vc
There is a huge market opportunity at the intersection of web3 and gaming.

- 20% of NFT sales volume in 2021 was gaming-related assets.
- 49% of crypto wallet activity comes from games.
- 50+ live web3 games with more than 1K unique on-chain users.

Source: Blockchain Game Alliance, DappRadar; First two metrics are as of 12/22/2021, third metric is as of 5/12/2022.
Interest in the metaverse has exploded, with land sales totaling nearly $2 billion.

### Metaverse Land—Secondary Sales

<table>
<thead>
<tr>
<th>Metaverse</th>
<th>Land Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otherside</td>
<td>$344,307,087</td>
</tr>
<tr>
<td>Sandbox</td>
<td>$96,537,491</td>
</tr>
<tr>
<td>Decentraland</td>
<td>$304,837,333</td>
</tr>
<tr>
<td>NFT Worlds</td>
<td>$34,920,762</td>
</tr>
<tr>
<td>Metroverse-Genesis</td>
<td>$47,315,010</td>
</tr>
<tr>
<td>Worldwide Webb</td>
<td>$4,065,464</td>
</tr>
<tr>
<td>CryptoVoxels</td>
<td>$34,920,762</td>
</tr>
<tr>
<td>Arcade Land</td>
<td>$37,990,987</td>
</tr>
<tr>
<td>Treedverse</td>
<td>$96,537,491</td>
</tr>
<tr>
<td>Somnium Space</td>
<td>$23,400,815</td>
</tr>
<tr>
<td>Crypto Unicorns</td>
<td>$14,865,658</td>
</tr>
<tr>
<td>FLIK World</td>
<td>$13,247,584</td>
</tr>
<tr>
<td>BYO Land</td>
<td>$9,045,273</td>
</tr>
<tr>
<td>Farm Land</td>
<td>$9,733,185</td>
</tr>
<tr>
<td>Metroverse-Blackout</td>
<td>$9,652,378</td>
</tr>
<tr>
<td>Mavis Land</td>
<td>$8,025,652</td>
</tr>
<tr>
<td>Aether</td>
<td>$177,885</td>
</tr>
<tr>
<td>Wilder World</td>
<td>$6,981,127</td>
</tr>
<tr>
<td>Ember Sword</td>
<td>$6,666,773</td>
</tr>
<tr>
<td>League of Kingdoms</td>
<td>$4,323,259</td>
</tr>
<tr>
<td>Matrix World</td>
<td>$4,306,434</td>
</tr>
<tr>
<td>Somnium Worlds</td>
<td>$4,122,223</td>
</tr>
<tr>
<td>Next Earth</td>
<td>$3,650,761</td>
</tr>
<tr>
<td>SuperWorld</td>
<td>$3,507,913</td>
</tr>
<tr>
<td>Polka City</td>
<td>$2,852,596</td>
</tr>
<tr>
<td>Influence Asteroids</td>
<td>$2,120,090</td>
</tr>
<tr>
<td>Etherum Towers</td>
<td>$1,232,158</td>
</tr>
<tr>
<td>DeNations</td>
<td>$1,193,194</td>
</tr>
<tr>
<td>Arcona</td>
<td>$693,018</td>
</tr>
<tr>
<td>Etherland</td>
<td>$424,758</td>
</tr>
<tr>
<td>OVRLand</td>
<td>$36,191</td>
</tr>
</tbody>
</table>

**Metaverse Land Sales**: $1,808,580,704

Source: https://dune.xyz/metaland/Metaverse-Land-Community

Data is as of 5/12/2021.

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DAOs
DAOs are providing a path toward community governance of any kind of organization.
DAOs have accumulated more than $10 billion in treasury assets under management.

Source: https://deepdao.io/; Data is as of 5/12/2022.
A large majority of value held by DAOs is in the form of the protocol’s native governance token.

Top 10 DAOs by Treasury Size

Source: https://deepdao.io/; Data is as of 5/12/2022.
DAOs enable a new, bottom-up way for groups to make decisions

- **Decisions Made**: 56.6K
- **Total Votes**: 3.4M
- **Active Voters and Proposal Makers**: 657K

Source: https://deepdao.io/, Data as of 5/12/2022.
Crypto is already making a *real world impact*

<table>
<thead>
<tr>
<th>01. Goldfinch</th>
<th>02. Spruce</th>
<th>03. Helium</th>
<th>04. Sound</th>
<th>05. Flowcarbon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today, there is vast untapped lending potential in emerging markets. Goldfinch expands access to capital using crypto to truly empower financial inclusion.</td>
<td>Traditional web services rely on trusted intermediaries (Facebook, Google) to manage their users' digital identities. With Spruce, users can control their own identity with an Ethereum account.</td>
<td>The telecom industry is currently controlled by monopolies. Helium is building towards a future where network coverage becomes a commodity, fueled by competition, available anywhere in the world, at a fraction of current costs.</td>
<td>Only 15,000 musicians on streaming services (less than 0.2%) make more than $50K/year. Sound cuts out the middlemen, allowing artists to monetize directly from their fans.</td>
<td>The voluntary carbon market lacks liquidity, accessibility, and price transparency. Flowcarbon is leveraging blockchain tech to scale climate change solutions.</td>
</tr>
</tbody>
</table>
It is still early days for web3
What’s next for web3?

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<table>
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<tbody>
<tr>
<td>01.</td>
<td>02.</td>
<td>03.</td>
<td>04.</td>
<td>05.</td>
</tr>
<tr>
<td>Web3 infrastructure will continue to improve, with the continued improvement and growth of non-Ethereum L1s and Ethereum L2s. The Ethereum merge will hopefully happen this year. This will improve performance and also remove the environmental objection to using Ethereum.</td>
<td>Expect many more creators to embrace NFTs in their own communities as they discover how much better they can monetize by selling digital goods directly to their fans vs banner ads and other web2 monetization methods.</td>
<td>Expect many web3 games to launch, developed by founders with backgrounds at top game studios. Some of these will launch in the coming months, others will take longer.</td>
<td>New web3 users who earn tokens through games and NFTs will likely choose to save those tokens in DeFi protocols vs tradfi banks given the better rates and user experience, growing the number of DeFi users.</td>
<td>Expect many more experiments with DAOs, social tokens, decentralized social networks, web3 media, and other emerging categories. Some of these might break out in the same way DeFi, NFTs and web3 games did.</td>
</tr>
</tbody>
</table>

Source: https://cdixon.mirror.xyz/CGrlfc6Yezv2WXUOE3hNh46y4H4XTQvgYXNkFaZ6610
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