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New Developments in GameFi

Play-to-Airdrop and Prediction Markets

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Research and Insights

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Executive Summary

- **Play-to-airdrop (P2A) and prediction markets** are the two trends that have recently led the cryptocurrency narrative. Both leverage social elements to gain significant traction and influence.

- One popular form of play-to-airdrop is **tap-to-earn,** which is when players tap or click in the game to earn in-game currencies that can be redeemed in a future airdrop. **Notcoin** and **Hamster Kombat** are two examples of popular tap-to-earn games. Notcoin garnered 40 million users within five to six months of launch, while Hamster Kombat reached 150 million players within three months.

- **Tap-to-earn's success can be attributed to** simple user onboarding and gameplay, potential attractive rewards, and integration with popular platforms.

- **Tap-to-earn** games are a great way to drive crypto adoption, as they're easy to play, hooking both newbies and crypto enthusiasts seeking rewards. The focus is on quickly onboarding many users with simple, fun gameplay — different from complex AAA titles. The 'dumbed-down' design and free airdrops help these games spread quickly, but the long-term sustainability after airdrops end is unclear.

- **Prediction markets** allow users to speculate on the results of diverse topics ranging from politics (election outcomes), sports (competition results), and macro events, etc. Typical features of prediction markets on blockchain include decentralisation, lower fees, and automated payouts.

- **Polymarket** is one of the largest crypto-based, decentralised prediction platforms. Its weekly trading volume has seen a spike in 2024, showing an 830% year-over-year increase comparing January-May 2023 to January-May 2024.

- Prediction markets contain the element of **relevancy,** as topics capture popular narratives and often reflect what's top on the audience's mind. In addition, they are social and potentially reflective of market sentiment if the topics reach critical mass.

- Both play-to-airdrop and prediction markets have blurred the boundaries between Web2 and Web3.

1. Introduction

Web3 gaming has widely adopted the 'x-to-earn' model (where 'x' can be actions, including play, tap, move, etc.) in which users gain the ability to make money (in the form of cryptocurrencies) from playing games. Axie Infinity and Decentraland are two popular examples under this model.

Recently, a new form of Web3 gaming, integrated with elements of speculation and SocialFi, has quickly accumulated users and gained significant market attention: **play-to-airdrop (P2A),** which allows users to earn points or rewards when completing certain in-game activities and speculate on a future airdrop. Telegram was one of the main enablers of this recent trend by supporting Telegram bots with mini-game designs, including Notcoin, TapSwap, and Hamster Kombat.

Integrating with Telegram's blockchain network, The Open Network (TON) has also simplified the cumbersome processes associated with Web3 participation (e.g., setting up wallets using the @wallet Telegram bot with a few clicks and funding deposits with options like bank card top-ups), potentially enhancing conversion of Web2 users to Web3.

At the same time, **prediction markets** have also recently gained traction in the cryptocurrency community, with speculation on the 2024 US presidential elections one of the main drivers. Prediction markets offer a way for users to bet on outcomes of future events with various themes, including sports, politics, cryptocurrency airdrops, etc, and can be seen as a form of social gaming or betting. Polymarket is currently one of the largest crypto-based prediction platforms.

In this report, we explore **new developments in Web3 gaming** using these two recent trends as examples.

2. Play-to-Airdrop

2.1 Overview

Play-to-airdrop (P2A) allows users to earn rewards while completing certain in-game activities, and the rewards are often related to a future token airdrop. This is similar to points farming, where users complete tasks on protocols to accumulate points and speculate on a future airdrop.

Play-to-airdrop represents a new 'twist' to the **play-to-earn (P2E)** model, where users have a built-in ownership of an existing cryptocurrency or NFT collection. For example, within Axie Infinity, players earn Smooth Love Potion (SLP), which is a tradeable cryptocurrency that users can earn and trade subsequently. Moreover, players often need to put in certain initial capital to start the game — for example, in Axie's case, players start by purchasing 'Axies' (gaming items represented as NFTs) in the marketplace, after which they can earn SLP or trade the Axies for immediate monetary rewards.

Under P2A, however, players earn points or rewards based on their in-game activities, which could be converted into cryptocurrencies through a future airdrop. In other words, there isn't a tradeable cryptocurrency to start with; instead, there's an element of speculation or uncertainty under this model where players spend time in the game with hopes of rewards later.

To the game developers, P2A serves as both a marketing strategy and a token distribution tactic to reward players. It allows developers to retain control and flexibility to build a healthy in-game economy, and has a similar purpose as the 'bait and hook' approach under points farming — baiting users in hopes of a future airdrop and providing a hook for users to engage in the ecosystem. In addition, P2A serves as the foundation of P2E: After the token airdrop, players can then use the tokens as in-game currency similar to the P2E model.

Type	Play-to-Airdrop (P2A)	Play-to-Earn (P2E)
Definition	• Earn in-game rewards while completing certain tasks or activities. Rewards are often correlated to a future token airdrop.	• Earn in-game cryptocurrency or NFT collection most often already directly tradeable.

|		
Features	• Build on top of well-known social platforms (like Telegram) — can be played without requirements of a wallet or cryptocurrency holdings. • Simple features and functions (e.g., tap-to-earn clicker games).	• Mostly hosted on existing blockchains. • Often require capital (cryptocurrencies or NFTs) to begin the game.
Pros	• Lower barrier for players to enter, as no initial capital is needed. • Players can potentially earn lucrative rewards and even passive income. • Projects can easily use this as a user acquisition and marketing tool, as such projects are usually integrated with well-known platforms that have large user bases.	• Players can directly earn and own tradeable cryptocurrencies or assets. • Can have complex gameplay and features.
Cons	• Simple features, and may lack attractive gameplay. • Low transparency on airdrop (e.g., timing, valuation) for *players*. • Projects face potential community backlash, hampering their game reputation if the airdrop is not up to expectations.	• Players are often required to put up certain initial capital to start the game, and earnings are not guaranteed. • Game-related tokens may have high price volatility and low liquidity.
Examples	• Notcoin • Hamster Kombat • TapSwap • Catizen • Nifty Island	• Axie Infinity • Decentraland • Gods Unchained • STEPN

2.2 Case Studies

One popular form of play-to-airdrop recently emerging is **tap-to-earn.** As its name suggests, this is when players simply tap or click in the game to earn in-game currencies that can be redeemed in a future airdrop. The main gameplay

is very simple: the more times a user taps, the more in-game assets they can get. Users can use the assets to complete other tasks to boost their returns.

One of the enablers of the trend is **Telegram,** the popular messaging platform that supports building embedded applications (called bots). Telegram hosts popular tap-to-earn games (bots) like Notcoin, Hamster Kombat, TapSwap, etc., where users can simply click on these Telegram bots to start playing the games. Integrating with **The Open Network (TON)**, a Layer-1 blockchain, has greatly simplified the crypto onboarding process for games on the network. Users can create/connect to Web3 wallets through Telegram and purchase cryptocurrency directly. This collaboration has served as an effective channel to convert Telegram's nearly one billion users to adopt Web3 games.

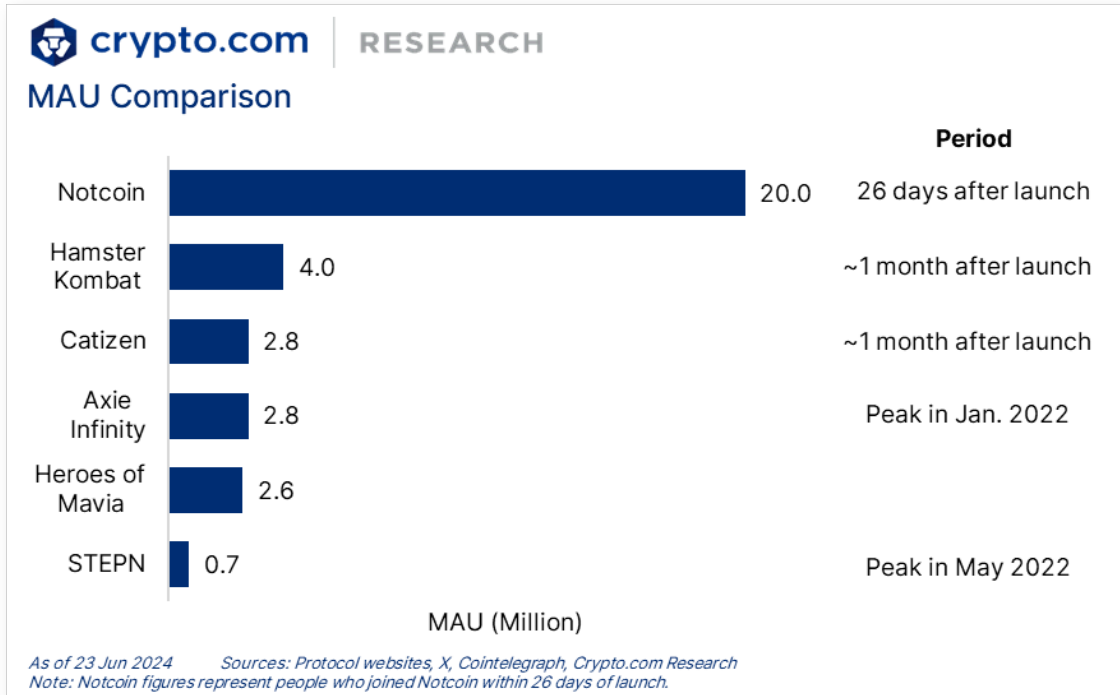## Notcoin

Launched in January 2024, **Notcoin** is a Telegram-based game in which users just simply 'tap' the image of a gold coin to earn rewards. Players initially earn one in-game Notcoin for every tap, which makes it similar to crypto mining. Users can purchase boosters and complete various quests to increase energy levels (to do more taps) or get more coins per tap.
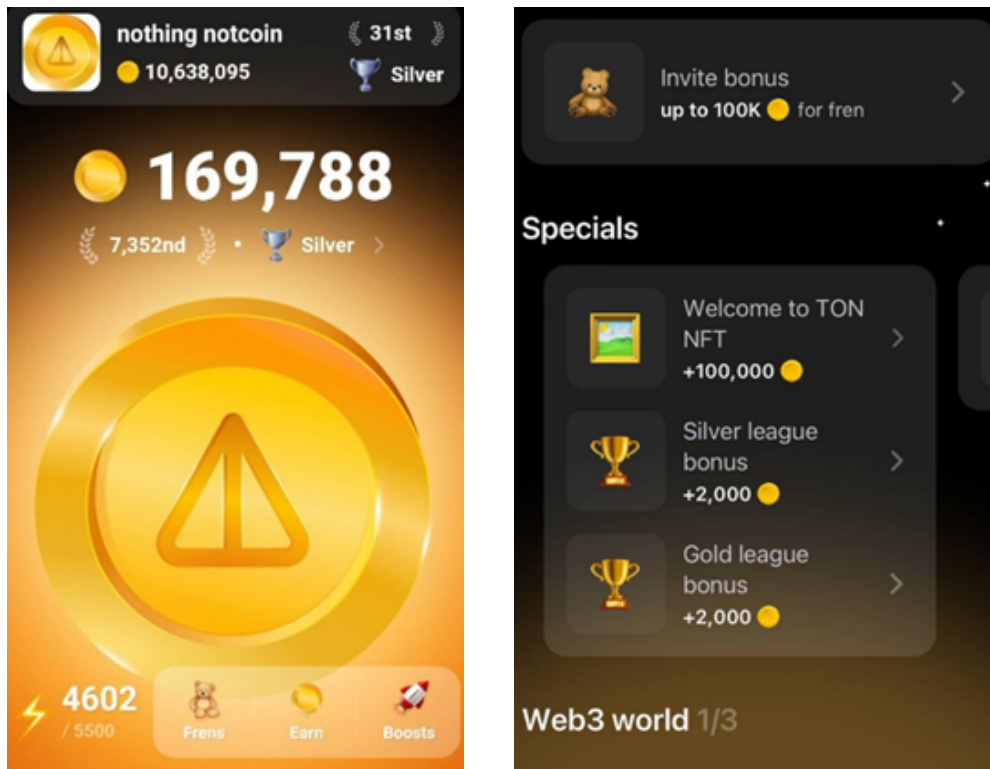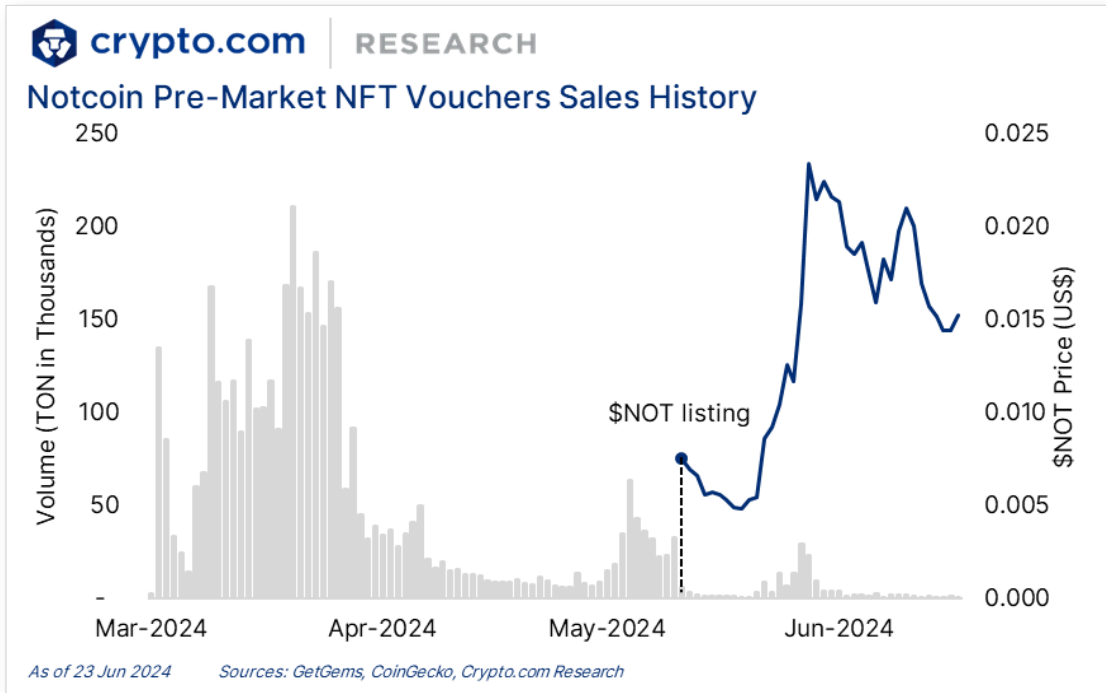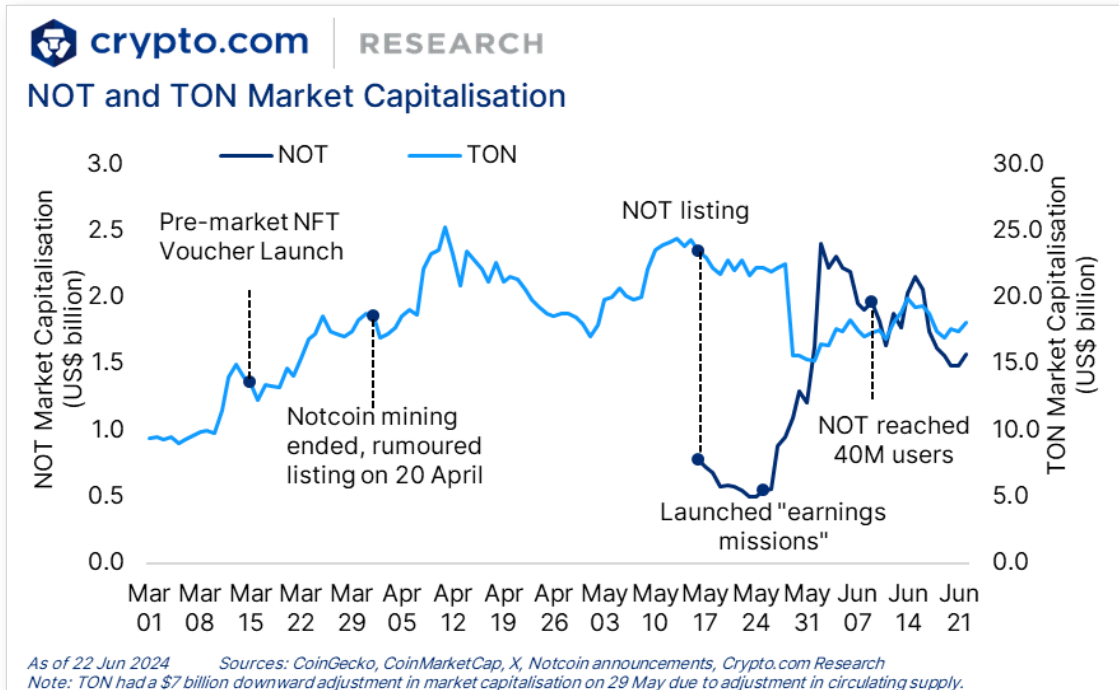

Source: Notcoin

Notcoin has quickly gained a lot of attention, garnering 20 million signups within the first 26 days of launch. As of 9 June, Notcoin has 40 million users. In comparison, Axie Infinity's peak monthly players were 2.8 million in January 2022, while that of STEPN was 700,000 in May 2022.

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MAU Comparison

	MAU (Million)	Period
Notcoin	20.0	26 days after launch
Hamster Kombat	4.0	~1 month after launch
Catizen	2.8	~1 month after launch
Axie Infinity	2.8	Peak in Jan. 2022
Heroes of Mavia	2.6	
STEPN	0.7	Peak in May 2022

As of 23 Jun 2024   Sources: Protocol websites, X, Cointelegraph, Crypto.com Research
Note: Notcoin figures represent people who joined Notcoin within 26 days of launch.

In March 2024, Notcoin announced the launch of pre-market NFT vouchers (which represent the in-game Notcoin currency, and can be exchanged for $NOT after a token generation event) on GetGems, an NFT marketplace built on TON. This enabled top coin holders (those with at least 10 million Notcoins) to speculate and pre-trade before the future airdrop, using the TON currency. According to data from GetGems, the highest-valued 100 million Notcoin voucher was sold for 2,000 TON on 9 May (equivalent to $11,520 based on that day's trading price).

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Notcoin Pre-Market NFT Vouchers Sales History

As of 23 Jun 2024   Sources: GetGems, CoinGecko, Crypto.com Research

Notcoin began its airdrop of NOT on 16 May in the ratio of 1,000:1 (1,000 in-game Notcoins to 1 NOT on TON blockchain), with 78% of the token supply going to players. NOT began trading and reached its peak market capitalisation of $2.4 billion on 2 June, marking the biggest gaming token launch by market capitalisation in 2024, which coincided with TON's increase in market capitalisation.

NOT and TON Market Capitalisation

As of 22 Jun 2024   Sources: CoinGecko, CoinMarketCap, X, Notcoin announcements, Crypto.com Research
Note: TON had a $7 billion downward adjustment in market capitalisation on 29 May due to adjustment in circulating supply.

While $NOT's utility is still under development, Notcoin has been using various ways to maintain its community post-airdrop. One of which is to encourage staking and levelling up. There are various levels in Notcoin (Bronze, Silver, Gold, Platinum), which is initially determined by the points earned. $NOT holders can stake $NOT to level up, which comes with access to more token earning opportunities and rewards over time. For instance, Notcoin has recently announced the plan to distribute bonus tokens to Gold and Platinum ranked members.

In addition, after the airdrop, NOT switched to a new 'explore-to-earn' model, where users are encouraged to explore other partner projects by joining discords or downloading their apps and are rewarded with $NOT. This is related to Notcoin's goal to become a platform for users to discover Web3 projects in Telegram, and be positioned as the "Netflix of social, viral games". In other words, Notcoin would be a launchpad where developers can leverage its infrastructure and connections.

This potentially extends Notcoin's influence and success to other projects within the TON ecosystem and expands participation after the airdrop.
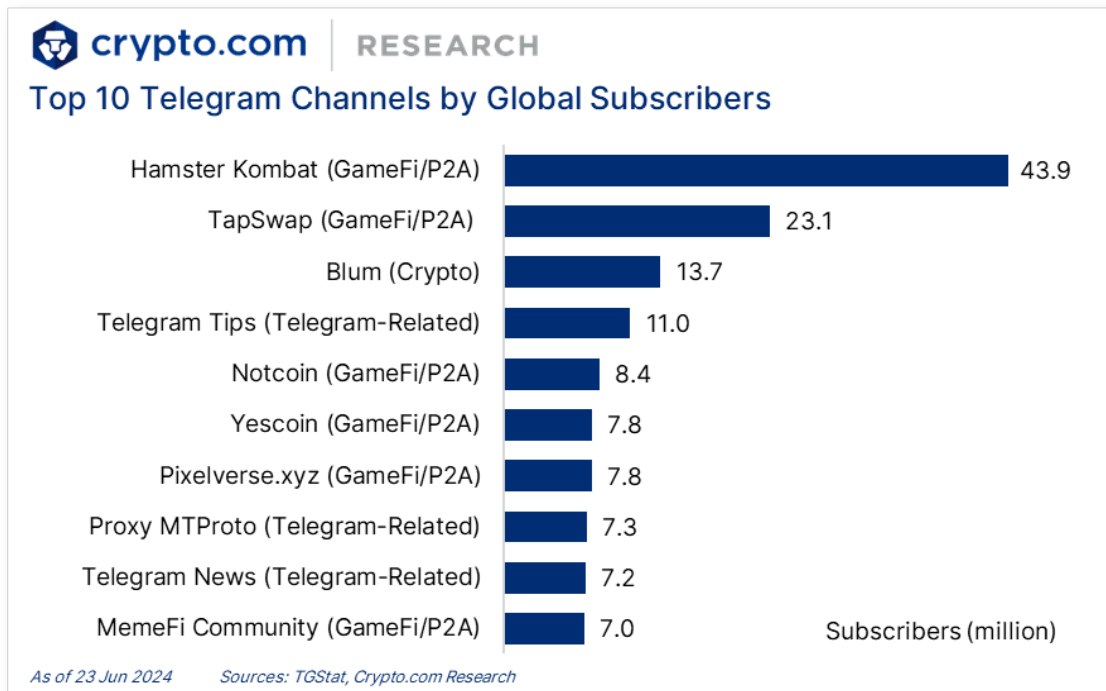
Hamster Kombat

Hamster Kombat, launched in March 2024, is a Telegram-based **tap-to-earn** game, where every player is the hamster CEO of a virtual crypto exchange, and players tap the hamster to earn gold coins. Hamster Kombat contains the following features, which have expanded beyond a pure clicker game.

- **Hamster upgrades —** Players can equip their hamsters with cards and outfits or unlock higher scoring combos.

- **Passive earnings —** Purchase cards with in-game tokens to improve the virtual exchange (e.g., add trading pairs, markets, public relations) and passively earn hourly rewards.

- **Daily combo —** Earn extra coins by completing daily upgrades or level-ups.

- **Boosts —** Spend to boost energy limits and tapping efficiency.

- **Referrals —** Earn rewards by inviting friends and helping to expand the gaming network.
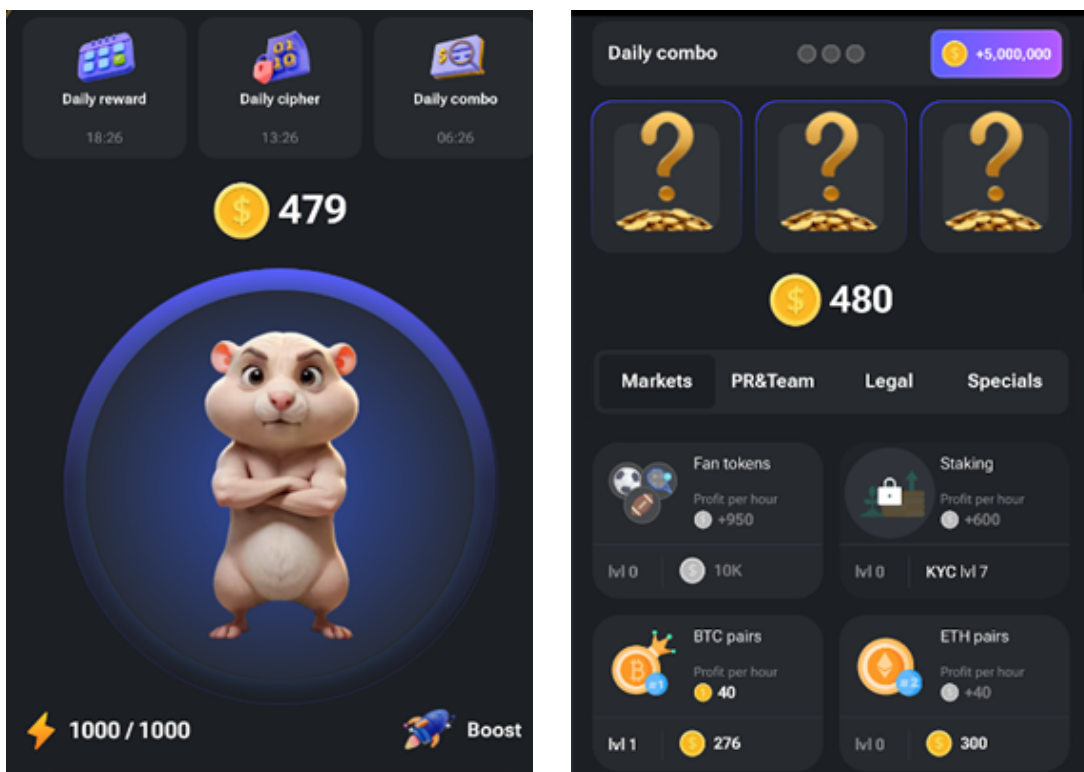
Source: Hamster Kombat

The game passed Notcoin in terms of pre-trading statistics, becoming the largest Telegram channel globally with 44 million subscribers (at the time of writing). It also claimed to have reached 150 million players by mid-June.

Top 10 Telegram Channels by Global Subscribers

As of 23 Jun 2024   Sources: TGStat, Crypto.com Research

Hamster Kombat hinted at an airdrop of HMSTR tokens for July 2024. Different from Notcoin, in which the airdrop is based on the amount of tokens, Hamster Kombat's airdrop is determined by earnings per hour, along with other non-disclosed parameters. This potentially encourages players to explore the in-game ecosystem and various upgrade strategies.

Catizen

Catizen is a Telegram-based **play-to-airdrop** game launched on TON. Since its public beta launch in March 2024, it has accumulated $10 million in in-game revenue and over 10 million users as of May 2024.

Unlike Notcoin and Hamster Kombat, Catizen does not rely on players tapping. Instead, it is a cat-raising game where players merge cats of the same level to get a higher-level cat to earn more tokens. It has some resemblance to the traditional play-to-earn games where there are paid options within games (for example, to acquire boosters or purchase FISH tokens to level up cats).

A highlight of the Catizen game is its stable on-chain 10% conversion rate, which refers to users who are interacting with the blockchain through trading in-game assets. This is in contrast to Telegram's crypto conversion rate of 0.66%, highlighting Catizen's potential to push cryptocurrency adoption beyond purely a game or an airdrop marketing gimmick.

2.3 Outlook

After the success of Notcoin, a plethora of mini-apps have launched on Telegram with the play-to-airdrop model hoping to replicate its success. Some other examples include TapSwap and Yescoin. Play-to-airdrop, or tap-to-earn, has become a new crypto gaming trend to acquire users.

Tap-to-earn, in particular, has been successful due to a few factors, including simplicity, as the game can be addictive and played without applying complex strategies. In-game activities range from tap to boost to upgrade, while the social elements (referrals, team competitions, leaderboards) make it challenging and entertaining. With these simple actions, users can speculate on an airdrop and are potentially able to earn passive income from it. This gaming model enhances crypto inclusivity and makes it more accessible to everyone. Moreover, tap-to-earn games serve as a good entry for crypto beginners to explore, as there's no complex setup required. Since it is developed on top of Telegram, users simply need to open the game (Telegram bot) and start playing, oftentimes without the requirement of putting up initial capital.

These games have garnered attention in certain developing countries and in places where Telegram is popular. For example, TapSwap is reported to be popular in Nigeria, while Hamster Kombat has attracted many users from Iran, and Eastern Europe. This is another benefit of the linkage with a social app (in this case, Telegram), which already has an existing reputation and user base, and contributes to the games' widespread adoption and success in a wide variety of countries.

Telegram has recently announced a new initiative, Telegram Stars, which aims to facilitate digital payments within these mini-apps (bots). Stars can be purchased through in-app purchases in Apple and Google, and can then be used for purchases. Mini-app developers can withdraw the Stars using TON, and this can be a potential revenue stream for games like Notcoin.

All in all, tap-to-earn has represented an innovative blend between gaming and cryptocurrency. It is a good way to drive crypto adoption, attracting both new crypto joiners with its ease of play, as well as crypto natives with its rewards. In addition, **it adopts a model in which a large amount of users are onboarded quickly with simple and attractive gameplay.** This is different from traditional AAA games that usually have complex designs and require strategies to win. The combination of the 'dumbing down' of gameplay and airdrops helps projects spread widely. However, the sustainability of these clicker games post-airdrop is in question, and the market needs more time to be observed.

3. Prediction Markets

3.1 Overview

Prediction markets allow users to speculate on the results of diverse topics ranging from politics (election outcomes), sports (competition results), and macro events, etc. They function similarly to a financial market in terms of buy and sell, but it's a category of [financial market on anything](#).

This is not a new concept — there have been long-running Web2 sites that settle bets in fiat currency. The trend has recently been brought to Web3 and has been very popular amongst crypto traders.

Typical features of prediction markets on blockchain include:

- **Decentralisation:** Use of smart contracts to settle bets removes the need of a centralised operator; leveraging oracles to resolve market outcomes maintains decentralisation.

- **Lower Fees:** Fees are generally lower on blockchain-enabled prediction markets due to the absence of intermediaries in most processes. Polymarket, for example, does not take a cut from trading.

- **Automated Payouts:** When the event outcome is resolved, the smart contract [automatically pays out](#) without interference.
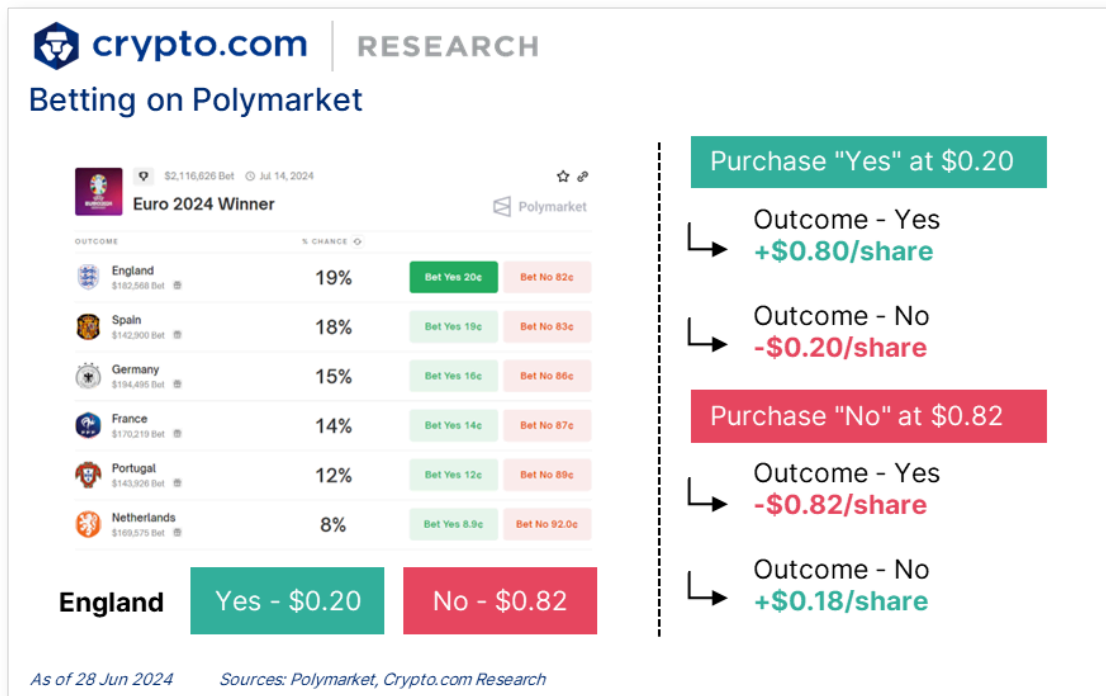
To some, prediction markets can appear as a form of gaming by enabling betting on future events. At the same time, they are a way to obtain insights on popular topics regionally or globally, and potentially enable better forecasting of future events provided that the bets have reached a critical mass or received large enough attention.

3.2 Polymarket

Launched in 2020 and built on the Polygon L2, **Polymarket is one of the largest crypto-based, decentralised prediction platforms.** It allows users to deposit stablecoins and bet on various topics, ranging from political election outcomes, sports, pop culture, crypto prices, and airdrop probabilities, etc. It describes itself as an '[information market](#)' that produces actionable insights on important matters.

Polymarket allows users to deposit stablecoins and buy/sell shares on [how a future event will resolve](#). Value of each share ranges from $0-$1, representing

the probability of occurrence of an event. Using the topic of 'Euro 2024 Winner?' as an example. At the time of writing, users can buy a 'Yes' share for England winning at $0.20 or a 'No' share at $0.82. If the event happens by the closing date (14 July 2024), the holders of 'Yes' shares would redeem $1/share (earning $0.80/share) since the correct bet would result in $1. On the other hand, if the outcome is 'No', then the 'Yes' share would be worth $0 and the user who bought 'Yes' would lose $0.20/share. Prices are dynamic based on trading activities, and users are allowed to trade shares before or when the event is resolved. Market resolutions are decentralised and majority-resolved using [UMA's optimistic oracle](). Answers are [proposed]() to the request (in this case, Euro 2024 Winner), and is accepted if it is not disputed during a period, this process is done [permissionlessly]() and after which, payouts would occur.
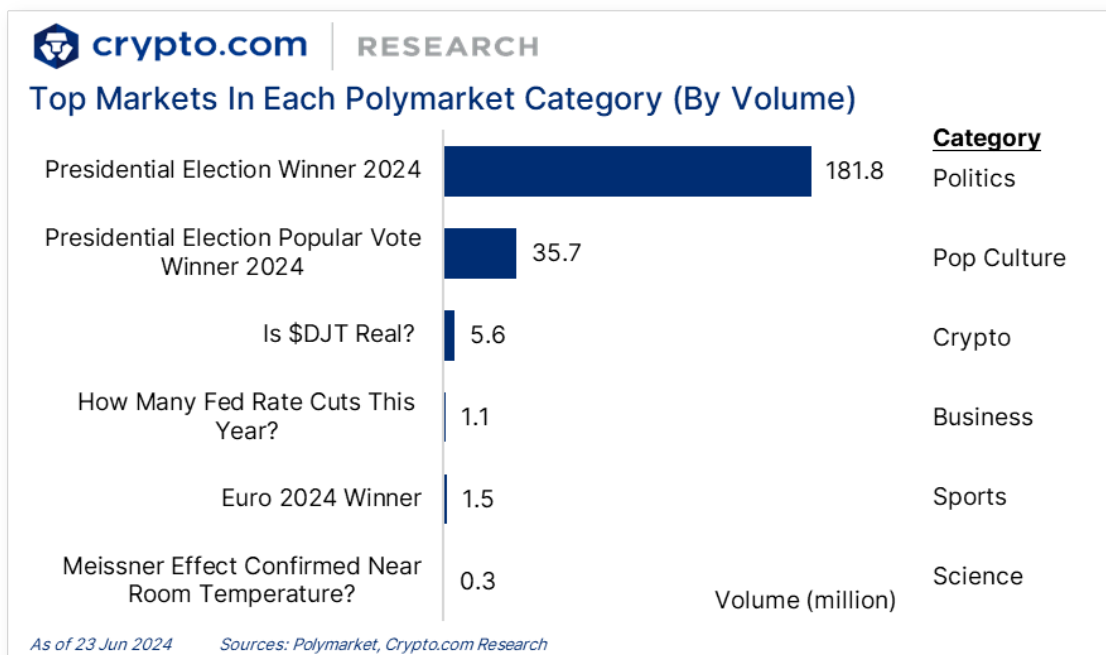

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Betting on Polymarket

	$2,116,626 Bet ⏱ Jul 14, 2024		☆ 🔗
Euro 2024 Winner			🏴 Polymarket
OUTCOME	% CHANCE		
🏴󠁧󠁢󠁥󠁮󠁧󠁿 England $182,568 Bet	19%	Bet Yes 20¢	Bet No 82¢
🇪🇸 Spain $142,900 Bet	18%	Bet Yes 19¢	Bet No 83¢
🇩🇪 Germany $194,495 Bet	15%	Bet Yes 16¢	Bet No 86¢
🇫🇷 France $170,219 Bet	14%	Bet Yes 14¢	Bet No 87¢
🇵🇹 Portugal $143,926 Bet	12%	Bet Yes 12¢	Bet No 89¢
🇳🇱 Netherlands $169,575 Bet	8%	Bet Yes 8.9¢	Bet No 92.0¢

England Yes - $0.20 No - $0.82

Purchase "Yes" at $0.20
↳ Outcome - Yes +$0.80/share
↳ Outcome - No -$0.20/share

Purchase "No" at $0.82
↳ Outcome - Yes -$0.82/share
↳ Outcome - No +$0.18/share

As of 28 Jun 2024   *Sources: Polymarket, Crypto.com Research*

Polymarket operates on a [Central Limit Order Book (CLOB)]() model, a hybrid-decentralised version in which order matching, ordering, and execution happen off-chain, while settlement is on-chain. Users are allowed to set limit orders, which only execute when a counterpart is willing to trade on their desired price (and can also be partially filled), or take market orders for their trades. **Polymarket does not impose extra fees on trading; instead, liquidity providers earn rewards from the transaction fees paid by traders. This system encourages more participants to add liquidity, helping to keep the markets efficient and active.** It also runs a [Liquidity Rewards Program](), which rewards users for placing limit orders close to the market's average price to maintain healthiness of the market. Reward amounts depend on how helpful the orders are based on size and pricing.

Outcomes on Polymarket are tokenised and represented using Gnosis' Conditional Token Framework (CTF). In binary outcome markets, conditional market tokens are created (Yes and No). CTF allows "splitting" and "merging" of full outcome sets. This means 1 unit of collateral (USDC) can be split into 1 of each binary outcome token (Yes and No), and vice versa - one of each outcome token can merge into 1 unit of collateral. Hence, market price of the tokens should be between 0 and 1.

In addition, Polymarket also provides an alternative trading mechanism besides order book, named the Fixed Product Market Makers (FPMM), in which the product of the tokens in the pool (ie. the liquidity) is held constant. Anyone can provide liquidity and in return get ERC20 tokens representing their shares in the liquidity pool. Liquidity providers earn trading fees proportionate to their share of the pool.

The graph below shows the top markets, by volume, in each major category listed on Polymarket.

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Top Markets In Each Polymarket Category (By Volume)

Market	Volume (million)	Category
Presidential Election Winner 2024	181.8	Politics
Presidential Election Popular Vote Winner 2024	35.7	Pop Culture
Is $DJT Real?	5.6	Crypto
How Many Fed Rate Cuts This Year?	1.1	Business
Euro 2024 Winner	1.5	Sports
Meissner Effect Confirmed Near Room Temperature?	0.3	Science

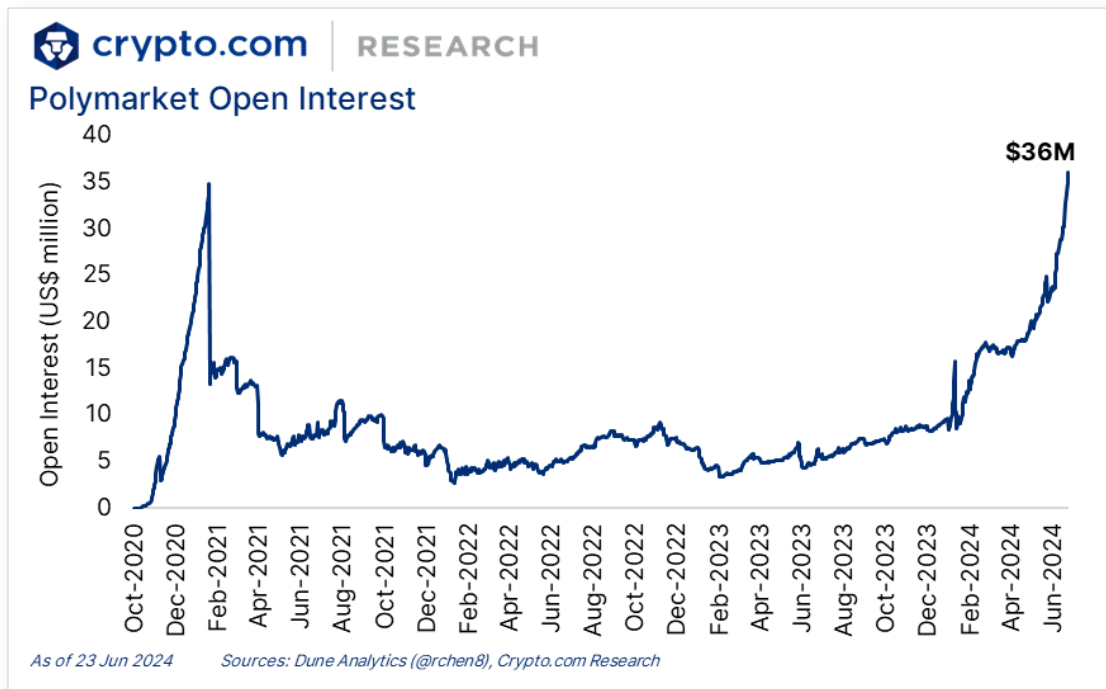As of 23 Jun 2024   Sources: Polymarket, Crypto.com Research

Its weekly trading volume has seen a spike in 2024, showing an 830% YoY increase comparing January-May 2023 to January-May 2024. Monthly active traders have also shown a similar trend, with a 405% increase YoY in the same period. In January 2024, Polymarket also established a partnership with Magic, a Web3 wallet provider, to facilitate easy user onboarding. In May 2024, Polymarket received $45 million Series B funding from Peter Thiel's Founders Fund, Vitalik Buterin, and others.

Polymarket Monthly Volume and Monthly Active Traders

As of 23 Jun 2024   Sources: Dune Analytics (@rchen8), Crypto.com Research

Polymarket was able to gain success this year by hosting a wide spread of popular topics, gaining media attention, and building onto its flywheel effect. Increasing users and exposure equate to more liquidity in the market, generating more insightful predictions and, in turn, attracting more attention, users, and liquidity.

3.3 Outlook

Bitwise Investments researchers recently forecast that "more than $100 million will be staked in prediction markets as they emerge as a new 'killer app' for crypto" in 2024.

Polymarket Open Interest

$36M

As of 23 Jun 2024   Sources: Dune Analytics (@rchen8), Crypto.com Research

Prediction platforms like Polymarket enable users to cast their opinions on trending topics in the form of bets. They serve as a **good way to gauge people's opinions and public sentiment if the poll receives enough attention or reaches a critical mass.** In other words, it may act as a "**high signal information source**."

While some may perceive prediction markets as acts of speculation, to some users, they may represent their **in-depth interpretation of certain topics.** Prediction platforms provide a channel to "prove them right" and earn money from it. Polymarket leverages the trading data on its platform to provide real-time market insights and data analytics services. This data can help users make more informed decisions, and is also a valuable resource for media and research institutions to understand public opinion and market trends. In addition, similar to play-to-airdrop, prediction markets serve as a gateway to introduce new users into Web3.

On the other hand, the market faces regulatory uncertainties. In May 2024, the US Commodity Futures Trading Commission (CFTC) proposed a ban of event contracts that bet on political activities for US-regulated companies. In January 2022, Polymarket was fined as part of a legal settlement with CFTC and had to shut out US traders. Another common issue faced by prediction platforms is insufficient liquidity for certain topics, resulting in slippage in bets.

However, 2024 so far has been a big year for prediction markets; we believe the momentum could continue in the coming months with the upcoming sporting and

macro events. Vitalik Buterin is also optimistic about the <u>integration of artificial intelligence (AI) in prediction markets</u>.

4. Conclusion

With the rise of play-to-airdrop, we have seen how gamification can be a way to make cryptocurrency more approachable for users by including engaging elements. From Notcoin's success story, we have also seen the importance of **simplicity and inclusion.** With simple features requiring just tapping or clicking, any average user can participate. Integration of Telegram and TON also broke down the perceived hurdles of crypto adoption by making the processes easier — from starting the game to setting up wallets. Leveraging gamification and elements of speculation with an airdrop, play-to-airdrop is more than a token distribution method: it represents an innovative approach to launch gaming tokens while boosting user engagement. These elements together enable projects like Notcoin to attract a wide audience.

On the other hand, prediction markets contain the element of **relevancy,** as topics capture popular narratives and often reflect what's on the audience's top of mind. In addition, they are **social and potentially reflective of market sentiment;** the betting odds change in real time in accordance with trading activities. Polymarket has frequently been cited on news and X (formerly Twitter) as a gauge to 'deduce' market sentiment on topics.

Both play-to-airdrop and prediction markets have blurred the boundaries between Web2 and Web3. Play-to-airdrop made cryptocurrency onboarding simple, while prediction markets provide a wide variety of relevant and interesting topics for people to bet on. We see the success of projects like Notcoin as blueprints for future developments in Web3 gaming, and we look forward to seeing how these can potentially aid mass adoption in cryptocurrency.

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