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Polymarket

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Table of contents

Abstract

Polymarket is an innovative platform at the intersection of blockchain, decentralized finance, media, and information sharing. Initially conceived as a prediction market, it has evolved into a dynamic ecosystem that combines real-time forecasting, financial speculation, and collective intelligence. Polymarket stands out for its decentralized structure, leveraging blockchain technology to ensure transparency, security, and accessibility. Built on blockchain technology, Polymarket incorporates smart contracts, fungible tokens, decentralized oracles, and seamless wallet integration to ensure secure, efficient, and accessible transactions. In 2024, the platform experienced significant growth, driven by high-profile global events such as political elections and advancements in technology, which attracted unprecedented user engagement and trading volumes. To fully understand the scope of Polymarket's impact, this report explores its functionality and the blockchain building blocks that support its operations. It addresses the critical problems the platform solves, such as inefficiency, lack of transparency, and accessibility barriers in traditional prediction systems, while also evaluating its strengths, weaknesses, opportunities, and threats through a comprehensive SWOT analysis.

1. Introduction: what is Polymarket?

1.1 Introduction

A prediction market is a system that leverages market mechanisms to forecast uncertain future events, operating like financial markets where individuals buy and sell "contracts" based on the outcome of a future event. For instance, a contract might represent the probability of a political candidate winning an election, with its price rising if many believe the event will occur and falling otherwise. By harnessing the collective intelligence of individuals, these markets aggregate information to make predictions that often surpass the accuracy of polls or expert opinions (Buckley, 2022).

Since the invention of Bitcoin in 2009 and the growing recognition of cognitive biases influencing market participants, financial instruments have begun to diverge from traditional forms that existed for centuries. In this evolving landscape, Polymarket, founded in March 2020 by Shayne Coplan, represents a groundbreaking innovation. Combining decentralized finance principles with blockchain technology, Polymarket operates as a decentralized prediction market platform, but it doesn't predict future events itself; instead, it shows how users collectively estimate the likelihood of an outcome based on the current information (Sergeenkov, 2024).

1.2 Functionality and Variety of markets

The distinctiveness of Polymarket lies in its structure and functionality. Unlike traditional betting platforms, where participants bet against "the house", Polymarket connects users directly, ensuring that each trade has another user as its counterparty and providing fairness and neutrality. The outcomes of events are represented by shares priced between $0.00 and $1.00 USDC, with the sum of opposing sides' investments always equaling $1.00. This means that if the agreed probability of the event occurring is 70%, those betting in favor will pay $0.70 per share, while those betting against will pay $0.30 per share, ensuring that the total amount paid by both sides always equals $1.00.

The price of each share reflects the market's collective assessment of the event's probability, and it is determined by supply and demand rather than a centralized entity, integrating real-time inputs from news, polls, and expert opinions. This decentralized approach provides unbiased and accurate probabilities for various events. Moreover, all shares are fully collateralized, ensuring that sufficient funds are available to pay out winning shares and guaranteeing market integrity at all times (Polymarket, What is Polymarket?, 2024).

Furthermore, the functionality of Polymarket becomes evident when examining the breadth of its offerings. Currently, the platform supports approximately a wide range of actively traded markets, covering topics ranging from U.S. political elections, such as party nominations and general elections, to global political outcomes and non-political events. The winning outcome in any of these markets is tied to a payout for participants who purchase shares representing that outcome at a certain price. In the payout, the price of each share is elevated to 1. For example, in a market predicting whether the Miami Heat will win the 2025 NBA Finals, buying "YES" shares that are trading at 18 cents results in an 82-cent profit per share if Miami ends up winning, since each "YES" share would be worth $1. Consequently, every trader with "NO" shares would see their investment become worthless once the game is over.

Finally, Polymarket's trading system allows users to adjust their positions dynamically by buying or selling shares as new information becomes available, enabling them to lock in profits or minimize losses. This fluidity ensures that market prices continuously adjust, reflecting the evolving odds as more informed participants join the market. As new information is shared, prices adjust to better reflect the true probability of an event. In this context, users have an economic incentive to provide correct predictions, since greater accuracy in their judgment translates into greater possible gains (Polymarket, What is Polymarket?, 2024). This blend of transparency, flexibility, and adaptability, amplified by strong network effects, has positioned Polymarket as a reliable platform and a dominant force in prediction markets, with each new user enhancing price discovery and predictive accuracy while attracting others and capitalizing on high-profile global events.

1.3 The rise of Polymarket

Polymarket's rise as a dominant force in the prediction markets industry can be attributed to a confluence of external conditions, internal innovations, and strategic advantages. Despite the longstanding history of prediction markets and their integration with cryptocurrency, Polymarket has managed to distinguish itself from competitors to the point of becoming almost synonymous with the concept of a "prediction market."

The 2024 year was disruptive for the platform, largely due to an extraordinary global context. With 76 countries and regions holding elections, including high-profile and dramatic developments such as Biden's withdrawal from the U.S. presidential race and Trump's assassination attempt, the political landscape drew unprecedented attention. Beyond politics, major global events like the Paris Summer Olympics, Federal Reserve rate-cut decisions, geopolitical crises, and rapid advancements in artificial

intelligence created fertile ground for speculation, offering unique opportunities for platforms like Polymarket to thrive.

Polymarket's dominance in the industry is exemplified by its position as the largest "2024 U.S. Election Prediction Market." On this platform alone, users have collectively bet nearly 1.5 billion dollars on the final outcome of the race between Harris and Trump. This trading volume is way higher than that of its Web2 competitors, such as PredictIt and Smarkets, which recorded only $37 million and $9 million in trades for the same issue, respectively (Wu, 2024).

Furthermore, Polymarket capitalized on this favorable context by introducing significant improvements in user experience. Its enhanced UX/UI, seamless processes for depositing and withdrawing funds, transparent mechanisms, and fee-free design provided a stark contrast to the clunky and costlier offerings of Web2 competitors. These features not only attracted a surge of new users but also fostered higher engagement among existing participants. The platform experienced a marked increase in the number of events created, a substantial boost in its user base, and significant growth in trading volume throughout 2024 (as shown in Figures 1, 2, and 3 in the Appendix).

Finally, in recent times Polymarket is evolving beyond its traditional label as "prediction market", becoming a hybrid platform intersecting crypto, media and information sharing. This positioning reflects how Polymarket is not just a tool for betting on event outcomes but also a space where users engage with information and insights, making it resemble an alternative news hub (as shows the Figure 4 in the appendix, in which Polymarket is ranked in the Magazine and Newspaper section in App Store).

This evolution clearly highlights Polymarket's ability to transcend the traditional boundaries of predictive markets by engaging users in a wide range of activities. To understand how Polymarket achieves this, it is critical to analyze the complex technologies that support its operation.

2. Blockchain building blocks

Polymarket features a unique building block structure that sets it apart from other betting platforms. This structure can be decomposed by: the integration of blockchain technology; the use of smart contracts and fungible tokens; the interaction between the platform and web3 wallets; and an Oracle to confirm the outcomes of each bet.

2.1 Blockchain-Specific Features

As a web3 platform, Polymarket's backbone lies in its integration with blockchain technology. Blockchain is a digital ledger that records transactions decentralized and transparently, ensuring no single entity has control. Transactions are grouped into blocks, linked chronologically, and secured using cryptographic techniques. Once recorded, data on the blockchain is immutable, meaning it cannot be altered, ensuring integrity and trust. The shift of its structure differentiates it from traditional betting platforms, which mostly operate on centralized systems.

A standout feature of Polymarket is its interoperability. It is primarily built on Ethereum; however, it also incorporates second-layer solutions like Polygon, Base, and Arbitrum to enhance efficiency, scalability, and lower fee costs (See Appendix: Figure 5). These layers alleviate Ethereum's congestion and high gas fees, enabling smoother transactions.

These blockchain networks employ a Proof of Stake (PoS) as a consensus mechanism to validate transactions. As we can see on Ethereum's website (Wackerow, 2024), Proof of Stake (PoS) is far more energy-efficient than Proof of Work (PoW) because it eliminates the need for energy-intensive mining. For instance, Ethereum's transition from PoW to PoS decreased its energy usage by approximately 99.98%. Additionally, It improves the network's ability to handle more transactions quickly and efficiently, allowing it to support a growing number of users and applications. Moreover, PoS promotes decentralization by allowing users to become validators through staking, reducing reliance on expensive hardware, and making network participation more accessible such as in Proof of Work (PoW). By ensuring secure and transparent block validation, PoS enhances trust among users.

2.2 Smart Contracts

Smart contracts are central to Polymarket's infrastructure. These self-executing contracts automatically enforce agreements when predefined conditions are met, ensuring secure and transparent transactions. The execution of these smart contracts is handled by the Ethereum Virtual Machine (EVM), a decentralized computation engine that processes and executes contract logic across the Ethereum network (Otto-AA, 2024). Users pay for this execution in the form of gas fees. These fees compensate the network validators for the computational resources required to execute transactions and maintain the blockchain's integrity. For instance, a bet placed on Polymarket is recorded on the blockchain, and the outcome is executed via smart contracts through the EVM once the result is confirmed, with gas fees covering the cost of this operation.

2.3 Fungible Tokens

Polymarket's financial system leverages fungible tokens, creating a versatile and efficient ecosystem. The platform supports a variety of tokens, including USDC, USDC.e, USDT, DAI, and WETH (See Appendix: Figure 6). These tokens serve as the primary medium for transactions, offering users flexibility in managing their assets. USDC, for instance, ensures price stability, making it an ideal choice for seamless betting activities.

2.4 Wallet Interactions

Polymarket integrates seamlessly with popular Web3 wallets such as "MetaMask", "WalletConnect", and "Coinbase" Wallet (See Appendix: Figure 7). These wallets let users store and manage their assets securely, granting them direct control over their funds. Users can initiate transactions, check balances, and interact with the platform without the need for intermediaries.

2.5 Oracle

Polymarket employs oracles as external data sources. More specifically, as we can see in polymarket's documentation (Polymarket, UMA, 2024), it leverages UMA's Optimistic Oracle (OO) to resolve arbitrary questions. Oracles confirm the results of events in cause, such as election outcomes or sports results, in a secure and decentralized manner. This eliminates the need for manual result verification, reducing the likelihood of errors or manipulation.

2.6 Example of a Transaction

In Figure 8 in the Appendix a typical Polymarket transaction can be seen reinforcing the platform's transparency. The red boxes show in what block the transaction belongs in the blockchain; when it was sent (Nov-24-2024); The amount of the bet (22.5144 USDC.e equivalent to $22.51); the public key of the user that sent the bet, and the receiver that in this case it's a smart contract where the transaction is stored. In the green box is where all this information is stored, in a transaction hash.

Essentially, users place bets by interacting with smart contracts, selecting their desired event, and transferring tokens. Transactions are recorded on the blockchain, and users can verify their details via explorers like "Polygonscan" (PolygonScan, 2024). For instance, a user betting on a political outcome can track their wager and payout status in real time.

When comparing it with other platforms such as PredictIt, we can clearly see Polymarket's advantages due to its building blocks. For instance, PredictIt operates on a centralized Web2 infrastructure, where

transactions, data security, and fund management are controlled internally. In this case, users rely on the platform's governance for transparency. This limits autonomy and increases the potential for manipulation. In contrast, as it was explained, Polymarket leverages blockchain technology, ensuring decentralization, transparency, and data immutability. Its integration of smart contracts automates transactions without intermediaries, reducing operational risks. Additionally, Polymarket's use of Web3 wallets like MetaMask gives users full control over their funds, unlike PredictIt's internal wallet system. Moreover, Polymarket employs UMA's Optimistic Oracle for secure, decentralized event verification, eliminating manual data handling.

Thus, it can be concluded that Polymarket represents a paradigm shift from platform-centric to user-centric digital ecosystems. Integrating blockchain technology addresses critical limitations of traditional betting platforms, such as transparency, security, and global accessibility.

3. **The problem the application solves**

Polymarket, as a blockchain-based prediction market platform, tackles several limitations that are present in traditional prediction applications. The latter often fail to deliver transparency and efficiency, which are critical for reliable forecasting. Polymarket leverages blockchain technology to address these shortcomings and offers a better alternative to non-blockchain solutions.

3.1 Lack of Accurate, Real-Time Predictions

Prediction tools like surveys, expert opinions, and polls such as Gallup polls, YouGov, or FiveThirtyEight have some limitations. They often fail to update dynamically as new information becomes available, leaving users reliant on outdated and biased insights. For example, election polls conducted by these platforms may reflect public sentiment from days before, which might not be relevant anymore. Additionally, these tools often depend on a small number of experts or participants, which reduces the scope for diverse perspectives. Polymarket resolves this issue by creating a decentralized marketplace where users continuously trade based on real-time data. Furthermore, traditional platforms lack the capability to reflect market changes in real time, which reduces their utility for forecasting fast-moving events like elections, financial markets, or public health crises. During the 2020 U.S. Presidential Election for example, FiveThirtyEight's polling data predicted Joe Biden as the winner but faced criticism for lagging behind real-time developments, particularly in swing states. This reliance on static polling data often leads to inaccurate short-term market reactions. Polymarket, powered by blockchain, continuously updates market prices based on new trades and

information flow. The prices of outcomes adjust based on market sentiment live, ensuring predictions reflect the most up-to-date collective knowledge and opinion. This ensures that predictions remain relevant and accurate, even as conditions change rapidly. Another example but from the 2024 US elections, some days before the election pollsters had the race very tied. But in Polymarket, odds were more in favor of former President Trump (58%) than Vice Presidente Harris (42%), which proved to be much more accurate (Morrow, 2024).

3.2 Inefficiency in Aggregating Collective Wisdom

The "wisdom of the crowd" refers to the idea that collective decision-making, when drawn from various and diverse participants, often leads to more accurate predictions than those made by individuals or small groups of experts. However, other platforms often lack mechanisms to efficiently aggregate this wisdom by focusing on individual viewpoints, ignoring the broader spectrum of public opinion. Polymarket incentivizes participation by financially rewarding accurate predictions. As a consequence, many users are attracted and stake funds on their beliefs regarding a particular event, which creates an incentive for people to research and make informed decisions. Blockchain plays a crucial role in enabling this process by making financial transactions secure and ensuring trust among participants. This market-driven probability pricing mechanism creates a robust system for aggregating diverse insights.

3.3 Lack of Incentives for Accurate Predictions

Building on the concept of collective wisdom, the effectiveness of any prediction platform relies on motivating participants to contribute accurate and well-researched insights. Non-blockchain solutions often fail to reward participants for accurate predictions regarding important events. While users can contribute valuable insights, there is usually little financial motivation to invest time or effort into providing well-researched inputs. Polymarket and its use of blockchain creates a reward system where participants earn financial payouts for accurate predictions. Because of that, users are incentivized to carefully analyze probabilities before betting on an outcome. This creates a self-sustaining ecosystem where accuracy is rewarded, and poor predictions carry financial consequences.

3.4 Transparency Issues in Non-Blockchain Platforms

Furthermore, non-blockchain prediction and betting sites, such as Betfair or PredictIt, rely heavily on centralized intermediaries to manage data, transactions, and outcomes. This reliance creates several transparency issues, undermining user trust. Participants often have no visibility into the processes

behind market resolution, raising concerns about fairness, manipulation, or delays. For instance, in 2019, PredictIt faced backlash for the delays in resolving Brexit-related markets, which frustrated participants who expected timely outcomes. Centralized platforms also operate as "black boxes," where users must trust that the intermediary will fairly process transactions and resolve outcomes without bias or external influence. Additionally, market rules or criteria for resolution are often ambiguously defined, leading sometimes to disputes and user dissatisfaction. For example, controversies arise when outcomes are resolved in ways users felt were inconsistent with the market's stated terms.

Blockchain technology directly addresses these transparency concerns. By utilizing an immutable ledger, blockchain ensures that all trades, transactions, and outcomes are permanently recorded and publicly accessible. On Polymarket, every user can independently verify the history of trades and outcomes, reducing the need to trust a centralized authority. This level of transparency not only fosters trust but also protects users from potential manipulations or errors in data processing. In addition to that, Polymarket enhances transparency through decentralized oracles, which are trusted data feeds that confirm event outcomes. Unlike non-blockchain platforms that rely on human intervention for resolutions, Polymarket's use of these decentralized oracles ensures unbiased and tamper-proof determination of outcomes.

This transparency also benefits participants by creating a fairer trading environment. Users are able to engage in markets knowing that processes are going to be auditable, and outcomes will be determined objectively. Polymarket's application highlights how blockchain not only addresses existing gaps in centralized platforms but also establishes a higher standard for transparency and fairness.

3.5 Centralization and Security Issues

In the same context, centralized prediction platforms also face significant potential risks, including manipulation, fraud, and single points of failure. For instance, data breaches and biased decision-making can undermine the reliability and fairness of these platforms. Blockchain's decentralization addresses these vulnerabilities by distributing control across a network of nodes. Polymarket ensures that no single entity can manipulate market outcomes or access user data without authorization. This decentralization not only enhances security but also increases trust among users. Additionally, non-blockchain systems can be prone to data breaches and fraud, further eroding safety. Blockchain also helps in eliminating intermediaries, reducing transaction costs and enhancing efficiency. Furthermore, Polymarket leverages blockchain's cryptographic security to protect user funds and data, creating a

more protected environment for participants. Polymarket takes advantage of blockchain's cryptographic mechanisms to ensure the security of user funds and data. It also safeguards user transactions from unauthorized access or tampering, where every trade, stake, and payout is recorded on an immutable ledger, ensuring that the data remains transparent and tamper-proof.

3.6 Resolution of Outcomes

As mentioned before, beyond just providing transparency, blockchain-based prediction markets like Polymarket often integrate with decentralized oracles to determine outcomes, while other non-blockchain platforms rely on centralized entities or intermediaries to decide when and how an event is resolved. This centralization can lead to disputes, manipulation, or delayed settlement. Such delays in market resolution can harm trustworthiness, as participants desire timely and transparent outcomes. On the other hand, blockchain-based oracles secure data feeds that confirm the occurrence of real-world events and ensure unbiased and quick settlement of results and payouts. This removes any reliance on a single party to finalize results, thereby improving efficiency and trust in the system.

3.7 Accessibility Barriers

Moreover, other platforms and bookmakers such as Bet365 or William Hill often impose high fees, geographic restrictions, and strict regulatory requirements, limiting their accessibility. These barriers exclude large portions of the global population. For instance, Bet365 restricts participation in many countries due to licensing issues, excluding a significant portion of potential users, especially in developing nations. Additionally, many platforms require users to have significant financial resources to participate. Polymarket eliminates these barriers by leveraging the decentralized nature of blockchain. Users from anywhere in the world can participate with low fees and no minimum balance requirements and without needing to trust intermediaries. The platform's low entry requirements and global accessibility democratize prediction markets, allowing broader participation and enabling a global "wisdom of the crowd" with users from over 80 countries.

3.8 Anonymity and User Sovereignty

Finally, blockchain-based platforms also allow for pseudonymous participation, meaning users can engage without revealing their identity. On platforms like Polymarket, users retain full control over their private keys, which are used to access and manage their funds, therefore, eliminating the need for a third-party custodian to hold their money. Additionally, there is no requirement for users to share personal information for participation, safeguarding their private data. This independence from both

financial custody and personal data management ensures users can interact securely and privately, without relying on centralized intermediaries. By combining privacy, autonomy, and security, Polymarket also sets a new standard for user empowerment in prediction markets.

4. How the application creates value for its users

4.1 Liquidity Provider Programme

A key feature of Polymarket is its Liquidity Provider Programme, which rewards participants for placing resting limit orders. This programme has been carefully designed to promote a liquid and efficient marketplace while addressing the unique challenges of binary contract markets.

The primary objectives of the incentive programme are to catalyse liquidity across all markets, maintain liquidity throughout a market's lifecycle, encourage passive and balanced quoting close to the market's midpoint, stimulate trading activity and discourage exploitative behaviour. These objectives ensure that the platform remains efficient, fair and attractive to all participants.

Inspired by dYdX's[1] liquidity provider rewards system, Polymarket has adapted this proven methodology with several modifications tailored to its unique context. Key adjustments include adaptations for binary contract markets with distinct books, the exclusion of staking mechanics, a modified order utility relative to depth function, and isolated reward amounts specific to individual markets. These refinements ensure that the incentive structure reflects the unique characteristics of binary contracts, making it both effective and fair.

Rewards are paid directly to liquidity providers on a daily basis, ensuring consistent and transparent rewards. Rewards are calculated using a well-defined formula that takes into account market participation, two-sided depth and spread efficiency. Participation rewards incentivise participation in different markets, while depth rewards prioritise balanced quoting on both sides of the order book, even for single-sided orders. The spread component evaluates the proximity of orders to the mid-market price, adjusted for a pre-defined size cut-off.

Each market has a maximum spread and a minimum size cut-off to ensure that only meaningful orders contribute to the reward pool. A participant's rewards are determined by their relative share of Q_{epoch} within the market, multiplied by the total rewards available for that market, where Q_{epoch} represents the total contribution score of a traded over a defined period, called epoch. This approach ensures that

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[1] DeFi pro trading platform

contributions are valued fairly, while promoting liquidity and order book efficiency across the platform.

By implementing this incentive structure, Polymarket has successfully created a dynamic and user-centric value creation mechanism. Its thoughtful design, inspired by established methodologies yet adapted to the specific needs of the platform, underscores Polymarket's commitment to fostering innovation and delivering tangible value to its users (Polymarket, Liquidity Rewards Programme, 2024)

4.2 Social Media Features

Polymarket is more than just a betting platform; it is a decentralized community where users engage and share insights on various topics, with a lot of social media features to make the experience more entertaining and enjoyable for the user.

Main social media features on Polymarket:

1) *User profiles*

Each participant has their own customizable profile that showcases their prediction history, market performance, and expertise.

2) *Market Feeds and Comments*

Dedicated feeds for each market allow users to post comments, share analysis and discuss trends. This open forum encourages collaboration, debate, and the exchange of ideas, enhancing the vibrancy of the markets.

3) *Tracking and Alerts*

Users can follow specific markets or traders to receive real-time updates, ensuring they stay informed about developments in their areas of interest.

4) *Leaderboards and Community Rankings*

Rankings highlight the best performing users, adding a gamification element that encourages friendly competition and motivates participants to improve their predictive skills.

5) *Polls and Community Engagement*

Community-driven polls allow users to weigh in on upcoming markets or suggest new topics, fostering a sense of participation and ownership in the direction of the platform.

6) *Trending Topics Trades*

A particularly unique and engaging feature is the creation of trend markets. These are markets based on popular culture, viral trends or Internet memes. These markets promote fun, creativity and community participation, making the platform more dynamic and entertaining (An example of this market is shown in Appendix: Figure 9).

By combining trading and communication, Polymarket incentivizes participation, increases user retention, and transforms financial speculation into a social activity. It fosters an ecosystem where users can learn, share and thrive together, establishing the platform as a hub of collective intelligence.

5. SWOT analysis

5.1 Strengths

This section includes the first part of a SWOT Analysis, strengths. A strength can be a resource, a unique approach, or a capacity that would help the entity in reaching its goals.

1) *Unprecedented Public Attention*

The success of a prediction market is ruled by how accurately it can predict the results of real live events, for that to happen, the more people that express their opinion about an outcome, the better the prediction will be (if the sample expressing their views is representative of the population, which sometimes doesn´t happen). The visibility and "the hype" that Polymarket has, creates a cycle with higher participation, which will lead to more accurate and more reliable results, and the available topics become more diverse. Polymarket can solidify themselves as leaders inside prediction markets if things work out smoothly.

In September 2024, the platform had vastly superior visitors compared to opensea.io and pump.fun (Figure 10). The number of visitors coming from mobile devices was significantly higher when compared to the other two platforms which can mean that the target audience is a bit different than NFT traders and meme enthusiasts. During the 2024 US presidential election, Polymarket also ranked second among all apps in the Apple App Store (Figure 4). Polymarket interest peaked just above 475 million $ on Election Day, dropping to 115 million $ by November 30. A decline after the U.S. elections was expected, and retaining 115 million $ is still a substantial value for a decentralized prediction market.

2) *Transparency*

It's important to clarify that there are two types of competition, the traditional prediction markets and other on-chain competitors. The on-chain architecture Polymarket has set itself apart from the traditional prediction markets. All transactions are transparent and immutable (Figure 11), which addresses one of the most popular concerns in centralized prediction markets (fraud and manipulation). Polymarket does not hold user´s funds, instead, smart contracts manage all the transactions, which again eliminates the need for a central authority. Relative to other on-chain competitors, its efficiency and ease of use (other platforms tend to have high fees, and slower speeds) set the platform apart from other crypto prediction markets.

3) *High Accessibility*

Polymarket´s commitment to high accessibility is one of its key strengths, making it user-friendly for the participants. The platform has an intuitive interface, lowering the barrier of entry for newcomers in the crypto space (Figure 12). It also does not have transaction fees and minimizes complex processes. The mobile app was also a success when compared to other platforms like Opensea and Pump.Fun.

5.2 Weaknesses

This section includes the second part of a SWOT analysis, weaknesses. A weakness consists of an entity's intrinsic limitations or defects that work against an entity in reaching its goals.

1) *Liquidity of niche events*

The liquidity of niche events is the primary inhibitor of Polymarket´s expansion onto different topics. This challenge is present in prediction market design and its order book model increases the challenge. All trades on Polymarket are peer-to-peer, meaning that when people trade, they are betting against other Polymarket users, not Polymarket itself. The prices we see are determined by supply and demand, this means that, for popular events, a lot of people would want to bet and in consequence, express their beliefs, however, if the event is not a popular one, not many people want to put their beliefs to the test. This means that users may struggle to match their orders, leading to significant delays and the prices won´t be optimal.

This problem is not present in typical sports betting companies since you are betting against the house. Polymarket tries to solve this problem through their "Liquidity Rewards Program" (Figure 13). With this program, Polymarket liquidity providers are rewarded based on a formula that determines how

helpful the order is in terms of size and pricing compared to others. This incentivizes people to provide more liquidity to the market by placing larger and more competitively priced orders, ensuring that trades can be executed more easily, and the price better reflects the beliefs of the market participants.

2) *Regulatory issues*

Make no mistake, this is the elephant in the room. Polymarket is a prediction market, and like many prediction markets, it suffers from regulatory scrutiny. These platforms are like gambling platforms, which raises concerns about their legality. In 2020, when Polymarket was founded, the platform ran into trouble with authorities right from the start. The Commodity Futures Trading Commission was worried that Polymarket wasn´t registered with the regulator but seemed to be offering gambling via derivatives (aka event contracts). The beginning of 2022 saw the first enforcement action of the year, paying a 1.4 million dollar fine alleging it violated commodities laws and regulations by offering prediction markets in the U.S (De, 2022) without registering with the agency. Polymarket also promised it would ban US residents from placing bets on its platform (of course they can access the website through a VPN).

Going forward to 2024, a year where the election betting turned Polymarket into a crypto success story, the regulatory challenges have not gone away. The tension between the platform´s global access and localized legal frameworks remains an ongoing challenge with the most recent event being the implementation of a ban on French Traders (it is symbolic since they still can access it with a VPN easily) while the French Gambling regulator investigates on the compliance of France´s gambling laws (Gibbs, 2024).

5.3 Opportunities

This section includes the third part of a SWOT analysis, opportunities. An opportunity consists of an entity's possible advantages about its internal or external environment that help it provide its services more effectively and to a wider audience.

1) *Integration with media for promotion and credibility.*

Prediction Markets live and die by the sword- and in this case, the sword is liquidity, sharp enough to cut through inefficiency, but double-edged if it does not exist. It was the largest prediction market for the 2024 U.S. elections with trading volumes reaching 1.5 billion dollars in bets (Poteriaieva, 2024). The application has the potential to become a crucial part of media and social content consumption by integrating real-time market data into news and discussions. Imagine watching a political debate while the odds are changing in real time based on what is currently happening. This gives people the

opportunity to not only consume information but also be active participants. During the last U.S. election, they did this well, becoming a go-to source for real-time public sentiment, and were frequently cited by other media platforms. They have to opportunity to capitalize even more on this for future events doing partnerships with media organizations to feature their market data in live events, articles, and much more. They must also keep in mind that people should see them as a forecasting tool rather than gambling.

5.4 Threats

This section includes the fourth part of a SWOT analysis, threats. A threat consists of a situation or barrier in the environment that limits an entity's success in providing its services or products.

1) Regulation

While I´ve already talked about Regulation under the Weaknesses, it is also a significant threat to Polymarket´s long-term viability. The platform operates on smart contracts rather than traditional intermediaries. This innovation made it a focal point for regulators in a lot of countries, the main one being the U.S. In the US CFTC has already issued fines against Polymarket and a restriction of U.S-based users. The decentralized nature of Polymarket makes it hard to align with the gambling and financial regulations in different countries. Other countries like France have begun investigations into Polymarket´s compliance with their gambling laws, demonstrating the difficulties of being in a legal gray area. Polymarket needs to engage with regulators, understand what the legal requirements in each target region are, and align its branding and role as a data-driven forecasting tool rather than a gambling platform.

2) Market Manipulation

Another big Threat that Polymarket suffers from is the risk of market manipulation. This is a vulnerability that is common to prediction markets and decentralized platforms. The two most concerning forms of market manipulation are "wash trading" and "whale tactics". In a prediction market like Polymarket, users can create an artificial trading volume by buying and selling the same contract often simultaneously and repeatedly, to create a false impression of volume and activity.

In separate investigations completed by blockchain firms Chaos Labs and Inca Digital, analysts suggested that Polymarket activity exhibited signs of wash trading (Schwartz, 2024). Chaos Labs estimated that wash trading constituted around one-third of trading volume on Polymarket's presidential market, while Inca Digital highlighted that a "significant portion of the volume" on the market could be attributed to potential wash trading, according to its report. While these reports are

not definitive and more investigation is necessary, even the possibility of widespread wash trading is a significant concern.

The second concern is related to whale tactics. Whales hold massive amounts of cryptocurrency. Unfathomable amounts to the regular user. They can be a person, an institution, or a group of people, using their financial resources to manipulate prediction markets like Polymarket for personal gain. The most common methods they use are placing disproportionately large bets on a certain outcome, skewing the odds, and misleading other traders, who believe that the current odds reflect market sentiment and follow the trend. In lower liquidity markets, whales can wipe the floor with other traders since their bets will have a tremendous impact on the current price. They can dominate the market and control the narrative without opposition.

To further understand how whale tactics can work, I give the example of the self-described trader known as "Théo". This individual reportedly bet more than 30 million on Donald Trump Victory. The sheer size of this bet caused a significant shift in the market. The bets he made drastically changed Trump´s implied chance of winning on Polymarket showing how easy it is to shift the pricing dynamics. Théo denied that he wanted to manipulate public intention but there is a fine line between doing a genius trade and manipulating the market (Osipovich, 2024). Even well-intentioned market trades can change perceptions of market consensus.

Conclusion

Polymarket does a lot of things right and it is a big step forward in the development of prediction markets. It shows the potential to create a more transparent, accessible, decentralized platform for forecasting. Comparing with the traditional prediction markets, the use of smart contracts, and decentralized oracles, ensure that all transactions are transparent, immutable and verifiable. This is a significant change already when comparing to the traditional markets, where we must trust centralized entities, leading to concerns about manipulation and clarity.

One of the main features that sets Polymarket apart from its competitors is the betting model, where users are betting against each other instead of the house. This eliminates bias and possible conflicts of interest. The peer-to-peer system eliminates this issue promoting a more competitive environment where odds really reflect the "wisdom of the crowd". Additionally, users are incentivized to adjust their beliefs in real time as soon as new information comes out. This ensures that the platform will have the most up to date views on the result of the outcomes.

While Polymarket is a useful tool for forecasting, it is important to know that it´s not a "truth machine". The predictions are based on market sentiment and available information, which will sometimes fail due to information asymmetry, biases, incomplete data. It will offer a good insight into the outcome, but it is not absolute.

When comparing to other on-chain competitors, Polymarket excels in terms of popularity, liquidity, accessibility and engagement from the users. It has the potential to grow significantly in the future with the biggest setback being the regulatory challenges. As the platform solves these problems, the potential it has to change the landscape of decentralized prediction markets continues to grow, with opportunities to expand to other markets and further increase user adoption.

Appendix

Figure 1 – Notable increase in the number of events created on Polymarket

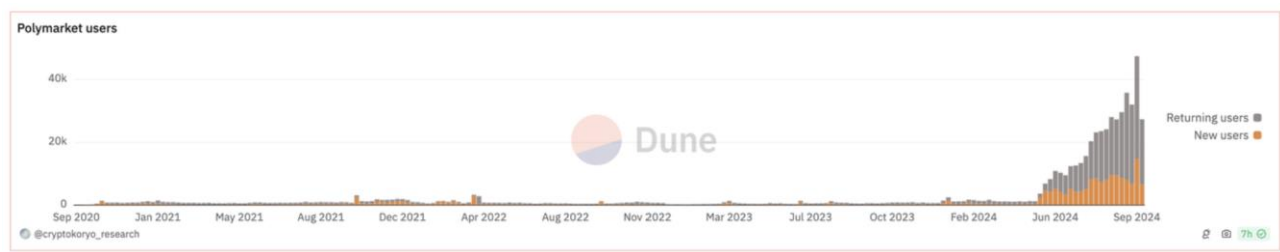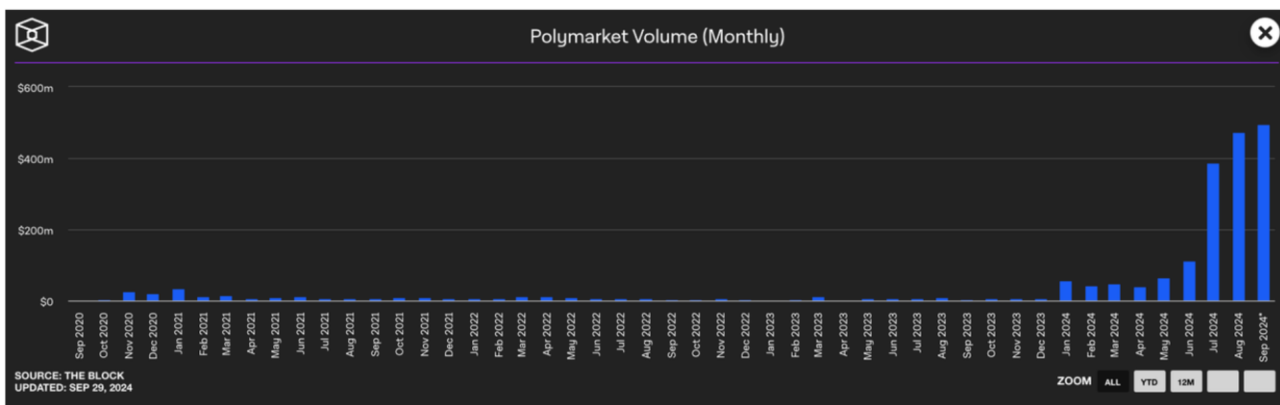**Figure 2** - Polymarket's user base quickly grew with the influx of new users

Figure 3 - Significant growth in the trading volume of Polymarket in 2024

Figure 4 – Screenshot showing Polymarket ranked third in the 'Magazines & Newspapers' section of the App Store

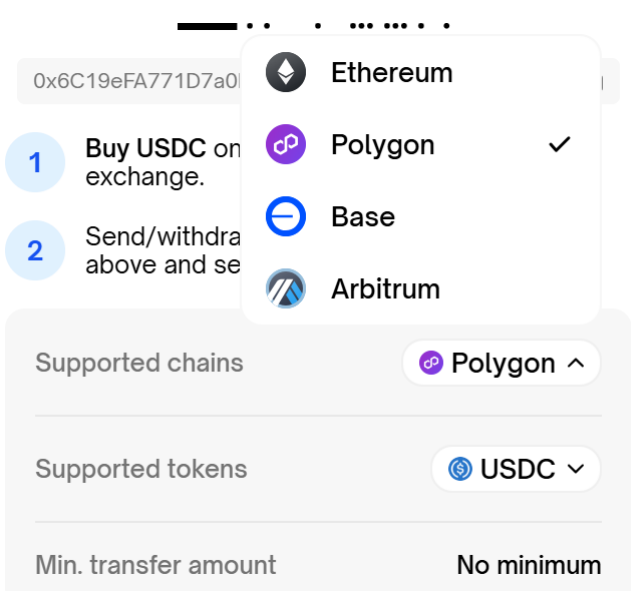**Figure 5** - Layers solutions possibilities in Polymarket to deal with the transaction
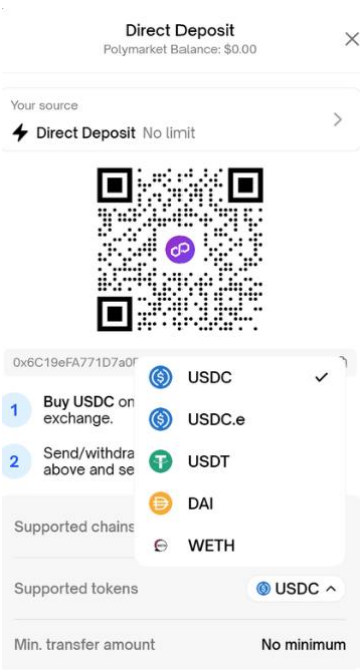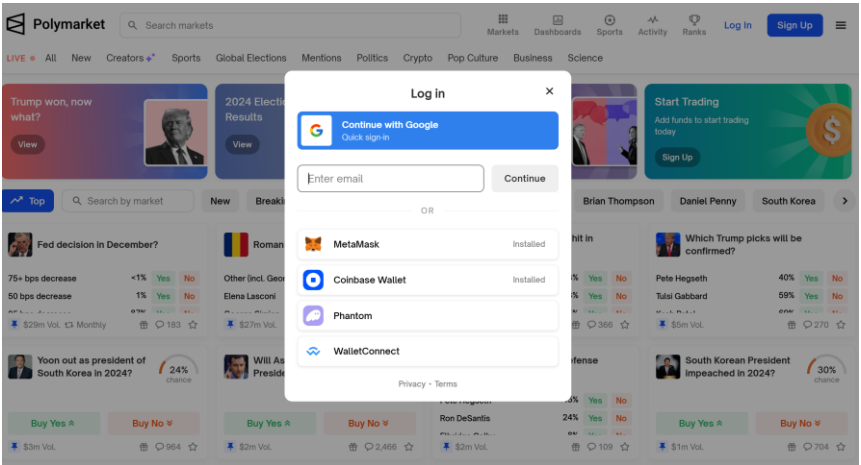
Figure 6 - Polymarket's fungible tokens possibilities

Figure 7 - Different wallets that Polymarket can interact with

Figure 8 - Example of a bet transaction made in Polymarket (interaction with the user and smart contract)
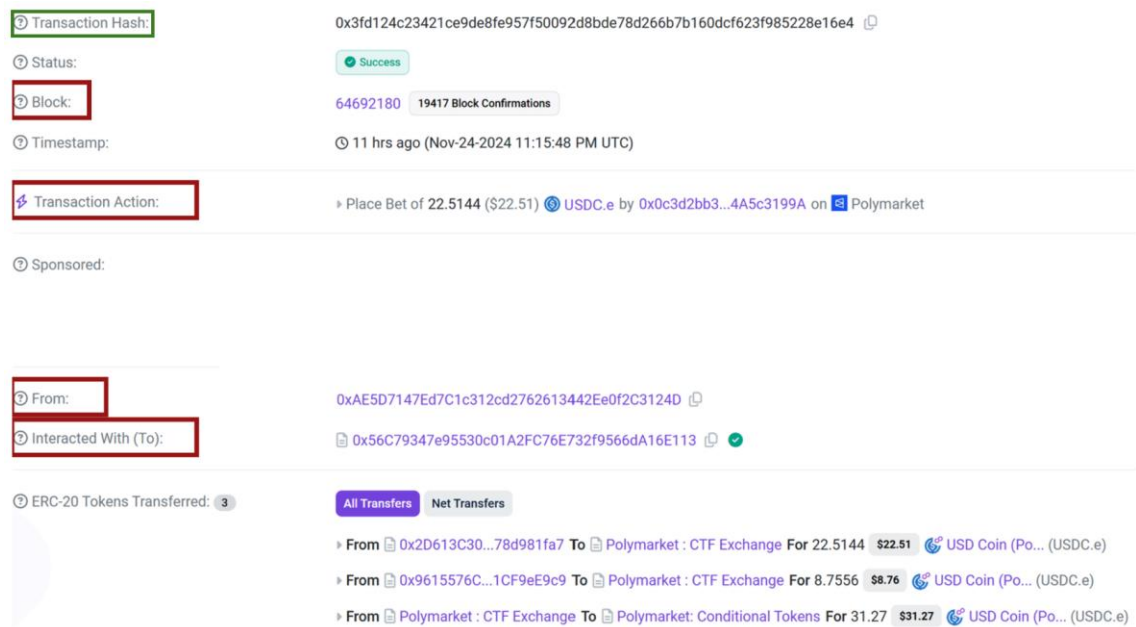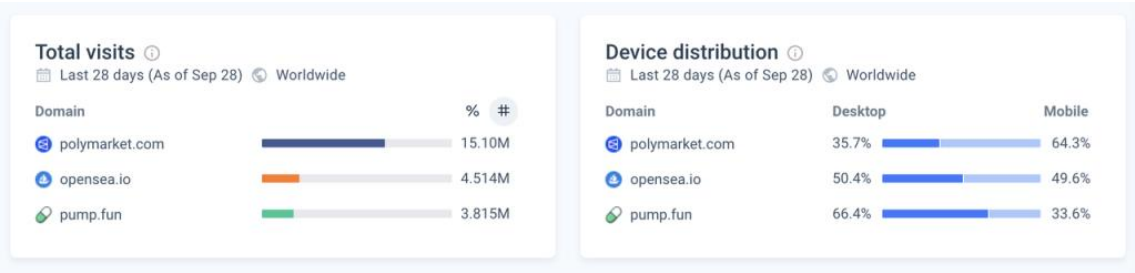

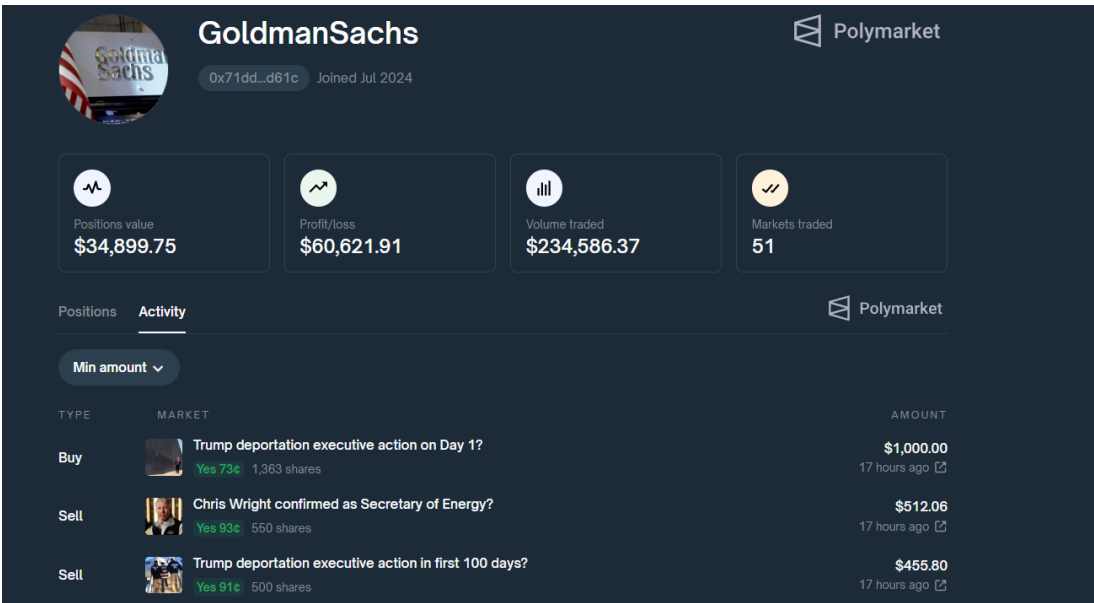**Figure 9** – Example of market based on a trending topic
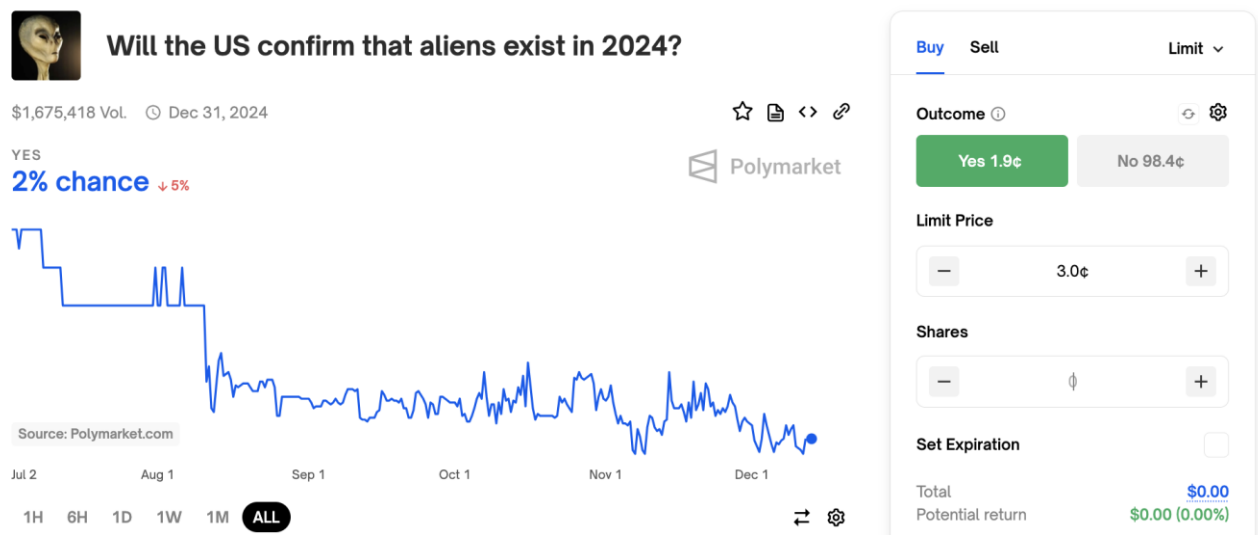
Figure 10 - Number of visits in the Month of September between Polymarket, Opensea.io and Pump.fun

Figure 11 – Specific User Profile, Bets, Volume and Current Positions can be tracked

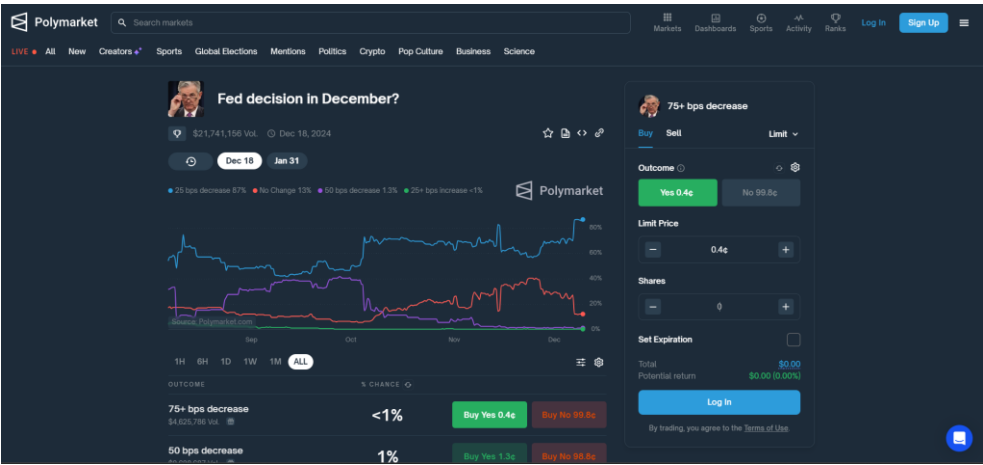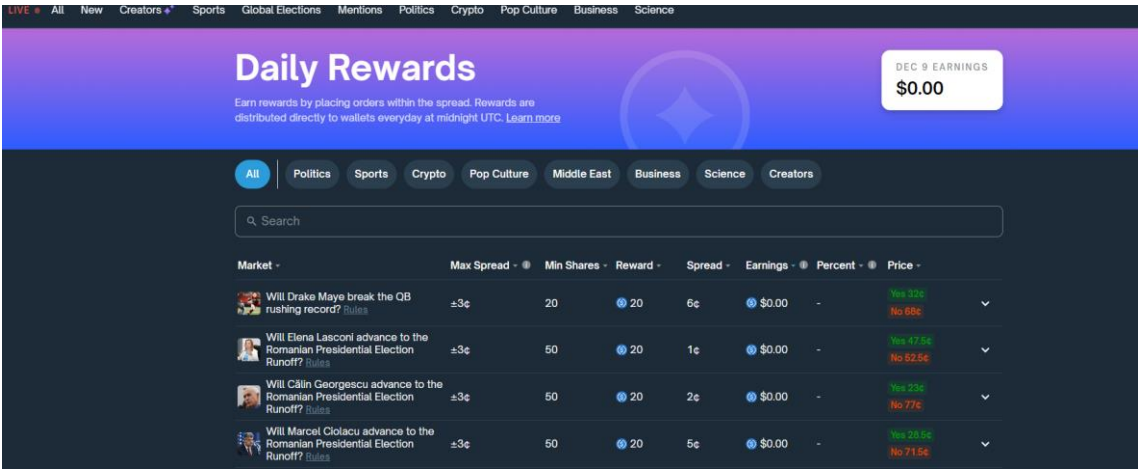**Figure 12 –** Simple and Clean UI, the odds are in a simple format and it is easy to bet

Figure 13 – Polymarket Daily Rewards for liquidity providing

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