HedgeTrade: Blockchain Enabled Social Trading

August 2019

Abstract

Capital markets, in general, are riddled with fear, uncertainty, and doubt. As a result, volatility cannot be explained through conventional principles and financial predictions available on the internet generally become baseless and hard to trust. The lack of a democratic process when determining reliable information with the sheer volume of participants leaves many with information that is challenging to rely on. HedgeTrade is a networking hub for financial and cryptocurrency trading experts, and for newcomers seeking trading predictions for cryptocurrencies, stocks, options, commodities, or any other tradable product. The HedgeTrade platform is driven by the HEDG token, this improves investor confidence for these predictions through staking mechanisms operated via smart contracts, and through a proprietary user rank algorithm that highlights users with excellent performance.

1 Introduction

Financial prediction markets are speculative markets created with the intent of trading outcomes for financial instruments from participants. The structure of these markets is very simple; users trade contracts through an exchange that provides payout. Prediction markets work using similar fundamental principles that drive other markets. The value of assets is uncertain, so a large number of traders attempt to profit by trading based on their beliefs, analytics, and available information. Prediction markets are important for the development of a trusted and transparent economy. Blockchain technology allows traders to enter predictive contracts without the need of a broker to manage the trade. Prediction markets have an enhanced capability to efficiently aggregate all accessible data that is pertinent to the outcome of an event. A large number of firms have thousands of active traders producing millions of dollars in trading volume with exponentially growing profits, but most are not taking advantage of the potential of prediction markets.

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2 How HedgeTrade Works

2.1 Blueprint Staking Mechanism

The HedgeTrade platform incorporates blockchain technology directly into its functionality whereby traders submit predictions into a smart contract driven "Blueprint[1]" that will execute true or false results based on real market information. HedgeTrade rewards traders with HEDG tokens for successful predictions as paid for by the Blueprint purchasers. If the trader makes a correct prediction via the Blueprint, they will receive tokens from the purchasing audience. Otherwise, the tokens are returned to the purchaser as coded in the smart contract. This reward and automated verification system greatly enhances a trader's credibility, motivation to succeed, and earning potential.

Each smart contract is written based on parameters set by the trader using the HedgeTrade web application. Any audience member can then 'buy' this analysis, or 'Blueprint.' Depending on the result of the Blueprint (a correct or incorrect trading prediction), the contract will then execute an outcome when specific parameters are carried out. The executed contract will affect the trader's reputation, ranking and HEDG earnings; HEDG is only awarded from the purchasing audience to the trader upon making a correct Blueprint, otherwise the HEDG tokens are returned to the audience members. This means that audience members will only 'pay' for trader recommendations with HEDG if their Blueprint is 'true,' otherwise the smart contract will execute a 'false' outcome and return the HEDG to the audience member.

The purpose of the smart contract integration into the Blueprints is to create a higher level of validation, verification and transparency of analyst performance, which in turn affects their ranking and reward.

2.2 Proof-of-Rank

The Proof-of-Rank algorithm is a proprietary multi variable set of formulas which assigns each trader on the platform an overall rank. It can be understood as leveraging the blockchain's most powerful property, its immutable ledger, which will integrate our proprietary algorithm that effectively quantifies the prediction performance of each Blueprint creator. Blueprints will thus carry an intrinsic value based on the trader's track record and ranking.

This scheme allows data to be indexed relative to importance and value. Our implementation of multiple variables within the algorithms will consist of numerous factors, a sampling of which are listed below as examples:

1. Birth of account

[1] A key feature of the staking mechanism. It contains the details of a user's personalized prediction in the form of a smart contract.

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2. Number of successful Blueprints

3. Viewership

4. Unique contributors

5. Amount of HEDG earned

6. Account age of contributors

7. Streak

All these factors, among a proprietary list of others, are taken into consideration to output an assessment of users/data and distinguish a level of credibility for the platform and each user.

Implementation

The premise of the formula is to filter each individual and provide an accurate risk analysis on the user as they grow their track record.

Let R(u,t) be the Proof-of-Rank function describing a user u at a time t. R(u,t) is a real-valued function where u=(u_1,u_2,...,u_N) is an N-dimensional vector of real values.

R(u,t) = f(u,t, w(t))

Where w(t) is a real-valued scalar weighting function, independent of the user u, and only depending on the time.

2.3 Oracle

In our context, an Oracle is an agent that finds, validates and submits market information to the blockchain to be used by our smart contracts. When a particular value (i.e., date/time, price, etc.) is reached an event automatically triggers. The primary task of an Oracle is to provide these values to the smart contract in a secure and accurate manner, while maintaining verifiable proof of its integrity.

2.4 Decentralized Dispute Resolution

The Decentralized Dispute Resolution process is designed to incentivize truthful action. The technology gives Blueprint creators the option to hold a challenge period at the Blueprint time of expiry. During this challenge period, the creator will be required to stake additional HEDG tokens to begin the dispute resolution process.

The process will begin by automatically notifying a randomized selection of high ranking users that have opted to join dispute resolutions. Each qualified user must then stake HEDG tokens to cast their vote on whether the Blueprint in question was correct or incorrect. Users that vote on the side of the majority will be rewarded with HEDG tokens.

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3 Milestone Releases

Due to the nature and complexity of our blockchain technology, the HedgeTrade platform will be separated into several milestone release versions.

3.1 HedgeTrade Alpha

The HedgeTrade Alpha release contains all necessary functionality congruent to our Blueprint staking model. Introductory features provide HedgeTrade platform users with the ability to create smart contract predictions on any cryptocurrency available through the exchanges listed.

The primary staking model introduced in this release gives Blueprint creators the ability to stake a variable number of HEDG tokens to signal their level of confidence to the audience. In order to incentivize initial purchasers, the first group of purchasers of a Blueprint will be entitled to an increased return in their purchase stake if the prediction is incorrect.

3.2 HedgeTrade Beta

The HedgeTrade Beta release will be available for access to private invite-only members. User feedback will be attained to ensure the public release is stable and fully functional.

3.3 HedgeTrade V1

The initial public release will possess the same features as the Beta version, albeit with improved UX and UI additions.

3.4 HedgeTrade V2

The HedgeTrade V2 platform will integrate our proprietary Proof-of-Rank technology, accompanied by an upgraded Blueprint resolution mechanism, and referral system. V2 will support data from additional financial markets, allowing users to create Blueprint predictions on more exchanges and eventually stocks, commodities, or any other exchange traded product.

3.5 HedgeTrade V3

Blueprints created in HedgeTrade V3 will feature the Decentralized Dispute Resolution process and the implementation of an additional staking model. This staking model will benefit users that hold a greater number of HEDG tokens. All Blueprint purchasers and creators will be entitled to an increased payout using a tiered system that depends on the amount of HEDG tokens the user is holding in their wallet (see Section 6).

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4 Spam and Manipulation

A key advantage of the HedgeTrade platform compared to other trading platforms is the degree of difficulty it will present to spammers and manipulators, making the execution of such fraudulent activities perverse and impractical. Most all traditional social media investing and sharing websites are plagued with fake upvotes, comments and followers.

Many of these heavily manipulated sites are frequently used to carry out pump-and-dump schemes and therefore can pose a massive risk to new investors in the space. The core architecture is dependent on a complex algorithm that eliminates gaming and abuse.

An integral element of spam prevention is the ability to detect anomalies, such as:

1. Account Creation Spam: Multiple accounts created by one person or a robot.
2. Shilling: Accounts used to artificially manipulate the perception of a person or product.
3. Usage of Accounts: Are the accounts only used to contribute to one person?

Amongst the tools used to help us identify account legitimacy is Artificial Intelligence (AI):

We build a base model from the data that asks the following question:

"What is the probability that the selected data is not an anomaly?"

Employing this model that we built utilizing our data structure, we can differentiate if other examples are anomalous or not.

Having built this model, we can assume:

if	$p(x_t) < \varepsilon$	Possible Anomaly
if	$p(x_t) \geq \varepsilon$	OK

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ε = is a probability value which we define depending on our needs.
t = is the test subject.

We model each of the features by assuming each one is distributed according to a normal distribution:

$$P(x : \mu, \sigma^2) = \frac{1}{\sqrt{2\pi\sigma}} e \frac{-(x-\mu)^2}{2\sigma^2}$$

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Assuming that there are n features assumed for each training data, p(x)p(x) is:

$$p(x) = \prod_{j=1}^{n} P(x_j : \mu_j, \sigma_j^2)$$

We now have a group of data which fits valid interactions and can continue to filter the data through more validity tests.

5 General Token Information

As part of our attempt at generating initial platform adoption, we will release the HEDG token to the public prior to the launch of HedgeTrade.

5.1 HEDG Token Specifications

- Token: HEDG
- Token Name: HedgeTrade Platform Utility Token
- HEDG Token Supply: 1,000,000,000

5.2 HEDG Token Distribution

- Up to 50% will be allocated for initial Private and Public Token sales.
- 10% will be allocated to the Seed round.
- 20% will be reserved for Partnerships and Community Building.
- 20% will be held by the company for future sales, staff compensation and other corporate affairs.

6 Cryptoeconomics

Modern cryptoeconomics suggests that a stable blockchain platform relies on well structured network economics for its token. Properties such as stakeholder incentivization dynamics enable better individual productivity on the platform, on the other hand, bad actors will be subject to penalties. Much of this leads to better network performance, resulting in more platform attention and an appreciation in token demand.

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6.1 Incentivizing Token Usage

With the initial V1 release, HEDG tokens can be staked favorably as the design delivers a high profit margin for both predictors and audience purchasers. In future releases, the HedgeTrade platform will experiment with other Blueprint staking mechanisms, these additional options will encourage users to utilize their tokens on the platform through a tiered payout model. This model will rely on a users Proof-of-Rank calculation, HEDG token staking in each Blueprint and the number of HEDG tokens currently held in their wallet. Through the interface provided by HedgeTrade, confidence between end-users and data sources will increase, businesses and consumers will be assured with quality controlled data, and end-users will have a simplified interface with a quick payment system. The tables below serve as examples for Blueprint traders and purchasers and the revenue payouts earned and discounts received (number values in the tables are for illustration purposes only and are subject to change with the functional release of the HedgeTrade platform).

1. **Trader Revenue Payout Based on HEDG Holdings[1]**

# of HEDG Tokens Held	Payout from Holding
0	0%
10,000	9%
50,000	12%
250,000	15%
1,000,000	18%
5,000,000	21%
10,000,000	Custom

[1] If a trader holds greater than the number of HEDG tokens in the table above, they will receive the corresponding Payout from Holding percentage. Token number held is determined at the time of Blueprint submission.

2. **Trader Revenue Payout Based on HEDG Staking Per Blueprint[2]**

# of HEDG Tokens Staked	Payout from Staking
0	6%
10	9%
50	12%
250	15%
1,000	18%
10,000	21%
100,000	24%
500,000	27%

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[2] In addition to the Payout from Holding (1) above, the trader will also receive an additional percentage of Payout from Staking for staking greater than this number of HEDG tokens into each Blueprint.

3. Purchaser Discount for HEDG Holdings[3]

# of HEDG Tokens Held	Blueprint Price Discount
0	0%
10,000	10%
50,000	15%
250,000	20%
1,000,000	25%
5,000,000	30%
10,000,000	Custom

[3] Purchasers that hold greater than this number of HEDG Tokens will receive the corresponding discount on the cost of each Blueprint. Token number held determined at the time of Blueprint purchase.

4. Purchaser Tokens Returned for HEDG Holdings[4]

# of HEDG Tokens Held	Percentage of Tokens Returned
0	20%
10,000	25%
50,000	30%
250,000	40%
1,000,000	45%
5,000,000	50%
10,000,000	Custom

[4] Purchasers that hold greater than this number of HEDG Tokens will receive the corresponding percentage of HEDG tokens back if the trader is incorrect with his Blueprint prediction. Token number held determined at the time of Blueprint purchase.

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7 Purchaser Eligibility & KYC / AML Compliance

All token sale rounds will strictly follow KYC (Know Your Customer) and AML (Anti-Money Laundering) policies. The participants' personal information and identity proofs are then gathered and run against a legal database. HEDG Tokens do not represent company shares or give rights to revenue sharing. From token economics point of view, the HEDG Tokens are for use on the HedgeTrade platform, therefore, there is no guarantee for any future economic value of the HEDG token.

8 Our Team

The HedgeTrade headquarters are based in Singapore, with team members extending into North America and Europe. Development on the HedgeTrade platform began in 2017 and its operations are currently supported by 25 full-time employees. More team information can be found on the HedgeTrade website.

9 Summary

Prediction markets have an enormous potential in long-term forecasting and assessment. Blockchain enabled prediction markets reduce bottlenecks associated with contract fulfilment, manipulation and provide better transparency and dispute resolution than traditional prediction markets. The HedgeTrade platform creates financial incentives for real market insights and an environment that deters market manipulation through the use of artificial intelligence. HedgeTrade strives to establish a community based on trust and transparency, that enables individuals to improve their trading skills, market awareness, and transactional profitability.

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References

[1] Cluster Analysis: Basic Concepts and Algorithms. [pdf]

[2] Decentralized Prediction Market without Arbiter (2017). Bentov I, Mizrahi A, Rosenfeld M. [pdf]

[3] Introduction to Cryptoeconomics. Vitalik Buterin. [pdf]

[4] On Decentralizing Prediction Markets and Order Books (2014), J. Clark et al. [pdf]

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