RAGS

WHITEPAPER

RAGS Hybrid Intelligence
for Effective Utility Asset Management

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Verified By the Blockchain EDP Team

Abstract

Rags creates the social and technological infrastructure needed to make effective Utility usages and decisions under the volatile conditions of the new economy. By combining a large number of diverse financial analysts and a set of machine- learning models into a single system, we are developing a Hybrid Intelligence infrastructure for the efficient management of investors' capital in traditional financial and crypto-markets. The benefits of Hybrid Intelligence for an ecosystem and community are

• A technological and analytical infrastructure for the efficient and safe management of investors' capital by investors themselves or licensed managers;

• An opportunity for analysts to monetise their intellectual assets without risking their own funds;

• Tools and data for making investment decisions under the conditions of market uncertainty;

• Up-to-date analytics of the industry, expectations, opportunities, and mar- ket growth points;

• Indices and ratings of crypto-assets.

Contents

1. Introduction to Hybrid Intelligence
1.1. What is Hybrid Intelligence?

Hybrid Intelligence is the combination of human intelligence and machine intelligence, and their interaction in resolving various tasks. One sort of intelligence supplements and strengthens the other.

Clearly, one may face many challenges during the decision-making process. Hybrid Intelligence and other related systems under development are appropriate for resolving these kinds of difficulties. This is not only due to the criterion of speed in decision-making - namely, the question of why one should waste time on simple tasks that can be resolved by both individuals and simple mathematical methods and algorithms? It is also related to the complexity of the tasks and the level of uncertainty in the systems used to resolve them.

In one of his interviews - Elon Musk speculates that humans should soon merge with artificial intelligence and create a new kind of interface. This symbiosis could help people settle one of the most complex tasks facing mankind: predicting the future with high accuracy.

People have long tried to resolve this issue in all areas of business by using various technologies with varying degrees of success. Investors and traders try to predict future share prices or company success to increase the profitability of investment deals. Political analysts try to predict the results of presidential elections, while corporations put a great deal of resources into attempts to fore- see future technological trends. Many of them have already used intellectual crowdsourcing to undertake these tasks to a greater or lesser extent. Let's take a look at the existing solutions.

1.2. Areas of application
1.2.1. Venture investments

Most investment venture deals are closed by "syndicates" at the moment. This means that several investors take part in one round of the deal at the same time. This trend has been increasing year on year. In addition to syndicate deals - which involve partner venture funds - specific associations and collective investment clubs emerge each year Angel-List is the most famous example).

Why do venture and other) investors prefer group deals rather than individual ones, despite the fact that sharing a profitable investment with one's competitors seems to make no sense?

One of the reasons for such deal structures lies in the use of collective intelligence systems for risk hedging against the potential mistakes of group thinking. This could happen when an investor makes the wrong decision about a deal based on a false insight, trend, or insufficient competence in a given area. In a syndicate, a set of competencies and the investors' previous experience can be very different, which allows them to view the startup as a whole, as well as looking at the team and the potential risks from various angles and to cancel the deal if there are sound reasons to do so. For most venture investments, the best deal is a deal that has never been done before.

Now imagine the collective intelligence of professional investors combined with artificial intelligence technology, which, based on the use of a large volumes of data in real time including the number of exits, the stock market situation in a specific area, the state of the labour market, and even the behaviour of startup founders on social networks), adapts to current market conditions and produces signals for entry or non-entry into a deal, free from emotional factors. Most investors at the pre-seed and seed stages admit that emotions are still the main drivers in investment decisions.

1.2.2. Science

The symbiosis of these two types of intelligence could, in this case, efficiently downplay the disadvantages of human 'emotional' approaches by strengthen- ing the decision-making signal with a number of decentralised data analysis points. Using such a method is reasonable in systems with higher uncertainty and highly complex of tasks, for example in biotechnologies. In a renowned scientific paper, researchers created a game in which each player with a different degree of knowledge could take part in molecular docking a process that helps predict the structure of a future chemical element with certain desired proper- ties). Each project participant could bind a molecule of the protein together in any way. Using this crowdsourced data from a variety of experts combined with virtual screening computer modelling and machine learning) enables scientists to create new medicines by combining a molecule medi-cine) with a target protein cancer target). The synergy of the two types of intelligence allows humanity to invent medicines for diseases that were once incurable.

In 1906, the famous British scientist Francis Galton came to a rural fair where visitors were invited to guess the weight of a bull put on public display and to write the figure on a special ticket, supposedly just for fun. The organisers of that show promised prizes for those who managed to guess the correct figure. Thus, about 800 people, some of them inveterate farmers, and others far from pastoral affairs, took part in the voting. After collecting all the tickets for analysis after the fair, Galton calculated the average arithmetic value from the entire sample: 1197 pounds. The actual weight of the bull was 1198 pounds. This means that as a group, the people gave an answer incredibly close to the true figure.

As evidenced by statistics from the Who Wants To Be a Millionaire? television game show, after contestants used the Phone-a-Friend option to phone an erudite friend, a correct answer was chosen in only 65% of cases, but when the player requested audience assistance, the aggregate answer from the audience was true in 91% of cases. Such studies of the wisdom of crowds were used widely amid the boom of studies dedicated to group dynamics between the 1920s and 1960s. The sociologist Heigl Knight, for example, asked students to estimate the temperature in the room. The arithmetic average of the group's opinions estimated the temperature in the room at some 22.44 C, while the actual temperature was 22.2 C.

1.2.3. Corporations and businesses

Google, Johnson & Johnson, and many other large corporations use 'collective intelligence' for new corporate management technologies. Corporations have already begun to integrate the technology of idea crowdsourcing and future forecasting into their strategic processes to crowdsource new ideas and generate forecasts for the future of the company and its competitors sales plans, new product releases, or entry into new markets).

Top management collects proposals and signals from various employees and departments on a decentralised basis, which is important), such as points of view and 'insights' from sales managers, who collect market feedback on a daily basis, as well as developers, who possess information on the actual value of technologies and the company's fulfilment of its product plan, which are completely different in nature and value. Combining this system with the unbiased algorithms of big data processing on sales data, analytical reports and forecasts, and the constantly changing market situation) and mathematical modelling, top management gains access to an extremely valuable decentralised source of decision-making, which can be used in combination with other strategic parameters.

1.2.4. Politics

Certainly, a similar technology can be used for political purposes. A noteworthy case is a well-known student project launched in 1988, the Iowa Electronic Market. It turned out to be one of the most precise tools for predicting the results of political events and elections for most countries around the world. Participants in this 'market' can buy or sell contracts for the various results of future political events similar to short and long positions on the stock ex- change), thus forming expectations and determining the exact probability of victory for one or another presidential candidate. For two decades, this technology has been predicting the results of US presidential elections with great precision, when compared with any analyst or company until the most recent election incidentally).

1.3. Hybrid Intelligence for investments and asset management

Undoubtedly, stock exchanges are still the leaders in researching and using Hybrid Intelligence in business - this is an area where traders have to make decisions on millions of dollars every second and trading robots do so every millisecond).
Financial markets themselves are the daily prediction of the future in its pure form. At what price and when is the best time to buy Facebook shares, Brent crude oil, the US dollar, or Bitcoin? All these questions are the subject of daily predictions of traders and analysts. Major current market analytics related, for example, forecasting the future in terms of finances are created by a limited number of professionals using roughly the same information. Each year the pace of information retrievals accelerates and the value of such reports falls, with fewer and fewer professional traders reading them or taking them seriously.

Nonetheless, such analytical reports bring in an impressive amount of money all over the world. In 2015 alone, professional traders spent over $50 billion purchasing financial market data, of which $4 billion was spent on professional analytical services and systems predictive analytics). By 2025 this figure will increase approximately 15 times. And these are only professional analytical systems. The B2C financial information market for non-professionals is huge: for example, 54% of US residents have bought shares at least once in their lives, and in China about 30% of residents are engaged in stock trading. Recognising the potential and size of this market, we decided to put the technology of Hybrid Intelligence to good use in financial markets as a top priority.

2.   Ecosystem of Hybrid Intelligence

Thousands of analysts on the Rags platform generate various forecasts daily, answering a number of specific questions about the price levels of different financial assets, macroeconomic indices, and events significantly influencing the market.
Examples:

• Create a forecast of the minimum and maximum price levels of Bitcoin for the coming seven-day period;
• Will the Tesla stock price surge to $345 during market hours on Friday?;
• Will the U.S. unemployment rate be greater than or equal to 4.5%,?

• Will Bancor collect more than 100 million during the first week of ICO?;
• What is the probability of Trump's impeachment during the next three months?

Rags works by using a large dataset that is transferred to a mathematical block consisting of a machine learning model ensemble cleaning, clustering methods, linear regressions, Bayesian models, xg boost on decision trees, genetic algorithms, and neural networks). Machine learning models dynamically calculate various weightings for each forecaster, identify stable systematics in their errors and calculate corrections for the errors, eliminate noise, and generate final predictions and trading signals.
At the core of our Hybrid Intelligence system is the synergy of the collective intelligence of a large group of dissimilar decentralised analysts combined with artificial intelligence machine learning, and a self-learning model based on a variety of dynamic feedbacks). Let's review these two ecosystem framework components in greater detail.

2.1. Collective intelligence

In order to ensure effective operations, any group intelligence system should meet the following criteria.

The complexity of every goal set.

For results to have any relevance, they cannot be derived from extremely com- plicated questions addressed to different users i.e., the expected Bitcoin price in USD in 376 days). However, the collected signal should present sufficient value. Aside from the complexity of the set task/issue, there is a need to create the most convenient infrastructure for each participant to make such forecasts.

Group diversity and decentralisation

Members of a single group intelligence should possess varied knowledge and competencies, intelligence, personal experience, and views. If a particular segment prevails in a group, the system will be incapable of generating an accurate signal in the event of an incorrect insight.

A group may have a lot of outliers, errors, or subjectivity; however, the diversity and multi directionality of these points allows them to be ignored in modulus the simplest example is the Gaussian distribution).

Furthermore, the group should be completely decentralised. No communication or exchange of opinions inside the group is allowed in order to avoid the influence of some individuals on others.

Financial motivation.

Each month, we distribute funds proportionately to each user's ranking in the application. The more accurate the forecasts a user makes, the more compensation they receive. Erroneous forecasts, and low activity downgrade the rankings. Accordingly, each user's compensation depends on their personal activities and the accuracy of the forecasts.
Training.

Getting daily feedback on the accuracy of their forecasts as well as increasing their level of knowledge before preparing each prediction helps forecasters to enhance their skills and find the best strategies for forecasting various types of events.

2.2. Artificial intelligence

The artificial intelligence system is only the first stage which generates a large amount of 'raw' data. Next, Rags 'black box' is used, with the following core elements:

(1)   The system and methods defining the confidence weight with constant adjustments after each question and trade) for each user, which takes into account:
• The personal track record of each member's accuracy, divided into clusters signal types, instrument types, links between answers, etc.);
• Dynamic feedback following each trade with regard to the value
 profit or loss) of each user's forecast;
• The predictive model, which in a very short time) is capable of defining super forecasters in the group.

(2)   Utility usage strategies and models to seek the best possible way of using the enriched data to create trading robots:
• Testing of various Payment usage strategies and hypotheses;
• Constant backtests and forward tests to adapt the models to the constantly changing market environment.

3.   Rags Coin sale

By releasing Rags infrastructure Coin, we offer all participants traders, investors, forecasters, analysts, data scientists, and the Rags team) the chance to become the creators of a decentralised ecosystem of Rags Hybrid Intelligence for more efficient asset management.
Each Rags token holder can obtain a new level of access to Rags indicators, indices, data, services, information, and analytical products. The level of access and the products and tools available will depend on the quantity of Coin in each holder's possession, which will in turn be influenced by each token holder's role and active participation in the decentralised ecosystem.
We also plan to place Rags Coin on exchanges, giving people the opportunity to buy them openly for residents of countries where the purchase of Coin does not violate local laws), gain access to new products, or sell them to interested traders, analysts, or investment funds. Coin can be sold to residents of the USA, Singapore, India, or other countries where the sale of Coin may require registration as a security.
Legislation on the circulation of securities in certain countries, such as the USA, Singapore,Dubai and India initiate the sale of Rags Coin to the residents of those countries. When you buy Rags Coin, you should be aware of the restrictions on their subsequent sale and promise to follow our instructions and/or those of the exchange when reselling them to other users.

3.1. Expediency of issuing Rags Coin

The issuance of our own infrastructure Coin is conditioned by the need to create an internal economy in the ecosystem that will establish transparent and fair relations among all participants comprising the system: forecasters and analysts, traders, financial investors, data scientists, and the Rag steam.

3.1.1. Effective economic motivation of all ecosystem participants

Blockchain, decentralisation, and a fair system of economic motivation are ideologically and systematically integrated into the structure of the predictive product module. Their purpose is to create a system of long-term motivation that encourages forecasters to

perform their intellectual work better, thereby increasing the effectiveness of the entire technology and its benefits to the community.

To ensure more efficient and fair motivation for active participants of the ecosystem, forecasters currently, but also data scientists and traders in the future) we will locate direct causality between the quality of their engagement and the result of real or simulated trading transactions or investments which are based on participants' forecasts, intellectual work, data processing models and trading strategies).

For this reason, after the crowd sale and acquisition of the necessary licenses, we will allocate part of the funding to the trading portfolio managed by Rags Hybrid Intelligence). Potential profit from this portfolio will be used to replenish the dynamic motivational Listed Coins pool to reward forecasters in proportion to their rating, accuracy, and participation over a given period). Therefore, financial compensation for active ecosystem participants will be directly linked to the trading module performance. This compensation is designed to be a reward mechanism incentive for accurate information and forecasts provided and contributed to the system and is not applied to Rags holders generally.

3.1.2. Necessity to business

The issuing of infrastructure Coin is the next step towards the creation of technological infrastructure API + forecasting module + data science module + trading module + GUI module), which will be used by investment funds working under the new format for utilising all products and capacities of Rags Hybrid Intelligence with maximum efficiency.

Funds that would purchase this technology will be regularly paying the performance fee from their potential profit, to the extent of which the dy- namic motivational Listed Coins pool will be replenished in order to increase the motivation of all active participants of the ecosystem forecasters , traders, data-scientists). This infrastructure is scheduled to be available for funds in 2022.

In order to preserve maximum efficiency in the utilisation our technology by investment funds hedge funds, crypto asset funds, venture capital funds) access to this infrastructure will be granted only for those who own a significant number of Rags Coin.

3.2. Terms of Rags sale
3.2.1. Terms of issue of Rags Coin

• Rags Coin will be issued on Binance Smartchain using the Bep20 token standard.

• Token sale period: 15 August to 15 October.

• Prior to the crowd sale, we plan to start selling the Coin via the White List in several iterations. There is a possibility that all Coin will be sold through these stages before the start of the crowd sale.

• 10% of the Coin will be issued within the token sale period. Purchase methods accepted: BTC,ETH,TRON,BNB.

• Price of 1 Rags = $0.36 fiat price equivalent provided for illustrative purposes only, fiat currency will be accepted).

3.2.2. Rags token distribution Coin will be distributed as follows:

50% - For token sale contributors;
20% - For the Corporates company + vesting; 10% - for advisors and partners
5% - Marketing campaign
5% - Tech & law Team
5% - Advisors team
1% - For the bounty campaign;
4% - For current Rags forecasters proportionally to their total rating).

3.2.3. Funding allocation

Funds will be allocated as follows proportions below are not final and may change at company's discretion based on business needs):
55% - budget for continuation of scientific work, infrastructure development, creation of new products, development of a Hybrid Intelligence platform. The budget will be allocated between these areas as set out below:

• Development: data science, machine learning, AI modules, mobile applications, web versions, products, API, web-hosting, server capacity;
• Ttrading: trading services and terminals, development of trading algorithms and infrastructure;
• Operational costs: salaries, office rent, other operational costs.

20% - Hybrid Intelligence portfolio for technology validation, the accu- mulation of valid trading data and formation of a dynamic motivational Listed Coins pool for forecasters. The trading cases of this portfolio will also serve to make up a history of transactions, which will contribute to growing interest and demand for Ragsproducts in the professional market of investors and traders.
10% - Marketing: promotion of the collective intelligence platform in order to achieve significant growth in forecaster numbers.
5% - Legal support, improvement of company's legal structure, protection of investors' rights.
5% - Monthly forecaster compensation fund.
5% - Acquisitions and future partnerships for the synergetic development of the Hybrid Intelligence ecosystem.

4.   An economic model for the ecosystem
4.1.   Products for Rags token holders

By buying Coin, Rags token holders will get exclusive access to part of the Hybrid Intelligence infrastructure currently under development).
Holders of the Rags infrastructure Coin will receive a different level of access to Rags indicators, ratings, and internal analytical products.
Token holders will be able to access the following parts of the infrastructure:

• Indicators of traditional markets and crypto-markets the probability of the rise or fall of asset prices, the probability of beating consensus in corporate and macroeconomic events, indicators of certain price levels being reached, and indicators of the probability of significant events influencing the market);

• Auxiliary service products for trading Telegram and Slack bots, notifiers, and portfolio monitoring products);
• Analytical products ICO ratings, market condition analysis, ICO due diligence, and investor portfolio analysis);
• Market indexes and sentiments generated by Hybrid Intelligence.

The fact that token holders can use data from the analytical infrastructure products will not affect the value of the data received from Hybrid Intelligence, since each indicator or index is not an unambiguous trading signal, but only an additional metric in the market that helps to analyse an investment deci- sion. These data and analytical products will assist token holders and make the ecosystem transparent.

However, a part of the infrastructure intended to be directly used in capital management by traders' teams, machine learning models, and trading strategies) will remain in the centralised part of the system. This is necessary in order to make sure that Hybrid Intelligence can be used most efficiently at the next stage, when interested funds will be provided with access to the entire infrastructure see Section 4.6).

4.2. Limited access to products

To prevent the dilution of analytical data value taking into account market capacity and the potential impact on it), the access level and set of available products and tools will be set for Rags Coin.

Part of the products will just be made available to the token holders in accordance with their balance level, and part of the products will be sold through transfer of Coin to the dynamic motivational Rags pool.

Exact formation of the access levels will depend on the crowd sale results number of the Coin issued) and the market dynamics, and will be determined by the appropriateness thereof for Rags internal economy.

We will deliver these products in various ways once the corresponding development work is complete:

• Daily/weekly/monthly distribution of indicators via messenger/email;
• SaaS Software as a Service) - a dashboard with an access to indicators and analytics of Hybrid Intelligence for various events;
• Mobile application;
• API access.

4.3. Trading portfolio of Hybrid Intelligence

In order to validate the RD progress on to develop the Hybrid Intelligence technology, and to verify the quality of the Rags analytical products, a Hybrid Intelligence Portfolio will be created.

This Portfolio will be divided into the three parts, in order to cover the most promising and scalable trading strategies, as well as for effective risk hedging:

1. Active crypto trading based on Rags technologies, along with data and signals retrieved from the consensus of Hybrid Intelligence. This portion of the portfolio will vary with crypto market liquidity. At the moment, liquidity makes it possible to comfortably use a small percent- age of the total portfolio in active strategies. Bitcoin will be used as a benchmark to estimate the results.
2. Protective buy and hold portfolio of crypto assets the proportion of various assets in the portfolio is determined by consensus). The task of Hybrid Intelligence is to determine the optimum ratio of crypto assets from the viewpoint of risk minimisation, and to keep

this ratio up to date. Bitcoin will be used as a benchmark to estimate the results.

3. Active trading of traditional financial assets: stocks, futures, and foreign exchange markets on the basis of Rags technologies, as well as data and signals retrieved from the consensus of Hybrid Intelligence. This part of the portfolio is used to demonstrate the capabilities of Hybrid Intelligence in traditional markets. It can also be treated as protective in relation to the entire crypto portfolio. In the case of a strong fall in the crypto market, a portion of the funds may be transferred to crypto assets with the purpose of earning a profit upon the rehabilitation of that market. USD will be used as a benchmark to estimate the results.

Active management of the third part of the portfolio will begin within a few months after the end of the Coin Sale. To do this, we will need to complete the preparation of the entire trading infrastructure, such as accounts and legal structure it is necessary to establish a separate legal entity for the fund and to obtain the necessary licenses). This portfolio will be managed by our team of traders and trading robots, who will use the data, signals, and analytics obtained through the RAGS Hybrid Intelligence technology.

We will apply various strategies in the financial markets both crypto and traditional) within different time horizons, from short-term trades to long-term investments. The choice of strategy and assets invested will draw on a positive evaluation from Hybrid Intelligence, as well as successful testing in the form of back and forward tests.

Our team will prepare detailed monthly reports featuring the results of the trades executed and make them available to the community.

4.4. Rags pool for dynamic compensation of forecasters

To form a steadily growing internal economy, Rags will create the internal motivational pool of Rags Coin.

The pool Coin will be used to encourage the Rags forecasters, as well as other contributors to the ecosystem, who will be bringing significant values to the ecosystem of Hybrid Intelligence scientists, visionaries, engineers, traders, investors, marketers, vendors, etc.).

For the contributors to be encouraged, Rags pool Coin will be brought to the pool primarily from selling of the Rags analytical products - those products and technologies that will be available only through the sale of Rags Coin by Rags company.

4.5. Listed Coins pool for dynamic compensation of forecasters

Every quarter we will record the results of all the accounts in the Hybrid Intelligence portfolio in order to form a dynamic motivational Listed Coins pool, designated to reward forecasters for their intellectual investment into the ecosystem.

In the case of positive performance relative to the initial state of the port- folio), we will distribute the profit as follows:

1. X% will remain in the Hybrid Intelligence portfolio, ensuring its growth for the next reporting period;
2. Y% is the performance fee for the Rags team to be paid only if the portfolio size is larger than its initial state);
3. Z% - funds to replenish the dynamic motivational Listed Coins pool.

In case of a loss, we will can use the reserve fund to provide financial motivation and compensation to the super forecasters for the period in question.

The parties acknowledge that the current state of the cryptocurrency industry is uncertain due to fast changing regulations and/or lack of regulatory certainty in several jurisdictions. To comply with any regulations and/or to ensure viability of its business model in light of any market, technological, and/or regulatory changes, Company reserves the right to amend, supplement, or delete any term of this Agreement, including but not limited to any terms dealing with the creation of dynamic motivational pools.

4.6. Monetisation of intellectual contribution of forecasters

Forecasters forming the Rags collective intelligence are the key element to be created with in the ecosystem. The successful operation of this system as a whole requires the personal motivation of forecasters to be sustained, and a common goal to be formulated for the entire group.

Our platform enables professional and non-professional analysts to monetise their intellectual work in analysing markets and generating predictions. We call this product the Collective Intelligence Platform, in which our forecasters can invest their mental asset time, attention, intelligence) and be eligible for the respective compensation of their embedded intellectual investments, with no risk of losing their own financial assets.

Personal motivation

Each forecaster generating various forecasts in our application is given a personal rating, based on the forecasts' accuracy. The rating may both increase and decrease, depending on the accuracy of each prediction. The rating of each forecaster is made public, which creates the necessary competitive motivation for each of forecaster.

At the end of each month the rating is fixed, and the most accurate of forecasters in the ratings share the cash prize in proportion to the number of points accrued that month. The monthly cash prize is formed from the reserve fund of forecasters' remuneration and depends on the number of forecasters at the time. The size of the monthly prize and the rules for its allocation are announced before the start of each month.

In the beginning of each month, this rating is reset in order for everyone to have an equal chance in the new period) and a new monthly stage begins.

Group motivation

The overall goal of the entire forecaster group will be related to the result of trading the Hybrid Intelligence portfolio, since they are an integral part of its management.

At the end of each reporting period quarter) we will record the results of trading of the Hybrid Intelligence portfolio for the traditional portfolio in USD; for the crypto-portfolio in BTC). In the case of profit generated on any of the accounts according to the corresponding benchmark), one part thereof will be applied into the dynamic motivational Listed Coins pool for allocation between the forecasters, as the additional bonus in proportion to their rating in such reporting period.

In case of a loss on both accounts, no additional bonus will be provided to the forecasters.

4.7. Technological infrastructure for investment funds

The final goal is to create a complete infrastructure for the new generation investment funds which will buy access to Rags technology API, fore- casting module, data science module, trading module, GUI module, security system).

The funds will be able to access this technology by buying necessary see

section 4.2) amount of Rags Coin. Funds that would purchase this technology will be regularly paying the performance fee from their potential profit, to the extent of which the dynamic motivational Listed Coins pool will be replenished in order to increase the motivation of all active participants of the ecosystem forecasters , traders, data-scientists).

The number of funds that will get access to the full infrastructure will be limited in order to maximise the efficiency of the infrastructure on each market
 crypto assets market, traditional stock market, currencies market, derivatives market, venture capital market).

This will provide an efficient supplement to Rags ecosystem, increasing its sustainability and providing benefits for all active members.

5.   Technologies applied
5.1. Technological infrastructure

The Rags technological infrastructure is already developed at the time of the token sale and consists of the following modules.

Business logic module:
• Backend system with basic business logic that works with events;
• Administrative system;
• Viewing data and indicators;
• Web application under development). Prediction module:
• Data acquisition;
• Filtration and cleaning of acquired data;
• Feature extraction;
• Forming of hypotheses and mathematical models;
• Validation and optimisation of parameters for predictive models;
• Synthesis of accurate predictions.
• Data acquisition from the predictive module;
• Integration with exchanges, acquisition and processing of resulting data;
• Back tests and forward tests for parameters of trading strategies;
• Implementation of trading strategies through trading robots.

5.2. Data science and machine learning (ML)

ML is employed by Rags to accurately forecast the actual behaviour of financial instruments based on data from the market and forecasters' predictions.

To achieve this goal, two major approaches are used: super forecasting and the wisdom of the crowd.

We undertake this work in several ways:

1. We study our forecasters, identifying behavioural patterns and common factors.
   • We cluster forecasters: into bears or bulls, those who narrow or expand price levels, analyse the market or not, follow the trend or not, use technical or fundamental analysis etc;
   • We explore behavioural patterns: how often forecasters make mis- takes, in which situations they are mistaken, and how forecasters react to a dramatic change in the market and different economic events.
2. We conduct experiments with groups and clusters.
3. We conduct experiments with predictive models and use them to build the boosting algorithm.

4. We conduct time series analysis of the market and the predictions of forecasters.
5. We validate machine learning models and optimise there parameters.

5.3. Description of current pipeline

Data available:

• Forecaster profile gender, age, country, professional background, occupation, and behavioural patterns);
• Forecasters' predictions for different financial assets binary questions, price-related questions);
• Historical market data on various financial assets.

We use the classical pipeline of machine learning models.

5.3.1. Data filtration and clean-up (data preparation)

The main source of random errors is forecaster input errors where the user indicated the wrong ticker symbol or specified an incorrect number order). These errors adversely affect the work of models and displace our metrics. For data clean-up we use the following methods: IQR, Grubbs Test, and GESD.

5.3.2. Feature extraction

Each forecaster and investment instrument has a distinctive behavioural pattern. Our algorithms consider these patterns and apply either charge different weightings or different models in the appropriate manner. We have developed a model that constantly updates the feature vector and recalculates its weightings based on RL reinforcement learning).

5.3.3. Construction of hypotheses and mathematical models

All our models can be divided into two classes:

• Super forecasting models in which we build models on various forecasters' clusters and cluster ensembles);
• The wisdom of the crowd model in which we build various models on the predictions of all forecasters).
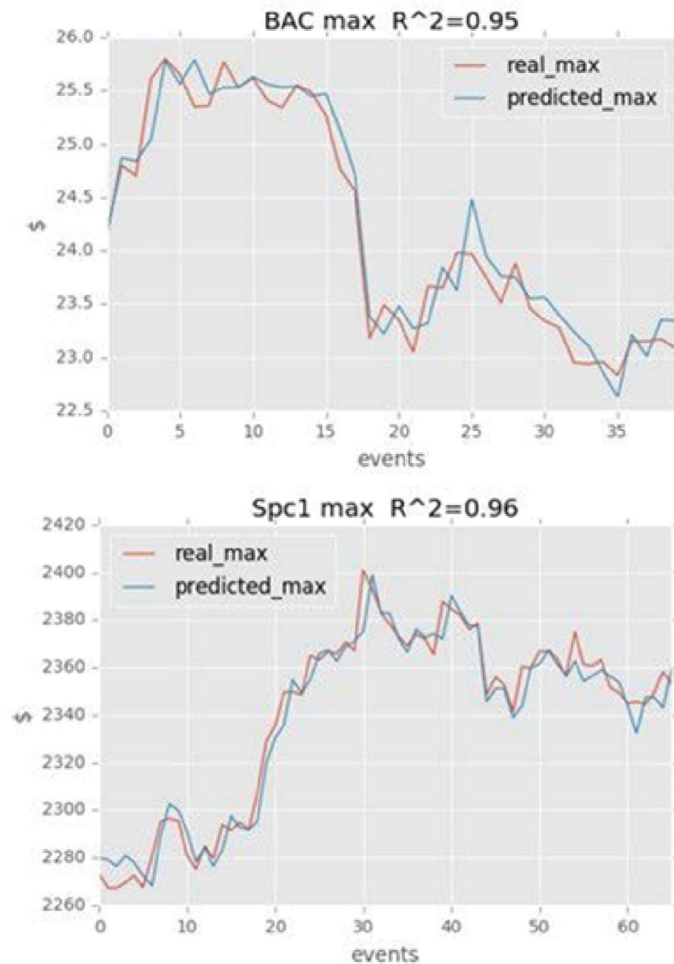
We develop mathematical models for description and prediction based on the theories of phase transitions and game theory. We also use fractal geometry to forecast critical points points where the market experiences increased tension, when the topological dimension and the Hausdorff Dimension are changing dramatically).

5.3.4. Validation and streamlining of predictive models

Our models are optimised and back test-assisted due to the pipelines involved. Different models demonstrate their own specific behaviours for different investment instruments. Each model has its own settings the length of the sliding window, the form of the function for calculating weights or penalties, the depth of the decision tree, and others). Tuning of parameters is done for each model with regards to each financial asset. Each model is constantly learning on the basis of new data. To assess the

accuracy and quality of our models, we per- form back-testing and use both standard scores RMSE, ROC, MAE, Pearson's correlation coefficient) and their intrinsic evaluation functions for each trading strategy.

5.4. Description of validated hypotheses and approaches
5.4.1. Confirmation of correlation between analysts' forecasts and real market behaviour

To demonstrate existence of strong correlation between analysts predictions and real market behaviour, we turn to the basic mathematical statistics.

Let R2 - be the coefficient of determination, one of the general mathematical metrics, which determines the degree of correlation between the data. It is believed that, when the condition R2 > 0.5 is satisfied, there is a strong correlation between the data sets.

Conclusion:

Our experiments show the presence of a constant and strong correlation be- tween analysts' forecasts and real market behaviour. This means that we can imple- ment a mathematical model that will extract from the forecasts of analysts the exact values of market behaviour with the necessary accuracy.

Legal considerations
5.5.   Legal

We are have approached the Rags sale in a comprehensive and responsible manner. Given the uncertain status of cryptocurrency and digital Coin in various jurisdictions, we spent a significant amount of time and re- sources to analyse the legal status of Rags business model and the Rags Coin in jurisdictions where we plan to operate. In the United States, we worked closely with Silicon Valley law firm actively representing blockchain and cryptocurrency clients. In Gibraltar, the jurisdiction of RagsLtd Gibraltar) we are working with ISOLAS, a leading and oldest law firm in Gibraltar.

Due to the uncertain state of regulation on a global scale, we cannot guarantee the legality of Rags hybrid intelligence platform or ability to structure and license a future investment fund based on our platform in any given juris- diction. However, we strive to be a responsive and compliant company should we face any regulatory inquiry.

5.6.   Legal status of Rags Coin

Rags Coin are functional utility Coin designed for the Rags hybrid intelligence platform. Rags Coin are not securities. Once you purchase Rags Coin, they cannot be refunded. We do not recommend buying Rags Coin for speculative investment purposes. You should buy Rags Coin to participate in the Rags hybrid intelligence platform. Rags Coin are not equated with participation in Vote, Inc. and/or RagsLtd Gibraltar) and Rags token holders have no equity, governance, or any other rights in either company. Rags Coin are sold as a digital asset, similar to downloadable software, digital music, and alike. We do not recommend purchasing Rags Coin unless you have prior experience with cryptographic Coin and blockchain-based software.

5.7.   Legal status of crowdsourced forecasting platforms

There is no unified regulatory framework applicable to crowdsourced forecasting platforms. These products and services are regulated in some jurisdictions based on existing gaming and/or financial services regulatory frameworks, while they are left unregulated in others. Before targeting a particular jurisdiction, we will conduct legal due diligence analysis of applicable regulations in such jurisdiction. Depending on the regulatory burden and steps involved, we will then either take the necessary steps to obtain any required licenses and/or permits in such jurisdiction or withhold from operating in such jurisdiction.

White Paper, website and other related documents are available in a number of languages. In the event there is any conflict between the English language version and a foreign language version, the English language version shall govern.

Conclusion

Rags ultimate goal is to set up a decentralised intellectual technology that effectively implements the potential of Hybrid Intelligence for the benefit of all participants of the ecosystem. In the future the technology strives to be fully automated: the only resource necessary for it to function will be the mental investment by the analysts.

Rags Hybrid Intelligence anticipates being used not only in financial and economic markets, but also in art, politics, sports, business, technologies, and science in the future.

RAGS sale is an excellent opportunity to join the development of a symbiotic relationship between the minds of people and machines.