



AI AND BLOCKCHAIN POWERED PERSONALIZED CRYPTO INFORMATION PLATFORM

**Aggregated news, verified by the community, boosted by artificial intelligence,
tailored to your needs.**

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1. WHAT IS IT ALL ABOUT?

1.1 INTRODUCTION

We are developing a **platform** in order to **process and evaluate any news and crypto-related information**, presenting it in the most understandable and convenient way. Our end goal is to offer the evaluated **essence of the crypto news**, making sure that anyone can get the right message delivered in real time. We want to increase the **reliability of the crypto news** with the help of **community evaluation** and **artificial intelligence** while **saving a significant amount of our users' time**.

BLOCKBIRD IS HERE TO:

-➤ combine the majority of crypto news sources into a **personalized, dashboard**, collecting all of the **relevant crypto news and information**.
-➤ create a strong **community rating system** backed by a **reward structure** to deliver verified and objective crypto news.
-➤ implement an **artificial intelligence algorithm**, ensuring the pinpoint accuracy of news analysis and enrichment of content.

1.2 MOTIVATION BEHIND THE BLOCKBIRD™ PLATFORM

We are a group of blockchain enthusiasts who believe in the decentralized and transparent future. Reporting on the subject changed drastically along with the increasing popularity of blockchain technology. It is easy to get lost in the flood of information due to an endless stream of crypto news and sources. We were looking for an all-in-one place to go, where we would be able to get all the information in one place while being forewarned and informed of fake news. We couldn't find anything to fit our wishes, so we started thinking about developing our own solution.

After speaking with experts from the fields of **artificial intelligence, blockchain, and software development**, we realized that current technology enables us to develop the **Artificial Intelligence system** that could do the work for us. In order to develop and improve such a system, we need data – lots of data. We already have plenty of news and information. What we are lacking is data required for accurate decision making.

That's where YOU, the community, comes into play – a community motivated by the same cause – the wish for **knowledge, transparency, and truth**. We will use the community's reactions to the crypto news to feed and improve the AI engine, which will learn from our community while taking care of it. All in all, we strongly believe that we can change the current state of the crypto news environment with a platform that **aggregates, enriches, and evaluates crypto news and information**. With an effective evaluation system in place, we strive to provide **a clear view of any given situation**. The availability of reliable and simplified news would also **improve the credibility of the cryptocurrency asset class**.

1.3 MISSION STATEMENT

To empower crypto environment with the latest, verified information, backed by community ratings and state-of-the-art artificial intelligence.

1.4 VISION

A world without manipulated crypto news delivered to you in the way you need it.



2. OVERVIEW OF THE CURRENT STATE OF INFORMATION

2.1 WHY DO WE NEED HIGH-QUALITY INFORMATION?

In economics there is a general consensus of striving towards perfect competition in order to provide the most efficient state of the market. Perfect information is one of the main factors that determines such a state. People who have all the relevant information are able to make the best decisions when acting on a market. It is an ideal situation – the perfection that is impossible to achieve, yet still something to endeavour. In that sense the state of information in cryptocurrency markets leaves a lot to be desired.

Cryptocurrency markets received an unprecedented amount of attention recently. The opportunity to invest and make some profit attracted contributors from all walks of life. One of the perks of cryptocurrency investing is the fact that it is not limited to exclusive groups such as accredited contributors. **Anyone can invest in crypto projects** and participate in the crypto community. Consequently, the **average investor does not have much experience investing**. The challenge of making an informed decision is not easy as **there is an abundance of information**. Even when ignoring the fact that the information **is scattered across a vast spectrum of sources**, there is still a possibility of making a **bad decision based on false information** since are many who benefit by influencing the decisions of everyday contributors. Considering all the factors it becomes nearly impossible to keep up with the ever-changing world of crypto.

2.2 THE ERA OF AN EXCESSIVE AMOUNT OF INFORMATION

We are living in a day and age of **information overload**. The sheer amount of information on the Internet is exceptional. According to an IDC study the amount of online data more than doubles every two years. As a result, the digital universe will reach 44 trillion gigabytes by 2020.¹ These increasing numbers are in direct correlation with cryptocurrency, since most of the information regarding the latter resides online. The problem becomes evident when making a move on highly volatile markets. Due to rapid price swings, **timing is of utmost importance**. Making a timely decision becomes difficult when it is based on the interpretation of considerable amounts of data. Another problem is not just the amount of the information but the **repetitiveness** of it. There is always **a wide range of articles that cover the same information**. The **information increase** in this sector **is expected to be amplified with the mass adoption** of cryptocurrencies.

2.3 DISPERSED INFORMATION SOURCES

Blockchain information can be found in **many different sources** such as well-known crypto news sites. First and foremost, crypto projects present themselves on their website and white paper. Project updates are then usually passed to the community through social media. Exterior information about the project is found on crypto news sites, forums, exchanges, market data sites, and blockchain explorers. Additionally, influencers of the crypto space use social media, YouTube channels, and blogs to pass along their own opinion of the available information. The spread of information sources **demand a lot of time and effort** in order to get the most accurate and complete information.

2.4 FALSE NEWS AND MANIPULATION

The cryptocurrency market remains an **unregulated investment area**. A lot of actions considered illegal in a regular stock market frequently take place. There is no ban on insider trading – true identities of parties are largely unknown. There are a lot of incentives for influencers and projects to present **false or exaggerated information** to gain an upper hand in the markets. The same can be said for some cryptocurrency communities when they spread this information further.

Since the area remains unregulated, there is an uprising of groups and individuals who try to influence the markets using **misinformation**-tactics. In addition, crypto investment markets are attracting a lot of users who have little experience in trading and evaluating the validity or intention of the information they consume – those users often unknowingly or **unintentionally spread false news** and/or make certain information more important than it is.

¹ <https://www.emc.com/leadership/digital-universe/2014iview/executive-summary.htm>



These are the reasons why the manipulation of crypto news/information is one of the main concerns in the market. The Blockbird™ platform is tackling all of them and will introduce novel methods for both detecting false news and alerting the users.

2.4.1 THE IMPACT OF FALSE NEWS

It is important to consider how much attention false news receives. This is mainly because falsified information can be exaggerated and sensationalized. This makes it more likely to reach a wider audience due to an emotional reaction and the supposed novelty presented in such news.

Even if there is a consequent news article, contradicting and debunking a false news piece, it never reaches the same amount of people. According to a recent MIT study "**false news reached more people than the truth**; the top 1% of false news cascades diffused to between 1000 and 100,000 people, whereas the truth rarely diffused to more than 1000 people. Falsehood also diffused faster than the truth."²

The Blockbird™ platform will pay special attention to this phenomenon and will offer functionalities to help alerts and revokes get to the users as soon as possible.

2.4.2 SOURCES OF FALSE NEWS

As already mentioned, there are many sources of false news and many reasons why it spreads so quickly. The Blockbird™ platform will use the community input and advanced AI algorithms to detect the validity (and relevance) of the information based on different criteria, including the trustworthiness of the sources and patterns used in spreading the news.

2.4.2.1 Influencers

An individual with a **significant number of followers can severely influence the evaluation** of some of the cryptocurrencies. There are cases when an individual mentions a small cap coin, and consequently it almost doubles in value in a matter of minutes. In these cases it got to a point when people started making algorithms programmed to buy any currency mentioned by those influencers, and then sell it minutes later at a much higher price.

2.4.2.2 Crypto Projects

Some of the **misinformation can come from the cryptocurrency projects themselves**. The most notable examples certainly include partnership announcements. There were some cases when a blockchain project announced an impressive partnership, only to be disputed a couple of days later by a so-called "partner". The consequential price swings in the markets are usually quite significant.

2.4.2.3 Pump and Dump Groups

Another popular manipulation technique is **the use of pump and dump groups**. Those groups are cooperating in buying a small cap coin prompting a quick rise in the value of the currency, so they can sell it off at higher prices, often to some unsuspecting contributors. Those groups often use the false crypto news as a means of getting wider attention from outside contributors. The fabricated crypto news or announcement from an account that is impersonating a company or an influential individual is shared by the "pump and dump" group members to influence markets in the desired way. The misleading information can be negative or positive.

² <http://science.sciencemag.org/content/359/6380/1146>



3. CURRENT SITUATION - USERS' PERSPECTIVE

In the previous chapter we have shown how it is very hard for anybody interested in the crypto market to gather complete information, let alone do it quickly, effortlessly, and on time. When we add to the picture the dimension of false information, the situation for the users is daunting.

Users fall into different categories based on their experience, skills, connections, knowledge, interest, time, and other criteria, however, they all face challenges when they try to understand the news important to them.

User level	General characteristics of the group	Main challenges the group is facing
Chicken Level 1	<ul style="list-style-type: none">• Interested in crypto world, but does not follow news on regular basis or systematically• Has little or no investments• Comes across news mostly on social media or when shared by other users• Generally believes what's written in the news	<ul style="list-style-type: none">• Doesn't have enough knowledge and time to recognize the impact of social media and influencers• Isn't able to gauge and question the credibility of the news• Doesn't know where to find relevant news sources and understand what is relevant in specific cases• Isn't willing to spend a lot of time researching
Rooster Level 2	<ul style="list-style-type: none">• Has some crypto investments• Follows some of the better-known news sites• Is more critical about information and tries to verify its validity by checking and comparing with other news sources• Tries to analyze the opinion of selected influencers• Spends considerable time evaluating selected information before deciding to believe the news	<ul style="list-style-type: none">• Is prone to being a victim of anchoring, confirmation, and other biases due to predefined list of news sources and influencers along with limited experience• Doesn't have enough time to read more news• Duplicates news across sources• Doesn't have enough time to verify the news• Doesn't know where to expand information search
Falcon Level 3	<ul style="list-style-type: none">• Is a serious crypto investor• Follows many news and social media sites• Is a member of project-related groups and always tries to verify the correctness of news• Uses trading and news aggregation tools to help with investing or trading in the crypto markets• Expresses opinions, concerns, and questions to various communities and friends• Feels tracking and following all of this information and the responses is time-consuming and critically delays response time	<ul style="list-style-type: none">• Doesn't have enough time to read more news• Duplicates news across sources.• Doesn't have enough time to verify all the news.• Is prone to personal biases when interpreting news• 24/7/365 market• Needs multiple tools



Based on the user categories and their underlying needs, the most common user concerns include the **credibility of provided crypto news, methods of verification and time consumption**. Those aspects of the user experience will be a priority as we develop the Blockbird™ platform.

Time Consumption / Information Evaluation Table

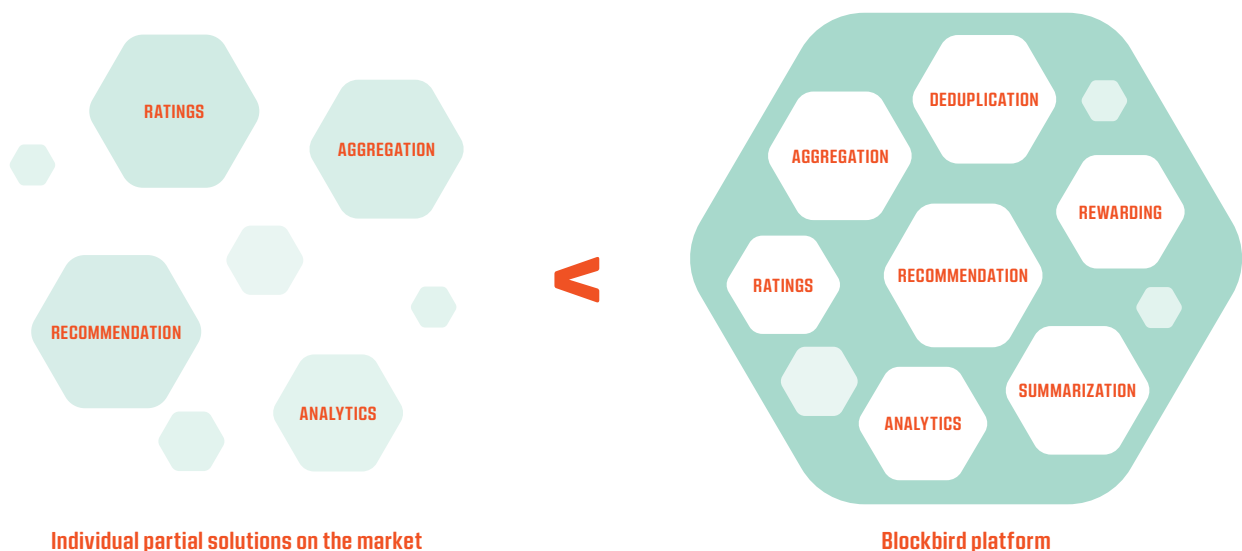
User Behaviour (*what user does with news and information)	Chicken	Rooster	Falcon
Checks information with community	×	✓	✓
Checks information with private(paid) groups	×	×	✓
Checks information on websites and social media	×	✓	✓
Uses tools	×	×	✓
Believes the information	✓	×/✓	×/✓
Analysis methods	reading	reading + checking	reading + checking + feedback

4. HOW BLOCKBIRD™ ADDRESSES THE PROBLEM

In order to tackle the problems of information overload, dispersed crypto news sources, and the manipulated crypto news Blockbird™ gathers, enriches, and evaluates all the relevant crypto news and information. In order to get a proper evaluation, it is necessary to firstly gather and enrich the news. We aim to enrich the news by summarizing and extracting the main point of the crypto news. After we enrich the information, we are able to evaluate the news much more accurately due to the processed data that we have. The manipulated news aspect will be tackled through a marking and alert system that will warn our users in real-time in order to help them recognize the misguided crypto news.

The Blockbird™ platform does not only implement the above-mentioned aspects of crypto information quality, it also improves the quality of each "feature" by using the outputs of other "features." For example, **Blockbird™ evaluates the trustworthiness of the crypto news by combining users' input with text analysis and a user/news graph**. Blockbird's synergistic approach, therefore, produces the combined result far superior to the results of localized solutions.

Blockbird™ combines multiple features in one platform and creates superior value by exploiting their synergistic effects





4.1 COMMUNITY APPROACH AND MOTIVATION

As it is the case with any community, its members vary greatly in terms of knowledge, expertise, capabilities, interests, time, connections, experience, views, etc. It will be the task of the machine-learning models to take all these differences into account and use them to shape the earliest robust rules. Technically, this means that the models will calculate different weightings for each user based on their **crypto news ratings, usage behaviours, demographics, and connections** while eliminating the unnecessary information simultaneously identifying the changes in the content and community through time.

The motivation of most platform users to participate in the community is to get access to high quality information, i.e. they have **self-interest**. As it has been shown in economic theory, self-interest is arguably the largest motivator for activity, and the best output for all can usually be accomplished when individuals act in their own self-interest. To further incentivize our users to make quality ratings, we designed a **reward system** that will distribute proportional rewards to our users in correlation with their activity and helpfulness of their rating.

The platform won't solely rely on the "invisible hand" of self-interest and rewards to level out the noise and deliberate users' actions. Some users will have temporary motivations or will try to use the platform to influence other users, so machine-learning models will be taught in the **hybrid intelligence system** to recognize this behaviour through successive layers of data representations and among others re-adjust the weighting system through impact scoring.

Power of crowd wisdom coupled with artificial intelligence has its scientific background in the field of **social physics**. In modern use social physics refers to using big data analysis and the mathematical laws to understand the behaviour of human crowds. The core idea is that data about human activity (e.g., phone call records, credit card purchases, taxi rides, web activity) contain mathematical patterns that are characteristic of how social interactions spread and converge. These mathematical invariances can then serve as a filter for analysis of behaviour changes and for detecting emerging behavioural patterns.

Over the past few years, Social Physics has been shown to be a potent analytics tool for a variety of applications where either data is anonymized or only metadata is available, as is typical of cryptographic and blockchain systems. This is because Social Physics is primarily about interactions between elements, so that the form of the data is often irrelevant.

Following are a few examples for the use of Social Physics applied to blockchain and crypto systems:

The purpose of the crypto news rating is:

- Social Physics for Financial Interaction. In a recent MIT PhD Thesis, a social physics approach to cryptocurrency market buy/sell timing was shown to drive "bubbles" in AltCoins. In this experiment, carefully timed investments totalling just a few dollars often drove more than 5000 times increase in AltCoin market value.
- Social Physics for breaking cryptographic anonymization. A recent ruling of the US Supreme Court cited the use of Social Physics for the efficient re-identification of cryptographically anonymized metadata (similar to Bitcoin transactions), discouraging defence agencies and private companies from collecting and using this so-called "anonymized" data.
- Social Physics for Anti-Money Laundering (AML). Social Physics was used to uncover a collaborating network of bitcoin addresses, an arrangement often used to launder stolen Bitcoins. This was done using a handful of known malicious addresses, that were used as "seeds" for the Social Physics "behavioural similarity detection" algorithm, resulting in an accurate detection of dozens of additional members of the network.

Research shows how social physics approach can already produce great results using behaviour only. On Blockbird platform we will still go on – we will combine user graph with news graph and then enhance them with advanced text analytics and natural language processing approaches. This way we will provide the users with unprecedented insights into the news in the context of veracity, impact, timeliness and other important information-quality factors.



4.2 BLOCKBIRD™ FEATURES

4.2.1 NEWS AGGREGATION

By aggregating crypto news from a plethora of sources, Blockbird™ is firstly providing a service of improving the information quality in the context of accessibility and timeliness. We are employing the most **advanced business intelligence** (BI) and **artificial intelligence** (AI) approaches to lift the quality of information to a whole new level.

We are talking about information that is enhanced so that it is:

- **easily found,**
- **trusted,**
- **quickly understood & consumed, and**
- **rapidly delivered.**

The Blockbird™ platform aims to **gather all of the available information** by means of data scraping. The Data scraping technique enables us to collect the vast majority of crypto news from a multitude of news sources available on the World Wide Web. It is an automated process, capable of extracting and collecting crypto news in a very efficient way. Using this method we can collect an immense amount of data, otherwise impossible to obtain through human effort.

After all the relevant information is obtained, it is presented on the **Blockbird™ dashboard** in a user-friendly form. The dashboard consists of **information blocks** that are **customizable**. Every user will be able to move the information blocks in order to shape the dashboard in-line with his own personal preference. Information blocks ensure that users obtain a fair perception of the platform elements to ensure a clear comprehension of the current situation.

4.2.2 INTELLIGENT NEWS EVALUATION

Inputs are presented to **Artificial Intelligence algorithms** in order to **automatize the crypto news evaluation process**. The machine-learning algorithms will process the input and act in line with the community actions when categorizing and presenting the news.

Business intelligence concepts are used to **visualize the number of views, votes, ratings, and popular trends**. To complement this approach, **machine learning concepts** are deployed in order to **transform all of the available data into a meaningful conclusion**.

4.2.3 CRYPTO NEWS RATING

One of our main goals is to enable crypto community evaluation of crypto and blockchain information. Therefore, we are implementing an advanced **rating system** into the Blockbird™ platform. The rating system is supported by an algorithm that calculates the value of presented information through parameters such as the **number of votes per information, user credibility rating, amount of views per information, and number of shares per information** among others.

4.2.4 TEXT ANALYTICS

Crypto news aggregated by the Blockbird™ platform alongside other textual information (such as comments) represents a valuable source of information. However, the amount of crypto news increases the information overload and users' frustration, since it is impossible to find, read, understand, and analyse all available crypto news.

The majority of systems that aggregate textual information rely on usage statistics to calculate popularity and make suggestions based on the metadata of the texts. The Blockbird™ platform will go further to **completely analyse the content of the crypto news using text-analytic techniques** and provide a huge boost to the value of collected texts by automating the tasks of grouping, understanding, and summarizing crypto news.



Text analysis involves information retrieval, lexical analysis (studying of the word frequency distributions), pattern recognition, tagging/annotation, information extraction, data-mining techniques (including the link and association analysis), visualization, and predictive analytics. The overarching goal is, essentially, to turn text into data for analysis via the application of Natural Language Processing (NLP) and analytical methods.

Using text analytics, the Blockbird™ platform will provide inputs to other ML algorithms as well as help users to easily and quickly consume the published content. The platform will:

- correlate the **content of the crypto news** with **users' ratings** to understand what makes crypto news **trustworthy and objective**;
- **analyse the content, sources, authors**, and other relevant parameters to detect and exploit **interconnections between crypto news** or what we call the “news graph”;
- use crypto news graph and content analysis to:
 - calculate the **similarity index** that will be used to both detect duplicated crypto news as well as make recommendations for users (alongside other parameters calculated by ML models),
 - **categorize news** in both pre-defined and ad-hoc categories,
 - **extract keywords**,
 - **create summaries** of the content.

4.2.5 RECOMMENDATION SYSTEM

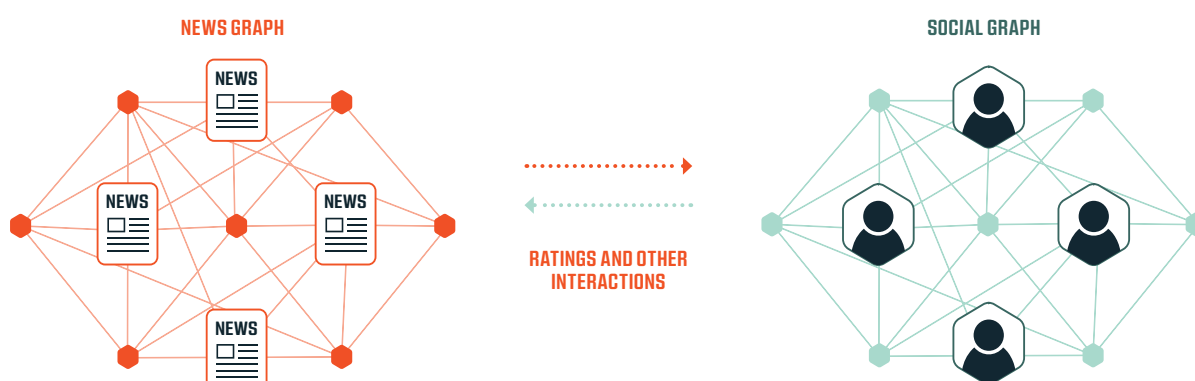
The Blockbird™ platform's recommendation engine will be a powerful tool that will help users navigate crypto space – it will both recommend the content users are most likely interested in as well as the most appropriate presentation form.

Recommender systems typically produce a list of recommendations in one of two ways – through collaborative filtering or through content-based filtering (also known as the personality-based approach). **Collaborative filtering** approaches build a model from a user's past behaviour (news previously read and/or ratings given to that news etc.) as well as similar decisions made by other users. This model is then used to predict items (news, content areas etc.) that the user may have an interest in. **Content-based filtering** approaches utilize a series of discrete characteristics of news in order to recommend additional news with similar properties.]

Blockbird engine will combine both approaches and can be thus classified as **a hybrid recommender system**. What will make the engine unique are the methods we will use to understand and connect the inputs. For collaborative filtering we will go **beyond classical user behaviour modelling** to analyse user and news graphs – they will give the models high-fidelity insight into how users are connected and how they are similar. Content filtering on the other hand will go **beyond comparing same or obviously similar news** and other items to comparing truly similar items based on advanced text analytics approaches.

As previously mentioned, combination of both approaches will create **synergistic effects**, since content- and collaborative-filtering models will all be individually fuelled by both understanding users' behaviour as well as content.

❑ Blockbird™ platform will combine social and news graph to detect hidden relationships





4.2.6 MARKING AND ALERT SYSTEM

To make sure that the arranged, classified, and rated crypto news stays as objective as possible, we will be adding an **alert system** in order to recognize **misguiding material** that can appear on our platform. There is some false crypto news that cannot be discovered when it is issued since it comes from sources that are not easily verified. If a team declares a partnership, it is quite difficult to check up on their statement. However, we can mark it in a way that indicates that the partnership wasn't confirmed by both parties. The **marking mechanism** can also be used to tag questionable and contradictory crypto news.

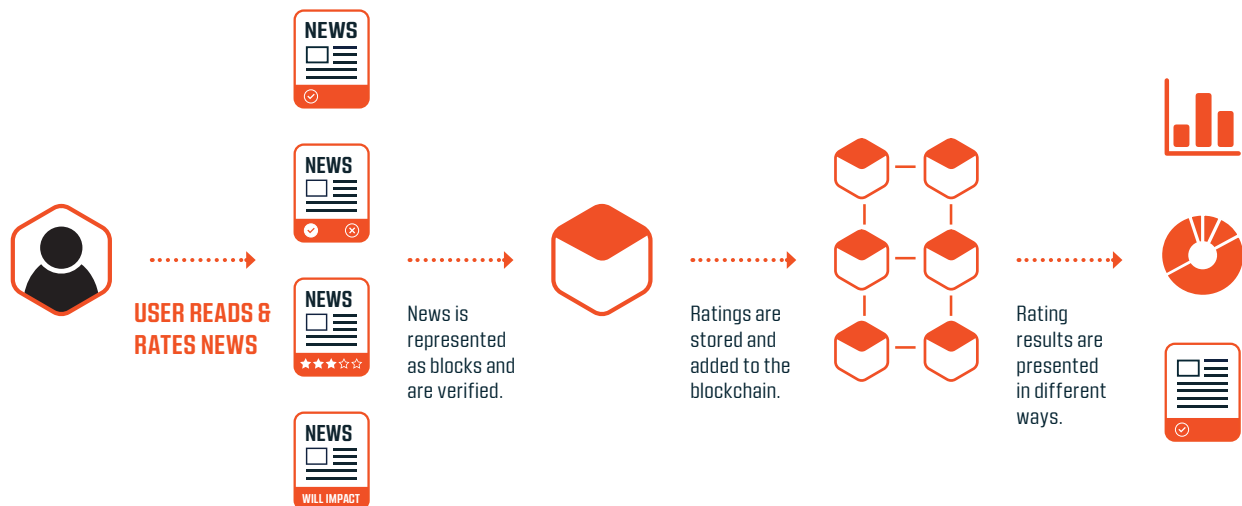
Furthermore, we plan to develop an **alert system** that would warn our users when certain information turns out to be false, offering them the chance to act as quickly as possible when things turn around on the markets. The combination of crypto news marking and the crypto news alert system could act as a safety net for our users when dealing with misguided information.

4.3 BLOCKBIRD™ ENGINE

4.3.1 A RATING SYSTEM BASED ON DISTRIBUTED LEDGER TECHNOLOGY VS. THE ALTERNATIVES

Blockchain enables transparency and immutability of the information written with Distributed Ledger Technology (DLT). Since blockchain is only one approach of DLT, we are looking beyond. Transparency is something that we take very seriously and is playing a major role in our platform development. We intend to implement a "hybrid" solution to combine some of the key features of the Distributed Ledger Technology with some of the traditional techniques. As DLT solutions require fees for executing a transaction (most of them), we are looking for fee-free and instant-transaction protocol to implement into our rating system and to have the possibility to add staking and other options in the future. **Directed Acyclic Graph** (IOTA, ByteBall, DagCoin) can serve as a viable alternative to DLT, but the progress has to be monitored in the future. The **HashGraph** algorithm is a consensus mechanism based on a virtual voting algorithm combined with the gossip protocol to achieve consensus quickly, fairly, efficiently, and securely. We are also considering a side-chain development for our platform.

❑ Results of ratings are stored in blocks and verified on a distributed ledger.



4.3.1.1 Crypto News Rating

The news is rated with the help of the **Blockbird™ community**. The purpose of the evaluation is the **determination of relevance, objectivity, and punctuality of the crypto news**. When we combine those factors, we are presented with the core quality of the displayed information. When determining the relevance of the crypto news, the **community input** is very useful, since the number of votes indicates the **popularity and relevance of the information**. Objectivity of the crypto news is showcased through the rating scores granted by the community.



In the first stages of platform development, the crypto news evaluation will mainly rely on the community input. The inputs will be used within our **AI algorithms** in order to teach and improve them. In further stages the AI algorithms will automatically complement the crypto news evaluation process, bringing the platform to full automation.

The purpose of the crypto news rating is:

- to identify the crypto news in terms of **relevancy, accuracy, and objectivity**,
- to use **user input** as data for **AI algorithms** that will learn to **recognize, categorize, and summarize the presented information**.

4.3.1.2 User Rating

Our users are a valued part of the rating system on the Blockbird™ platform. Users however have their own motives, experience and knowledge, so their inputs cannot be taken for granted. We plan to get closer to an accurate crypto news evaluation by establishing a **rating system** that emphasizes votes from the users who have proven the quality of their evaluations based on their past actions.

Rating power of a user in the context of crowd wisdom and Blockbird methodology is a proprietary **combination of user's historical rating accuracy, timeliness and completeness with user's reputation**. The latter is being modelled based on both community input as social/news graph analysis as well as content-based filtering.

4.3.1.3 Source Rating

The presented information can gain or lose credibility and relevance based on the combined weight of our users' votes. The same can be done with information providers such as crypto news pages, influencers, and individuals.

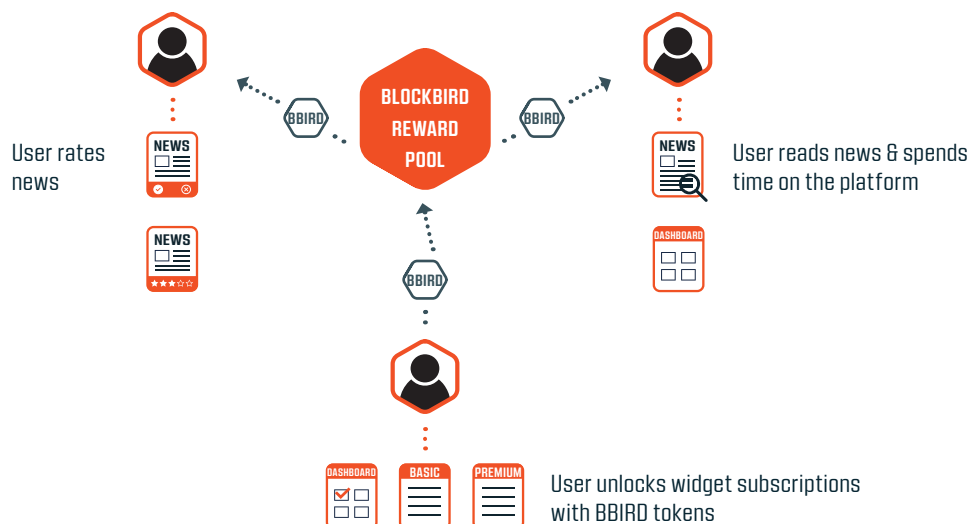
The rating system is connected with our reward system – the voting presents the opportunity for users to gain BBIRD tokens, which can also be spent on other services we provide.

4.3.2 REWARD SYSTEM

Users are rewarded with **BBIRD tokens** in two ways:

- Most importantly, users are rewarded for every action that helps the Blockbird™ platform to display and identify relevant crypto news, find manipulated crypto news, discover duplicated crypto news, correctly rate credible sources and influencers, and post meaningful comments, to name a few.
- Secondly, users are rewarded for several other activities on the platform depending on their engagement (such as the time spent on the platform, number of votes and their impact, the ratio between read and followed news etc..).

❏ Blockbird™ reward pool token token circulation





The rewarded tokens are transferred to the user virtually, and the amount is shown in the user's profile. He can then use them to unlock payable subscriptions of information blocks. The Reward System will deliver the BBIRD tokens to users via a **micropayment system**. The transactions will be **low-cost fees (or zero fees)** and will be executed **automatically** via a **smart contract**.

❑ BBIRD token usage



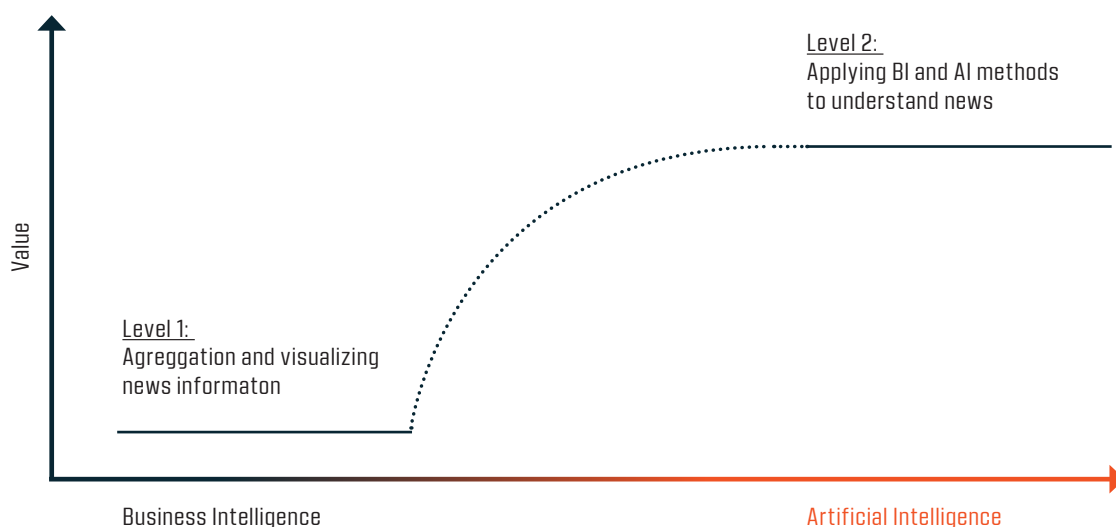
We reserved a pool of BBIRD tokens that will be distributed back to our users. The Blockbird™ reward pool is already set by our team and its token volume is 15% of the Non-Contribution part.

Furthermore, we plan to give back to our community and maximize the reward pool by adding a percentage of profits from the Blockbird™ platform's annual revenue.

4.3.3 ARTIFICIAL/BUSINESS INTELLIGENCE (AI/BI)

The Blockbird™ platform will integrate a **hybrid system** (BI and AI) to analyze gathered data. Such data will be available to Blockbird™ platform users.

❑ The Blockbird™ platform will provide both BI and AI insights into gleaned information





4.3.3.1 What Exactly Are We Going to Do?

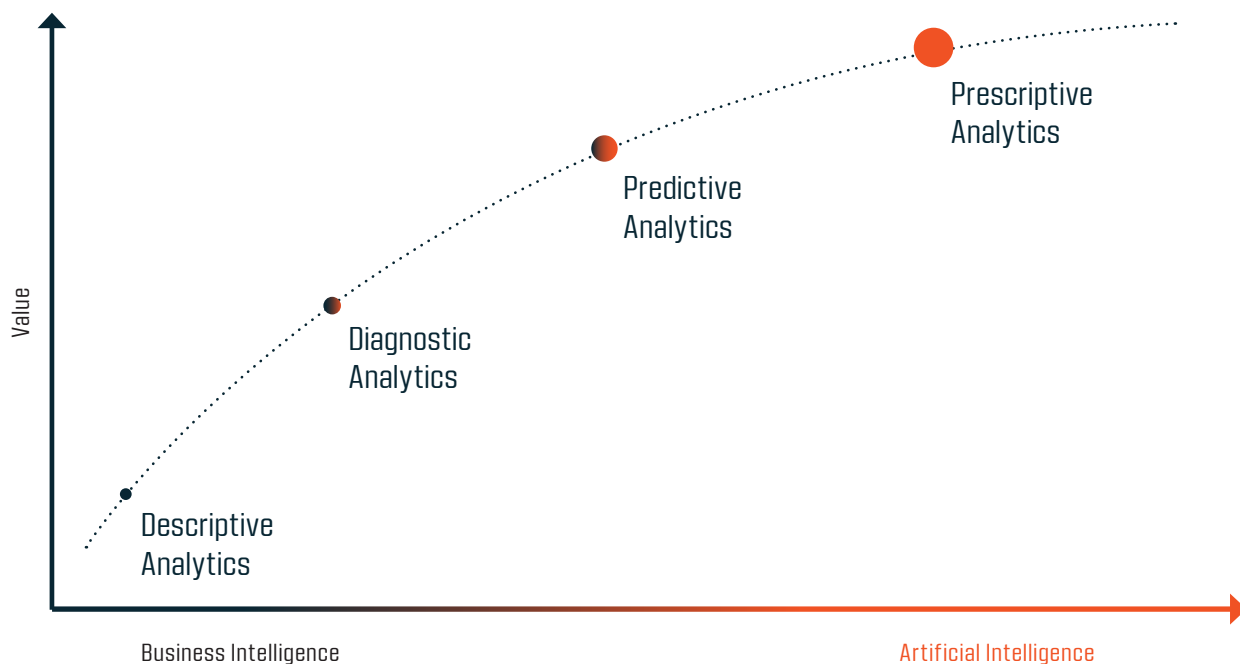
Every piece of crypto news will be rated by the Blockbird™ community across the dimensions, as described in Chapter 4.3.3. User ratings will be used as inputs into our advanced analytics algorithms (along with other relevant inputs) to automatically identify relevant crypto news and rate it. In addition, the algorithms will also categorize, de-duplicate, and summarize crypto news, as well as provide calculated suggestions for which crypto news a user should look into at a certain point in time.

Within the Blockbird™ platform we will analyse crypto news, ratings, and other available information using a wide range of analytic methods. In the context of Gartner's Analytic Ascendancy Model, the platform will provide users with information blocks offering descriptive, diagnostic, predictive, and prescriptive analytic insights.

On the left/lower side of the ascendancy model, we talk about **business intelligence** (BI), which mainly focuses on what has already happened using (preferably interactive) visual reports, dashboards, analyses, and other supporting processes. In the space of business intelligence, we are usually dealing with structured, controllable, and overall smaller datasets, i.e. small data.

Towards the right/upper side, we talk about **artificial intelligence** (AI) (also Advanced Analytics - AA), which helps us understand what the future is bringing. AI encompasses various statistical and data mining techniques and methodologies that allow us to predict the most likely outcomes. Artificial intelligence benefits from analysing large amounts of data from various sources, which have different structures and change rapidly, i.e. big data that cannot be analysed using a traditional (business intelligence) approach.

□ Different types of analytics from business to artificial intelligence





Analytical Insight

Application examples on the Blockbird™ platform

● Descriptive analytics	<ul style="list-style-type: none">• How much crypto news is there in a certain category or news source?• How is a crypto news piece rated? How has that changed over time?• How many users viewed the crypto news?• Is the popularity of crypto news increasing or decreasing?
● Diagnostic analytics	<ul style="list-style-type: none">• Why is the crypto news rated as it is?• Are there differences in ratings based on demographics, geography, or other factors?
● Predictive analytics	<ul style="list-style-type: none">• How long will it take for the crypto news piece to become trustworthy?• How can duplication of crypto news be detected?
● Prescriptive analytics	<ul style="list-style-type: none">• Based on my existing interests, which news I need to read?• Which projects / tokens should I be interested in?

4.3.3.2 Business Intelligence

Although simpler in its approach, Business Intelligence concepts can be very useful and informative. On the Blockbird™ platform we will use BI to visualize important statistics, such as the **number of views, popular trends, number of votes, and ratings**.

The platform will present the data through our **information blocks**, which are cognitive tools that improve our "span of control" over a lot of data. Information blocks will be designed to help users maintain the so-called situational awareness:

- perception of the elements within the platform,
- comprehension of the current situation, and
- projection of future status.

The information on a dashboard will be presented visually, usually as a combination of text and graphics, with an emphasis on graphics – not because graphics are cute or fun, but because graphical presentation can often communicate more efficiently and comprehensively than text alone.

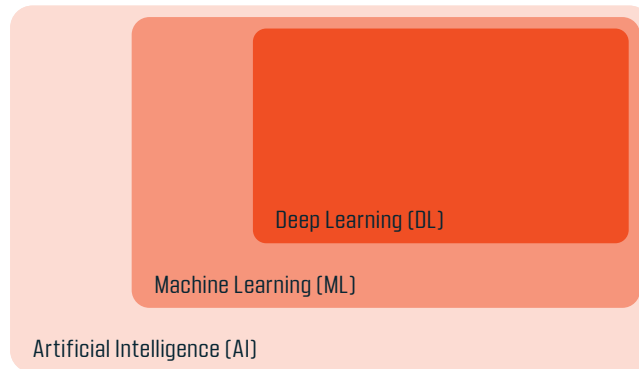
4.3.3.3 Artificial Intelligence

The Blockbird platform will employ AI approaches – more specifically, **machine learning** (ML) and **deep learning** (DL) techniques – to learn from data and provide users with predictions, suggestions, summaries, and other forms of advanced information.

AI attempts to **automate intellectual tasks normally performed by humans**. It is sometimes confused or equated with machine learning (ML), but ML is one of the ways to achieve AI – i.e. it is its subset. In the same way, deep learning is an approach within the spectrum of machine learning.



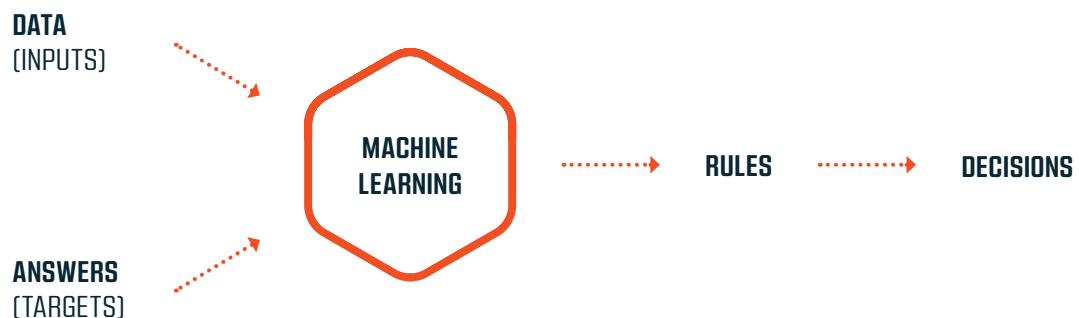
❑ Deep Learning is a subset of Machine Learning that is a subset of Artificial Intelligence



With machine learning we want the algorithms to provide us with rules that define how data is transformed into answers. This means that a machine-learning system is trained rather than explicitly programmed (as is the case with so-called symbolic Artificial Intelligence).

The ML system is presented with many examples relevant to the task, and it finds statistical structure in these examples that allows the system to come up with the rules. Statistical rules are, therefore, what the algorithms first learn and then apply to make informed decisions.

❑ The Basic Concept of Machine Learning



4.3.3.4 Machine Learning on Blockbird™

4.3.3.4.1 Rules

The rules learned by the machine learning algorithm on the Blockbird™ platform will give users the following types of answers:

- Is the crypto news trustworthy, organic, duplicated, etc.?
- What is the category of the news?
- Which crypto news is duplicated?
- What is the sentiment in the crypto news?
- Which crypto news is recommended for certain users?

4.3.3.4.2 Answers (Targets)

The answers that we will provide to the algorithm will be received from the Blockbird™ community:

- rating of the crypto news in each of the rated categories,
- classifying crypto news into predefined and ad-hoc categories,
- marking crypto news relations of specific news to other news, i.e. "similarity" rating.

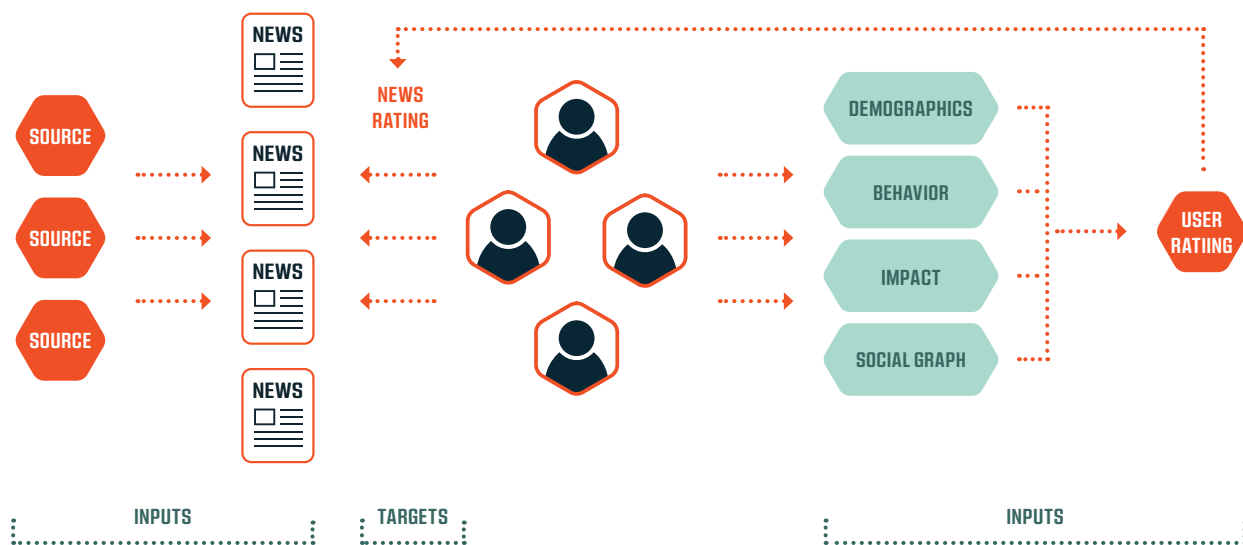


4.3.3.4.3 Data (Inputs)

The Blockbird™ machine learning algorithm will determine rules for the answers from big data aggregated by the platform:

- **News**
 - The content of the news
 - Crypto news sources
 - Connections between crypto news (news graph)
- **Users**
 - Actions/Behaviour
 - Time spent reading the crypto news,
 - news read together
 - following news,
 - following users,
 - other actions.
- **Demographics**
- **Connections between users (social graph)**
- **Derived impact**

□ Simplified schema of the machine learning concept of the rating functionality on the Blockbird™ platform



4.3.3.4.4 Going Beyond Machine Learning

The central problem in machine learning is the meaningful data transformation, i.e. learning how to present data in a useful way – meaning accurate and complete rules can be learned. Prevalent machine learning approaches tend to focus on learning only one or two layers of representations of the data and are sometimes called **shallow learning**.

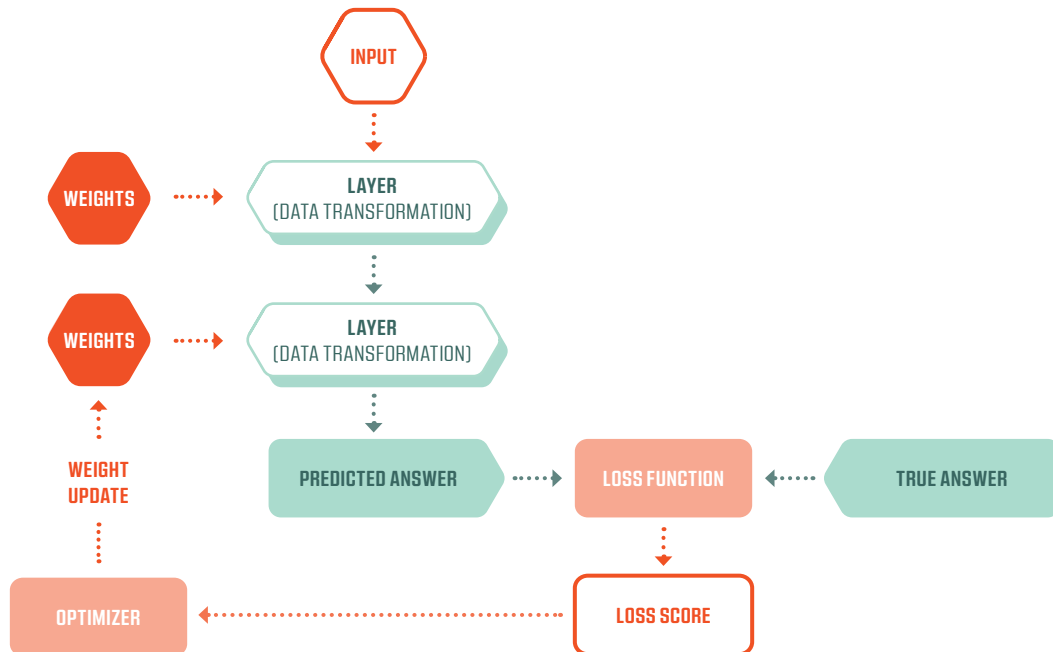
The amount of data the Blockbird™ platform algorithms process, alongside its variety and velocity, combined with a plethora of different kinds of interconnected inputs, makes it hard to either predefine or restrict algorithms to only a few representation layers.

Simply put, it is difficult to construct a single representation (layer) of input data that would uniformly depict ratings, content, source reputation, users' impact and behaviour, and all interconnections between users and information pieces – the attempt would result in a simplified reality, not a very accurate model.



Whenever it will make sense, we will use the **deep learning** approach where layered representations are learned via neural networks, structured in layers, stacked on top of each other, and parameterized by its weights. The weights are self-learned within the model and are improved with time.

□ General deep learning concept



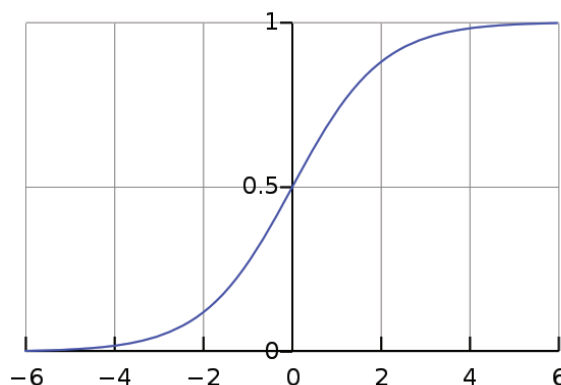
4.3.4 USER ACTIVITY IMPACT

Besides users' behavioural characteristics the platform will additionally group them based on their **impact** and use the **impact score in ML models**. Simply put, the impact will be calculated by accumulating the value each user's actions are bringing to the system – the impact can be both positive or negative and gets bigger the further away a specific user differs from the average user (along with all property vectors).

The impact scoring matrix will be based on the concept of a sigmoid function. It is suitable for formalizing the processes exhibiting a progression from small beginnings that accelerate and approach a climax over time.

□ Example of a simple sigmoid function

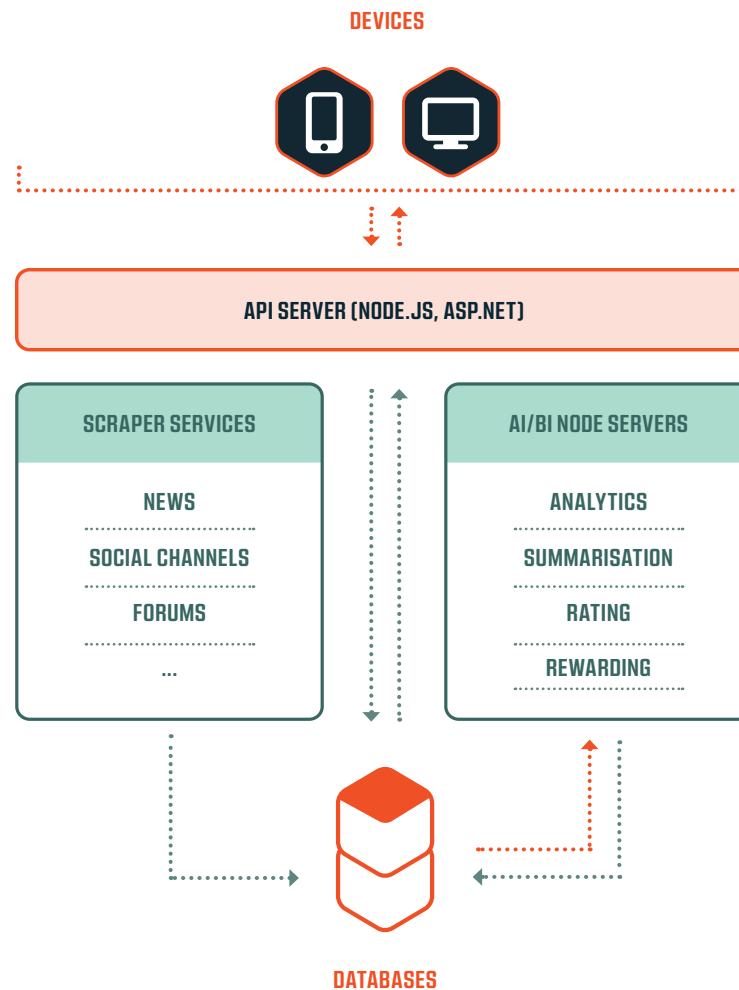
$$S(x) = \frac{1}{1+e^{-x}} = \frac{e^x}{e^x+1}$$





4.4 BLOCKBIRD™ ECOSYSTEM

□ The Blockbird™ platform architecture



4.5 CONCLUSION

The aim of the fully developed platform is to provide BI and AI insight into relevant information:

- Visualizing and presenting relevant information about crypto news (popularity, votes, connection with other news, etc.), as well as sources, users, etc.
- Automatic classification of crypto news based on its content
- Identification and comparison of crypto news based on similarity in order to de-duplicate and summarize
- Recommendation of crypto news that is relevant to a user based on his behavior compared to the behavior of similar users

5. REVENUE MODEL

The BBIRD revenue model is **subscription-based** in order to strike the best balance between the value we provide to our users and their expenses. A user can choose the appropriate package based on his preferences and needs. All features and subscriptions can be paid for with BBIRD tokens or the user's rewards earned by using the platform.

Part of our monthly revenue will be added back to our reward pool and then back to our Blockbird™ platform users.



We will offer a **free package**, available to everyone. With this package users can get access to crypto news aggregated by the platform as well as rate the crypto news and earn rewards, but this does not include access to other features of the platform. Other features are included in 2 **paid subscription packages** – **Basic** and **Premium**. Details are shown in the table below.

	FREE	BASIC	PREMIUM
GROUP 1 - BASIC FUNCTIONALITY			
Read news	✓	✓	✓
Rate news	✓	✓	✓
Receive reward	✓	✓	✓
See news ratings	✗	✓	✓
Read comments	✗	✓	✓
Add comments	✗	● FEE	✓
Alerts	✗	● FEE	✓
GROUP 2 - NEWS ANALYSIS			
News statistics - basic	✗	✓	✓
News statistics - advanced	✗	● FEE	✓
Ratings analysis	✗	● FEE	✓
Comments analysis	✗	● FEE	✓
GROUP 3 - SEARCH AND CONTENT ORGANIZATION			
Advanced categorization and organization of crypto news	✗	✓	✓
Basic news filtering	● < 5 news sources	✓	✓
Advanced news filtering – advanced	✗	● < 10 news sources	✓
AI supported news filtering	✗	✗	✓



	FREE	BASIC	PREMIUM
GROUP 3 - CONTENT ENRICHMENT			
News deduplication	×	● FEE	✓
News summarization	×	×	● FEE
Content recommendations	×	×	✓
OTHER FEATURES			
Number of widgets included in each category	1	5	10
Widget selection	×	✓	✓
Widgets purchases and additional data sources	×	✓	✓
Additional widgets discount	—	—	50 %
Widget access in beta development stage	×	×	✓
SUBSCRIPTION OPTIONS			
Features and subscription can be paid using BBIRD tokens	—	✓	✓
Features and subscription can be paid using rewards earned on BBIRD platform	—	✓	✓
Flexible subscription period options (1 month, 3 months, 6 months, or 12 months)	—	✓	✓

5.1 REVENUE MODEL FAQ

Why do you plan to charge for comments?

We believe the comments may offer additional insights into news content and context. However, they can quickly get messy thus requiring extensive editing to stay meaningful and helpful to other users. To ensure that we avoid meaningless comments under the Blockbird's feeds and articles, users with the Free or Basic package will be charged a small fee for each comment – the fee can, however, be paid using rewards that users obtain through other actions.

Will I be able to pay for widgets using my rating rewards?

The rewards for the rating are accumulated in the wallet associated with the user account. A user can use those funds to pay for the subscription fees.

What is a widget category?

Each group of widgets consists of widgets that fall in different categories – for example, the News Analysis group consists of Basic news analysis, Advanced news analysis, and Rating analysis categories. In each category the platform offers many widgets that offer specific functionality or focus on a specific data source – for example, the analysis of Twitter hashtags.



Basic and Premium subscribers have 5 or 10 widgets (respectively) in each category already included in their subscription, and they can choose the ones they would like to use. Others can be added for a small fee.

Are the category and widgets lists fixed?

No, the platform will be constantly developed and upgraded. We will be working hard to constantly add new features that will improve the value for users based on the development of the market, usage patterns and feedback from the community.

6. BLOCKBIRD™ TOKEN (BBIRD)

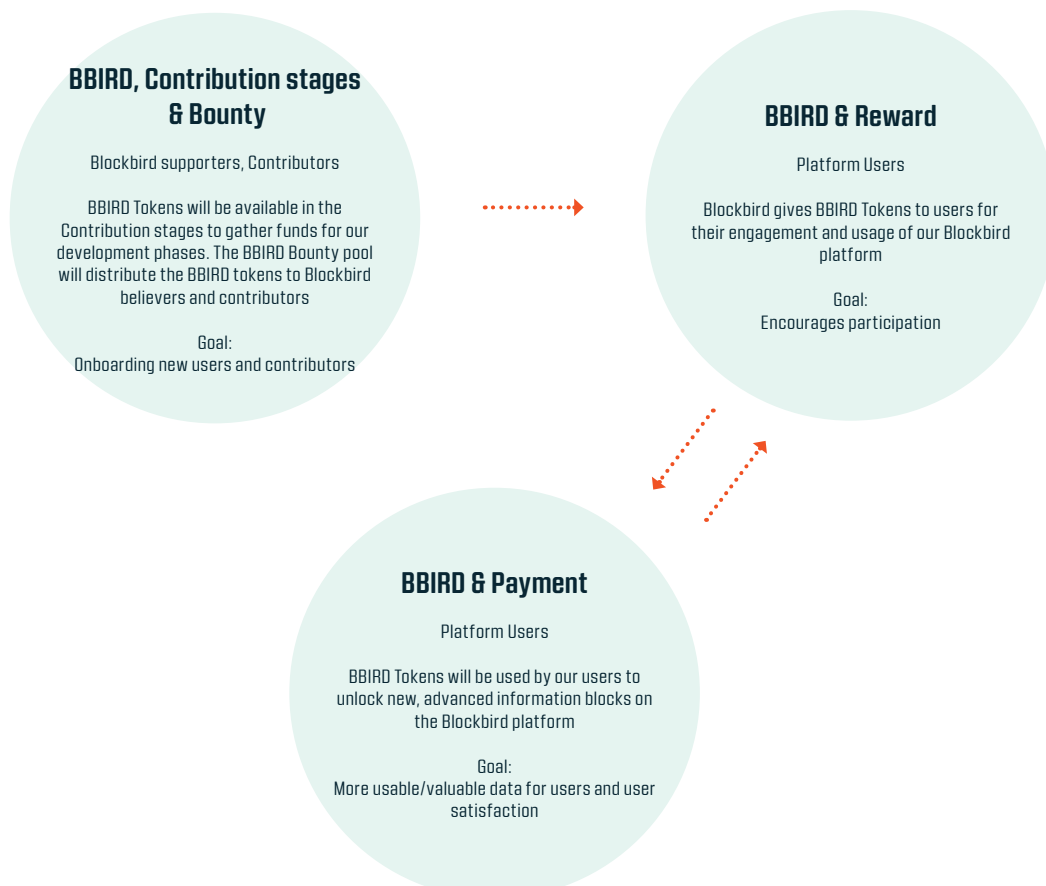
The Blockbird™ token (BBIRD) will be a fully **ERC20 compliant utility token** that will tokenize the Blockbird™ platform, its services, and features. It will be issued by a smart contract and deployed to the main Ethereum network. All smart contracts related to the BBIRD will be published and available for review by the major public.

We see our users and contributors to be able to get Blockbird™ tokens (BBIRD) in two ways:

1. Potential contributors will get BBIRD tokens in exchange for their contribution to our project during the private and public Contribution stages.
2. Users will get their BBIRD tokens as a sign of our appreciation for their engagement on our platform. This will also motivate them to contribute and help grow our Blockbird™ community.

BBIRD tokens offer users the possibility to use Blockbird's information block (widgets) subscription system inside our platform. They help the user to unlock and enable extra platform features like:

- extended rating possibilities
- news summarization
- commenting
- advanced market data analysis, and more.

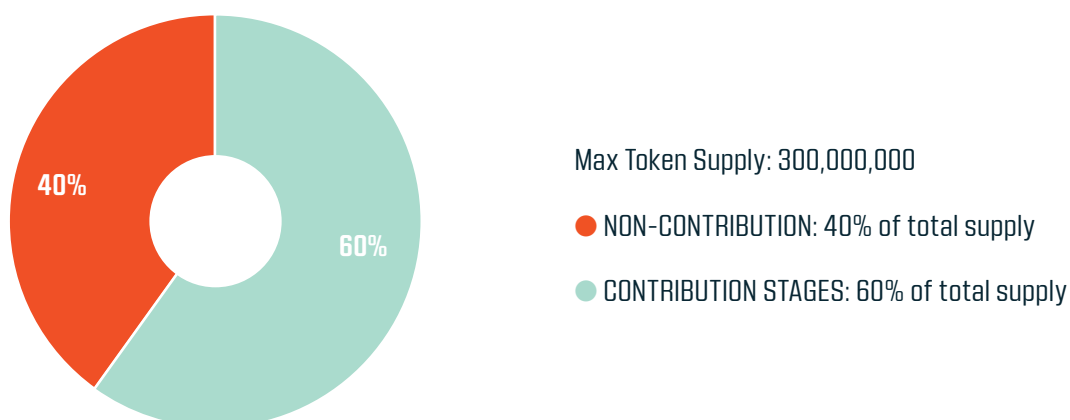




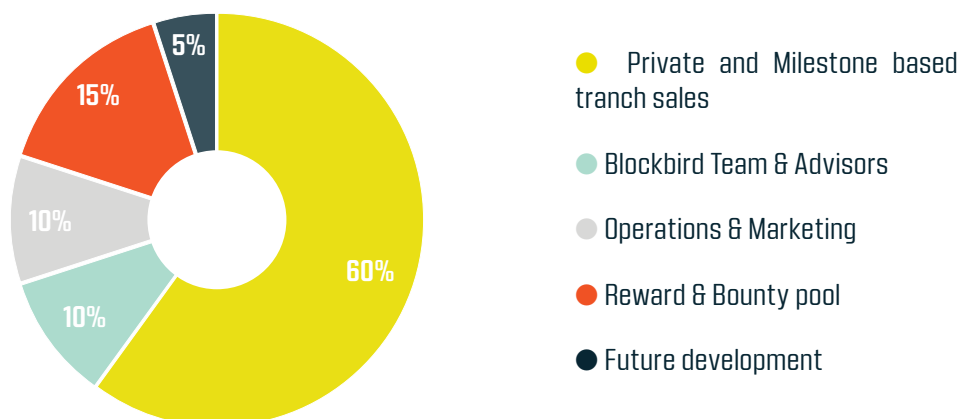
BBIRD tokens will be issued at the Token Generation Event, that will take place before the beginning of public Milestone tranche sale. There will be no possibility to generate them again due to smart contract restrictions (One-time Issuance). Tokens can be locked or vested for a predefined number of blocks (time). The smallest quantity of the BBIRD token is 0.000000001 BBIRD (9 decimals).

6.1 BLOCKBIRD™ TOKEN PROJECT DISTRIBUTION PLAN

The BBIRD token distribution is found in the table below. 60% of all tokens are reserved to be sold in different Contribution stages. The remaining is reserved for the company operations, team, reward & bounty pool, and future reserves.



- **Contribution stages (Private and Milestone based tranche sales)**
60% of tokens are reserved for Private sale and Milestone based tranche sales (for more information read the following section 7 about Contribution Info).
- **Blockbird™ Team & Advisors**
10% of tokens will be allocated to the team, early project believers, project ambassadors, and advisors. Tokens will be locked for a predefined number months after the internal distribution of allocated team tokens.
- **Operations & Marketing**
10% of tokens are allocated to the project development operations and support. This also includes the tasks that are connected to marketing and growth campaigns. Tokens will be locked for a predefined number months after the last Contribution stage (Milestone based tranche sale).
- **Reward & Bounty pool**
15% of tokens will be allocated to the reward system for the Blockbird™ platform and will be used for community engagement, reward, and contribution purposes. A portion will also be used for our bounty programs.
- **Future development**
5% of tokens will be reserved for future development. Tokens will be locked for a predefined number months after the last Contribution stage (Milestone based tranche sale).



6.2 BLOCKBIRD™ STAKING SYSTEM

The Blockbird™ platform is set to steadily grow and develop over time. The same goes for its fuel at the core – the BBIRD token. One key component in this process is that investors and interested parties believe and monitor the BBIRD token closely. This will be achieved through Blockbird's reward system, the platform's regular usage, and users' engagement.

Below we present three main staking approaches and incentive types for contributors, users, and sources. Each party can participate in more than one staking model, yet can only do so with purchased BBIRD tokens. BBIRD tokens received through the Blockbird™ reward system will only be used for subscription payments.

6.2.1 STAKING FOR CONTRIBUTORS

As we are sure some contributors will look beyond the utility aspect of our token, we present the addition to our reward system – the Blockbird™ staking system. The system will reward investors and users for staking (holding) the BBIRD tokens for a fixed period of time. The bonus that is earned through staking varies depending on the time-span in which the tokens are held. The longer the stake duration, the higher the bonus.

Our predefined staking duration and amounts are:

Staking (Holding) stage and duration	Staking (Holding) bonus
After the last Milestone based tranch sale (duration 6 months)	3 %
After the last Milestone based tranch sale (duration 12 months)	7,5 %

• The minimum staking amount for contributors is set to 100.000 BBIRD tokens (approx. 10.000 USD*).

6.2.2 STAKING FOR PLATFORM USERS

Platform users will be encouraged to stake their BBIRDS in exchange for additional subscription benefits, higher reward multipliers, and the unlocking of special platform features not available to all users.

6.2.3 STAKING FOR CONTENT SOURCES

Additionally, we plan to implement a staking system for sources. Staking will, on one hand, enable us to prioritize the development of news scrapers and content processors for a specific source. On the other hand, it will establish sources' commitment to publish relevant content. Sources with higher stakes will be moved higher on the implementation timeline, however the staking system will not provide sources any advantage in the rating process, which will remain completely independent and based on the rules and approaches described in previous chapters.



7. CONTRIBUTION INFO

7.1 CONTRIBUTION STAGES

The Blockbird™ token (BBIRD) will be distributed at a dynamic rate to all contributors during the Private sale and Milestone based tranche sales. A total of 168,750,000 BBIRD tokens will be made available for Contribution stages. There will be a bonus allocation for those who participate in the private sale and 1st Milestone based tranche sale.

TOKEN NAME: BLOCKBIRD TOKEN (BBIRD)

CONTRIBUTION SUPPLY: 180,000,000

PRIVATE SALE SOFT CAP: 250,000 USD

PRIVATE SALE HARD CAP: 1,000,000 USD

*The price of a token is now set to 0.10 USD per token. The final price will depend on the amount of ETH gathered during each Public Contribution stage.



1 ETH = 1800 BBIRD*

1 BBIRD = 0.000055 ETH*

Accepted Currencies: ETH

(For contributions in ETH, an automatic swap will be executed using a smart contract that will collect the amount, calculate the distribution, and issue BBIRD tokens to the investor.)

The Blockbird™ Contributions stages consists of two phases: **Private sale** and **Milestone based tranche sale**. Details can be found below. In case the allocated number of tokens for each tranche is not sold, it will be added to the next till the last one and then the remaining tokens will be burned. The Public Milestone based tranche sales will not be conducted like the traditional ICOs we seen in past years, instead tokens will be sold based on Companies Milestones in 2020 (3 tranches). There will be a fixed number of tokens available during this tranches.

With this kind of contribution sales, we try to ensure that the tokens will be available to our supporters and users for a longer period, making the tokens more stable and enabling users to track the development of our entire project more closely.

Phase	Date	Token Allocation	Max Bonus	% Total Contribution Supply
Private Sale (Stage 1)	May/Jun 2019	20 000 000 BBIRD	Defined at whitelisting	6.7%
Private Sale (Stage 2)	Jul/Sep 2019	36 000 000 BBIRD	Defined at whitelisting	12%
Private Sale (Stage 3)	Oct/Dec 2019	48 000 000 BBIRD	Defined at whitelisting	16%
Milestone 1 based tranche sales	Jan 2020	26 000 000 BBIRD	20%	8.7%
Milestone 2 based tranche sales	May 2020	25 000 000 BBIRD	5%	8.3%
Milestone 3 based tranche sales	Dec 2020	25 000 000 BBIRD	0%	8.3%

(The smart contract address will be publicly announced on the Blockbird™ official website <https://blockbird.io>)
The minimum amount of Ether that can be sent to the smart contract is 1000 Finney (1 Ether).



7.2 WHITELIST

Early supporters, who have already shown an interest in participating in Contribution stages, will have the ability to register on the whitelist with their Ethereum addresses, giving them the possibility to participate in the 1st Milestone based tranche sale.

7.3 PARTICIPATION IN CONTRIBUTION STAGE

To participate in the Contribution stages, buyers must:

- have ETH (Ethereum) cryptocurrency,
- have an ETH wallet address (MetaMask, MyEtherWallet, etc.),
- finish the KYC procedure before purchasing the token (for more info, read below), and
- be a citizen of countries that are eligible for their citizens to participate in the token sale (more details in the Token Sale Terms and Conditions).

Also, we recommend you follow the additional information below:

- In order to participate in the Private sale, there is a minimum amount of ETH set in order to get in.
- Only whitelisted buyers can participate in the Contribution stages. The information when the whitelisting for Contribution stages will be closed will be published on the Blockbird™ website.
- Contribution stages will be open to all (respecting the 4 conditions listed above). There will be a minimum purchase amount in the Contribution stages. The amount will be announced according to the timeline.

7.3.1 KYC

Before the Contribution stages begin an online registration form will be available for future token holders to register. Registering oneself is mandatory. Stringent regulations require us to verify identity for token holders (Know Your Customer). Please be wary of your local regulations. If in doubt, seek advice prior to contributing to the token sale. Once KYC is concluded, the accepted contributors will receive proper notifications before the start of each Contribution stage.

7.4 DISTRIBUTION SCHEDULE FOR BBIRD TOKENS

The distribution of the tokens will be done via the the Crowdsale smart contract with the following steps:

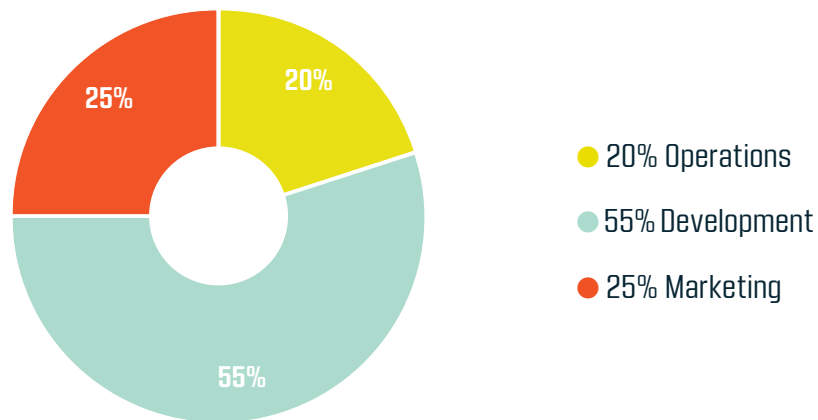
- The Private sale contributors will receive their purchased BBIRD tokens to the ETH wallet address they have provided to our Team (Blockbird™).
- All Contribution stage buyers will receive their BBIRD tokens 24-48 hours after the individual Contribution stage sell.
- The unsold tokens allocated to the token sale will be burned after the last Milestone based tranche sale.
- The remaining 40% of tokens (not allocated to the token sale) will be distributed to their respective ETH wallet addresses within 7 days after the final end date of the Milestone tranche sale.
- There will be a predefined lock-up period for the Company token supply.

The timeline can vary due to the Ethereum network status, lags, etc.



7.5 CONTRIBUTION STAGE FUNDING ALLOCATION

The funds collected in the Contribution stages will be used with the following allocation:



7.5.1 DEVELOPMENT

55% of funds will be used for the Blockbird™ portal development and its corresponding services, early expansion to foreign markets, BI and AI technology research and development, hosting services, and other operating costs.

7.5.2 MARKETING

25% of funds will be used for marketing and PR purposes to enable fast community expansion. The funds will also help with our early adoption and communication with our future partners and users.

7.5.3 OPERATIONS

20% of funds will be used for the Blockbird™ operational costs, general expenses, legal obligations, security testing, and other costs.



8. ROADMAP / PLATFORM DEVELOPMENT STAGES

JUNE 2017	The initial idea was born
JULY–AUGUST 2017	Market analysis
SEPTEMBER 2017	Core team establishment
OCTOBER–NOVEMBER 2017	Platform idea development
OCTOBER 2017	Extended market analysis
NOVEMBER 2017–FEBRUARY 2018	MVP features development
DECEMBER 2017–JANUARY 2018	Business model development
DECEMBER 2017–JANUARY 2018	Core team expansion & onboarding of advisors
MARCH–SEPTEMBER 2018	Platform concept development (pre-alpha / alpha)
JULY 2018–SEPTEMBER 2018	Community engagement / Explainer-video / Landing page development
NOVEMBER - DECEMBER 2018	Onboarding new partners, community engagement, and in-depth marketing
Q4 2018 - Q1 2019	Blockchain smart contract testing / Alpha platform development (alpha dashboard, basic information blocks) / Community engagement
Q2 2019 - Q1 2020	Contribution stage preparations / Blockbird™ (beta) platform launch (first versions of dashboard, rating and reward system, BI with focus on visualization) / Blockbird™ Beta Sidechain development and testing / Smart contract auditing
Q3 2020	Blockbird™ (v.1) platform launch (dashboard, full rating, and reward system, BI functionalities)
Q1 2021	Blockbird™ (v.2) platform launch (first AI based functionalities)
Q3 2020 AND BEYOND	New release of Blockbird™ functionalities every 6 months (adding AI and text analytics functionalities, new information widgets, support for new languages etc.)





8.1 PLATFORM DEVELOPMENT

The development will be divided into stages. The speed of development will depend on the amount of funds raised and team expansion. Since the **development of a platform of this kind is a never-ending process**, we are describing the first steps of our development below. All other development steps will be published on our website after collecting user feedback, doing new market analysis, and processing the ideas with our advisory board members along with utilizing different business tools.

FIRST STAGES:

Development of the Alpha version (Blockbird™ AV)

- Basic dashboard functionalities
- Basic rating and voting functionalities
- Basic information blocks

Blockbird™ AV will not have any distributed ledger technology integrated and will be offered to our early community testers and backers.

Development of the Beta version (Blockbird™ BV)

- Added dashboard functionalities
- Enriched/Advanced information blocks > Basic rating/voting functionalities
- The basic concept of the information blocks unlock system
- Basic reward system
- Basic BI concept

Blockbird™ BV will feature some of the **distributed ledger technology** (or similar) and welcome every one who wants to join our platform. We want to ensure the transparency and immutability of our users' votes and rating results. That's why we are looking to implement an existing distributed ledger technology solution or alternatives, like DAG, which must enable free and instant transactions. There will be a PoC side chain development.

Development of the Blockbird™ version 1 (Blockbird™ v1)

- All version Beta features included, which will be constantly improved with new information blocks, UX experience, and a payment (unlock) system on the platform
- Full rating/voting functionalities on Blockchain (numeric, impact factor, rating board)
- Full information block unlock system with BBIRD tokens
- Reward system (DLT)

Blockbird™ v1 will move some of the Blockbird™ platform features to DLT (or similar). Information blocks will be unlocked with the help of our BBIRD tokens. Users will receive rewards in the form of BBIRD tokens, and there will be an extension of the rating system that will already be on a DLT solution.

Development of the Blockbird™ version 2 and beyond (Blockbird™ v2)

- Dashboard and the whole system upgrade with our AI functionalities

Blockbird™ v2 will add our major AI component that represents a new range of possibilities for the user and the delivered data – to deliver this data to our users when they need it. The data can be archived with the help of the BI / AI components. The AI system will learn from the user behaviour on the platform by the decisions the user makes, and the AI will then automatically deliver the relevant information to the user.



9. TEAM

ANDREJ ZUPAN – Chief Executive Officer (CEO) [in](#)

Andrej Zupan has many years of experience in project management and leadership. After finishing his management studies, where he served as Vice-Dean of Student Affairs, he continued to work in the fields of IT Project Management and Business Process Optimization. There he acquired a background in Quality Management, Lean Production, and Process Improvement. Additionally, Andrej has a great deal of knowledge in IT System Development and Implementation. For the last 10 years he has been focusing on start-up founding, running, and consulting, during which he ran a gamification app start-up and consulted many others. Throughout his business endeavours, Andrej also developed several leadership skills, working with different teams developing new projects and newly-founded start-ups. The variety of skills, knowledge, and experience makes him a great choice for the Blockbird™ CEO.

MIHA MAČEK – Chief Operating Officer (COO) [in](#)

Miha Maček studied Business Management and started his professional path at the largest Slovenian insurance company, where he worked in the Human Resources sector for several years. He continued his professional journey at an international distribution company. He started his work as COO in the logistics department where he handled international transport and customer communication. Later he switched to a department where he was in charge of product development. Recently, after successfully achieving the company's goals, he was promoted to Business Manager. He is the head of the Purchasing and Sales Department, co-operating with many foreign suppliers.

GREGA ŠVABIČ – Co-founder & Chief Brand Officer (CBO) [in](#)

Grega Švabič is a Brand Manager, Producer, and Production Sound Designer. In his line of work, he gained a lot of experience with various technology. With his organizational and brand-development experience, he handles team and product management, strategic analytics, and the cooperation between different sectors of the company.

KLEMEN METHANS – CO-Founder & Chief Information Officer (CIO) [in](#)

Klemen Methans has a Master's degree in Organization and Management of Information Systems. His diverse skill sets add a vital contribution to our team. From system administration skills (virtualization, hardware, software, cloud, networking) and programming skills (Java, Html, blockchain) to organizational skills (managing workflows, teams, projects). His years in IT took him to all job levels – from IT maintenance, System administration, and IT engineering to the Head of an IT department. In recent years he devoted his private time to gathering knowledge on IT security systems and distributed ledger technologies, mostly blockchain and smart contract based projects.

PETER DJUKIĆ – Chief Technology Officer (CTO) [in](#)

Peter Djukic is a Computer Science graduate with more than 18 years of coding experience. He was a developer for RTV Slovenia, the National Bank of Slovenia, and other smaller businesses. He has experience in a variety of programming languages from Pascal, VisualBasic, PL/SQL, C#, JavaScript, and others. For the past 10 years his main focus has been the development of the internal customer management platform for the National Television of Slovenia (RTV Slovenija). His work included application development; working with a large DB; and sharing, communicating, and integrating data from various subjects – from banks to government institutions.

BOŠTJAN KOŽUH – Chief Analytics Officer (CAO) [in](#)

Boštjan Kožuh is a BI/AI ninja with more than 15 years of relevant experience. He holds a Master's degree in Information Sciences and a Bachelor's degree in Economics. In his endeavours he continues to build on valuable experience he has gained from the perspectives of developing, implementing, and using business intelligence and analytics solutions. In his past roles he has headed and established Business Intelligence, Information Management, and Web Development departments at the Statistical Office of the Republic of Slovenia, global analytics vendor SAS, and one of the largest regional IT vendors, Adacta. Having held various roles and worked with clients across a range of industries including but not limited to the travel industry, insurance and banking, telecommunications, utilities, and the public sector. He is highly experienced in engaging with top management and senior executives and is able to progress programmes at various delivery phases with an expertise in Benefits Realization Management (BRM).



MAKS LEVSTEK – Public Relations Officer (PRO) [in](#)

Maks Levstek is a law school graduate who worked in various positions across different job sectors. With experience in customer service, administration, marketing, manufacturing production, and content creation, he brings his versatility to our marketing team along with his crypto enthusiasm and investment experience.

ALIASH TEPINA – Media Production Manager (MPM) [in](#)

Aliash Tepina has a Bachelor of Arts degree from the Royal Central School of Speech and Drama in London. As an actor he has an active career, mostly on television, but also on the big screens. His most notable appearances include Christopher Nolan's "The Dark Knight Rises," "Silent Witness," and "Law & Order: UK" among various Slovenian films and TV shows. During his studies he started producing short video content, which later evolved into him becoming a producer – oriented mostly towards commercial content. He has produced TV commercials for many major Slovenian brands such as Pivovarna Union, Gorenje, Telekom, Cockta, and Mobitel.

UROŠ KUMER – Chief Customer Officer (CCO) [in](#)

Uroš Kumer has a degree in Political Science, but his career soon shifted, and now he has years of experience in Customer Relations and Quality Control Services. He started several companies across different industries where he was dealing with numerous customers – from high-profile clients in the Mega Yacht industry and later in the Yacht industry to a vast base of customers in the tourism sector. All of the mentioned industries demand a high level of professionalism and attention, which Uroš delivered and is still delivering with his ongoing projects/companies. For that reason, our community can be sure they will be served with a great deal of attention and promptness.

9.1 ADVISORS AND PARTNERS

Check out our website blockbird.io to meet our advisors and partners.

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