OBSERVER BUSINESS NOTE

WEATHER MINING : BLOCKCHAIN-BASED WEATHER DATA TRADING PLATFORM

OBSERVER

OBSR

October 15, 2018
Version 2.0

OBSERVER

Business Note

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KEY CONCEPT

The OBSERVER is an innovative platform where individuals and private firms trade daily weather data. Anyone in the world can trade weather data that is collected by smartphones, mini weather stations, or automobiles, and receive OBSERVER coins as compensation. The quality of the collected data is verified through big data technology, and the details are recorded in the blockchain. This allows the OBSERVER to create high-resolution weather data that has never been available before.

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WEATHER INDUSTRY

The weather market, which has been dominated by public services, is rapidly growing in size. The portion of the U.S. GDP that is affected by weather events is estimated to be $1,334 billion annually, and the economic value of weather information is estimated to be at roughly $13 billion (NWS Enterprise Analysis Report 2017). The total private weather industry revenue of 2015 is estimated to be $4-5 billion, with a service provider revenue estimated at $2.5 billion (AMS 2012, State of the Weather and Climate Enterprise). The annual budget of the U.S. National Weather Service is in the range of a billion dollars, and the aggregated amount of weather-related budgets for countries that operate weather observation networks is estimated to be at several billion dollars. Considering the recent M&A of major weather companies, the capitalization of the private weather industry is estimated to be above $9 billion and is growing at a rate of 10 to 15 percent annually (University Corporation for Atmospheric Research).

2-1

WEATHER DATA SERVICES

IBM and Monsanto recently entered the weather business by acquiring weather companies, further showing evidence of the weather market's solid growth potential. In 2016, IBM purchased The Weather Company for $2 billion. IBM is now combining its global cloud with The Weather Company's data, which enables enterprise clients to access weather-related big data solutions. Monsanto, a leading provider of agricultural products, acquired The Climate Corporation in 2013 for approximately $930 million. Monsanto has achieved a higher corporate value by integrating its expertise in agriculture analytics with The Climate Corporation's weather data.

Weather data is creating value in a wide spectrum of sectors. Along with business analytics, it has also become a prominent factor in the corporate decision-making process.

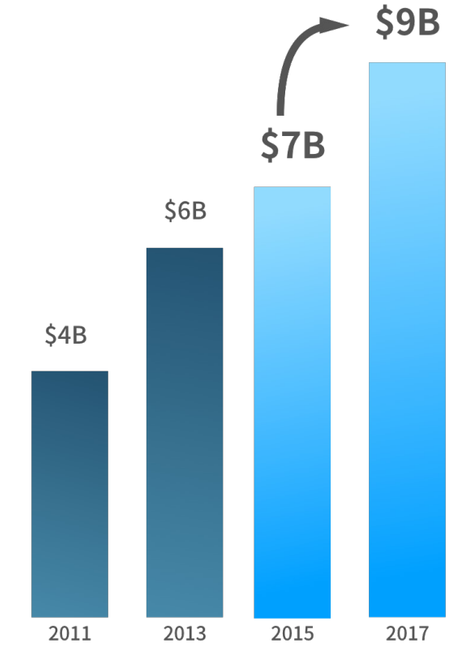

Fig. 1. Estimated capitalization of the U.S. private weather industry (as of 2012)

Agriculture

Weather is an important factor for agricultural productivity, as it is necessary to monitor, analyze, and predict the weather to maximize crop yields and mitigate losses from unforeseen disasters. Large agriculture companies are already using weather data in order to optimize yields, reduce environmental impacts and cut operational costs.

Energy & Power Generation

By using weather data, power companies are able to overcome challenges like volatile energy prices, rising pressure from environmental activists and the growing use of alternative energy sources. Large power companies, in particular, can take advantage of weather data to better manage its plants and power distribution.

Insurance

Weather data enables insurance companies to create and develop weather-based products. It also plays a key role in establishing a compensation model for weather-related insurance (e.g., storm and flood insurance).

Retail & Wholesale

Weather, like air temperature and rainfall, can cause great changes in customers' buying patterns. Retailers and wholesalers are monitoring the weather to maximize sales and better manage their inventories.

Airlines

Airlines are using weather data to prevent flight delays and cancellations. Weather data is also being used for various purposes such as in steering aircraft, controlling air traffic, and maintaining runways to ensure flight safety and logistical efficiency.

Travel & Leisure

Accurate weather information is essential for developers of travel and leisure products, as it enables them to plan activities and minimize potential losses due to the unexpected weather.

Financial Investment

Weather data is already a contributing factor in investment decisions. Customized weather data enables investors to evaluate companies in weather-sensitive sectors (i.e., energy, agriculture, insurance, transportation and distribution).

Disaster Prevention and Management

Weather information is closely monitored and analyzed by government agencies and international organizations that are committed to protecting people from natural disasters. Weather data helps them predict natural disasters and devise an emergency plan for each stage of prevention and evacuation.

2-2

CROWD-SOURCED WEATHER DATA

The biggest challenge facing weather companies is the lack of hyper-local weather data. While macro data is widely available, hyper-local data still remains very limited. Attempts have been made but have not been successful partly due to the absence of a proper compensation scheme that motivates people to provide region-specific weather data. Even in cases where data is collected by volunteer observers, data reliability issues have hindered its commercial use.

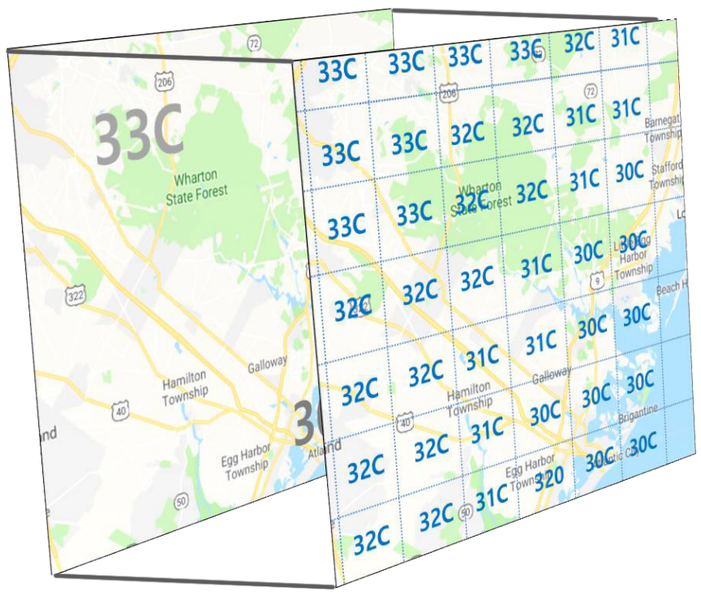

Fig. 2. Hyper-local weather observations

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OBSERVER BUSINESS MODEL

The OBSERVER is founded on the vision that “anyone can produce weather observations and purchase them at a reasonable price.” Weather observations are made worldwide on a timely basis, with data being made available to the public without government interference. Big data technology allows for a systematic data management, while blockchain platform enables a transparent data exchange.

To achieve this goal, the OBSERVER collects data, conducts quality control and develops standards for data transactions. Unlike public and industry weather services that require large initial investments in sophisticated instruments, crowdsourcing enables individuals and private firms to make their own observations at any place and time.

Weather observation is already an indispensable part of people’s daily lives. For example, a person can measure air temperature or pressure by using his/her smartphone and share the data online. In other words, without any expensive instrument or expertise, individuals can measure meteorological conditions and instantly send out their data via worldwide cable and wireless networks. This may help overcome the limitations of existing public observation systems and inefficient data exchange platforms.

3-1

A NEW PARADIGM

The Weather Company has access to over 200,000 weather stations across the world and is using real-time data to feed a multi-billion dollar weather industry. The OBSERVER aims to broaden such weather networks by including over two billion smartphones, one billion automobiles, 20,000 aircraft, 50,000 vessels, and countless private weather stations across the world. Individuals and private firms could easily collect and share their data by using simple instruments that do not require sophisticated skill sets. Once the collected data is quality checked, the data can be sold in real time to both private and public sectors. All transactions take place on a blockchain platform in a transparent manner.

Fig. 3. OBSERVER ecosystem

3-2

OBSERVER ECOSYSTEM

The OBSERVER ecosystem consists of data providers, buyers, and the OBSERVER foundation. Data providers send real-time observations to the OBSERVER foundation where observations are quality controlled with big data technology and processed into the database. Once verified, data providers receive payment in OBSERVER coin (OBSR), and buyers purchase the data with OBSR.

Since the OBSERVER foundation accepts data from many different sources, quality control is critical. All data is subject to quality control by the OBSERVER foundation. Although this may seem different from the idea of a decentralized blockchain platform, it is a necessary move to ensure data quality.

Buyers of historical and real-time weather data could be individuals, companies or government. Customers, like weather service providers, can process OBSERVER's data to offer real-time information on urban weather. Weather information obtained from automobiles can be directly applied to automobile navigation systems. By combining OBSERVER's data with AI technology (e.g., IBM's Watson and Google's deep learning algorithm), weather service providers can make hyper-local short-range weather forecasts. Daily observations can be also purchased by government agencies in agriculture, energy, disaster prevention and public services. Among others, the data archived in the OBSERVER foundation can be useful for local governments looking to develop smart cities.

Airlines and ship routing companies can take great advantages of OBSERVER's real-time weather data as well. Airlines can use OBSERVER's data to check airport weather and monitor clear air turbulence. As for ship routing companies, they can monitor real-time weather and marine conditions with OBSERVER's data.

3-3

OBSERVER COINS

All payments and transactions in the OBSERVER are made in the two types of OBSERVER coins: i.e., OBSR and ROT. As described below, OBSR is a transaction coin and ROT is a copyright coin. *(As of October 15, 2018, OBSR is implemented but ROT is not. It is possible that ROT can be excluded from the OBSERVER economic model under certain conditions.)*

1) OBSR (OBSERVER COIN) : COIN FOR TRANSACTIONS

OBSR is a coin listed on the cryptocurrency exchanges and used in transactions of the data. The data providers receive OBSR on two separate occasions: the first is when their data is quality-checked and the latter is each time the data is sold. In order to access weather data, buyers need to purchase OBSR from the cryptocurrency exchanges and pay in the OBSERVER foundation. The value of OBSR will increase with a greater public interest in the OBSERVER project and higher demand for its data. This, in turn, will result in better compensation for the data providers.

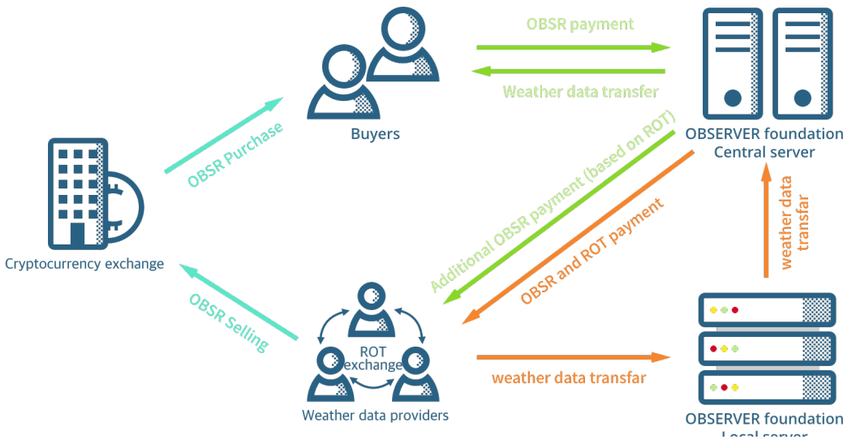

Fig. 4. Economic model of OBSERVER

2) ROT (ROYALTY COIN) : COIN FOR COPYRIGHTS

ROT is a coin designed to protect the providers' copyrights to the quality-controlled data. Every time an observation is successfully performed, the OBSERVER foundation transfers ROT to the data provider's e-wallet. The blockchain-based coin serves as an encrypted record of the data's time, location, and value. If the observation holds no value or only has negligible significance, ROT is not issued. After initial issuance, ROT is used as a standard for royalty, which is paid each time the data is sold.

3) OBSERVER AND BLOCKCHAIN TECHNOLOGY

The OBSERVER uses blockchain technology to enable transparent data management, effortless data trade and efficient compensation.

ROT is provided for successful observation. Because this coin utilizes blockchain technology, anyone can access the details of observations but no one can alter the encrypted information. Therefore, ROT guarantees the transparency and security of the data.

A buyer can immediately purchase the weather data by paying with OBSR anywhere in the world. The use of OBSR eliminates the issues that arise from conventional purchasing methods, such as unstable foreign exchange rates and disturbances in wiring and mailing remittances. The details of transactions are recorded in the blockchain and are managed transparently.

The OBSR paid by the buyer is directly redistributed to the individuals who own the copyright to the data. This process is realized by referring to ROT without a specific contract or a mediator.

4) OBSERVER MAINNET

The OBSERVER foundation operates its own blockchain mainnet. All compensation for the data is made on the mainnet, and verified by the individuals who participate in the blockchain network. Both the proof of stake and the masternode are utilized in the mainnet.

4

OBSERVER

OBSERVER COIN (OBSR) ALLOCATION

The total supply of OBSR is limited to 15,000,000,000 (15 billion) units, and they will be allocated as below to ensure the success of the business.

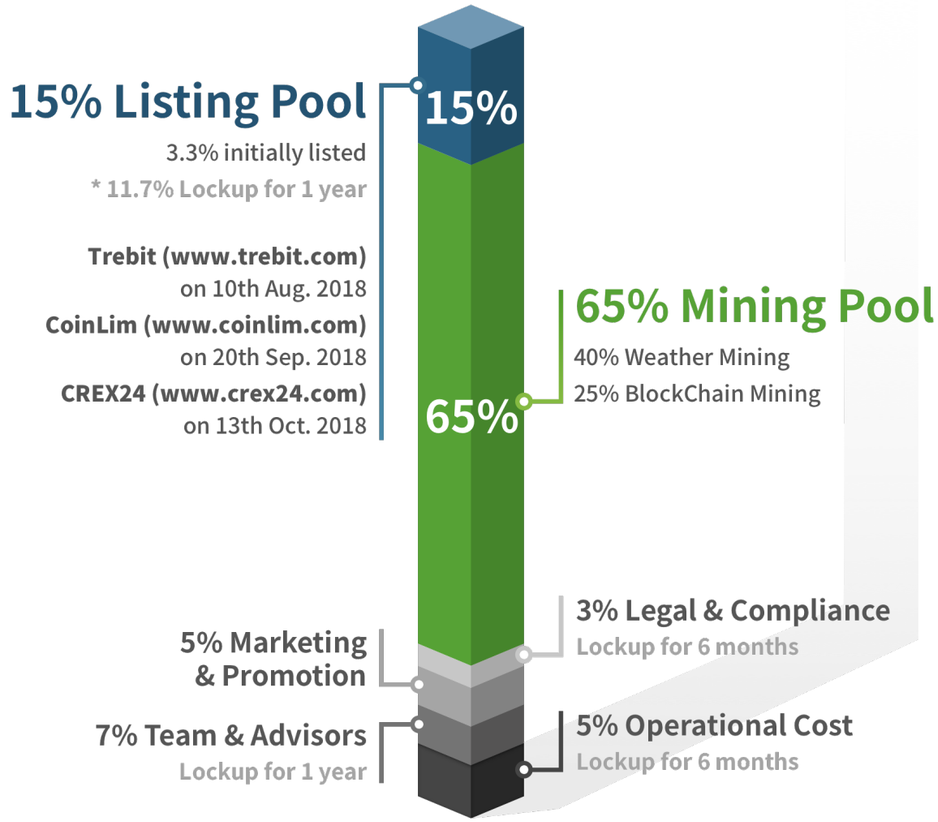

Fig. 5. Coin allocation

4-1

OBSR MINING

The two third of the total supply (65%) are allocated to the mining pool. This includes the weather mining, that is assigned to weather observations, and the blockchain mining, that is assigned to blockchain network participation. The total amount of OBSR allocated to annual weather mining is flexible and determined each year. On the other hand, the total amount of OBSR for the blockchain mining is the same every year. These pools are set to run the OBSERVER for more than 30 years.

4-2

USE OF FUNDS

The cryptocurrencies raised through the OBSR sale will be converted into fiat currencies, which will be used for the establishment of the OBSERVER foundation and its marketing activities.

- OBSERVER foundation establishment **30%**
- Meteorological instruments development & distribution **30%**
- Development of weather solutions **10%**
- Data quality control **10%**
- Operational expenses **20%**

4-3

COIN LOCKUP

The coin supply allocated to the OBSERVER foundation team and advisors (7%) is locked up for one year after the initial listing (August 10, 2018 / Unlocked on August 15, 2019). The locked-up coins are not distributed among individual team members but will be kept in the OBSERVER foundation e-wallet. This quantity cannot be sold through the cryptocurrency exchanges or to a third party during the lockout period. This is intended to encourage the team members and advisers to devote themselves to the success of the OBSERVER project. The unlisted coins in the listing pool (11.7%) are also locked up for one year. The coins allocated to additional operational costs (8%) are locked up for six months.

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ROADMAP

OBSERVER

May 2018
Distribution of business note and technical note

May 2018
Development of OBSERVER App (beta version) for smartphones

May 2018
Development of OBSERVER mini weather station (prototype)

Aug. 2018
Listing of OBSR on the major cryptocurrency exchanges

Aug. 2018
Development of OBSERVER App (beta version) for automobiles

Sep. 2018
Installation of OBSERVER foundation servers (beta version)

Oct. 2018
Development of quality control algorithms for real-time observations

Oct. 2018
Release of OBSERVER App (beta version)

Nov. 2018
OBSERVER mini weather station beta test

Nov. 2018
OBSERVER test operation

Dec. 2018
Release of official OBSERVER App (Android & iOS version)

Dec. 2018
Release of OBSERVER mini weather station

Dec. 2018
Official launch of OBSERVER

Q1. 2019 **USA, China, Europe office open**
Q2. 2019 **Southeast Asia office open**

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TEAM

Sejin Kim

Co-founder,
IT Specialist

Graduated from Yonsei University with a B.A. in Computer Science and Industrial System Engineering, Mr. Kim earned a M.Sc. in Engineering Management from Tufts University. He has been actively involved in IoT and ICT industries as a CEO of Talhwan, Inc. With multiple years of experiences in technical development and business, he is now leading the OBSERVER FOUNDATION that utilizes both blockchain and big data technologies.

Taeil Cho

Co-founder,
Business Developer

Mr. Cho has worked at several investment banks for ten years and subsequently started his first overseas business in Vietnam by founding Kovet Holdings. He also founded Mediway Korea, introducing overseas patients to Korean medical institutions, and is currently running an online magazine, BLOG237, and an e-commerce platform, WHATPICK. His experiences in overseas marketing greatly aid the international operation of the OBSERVER FOUNDATION.

Ki-Young Kim, Ph.D.

Co-founder,
Meteorological Specialist

After graduating from Pusan National University with a Ph.D. in Atmospheric Sciences, Dr. Kim started her career as a research team leader in The Chumsungdae, one of the first meteorological solution companies in Korea. She is currently leading 4D Solution Inc. and is working on meteorological solutions for government agencies and private companies. In the OBSERVER FOUNDATION, she is responsible for data quality control and data applications for various business sectors.

Bryan Doreian, Ph.D.

Oversea CEO

Entered the blockchain and cryptocurrency realm in 2012 and since then has been a highly sought after advisor, consultant, investor and advocator projects that seek to be of use to the world. A serial entrepreneur, launched an Education Technology Company (Wysebridge) in 2012, a holistic healthcare platform (elev3n) in 2017, and two blockchain related projects (Pocket Network and Vendible) in 2018. Was invited to partake in the first ever Blockchain for Impact Global Summit at the United Nations on June 4th, 2018. An Academic scholar, holding dual Bachelors of Science Degrees in Chemistry and Chemical Engineering, and completed a Doctorate in Cellular and Molecular Biophysics.

Tony Kim

Oversea Sales
Advisor

Peter Willemsen

Blockchain AI
Developer

Mitchell Cash

Lead Main-net
Developer

Chang-Bae Lee

Meteorological
Specialist

Geun-Hye Kim

Contents Specialist

Lori Brown

Ambassador

Jaehyung Cho

Project Manager

Jung-Ik Jo

Marketing Team

Seungmi Lee

Server Developer

Donghee Lee

Chief Designer

Hansu Lee

Weather Solution
Team

Doeui Pyeon

Weather Solution
Team

Seok Joon Cho
Chief Advisor

Dennis Schouten
Chief International Advisor

James Burden
Chief Blockchain Advisor

David Mah
Blockchain Advisor

Koichiro Ichimura
Advisor

Qiao Jin
Advisor

Michael Stockford
Advisor

Alanoud Faisal
Advisor

Peter Nesden
Advisor

Jong Eup Ahn
Advisor

Joon-Ho Kim, Ph.D.
Advisor

Hyo-Hyuc Lim
Advisor

Seung-Gu Yang
Advisor

Hak-Jun Kim
Advisor

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LEGAL CONSIDERATIONS AND RISKS

Contributions can only be made by people or entities that have broad knowledge, experience, and understanding about cryptocurrency markets. The contributor understands that despite the collateral efforts of parties involved in the development of the OBSERVER project, it is possible that the project might fail and the OBSERVER coin (OBSR) becomes worthless. The contributor also understands that even if the OBSERVER project is successfully developed and launched, the project could be dissolved due to lack of public interest, changes in law and legislation or other uncontrollable reasons. Hence, the contributor understands that the OBSERVER project involves significant financial risks, and if they are not in the position to accept risks, they should not participate in the OBSERVER project.

OBSR is a utility coin and does not provide any rights other than the rights to use the OBSERVER platform. OBSR is distributed not for investment or speculative purposes. The contributor understands that OBSR does not supply any kind of income and/or ownership rights, or rights to receive any kind of future income and/or ownership rights. The contributor understands that they will not possess any voting rights or governance rights, or any rights to influence the development of the OBSERVER project in any way.

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Business Note
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