

The Oracle of Blockchain

OASISBloc

OASISBloc is the first blockchainized data platform for
Trading useful data and value between real businesses.

WHITEPAPER

Ver 0.7.1
October 15, 2020



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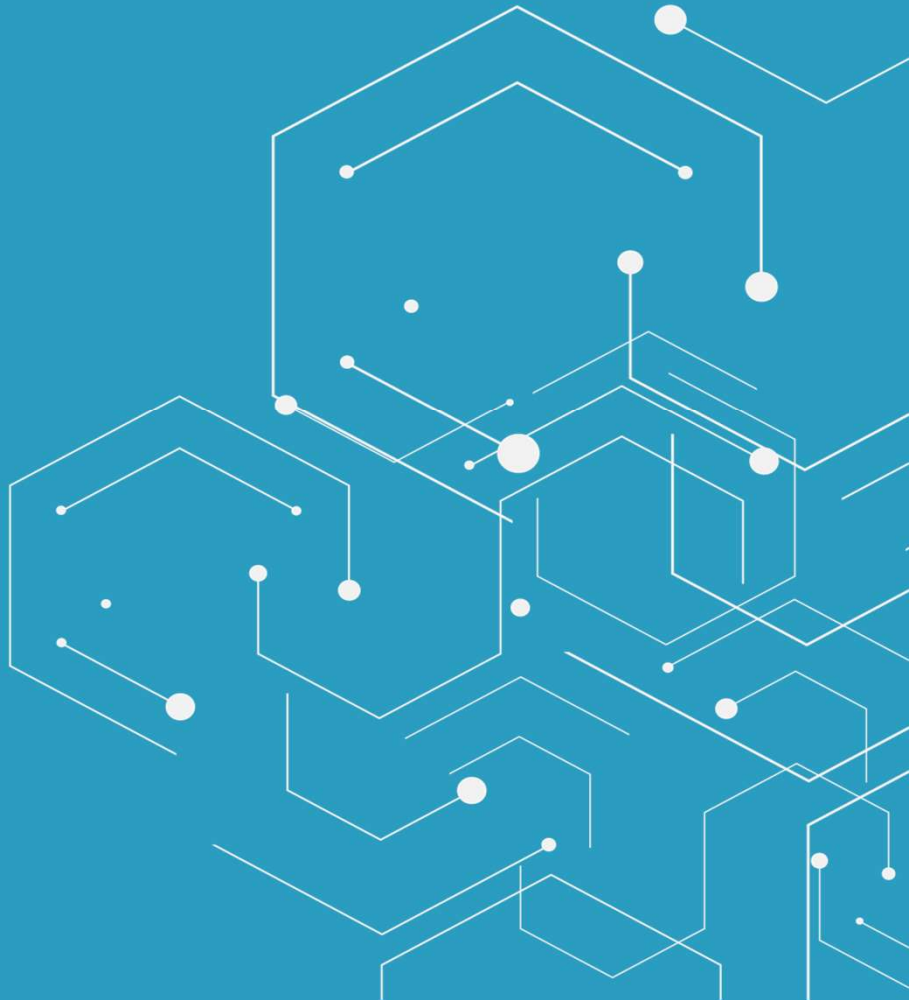
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Introduction



1. Introduction

The global big data market is growing as government investments in the fourth industrial technology is expanding and as industries such as AI (Artificial Intelligence), Machine Learning, IoT (Internet of Things) etc. are growing. The big data market is expected to grow from \$ 33.5 billion in 2017 to \$ 92.2 billion in 2026.¹

As the big data trading market is growing, the support from governments around the world is also expanding to utilize big data of both public and private organizations.

South Korea has opened K-ICT big data center to support big data infrastructure and practical training environment so that individuals and companies can utilize big data. The United States has allowed access of public data and data trading for companies through the guideline NISTIR 8053: De-identification of Personal Information.

In the case of EU, a consortium of 17 institutions is running a joint project with public and private sectors to utilize the data generated in the transportation and logistics industries.

Japan is planning to push forward with “approved data bank” system which can be used by companies and research institutes for product development by collecting big data in the industrial fields.

The Chinese government is proceeding with big data development plan to improve application capability of big data industry by 2020, and to increase revenue of big data products and services by 30% per year.

With institutional support and growth of data trading market, approximately 53% of global companies are actively seeking to innovate products and services by utilizing big data.² In the future, how companies utilize big data in the global market will be the key determinant of corporate competitiveness.

However, companies still have the following limitations of data trading and utilization.

First, the available data is limited. In order to enhance company competitiveness, it is important to discover new products and services by analyzing the market data of the same industry, other industries, and the target global market. However, many SMEs (small and medium enterprises) are facing difficulty in securing data due to lack of data experts and budget for system construction and management.

Second, the standardization of data sources is insufficient. Even within the same industry, the quality of the available data is deteriorated due to lack of data standard policies. Data deterioration is caused by managing data of the same meaning under a different name or by not making changes to new requirements. Deteriorated data may lead to inaccurate data trading and errors on decision making which may cause loss to companies. Data standardization must be preceded in order to share and utilize reliable data.

Third, the distribution system for data trading is not properly established. Guidelines for prices to buy or sell data is unclear. Also, the system information³ for data production, process, and usage history of data are unverified.

1. German STARTISTA 2017 Research Report

2. Dresner Advisory Services survey of 4,000 companies worldwide where results shows: 66% for North America, 24% for Europe/Middle East/Africa, and 7% for Asia. (Bigdata Monthly, vol. 37, 2018.1)

3. [IT daily article] “AI and big data, how is it evolving?”
<http://www.itdaily.kr/news/articleView.html?idxno=92037>

1. Introduction

In the future, a new paradigm is required for a more transparent and safe data trading within various industries. Transparent data trading history is necessary for both data sellers and buyers.

OASISBloc is a blockchain project that links scattered value and data across industries and allows trading. OASISBloc will solve the problems on accessing worldwide data and the limitations of current blockchains which are specific to each particular industry domain. We are aiming to create collaborative value among companies through virtuous circulation of data ecosystem between data producers and consumers.

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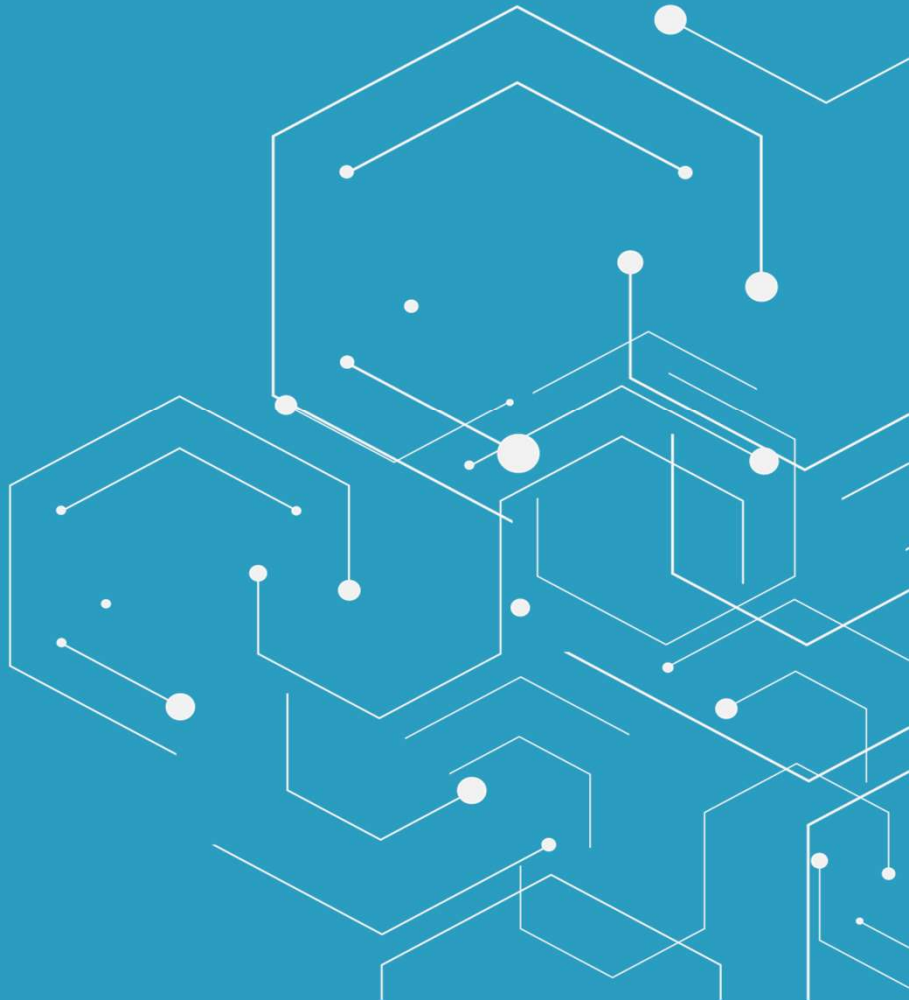
Background

2.1 Characteristics of blockchain platforms

2.2 Trends in blockchain platform technology (EOS, Qtum etc.)

2.3 Trends in blockchain based data trading platforms

2.4 Various efforts to overcome limitations of current blockchain technology



2. Background

2.1 Characteristics of blockchain platforms

1) First generation blockchain - Bitcoin

With the advent of Bitcoin, people can trade and own something that are not banknotes, coins, or gold but have the value of money, without any involvement of the central system such as banks or the government. Bitcoin can secure reliability of transaction without the third party even if the transaction is done with an unknown counterparty. Through the DLT (Distributed Ledger Technology) of blockchain, anyone can freely participate and browse the transaction history of Bitcoin. Also, participants can access, store, and confirm transactions.

The introduction of Bitcoin was an event that caused a paradigm shift from a centralized financial system to a decentralized financial system. Bitcoin was the beginning of cryptocurrency with new value beyond “currency” such as cash or coins, banknotes, and bonds.

However, since Bitcoin is used only as a means of remittance and payment, it is limited to be applied to various types of financial businesses. Bitcoin is difficult to be used for real-time transactions due to slow transaction speed, which is caused by time-consuming confirmations as the network expands.

2) Second generation blockchain - Ethereum

Ethereum has a special feature which is the **blockchain based** smart contract. Smart contract is designed to automatically contract when predefined conditions are met. In addition to the “money” function of Bitcoin, smart contract is designed to execute contract through negotiation among participants without any third party intervention in various conditions. Contracts established through smart contract are stored in distributed ledgers which cannot be canceled or modified. This makes it possible to conduct mutual trust based transactions without verifications from third parties. The Ethereum platform also provides a dApp (decentralized application) environment that can be used for various business areas.

However, Ethereum still has problems such as high usage fees, the network scalability, limited data size, slow network processing speed, and lack of self-decision function when smart contract is executed.

Ethereum is working on ways to extend the database scalability - sharding which requires only few nodes for confirmations and processes many transactions in parallel at the same time. Also, they are developing a Layer 2 protocol that handles transactions on off-chain and interacts with blockchain only when entering and leaving the Layer 2 system.

2-2. Trends in blockchain platform technology (EOS, Qtum etc.)

So called, next generation blockchains aim to solve the problems of the existing blockchains and to industrialize the blockchain technology to a wider society just like the World Wide Web (www). These blockchains attempt to improve the fundamental limitations of blockchain by: making changes in the consensus algorithm for better scalability and interoperability; developing distributed ledger management technology; and adding self-decision making function. Those blockchain projects are developing technologies with clear objectives such as faster transaction speed, prevention of hard fork, come up with new consensus algorithm, and free transaction fees.

2. Background

2-2. Trends in blockchain platform technology (EOS, Qtum etc.)

As blockchain is being recognized as the main infrastructure of future industries, those blockchains are expected to be a platform type that focuses not only on the advantages of the existing blockchains but also on the technology standardization and wide scalability to converge with other technologies such as AI, big data, and IoT.

Currently, there are active researches on blockchain platforms for distribution and energy industries to maximize the benefit of decentralization. Also, many blockchain based products and services are being introduced in various industries. Blockchains in the medical fields and administrative management services are drawing attention as it requires high security and transparency to manage sensitive personal information. The development of blockchain is expected to establish a transparent society where data integrity is guaranteed and managed safely.

2-3. Trends in blockchain based data trading platforms

The number of projects for blockchain based data trading platform is increasing to utilize meaningful public data while protecting personal data accumulated through the Internet and IT devices. The global market size of big data trading which uses blockchain for data confidentiality and security, is growing steadily.

Below are few examples:

1) DECODE (Decentralized Citizen Owned Data Ecosystem)

DECODE has been selected for Horizon2020, which is an EU funded project, and running from December 2016 to December 2019. Citizens can decide whether to keep their personal information closed in online or to share it for public interest through smart contracts based on blockchain. This project is to establish an ecosystem for the distributed data owned by citizens.

2) MHMD (MyHealthMyData)

MHMD is another project of Horizon2020 which is running from November 2016 to October 2019. MHMD seeks new ways of sharing personal data for individuals (patients) who are the primary data owners, to enhance confidentiality and security of personal health/medical data. The Horizon2020 project builds an open network of medical data that allows hospitals to provide anonymized medical data to the network and patients to exercise ownership and control over their own health/medical data. MHMD adopted the blockchain based DLT system for the first time in the healthcare field to provide high transparency and reliability with utilizing the data from patients, hospitals, research institutes, and companies in the medical sector. Similar to MHMD, Nebula Genomics and Longenisis are proceeding with a joint project. The project is building a platform to store, manage, exchange, and sell genome and various clinical data using AI and blockchain.⁴

In summary, various projects in the medical, transportation, and advertisement fields are expected to spread throughout the global data industry.

2. Background

2-4. Various efforts to overcome limitations of current blockchain technology

Various projects are in progress to overcome the limitations of the current blockchain technology.

1) Transaction speed (efficiency)

There are many attempts to increase transaction speed by increasing block size, shortening block generation time, and improving consensus algorithm. Lightning network and sharding have been developed and are undergoing tests for real-time transactions.

- ① Sharding: divides the network and sets transaction orders for each partition, and then merges the orders.
- ② Side chain: creates a small network to set transaction orders, then sends the results to the main chain.
- ③ State channel: sets transaction orders of the nodes which are connected to the hotline and links the results to the main chain.

2) Security

Various cryptographic researches are underway for data confidentiality. Homomorphic encryption stores encrypted data and performs data operation without additional decoding process. Therefore, eliminate the possibility of the deodorization of decryption key and data will not be leaked even if the data storage is hacked.

3) Governance

There are various attempts to improve the blockchain consensus algorithm to prevent certain parties (person) obtaining an independent block generation authority. This happens when a specific party has a majority of calculation capability (Proof of Work) or the issued amount (Proof of Stake) of a certain cryptocurrency.

Also, in order to maintain the self-sustainability of the blockchain project itself, a fair distribution of profits among the participants and continuous improvement is required. Therefore, many projects are attempting to meet the demands from their ecosystems by enacting own constitutions.

4) Scalability and interoperability

As it is difficult to directly exchange data and tokens between different blockchains, many platforms with interoperability are being developed (connection with other blockchains, linking external data etc.). They are aiming to solve the security issues when applying external data to the blockchain. Also, they are putting efforts to connect with other blockchains and to expand to more various fields.

However, blockchain technology is still in early stage and conducting researches to overcome the current technical limitation. In order to adopt the technology into business and everyday life, technology research, learning, and demonstration cases are needed.

While the industry is limited, too many blockchains are competing with each other. Advanced interoperability between networks is required for the continuous development of blockchain. Collaboration with players from various industries is required to create a practical platform that can be applied to real businesses.

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Introduction of OASISBloc

3.1 Project background

3.2 Mission and goal

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3.4 Key value (data x partners = ecosystem)

3.5 Governance

3.6 Applied technology



3. Introduction of OASISBloc

3-1. Project background

Concern 1) How to apply blockchain platform into real business more easily and quickly?

Concern 2) How to standardize and distribute various data generated from different industries?

Concern 3) Why data owners (providers) do not receive benefits?

Concern 4) How to provide a more transparent and definite data usage history to data providers?

Concern 5) How to trade data between different industries and to create added value?

OASISBloc began with the above concerns and below is the core value of OASISBloc.

OASISBloc is the first blockchainized data platform for trading useful data and value between real businesses.

Oasis is derived from the word “ouahe” which means residence in Egyptian. The word “oasis” is commonly referred to as “a pleasant or peaceful area or period in the midst of a difficult or hectic place or situation” which also has a meaning of a point connecting the route between destinations in desert.

OASISBloc is the starting point for connecting the above five concerns and it also means to be the “core” of the virtuous cycle structure.

OASISBloc will create a new ecosystem by bringing companies together from various business area in OASISBloc to create synergy through the convergence of business and technology.

Companies doing their own businesses with different purposes can participate as Domain Chain or dApp service providers.

3-2. Mission and goal

1) Platform for distributed value / data sharing and trading across various domains

Certain data can be meaningless to some companies or individuals. But it can be meaningful and useful to others. This can be clearly perceived when data is systematically shared and traded within a platform. In the OASISBloc platform, not only data but also value of each Domain Chain can be traded through Oasis Chain.

2) Platform to create collaborative value through participation of various industrial domains and data connection between the domains

OASISBloc requires collaboration with various Domain Chains. OASISBloc will maintain close relationships with other Domain Chain companies and provide opportunity to Domain Chains, so they can smoothly enter a business that can create new added value through collaboration.

3. Introduction of OASISBloc

3-2. Mission and goal

3) Providing incentives to maximize data transactions

Data can be divided into data provided free of charge and at a cost. Data provided free of charge is data from public agencies provided to achieve public interest, and data provided at a cost is data necessary for conducting business in the enterprise. OASISBloc encourages voluntary participation in ecosystems by providing incentives directly to data providers (owners).

4) Ensuring self-sustainability through the realization of token economy that gives fair rewards to all actors⁵ such as partners and participants of the OASISBloc platform ecosystem

Currently, the majority of parties in the crypto industry have self-destructive properties as they act to maximize its own interests. To build a self-sustainable ecosystem and a fair economy, OASISBloc designs an economic platform that is motivated from the “Ubuntu” spirit. The spirit of Ubuntu is known as the founding principle of the South African Republic, which means “I am, because we are.”

OASISBloc consists of two types of tokens: OASISBloc tokens and tokens issued by each Domain Chain. OASISBloc tokens will be used as a means of trading value and data between Domain Chains, and tokens issued by Domain Chains are utility tokens used for exchanging data only in the corresponding blockchain.

5) Realizing self-corrective governance by stipulating constitution to maintain the ecosystem

OASISBloc has designed its own governance so that data generation, storage, transaction, and transmission can be performed safely and reliably in accordance with each participant’s self-interest when they faithfully fulfill their roles. In addition, through the OIC (OASISBloc Innovation Committee)⁶, OASISBloc has established a way to improve the constitution and created a governance system that is capable of optimized operation and sustainable development. With this purpose, OASISBloc will become the “blockchainized data trading platform” and will lead the data business through secure and standardized data transactions.

3. Introduction of OASISBloc

3-3. Concept

“It’s the Internet of Things that is just the latest market transition that is allowing us then to connect the 99% of the unconnected,”⁷ “the world is on the threshold of a new era of innovation and change with the rise of the Industrial Internet.” (GE. Peter C. Evans, Ph.D.).

OASISBloc was inspired by the above two phrases. In other words, the most advanced form of Internet technology will come where things-things and things-humans are all connected to one large network. All advanced information and communication technologies such as big data and cloud etc. will be integrated, where variety of data is at its core.

OASISBloc seeks to share, standardize, and trade “data” which is the key connection according to the time flow.

Three concept keywords of OASISBloc are as below:

1) IoE (Internet of Everything)

IoE service which connects everything to the Internet can be represented as a connection system to standardize and trade data between different industries.

2) MoE (Management of Everything)

MoE enables real-time infrastructure operation and management, analysis, and forecasting can create synergy effect through connection between each field.

3) BoT (Blockchain of Things)

Blockchain platform for IoT network can be connected with various alliances to provide blockchain based practical services.

3. Introduction of OASISBloc

3-3. Concept

The above concepts can be illustrated as below

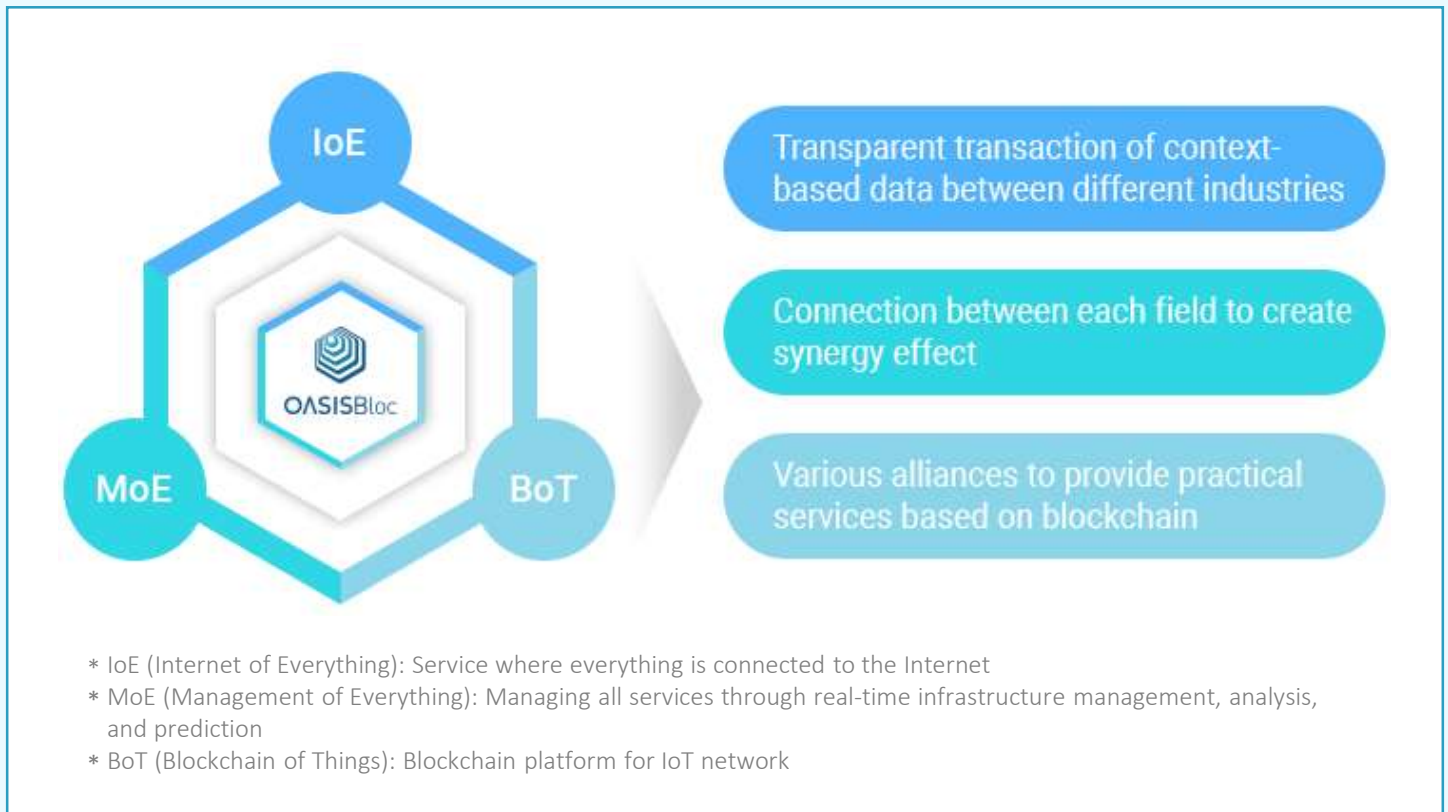


Figure 1. Concept keyword of OASISBloc

3-4. Key value

(data x partners = ecosystem)

[Role and value of data]

Data has been recognized as a resource of short amount, but now the perception of data has turned into a vast, valuable, and renewable resource. Data has already become a major source of economic and social benefits. Historically, the distinction between economically successful and unsuccessful people has been the availability of resources such as land, labor, and capital. However, 90 percent of leaders of top leading companies say that data is the most important and fundamental resource as land, manpower, and capital.

As data becomes more abundant and the cost of data storage plummets, new technologies are equipping data scientists with cutting-edge tools that unlock valuable insights from vast amounts of data.

We are heading toward a world of almost boundless information and nearly limitless possibilities. Consider how data is being used to make predictions that enhance our daily lives.

Predictive data helps us know in advance whether to bring an umbrella to work or take the bus.

3. Introduction of OASISBloc

3-4. Key value

(data x partners = ecosystem)

Traffic data is used to synchronize traffic lights, predict train arrival times, and help us find the fastest route to get to a child's rehearsal on time. Wearable devices help us track our personal fitness so we can make smarter choices to live longer, healthier lives, and scientists are analyzing terabytes of genetic information to find new cures and develop more effective, personalized treatments.

Through data innovation, each industry can create additional value by various improvements.

Enterprise - makes businesses more agile, responsive, and competitive

Healthcare - helps people to live longer and healthier through better insights

Transportation - saves time, money, fuel and even lives through enhanced safety system such as anti-collision

Energy/environment - reduces energy consumption and improves our environment

Manufacturing - improves the way products are designed, built, and distributed

Finance - boosts efficiency, improves compliance, and cuts fraud

Farm culture - produces more and better food using fewer resources ⁸

3. Introduction of OASISBloc

3-5. Governance

OASISBloc platform provides the environment for both public data sharing and Domain Chain. Oasis Chain supports the development and maintenance of DLT, big data, AI, and data management. Moreover, Oasis Chain will act as an “interchain” between Domain Chains so that partners can concentrate on their own business operations.

The OASISBloc governance prevents the misuse of data (or critical data breaches) for incentives. It is designed to enable secure and reliable data generation, storage, trade, and transaction while meeting the interests of participants when they fulfill their duties.

1) definitions and the roles of OASISBloc members

① Witness Group and Block Generator

The Witness Group consists of 39 candidates of BG and of 3 levels. A BG will be selected randomly at each level. BGs are responsible for generating and verifying blocks so that transactions between Domain Chains can be quickly and accurately recorded on the blockchain.

Oasis Chain uses ePoA (Proof of Authority) to ensure that block generations and verifications are conducted by a trusted authority. Any member who fails to comply with the regulation or acts against sustainability of the ecosystem may be excluded from Witness Group or subject to penalties. Selection of a new Witness Group member is decided by agreement between the current Witness Group and the alliance.

② OIC

OIC supports platform development, transparency in management, and project development of partners for the security of ecosystem and the OASISBloc platform.

- Provides proposals for improvement of each Domain Chain and OASISBloc
- Improves creativity through communication and education
- Discovers for new Domain Chain projects, and decides on the scope of support through evaluation
- Provides technical support for partners
- Provides support for data standardization of each Domain Chain and standardization of connections between Domain Chains
- Reviews and consults for Domain Chain project progress
- Organizes the Witness Group and makes decisions on new members for Witness Group by evaluating with the existing Witness Group
- Enacts the OASISBloc constitution and self-corrective governance according to needs

3. Introduction of OASISBloc

3-5. Governance

⑨ dApp service user

dApp service users can use the dApp services provided through OASISBloc. Depending on the various types of services, the user can pay for the services or send their data.

⑩ Constitution

All OASISBloc ecosystem participants must comply with the OASISBloc constitution.

The OIC enacts the constitution and establishes the amendment procedure. If necessary, the amendment procedure may be proposed by various parties in OASISBloc, and OIC can amend the constitution according to a fair amendment procedure.

2) Importance and platform application of standard data model

Through blockchain, CIA (Confidentiality, Integrity, Availability) can be added to data, thereby enabling to protect personal information according to data sharing guidelines. In order to adopt CIA to data, a data standardization model including data utilization method is required while ensuring the quality of data. However, data standardization in a decentralized environment such as the blockchain is not easy. Therefore, OASISBloc will build its own data governance and manage the data standards. Moreover, a Data Standardization Officer (DSO) will be selected from each Domain Chain where the DSO will apply data standards to build a database. DSO will be selected through voting or by a trustful authority or domain managers. In the future, important decisions about data governance will be decided by the OASISBloc Innovation Committee (OIC).

A standard model for the data gathered is required to maintain the quality of data. Non-standardized data models make it difficult to exchange and reuse the data between Domain Chains. A standard data model will allow everyone to use the same data model for creating opportunities for global business. Data standardization is also required for data exchange and application service interworking between various IoT models.

3. Introduction of OASISBloc

3-5. Governance

New services can be created and introduced by enabling data exchange between Domain Chains.

- Data exchange between parking chain and healthcare chain enables paramedics to use the available parking spot for emergency dispatches.
- Data exchange between building management chain and mobility chain allows selling solar photovoltaic electricity produced from buildings to electric vehicle charging, instead of selling generated electricity to power exchanges when the price is low.
- Data exchange between air environment information chain and mobility chain allows vehicles (car, truck, bicycle etc.) to drive a route with pleasant air environment.
- Data exchange between e-health chain and home appliances chain enables monitoring household appliances and analyzing the usage pattern. If the usual use of household appliances is not detected, any health problems or emergency (especially elderly people) can be expected and families or hospitals can notify immediately by receiving an automatic emergency call from the system.

In addition to data standardization the task of creating context data is needed to provide more seamless services to users, such as the services exemplified above. Data context is a way of characterizing the context of one or more objects. Through context data, all related data and elements between users and services (eg. software applications) will be organized. In a world where IoT is commonly applied, context data will provide important clues to understand the interaction between IoT and users.⁹

When creating a new service by integrating data from different Domain Chains, sometimes, each Domain Chain uses the different field name (metadata) which have the same meaning or uses the same field name (metadata), with a different presentation style.

3. Introduction of OASISBloc

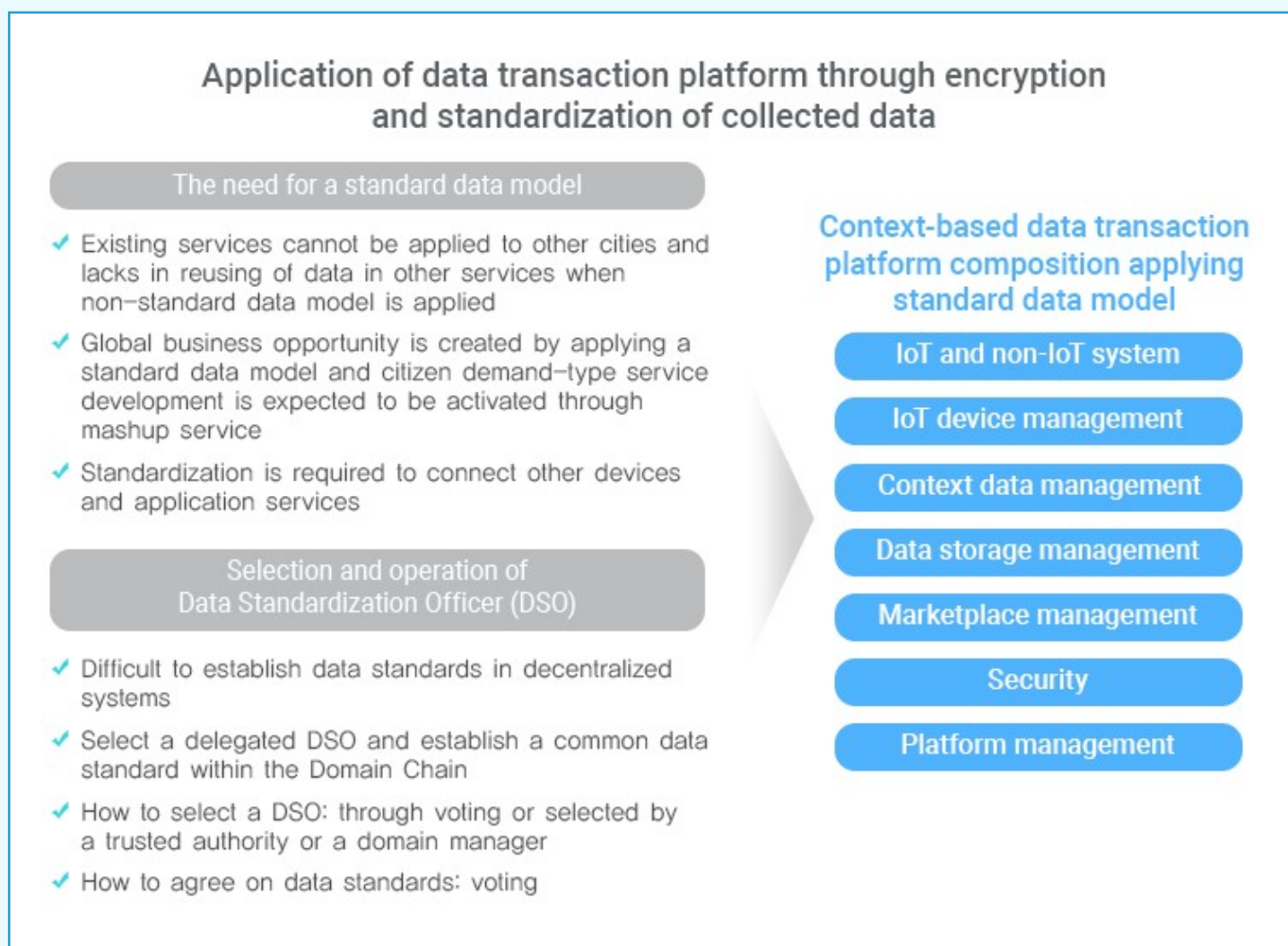


Figure 2 : Applying standardized data model

3) Structure of OASISBloc alliance

OASISBloc forms a global alliance. The OASISBloc alliance strives for platform innovation and providing services. The activities of the alliance will be the key success of the platform and will provide high reliability and continuous services to users.

Currently, the alliance consists of 18 different industries and will continue to expand.

Every partner provides their unique data and services, and they have united in OASISBloc platform to provide convenient and seamless services throughout the entire network.

The OASISBloc alliance is composed of Foundation Oasis Ltd. (Foundation Oasis), OIC, and partners.

① Foundation Oasis

Foundation Oasis leads development and provision of the OASISBloc platform. It also supports OIC activities for platform enhancement and also supports initial consulting and marketing of each Domain Chain. The scope of support shall be determined through evaluation and vote by the OIC.

4

OASISBloc platform

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- 4.7 Role of data keeper and reward



4. OASISBloc platform

4-1. Platform features

OASISBloc provides a flexible environment by configuring the blockchain according to the characteristics of each industry.

3) Providing protocol for data trading

OASISBloc provides a protocol for trading data that can be commonly used in various data sharing blockchains. Through the OASISBloc data transaction protocol, data sellers can register data in the appropriate domain, and data buyers can purchase the necessary data from multiple Domain Chains. This protocol can support transactions not only from Domain Chains in the OASISBloc platform, but also from other data sharing blockchains linked through the blockchain oracle.

4-2. Blockchain configuration

OASISBloc provides data sharing blockchain to support various industry fields. Data trading blockchain consists of the following two types of chains to support global data transactions.

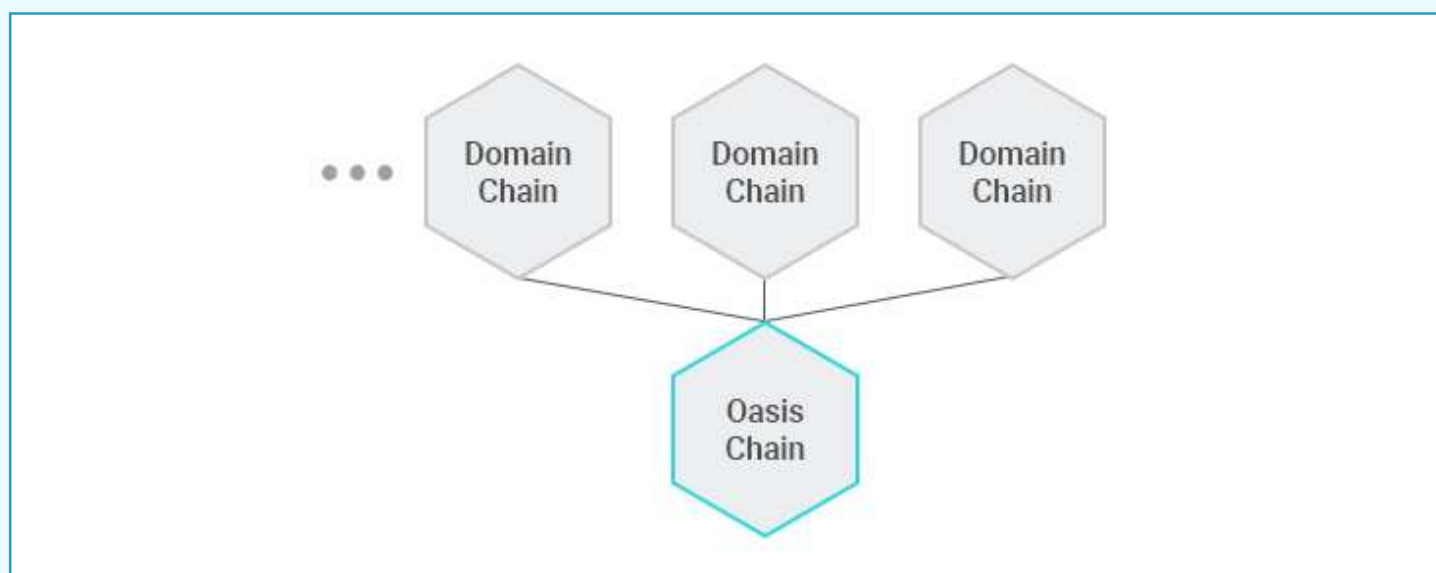


Figure 4. Configuration of OASISBloc blockchain

1) Domain Chain

Domain Chain is a blockchain to share data for a single industry. The data registration details of who registered which data, and the data purchase details of who purchased the data are recorded. Appropriate governance can be configured according to the type of data, data provider, method of providing data, and method of transaction in the domain.

Domain Chain consists of an on-chain node that records data transactions and registration, and an off-chain node that stores and transmits the actual data. The following figure shows the architecture of a Domain Chain that interacts with the user app.

4. OASISBloc platform

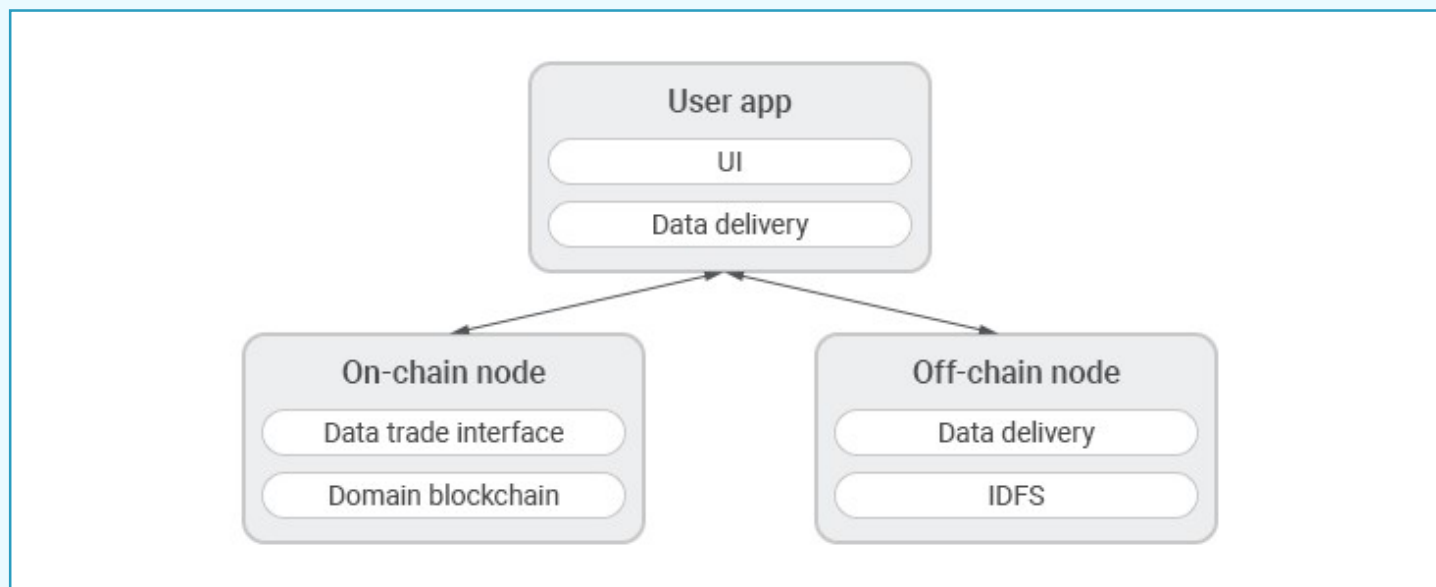


Figure 5. Architecture of Domain Chain that interacts with user app

Users can trade data through the application UI. Data transaction such as for data registration/search/purchase is handled through the on-chain data trade interface module. The data transaction history is recorded on the domain blockchain. When a data seller registers data, the data is transferred through a data delivery module once the data buyer receives the purchased data. To increase the security level and operation efficiency, the registered data by data sellers is dispersed and stored in OASISBloc-wide storages. If necessary, the data may be stored in storages built inside the domain chain

2) Oasis Chain

Oasis Chain is a hub chain that connects all Domain Chains. By providing value and data exchange between Domain Chains, users can trade data with Domain Chains through the OASISBloc platform. Oasis Chain records details such as user account interconnection history, data transaction history, and

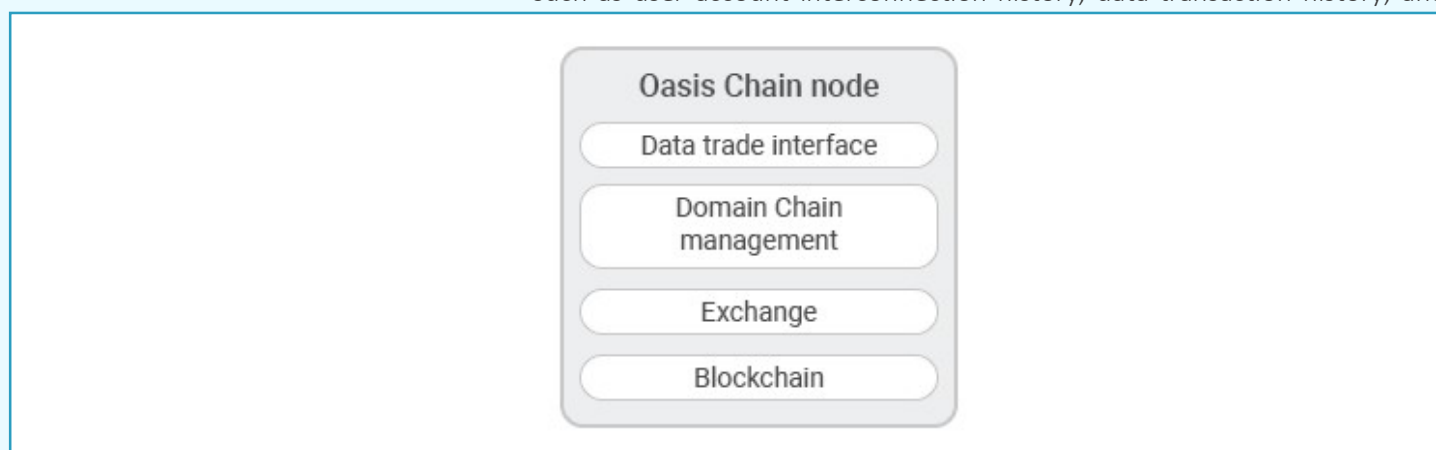


Figure 6. Key module configuration of Oasis Chain node

4. OASISBloc platform

4-2. Blockchain configuration

Oasis Chain includes data trade interface module that supports data transactions, Domain Chain management module linked to Oasis Chain, value exchange transaction module, and blockchain module. When a data buyer searches data through the app, the data trade interface module of Oasis Chain confirms the data registration information of the related Domain Chain with the data corresponding to the user's query. The purchased data is transferred from the off-chain node of the Domain Chain.

3) Blockchain interconnection and value exchange for data transactions

OASISBloc not only interconnects with Domain Chains in the Oasis Chain but also with other data sharing blockchains in order to enable data transactions that occur between multiple data sharing blockchains. OASISBloc provides oracle SDK by importing data from the corresponding blockchain for interconnecting with other data sharing blockchains. The oracle enables users to search, purchase, and register data in other blockchains through the data transaction protocol of OASISBloc.

Oasis Chain supports data transactions through token exchange between registered Domain Chains and Oasis Chain. For example, if Domain Chains A and B are registered in the OASISBloc platform as shown in the figure below, the data buyer can use OASISBloc tokens to purchase data from Domain Chain A, or may use the tokens commonly used in Domain Chain B instead of OASISBloc tokens.

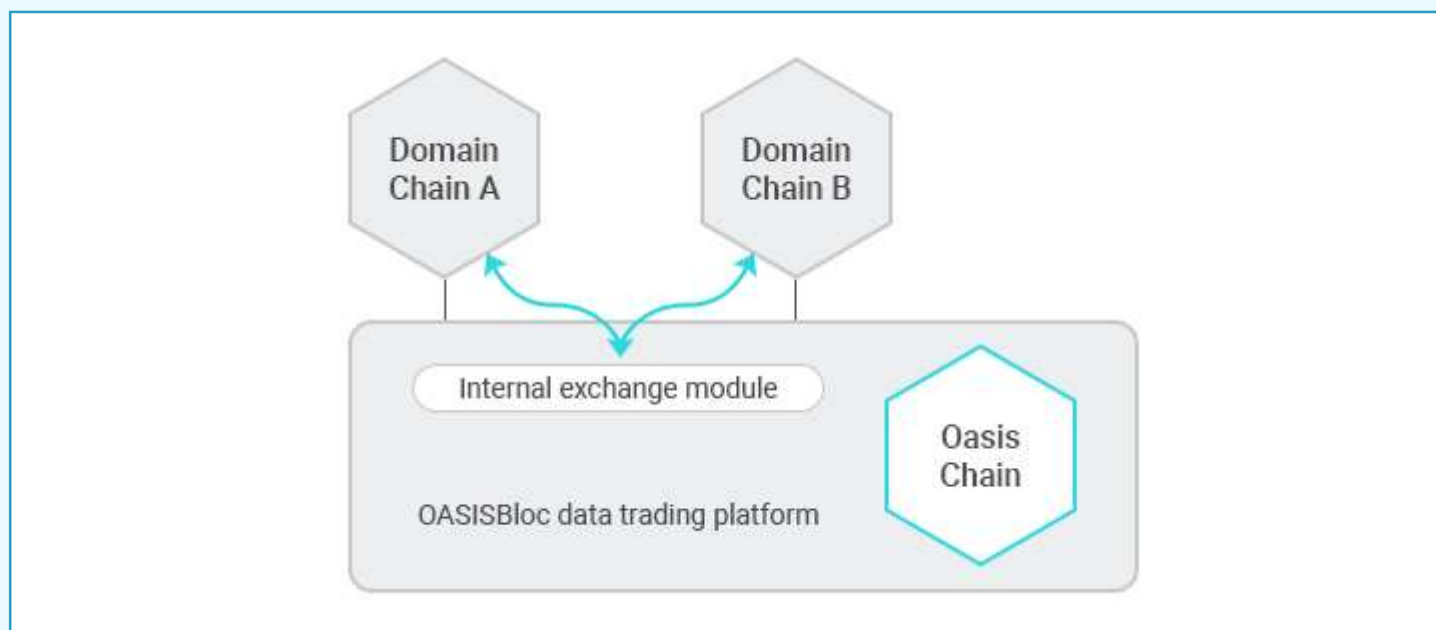


Figure 7. Example of value exchange trading module of OASISBloc platform

When a data buyer purchases data from Domain Chain A and pays with OASISBloc tokens, the value exchange trading module checks the value of the corresponding Domain Chain token and the value of OASISBloc token. OASISBloc token is then deducted from the data buyer's account as much as the data price according to the above value exchange ratio. The data seller will be paid for its data with the tokens of Domain Chain A. Transaction details are recorded in the corresponding Domain Chain and also in the Oasis Chain.

4. OASISBloc platform

4-2. Blockchain configuration

The value ratio of each Domain Chain token and OASISBloc token is determined by the market price. Domain Chain tokens must be listed on an external exchange and traded in order to be used. When Domain Chains are connecting to Oasis Chain, every Domain Chain must go through the OASISBloc alliance.

4) IDC (Inter Domain Chain Communication)

People interact in various ways - from simple conversations in everyday life to intellectual activities such as writing and work of art. Beyond simple expressions between people, people express their thoughts and respond to it. And It is what we call the communication.

OASISBloc platform enables parties to interact and exchange value. The underlying technology of data transactions in a blockchain is IDC.

In other words, IDC is a technology for communications between blockchains. IDC is the underlying technology of OASISBloc's ecosystem expansion. It enables the transfer of funds for data transactions and communication between Domain Chains.

In addition, IDC will make possible to transfer value to other blockchains that have their own tokens. This is the goal of OASISBloc and the IDC technology will be used in order to expand this goal.

OASISBloc focused on four key elements of IDC:

① Merkle proof¹⁷ for improving validation speed between blockchains

Since blockchain has a monoculture structure, one error damages the entire ledger. With this weakness, validation is essential for communication between different chains. When attempting communication between chains and if the opponent chain is in the reorganization state, the block becomes unreliable. Therefore, the status of the opponent chain should be checked. LCV (Light Client Validation) is used to validate the opponent chain to solve the current constraints of resource and time for full node validation. LCV is not a method of verifying all the blocks but a Proof of Completeness method which proves that there is no gap in the transaction history of the chain to be verified.

4. OASISBloc platform

4-2. Blockchain configuration

② Exchange module¹⁸ for exchange rate of value transactions

The value of tokens issued in each Domain Chain are all different. As there are exchange rates and exchange bureaus in international currency transactions, there are also exchange rates and exchange centers in cryptocurrency. However, when using currency exchange, there are problems such as high commissions, time consuming, government regulation and control, complexity, and exposure to risk of hacking etc. In order to solve the above problems, the exchange module is designed with the principle to make direct transactions between nodes, and to be created when connecting end-to-end nodes for generating transactions. In this structure, Hashed Time Lock Contract (HTLC, which is a basic technology of Atomic swap) is used for payments. HTLC is a combination of timelock (time limitation technology for transactions) and hashlock (where a hash value must be presented before the contract is fulfilled) technologies.

The exchange module is designed based on the existing HTLC technology and is the basic technology for the swap contract as proposed in ③ below.

③ Transactions by swap contract between chains

The smart contract in Domain Chain guarantees integrity if the function details (contract conditions) and function inputs (contract execution states) are shared. In this case, the function result does not need to be shared separately through blockchain. This applies equally to transactions between chains. Swap contract which is similar to smart contract is created on both chains in the transaction. The function details are communicated with a protocol similar to TCP (Transmission Control Protocol). Multisig method is applied for the security of both chains and the timelock of swap contract. Protocol is used to check irreversible verification and reorganization status of the block of the opponent chain.

4. OASISBloc platform

4-3. Platform configuration

OASISBloc platform includes Oasis Chain and each Domain Chain registered in Oasis Chain. The platform supports integrated data trading function between Domain Chains. Depending on the Domain Chain, the platform may work with existing legacy systems to provide characteristics for data transactions based on blockchain. OASISBloc platform consists of five layers: application, service, platform, blockchain, and data layers.

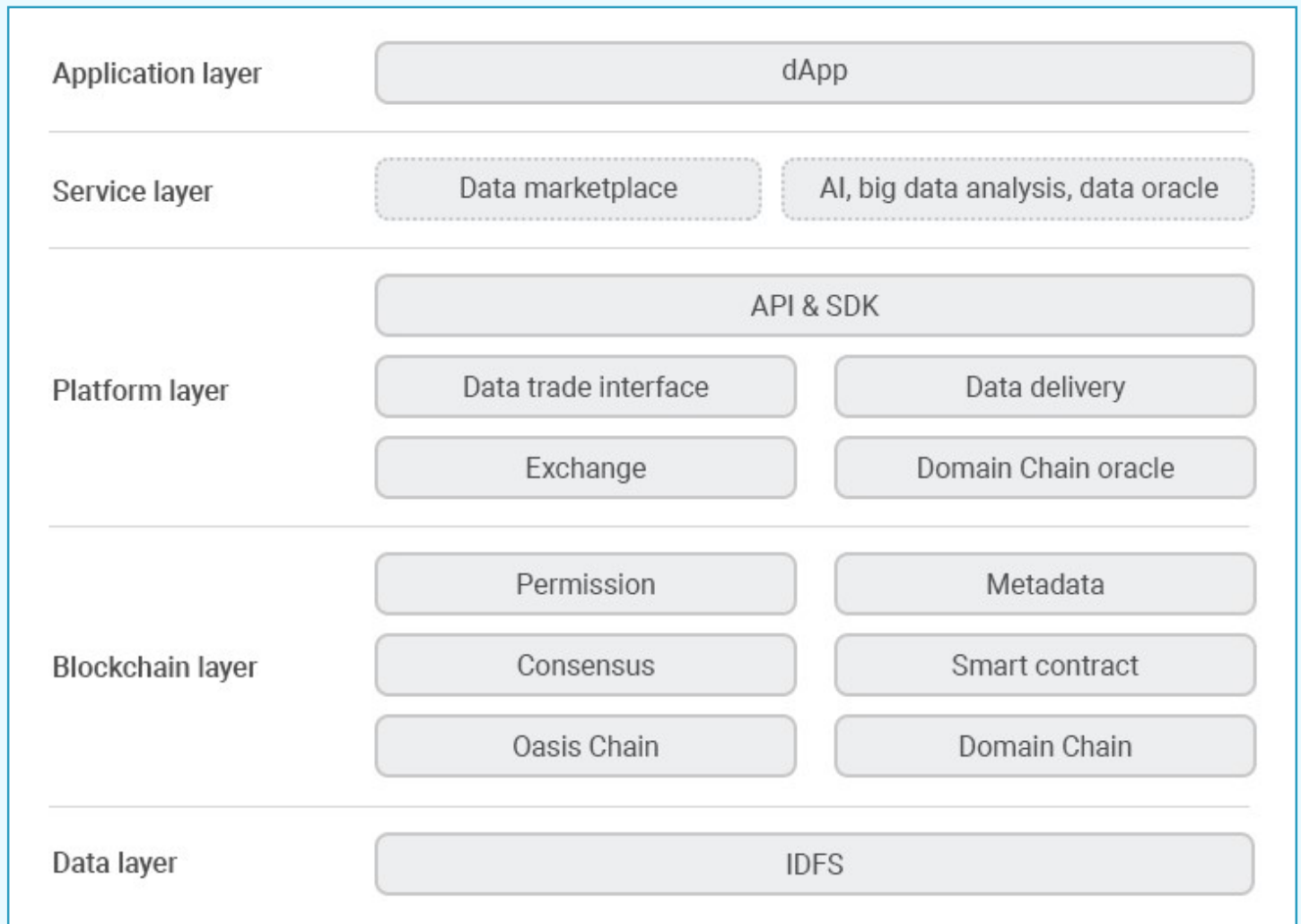


Figure 8. Structure of OASISBloc platform layers

1) Application layer

The Application layer is for dApps that provide data trading functions or provide services that leverage data.

2) Service layer

The Service layer is for services running on OASISBloc platform. Configurations may vary depending on the Domain Chain. Service layer includes big data analysis using Domain Chain data, AI service for data learning, blockchain oracle, and data marketplace etc.

4. OASISBloc platform

4-3. Platform configuration

3) Platform layer

The platform layer provides various functions for data transactions and handles user's data transactions. The data trade interface provides interfaces for registration, search, and purchase of data. Transactions through this interface are reflected on the blockchain layer. Data delivery performs data upload and download to FEDSS for user's data registration and purchase. The data delivery module verifies that the person who wants to download the data has the right to access the data. If verification is successful, the data is encrypted and transmitted, and the encrypted data can only be decrypted with the authentication key of the data purchaser. Exchange between OASISBloc tokens and Domain Chain tokens are handled in "Exchange" to enable data transactions in multiple Domain Chains registered to the Oasis Chain. The Domain Chain oracle is provided to link with other blockchains for data trading. The platform layer provides API and SDK to handle these functions.

4) Blockchain layer

OASISBloc platform provides 2 types of blockchains: Oasis Chain and Domain Chain. Details of all actions related to data transactions such as data registration history, purchase history, and data type are recorded in the Domain Chain in which data is registered. On the other hand, settlement details for value exchange through OASISBloc tokens and Domain Chain registration history are recorded in the Oasis Chain. Each data transaction is processed based on smart contracts. Also, by managing data access with blockchain accounts, only authorized person can view or modify the data.

5) Data layer

The data layer is for data transactions, OASISBloc platform establishes a P2P network-based distributed file system which is called FEDSS. FEDSS has the following technical advantages: First of all, unlike the HTTP web, ecosystem can remain stable even if some nodes are disconnected. It can transfer high-capacity files quickly and efficiently.

Actors can be classified into registrants, buyers, keepers depending on the data layer and the type of data transaction. Rewards are given differently according to the above types.

4. OASISBloc platform

4-4. Consensus algorithm: ePoA

In OASISBloc platform, most transactions are expected to occur by Domain Chains. OASISBloc will begin with at least 13 witness group and 7 BGs but will gradually expand up to 39 witness group and 23 BGs. Through the procedure of OASISBloc governance, OIC will decide the expansion of witness group and BG according to the transaction volume and the number of Domain Chains.

Witness Group is divided into 3 levels according to the contribution. Within each level, cyclical random selection method is structured to provide fair opportunity to participate in block generation.

In the case of Witness Group consisting of 39 and BG consisting of 23 : 16 BGs for level 1, 13 BGs for level 2, and 10 BGs for level 3. For every round, a total of 23 BGs are selected: 8 BGs, 8 BGs, and 7 BGs respectively for each level.

The block time of Oasis Chain is 1s, and in the case of 23 BGs, each BG generates 12 blocks. A total of 276 blocks are generated per round. At the beginning of each round, 23 BGs are selected randomly according to their basic requirements and contribution. The selected BGs create blocks in the order agreed by more than 16 BGs.

The participation requirements of the Witness Group will be determined by OIC based on technology, transparency, and infrastructure. And moreover, openness to participation of a new Witness.

The basic requirements of BG selection method are as follows:

- ① Deposit
- ② Compliance to regulations
- ③ Contribution

Deposit is the “minimum equity deposit,” which is required to be at least 500,000 OSB. A robust method to measure the healthy sustainability of a blockchain network is by measuring the amount of tokens held by a BG. If the BG has the more to loses, the more responsibility the BG will have, and therefore, the BG will be cautious in making decisions accordingly. Contribution is based on trust and reputation for contributing to ecosystem activation and platform sustainability. The Oasis alliance can coordinate the above criteria in consultation according to the situation and evaluate whether the regulation is fairly complied. BG is required to generate a block at the right time with the designated order. Based on the role BGs are playing, their performance is evaluated while the grade is reflected in the BG Compliance to regulations. In addition, weights for the above requirements can be adjusted according to the level and be reflected in the BG selection criteria.

By using ePoA for consensus algorithm, It is possible to improve the transaction speed with small number of nodes like EOS, while maintaining security that of large networks like Bitcoin or Ethereum by randomly selecting candidates that meet the basic requirements.

4. OASISBloc platform

4-5. Security

OASISBloc is a distributed ledger system that provides high security and trust. Basic transaction can be made through asymmetric key encryption with securing CIA. The technical element of key generation (which is the basis of the 3 elements of CIA) is based on proxy re-encryption so that no one can own the original data other than the trading parties.

In addition, a two-step system is built to defend against DDoS attacks. First, the ePoA consensus algorithm is established to minimize the exposure of BG, which could be a target. Second, the full node that is open to users, is separated from the BG node that produces the block. In this way, the VPN service (that has integrity, mutual authentication, and access control etc.) maintains the block generation through the trusted BG network, and protects the OASISBloc network even during an attack on the full node.

1) Data security

Blockchain is a system designed based on the philosophy that all nodes equally share the ledger. However, the disadvantage of this structure is that the size of the ledger becomes larger, and if the ledger contains data that includes files, the size will be enormous. Therefore, OASISBloc aims to minimize the size of the ledger by creating a separate chain (off-chain) for data storage.

① Data confidentiality

Since fragments of data are encrypted and dispersedly stored to be transmitted to data buyers, data keepers do not have the ownership of data while only data sellers and buyers have access to data. Due to the concept of “data access rights,” unpermitted (or unauthorized) keys cannot use the data or services.

② Data integrity

Based on the policy that “information and data may be seen, but cannot be changed,” hash values of all data in the off-chain are extracted in each data processing process and recorded in the on-chain. By doing so, data keepers and buyers are able to check the hash values once they receive the data and validate their integrity.

4. OASISBloc platform

4-5. Security

③ Data availability

If data buyers have the data access right, they should be able to earn data at any time upon request. The storage server where fragments of data are duplicated and stored is called a keeper node, and the group of the keeper nodes is called a data storage. In case a problem occurs in a keeper node where the encrypted data fragments are dispersedly stored, missing out data fragments, each data fragment is stored in multiple keeper nodes of the data storage.

④ Data life cycle and deletion

OASISBloc, which deals with data transactions, requires smoothness in deleting data that has reached the end of its life cycle due to security issues. For this, the FEDSS was configured to secure the storage capacity, data that are not pinned are sent to garbage after a certain period of time. Data that are traded through tokens are basically pinned. Deleting a transaction on a blockchain is not possible. Therefore, we designed the data lifecycle by creating a new transaction which contains deleted data on FEDSS, and update in the blockchain.

In other words, we designed the data lifecycle through data deletion on FEDSS.

2) Attacks

① Evolution and commercialization of DDoS attacks

There are various types of DDoS attacks, but the purpose is always the same - to slow down the speed of online resources or to prevent them from responding, thereby giving financial damages or damaging the reputations of the victims. The patterns and methods of attacks are constantly evolving.

DDoS attacks have established themselves in the market as a profit model, which is the reason they are constantly evolving in size and type. Given these trends of DDoS attacks, even dPoS blockchains such as EOS can never be safe from attacks. However, OASISBloc is designed to prepare against DDoS attacks.

4. OASISBloc platform

4-7. Role of data keeper and its reward 2) Rewards for keeping data (time and space)

As a data keeper of OASISBloc, data keepers provide a certain amount of space on its hard disk and receives appropriate rewards accordingly. Reward is also made according to the time for keeping the block. Time and space are the basis of the reward concept for data keepers of OASISBloc, both of which are calculated by appropriate reward formulas.

5

Service model

5.1 Overview

5.2 Service cases of Domain Chain

5.3 Case of utilizing service by converging data between Domain Chains

5.4 Case of solving current problems by converging data between Domain Chains



5. Service model

5-1. Overview

Enterprises that are already running a business face many challenges when dealing with other companies. Many enterprises expect stable and efficient business operations by applying blockchain to various business areas because of the characteristics of blockchain such as saving cost, time and securing reliability. Most enterprises use private blockchain to avoid sensitive data leakage and to solve the problems according to the characteristics of each business process.

OASISBloc aims to support blockchain business for enterprises by providing the following two service models.

1) BaaS model (Blockchain-as-a-Service)

There are various barriers such as technology, cost, and time for companies to newly adopt blockchain into their business. OASISBloc provides solutions to eliminate such barriers.

2) DaaS model (Data-as-a-Service)

As data trading and processing become more active, the data trading platform must be transparent and the data provider should gain fair profits. OASISBloc plans to provide data services based on blockchain that will enable the greatest efficiency and business value to enterprises.

By applying blockchain to existing business areas, companies can implement an optimal management system and increase revenue. This allows them to create a variety of services.

First, sell data to other companies which need the data.

Second, create new businesses through data collection and analysis.

Third, purchase data to solve the existing business problems.

Below are seven service cases of Domain Chain.

5. Service model

5-2. Service cases of Domain Chain

[Healthcare Chain]

- Current problems
 - 1) Patient's medical data are used only for a short period of time and in most of the time, they are scattered and stored in several hospitals.
 - 2) Patients repeated go through unnecessary treatments due to limited sharing of medical records between hospitals.
 - 3) Patient's medical data are being sold within the medical field. However, the patients do not know how the data is being used and do not gain any benefit from it.
- Solutions through blockchain
 - 1) The distributed ledger technology of the blockchain allows to search and track the data that are scattered all over different hospitals by the patient's private key.
 - 2) Hospitals can accelerate the exchange of medical data with other hospitals by providing tokens as means of incentives.
 - 3) The shared distributed ledger between hospitals, patients, and medical industry facilitates data flow surveillance by wallet-based consent system to utilize patient's data enables precise control of medical data.

5. Service model

5-2. Service cases of Domain Chain

· Benefits

- 1) Patients can receive precision medicine service based on clinical data, genetic data, and life log data that are gathered from various medical institutions through the distributed ledger technology.
- 2) Token incentives in data transactions facilitates the exchange of medical information between hospitals and individuals-hospitals, thus eliminating unnecessary testing and reducing national medical expenses.
- 3) Blockchain and consent mechanism technology enables precise control of data flow, preventing misuse of patient data and black market leakage problems.

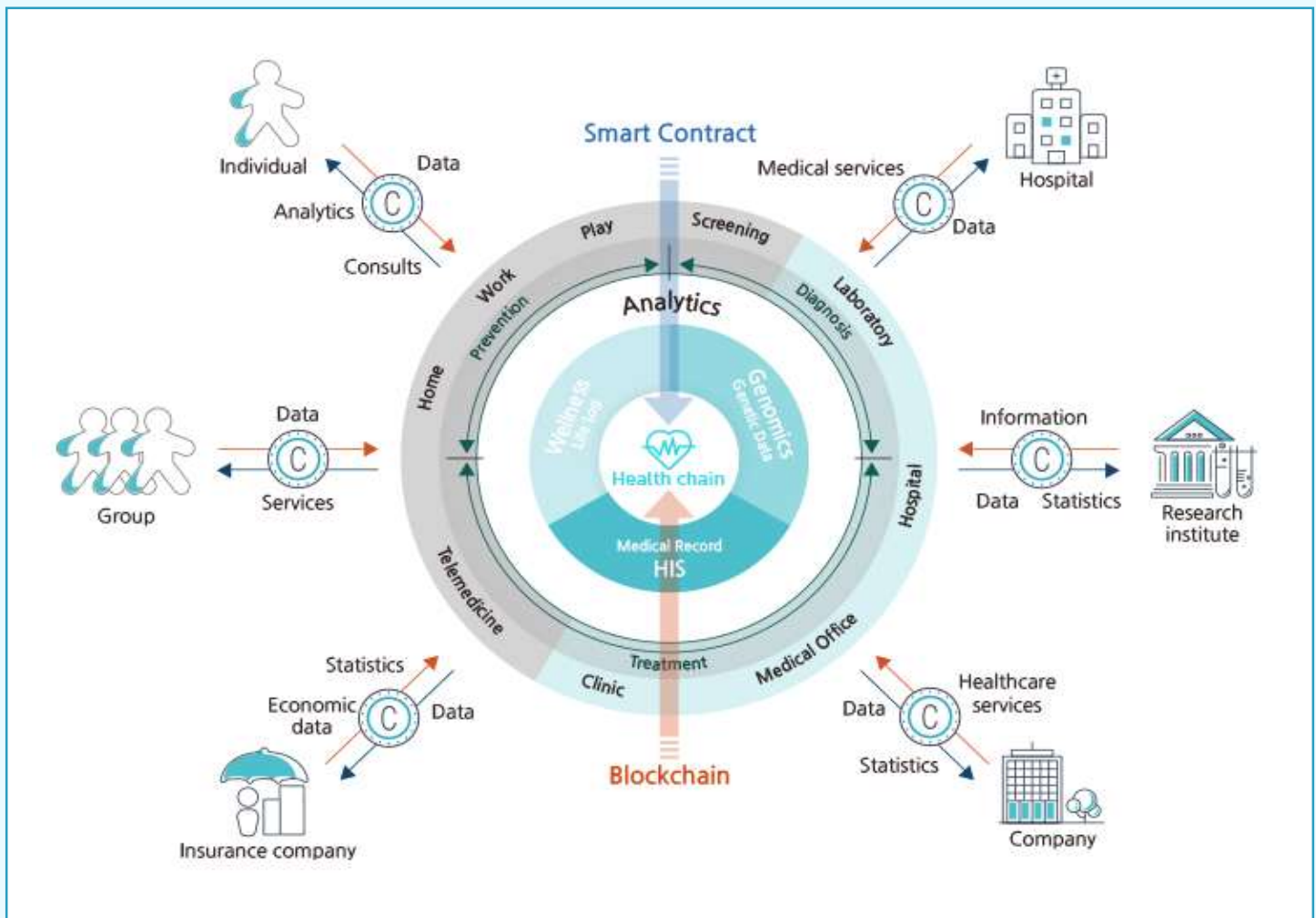


Figure 10. Transaction of medical data using Healthcare Chain platform

5. Service model

5-2. Service cases of Domain Chain

[Gold Chain]

(Application of Gold Chain must be consulted with a jurisdiction legal expert)

- Current problems
 - 1) Investors want to invest in physical gold but there are concerns for theft. There is also a big spread between the purchase price and the selling price where the burden of VAT and commission is high.
 - 2) Even if investors want to trade abroad, they lose money with their trading volume due to tariffs.
 - 3) There is an ETF-type gold investment method. However, the tax burden on profits is high.
- Solutions through blockchain
 - 1) Issuing tokens with gold as collateral can be stored easily where it reduces the burden of commission for the transaction.
 - 2) It is possible to trade without border restrictions through the gold-backed token exchange which is connectable from all over the world.
 - 3) Taxes and fees are incurred when the token is exchanged to physical gold. However, the transaction between tokens do not incur tax for the gain.

5. Service model

5-2. Service cases of Domain Chain

· Benefits

- 1) By reducing the spread between purchases and sales through a gold-backed token, it can meet the demand of both long and short-term holders, enabling the gold market to grow.
- 2) Blockchain enables borderless transactions which are recorded in the transparent distributed ledger and suppresses the outflow to the black market.
- 3) The token issuer can deposit physical gold in a certified institution and store it safely.



Figure 11. Gold Coin issuing process through the Gold Chain platform

5. Service model

5-2. Service cases of Domain Chain

[Retail chain]

- Current problems
 - 1) Due to fierce competition, the revenue of small business owners is decreasing as well as the burden on commissions paid to the current payment systems is increasing.
 - 2) Franchise owners are demanding higher franchise fee in return for providing logistics, inventory, manpower, and marketing services which reduce the profitability of franchisees.
 - 3) Many companies have an in-house cafeteria for employees but it is difficult to consider the ethnic and religious tastes of all employees. Companies are using paper vouchers which can be lost and difficult to prevent exchange activities that are not in line with the voucher usage rules.
- Solutions through blockchain
 - 1) With QR codes and blockchain based payment system, users can buy products and services without banks, credit card companies, or other financial intermediaries.
 - 2) Logistics, inventory, HR, and marketing service providers can be connected to the blockchain and enable to provide one-stop services with smart contracts.
 - 3) Smart contract based blockchain voucher can be issued to allow employees to use vouchers within the rules set by the company.

5. Service model

5-2. Service cases of Domain Chain

· Benefits

- 1) By simplifying the payment process with blockchain, it is possible to prevent transaction errors in advance and reduce labor costs. Thereby, improving the profitability of small size business owners.
- 2) Smart contract based cooperative system can operate more efficiently than the existing franchises, therefore the purchase price can be lowered by strengthening bargaining power of small size business owners.
- 3) Companies can make efficient employees' welfare scheme by using a blockchain voucher.

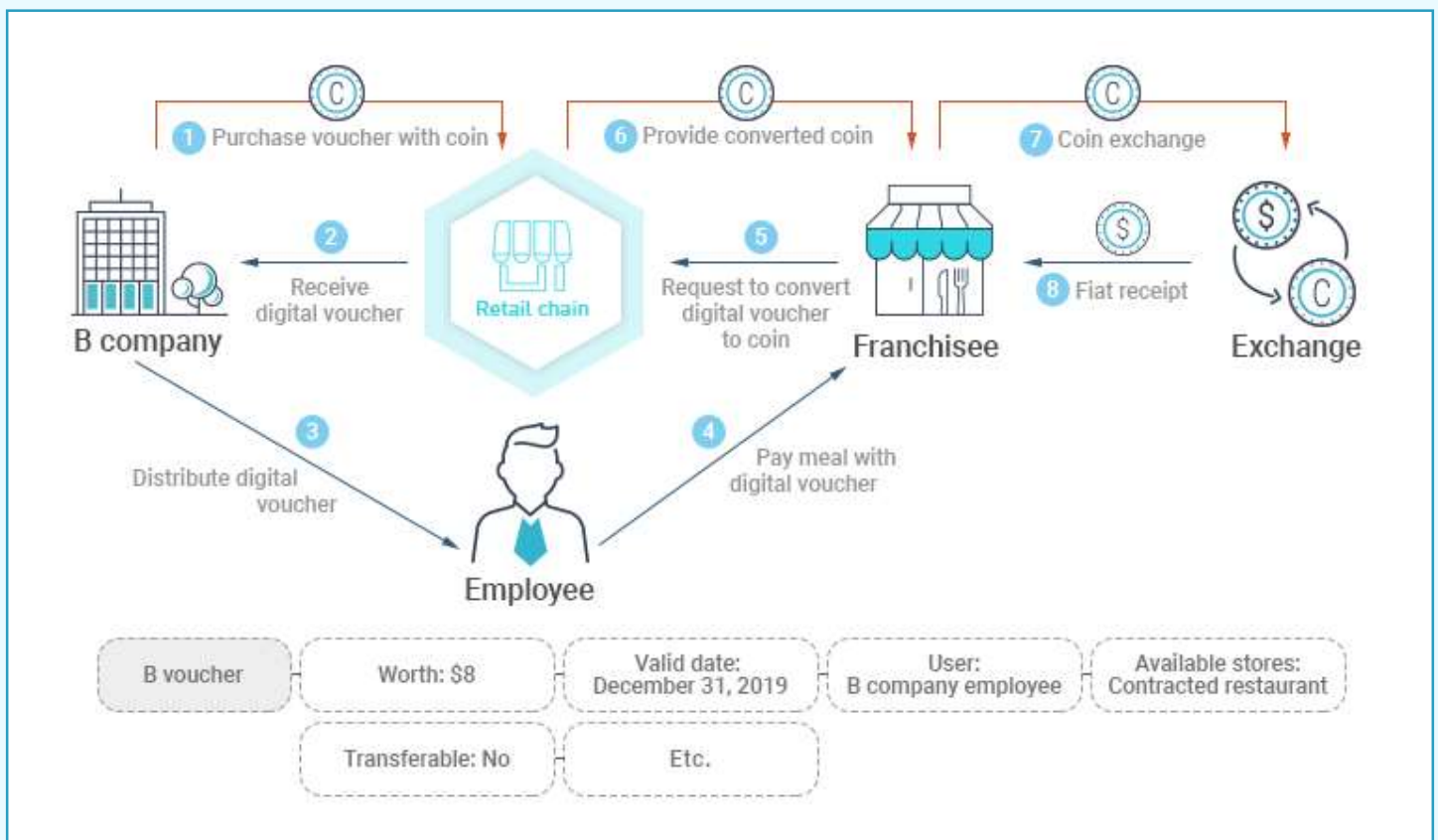


Figure 12. Utilization of blockchain voucher through retail chain platform

5. Service model

5-2. Service cases of Domain Chain

[Media chain]

- Current problems
 - 1) Building a standardized set of data for retail transactions is difficult, making it impossible to fully identify consumer data. (Eg., Credit card company: knowing the identity of the consumer and the price of the purchase item but not knowing what the consumer has purchased. Shops and POS: knowing what the consumer has purchased but not knowing the identity of the consumer.)
 - 2) Although store owners pay high price for online advertising, they are unable to find out the exact effects. Also, it is difficult to find out customer inflow through handing out leaflets.
 - 3) Small and medium advertising platform companies are trying to utilize a point system to attract customers, but as a result, there is a limit to expand to large-scale campaign because it is a zero sum game.
- Solutions through blockchain
 - 1) Blockchain's distributed ledger technology enables to acquire and analyze the integrated information of consumers with their consent of the scattered data accumulated by each companies.
 - 2) Consumer-centric, integrated data can show how many customers have been exposed to ads. This makes it possible to identify the effectiveness of advertising.
 - 3) Through tokenization of points, small and medium marketing platforms can choose a new alternative that facilitates marketing investment.

5. Service model

5-2. Service cases of Domain Chain

· Benefits

- 1) The advertisement management system for advertisers, media companies, and advertising agencies, it is possible to increase the reliability of data provided to each other with blockchain
- 2) As owners can measure and identify the advertising effects instantly, it can improve the profit of the business by saving unnecessary advertising costs.
- 3) With the acquisition of large-scale marketing investment through tokens, small and medium sized platform companies can expect a fair competition with major companies.

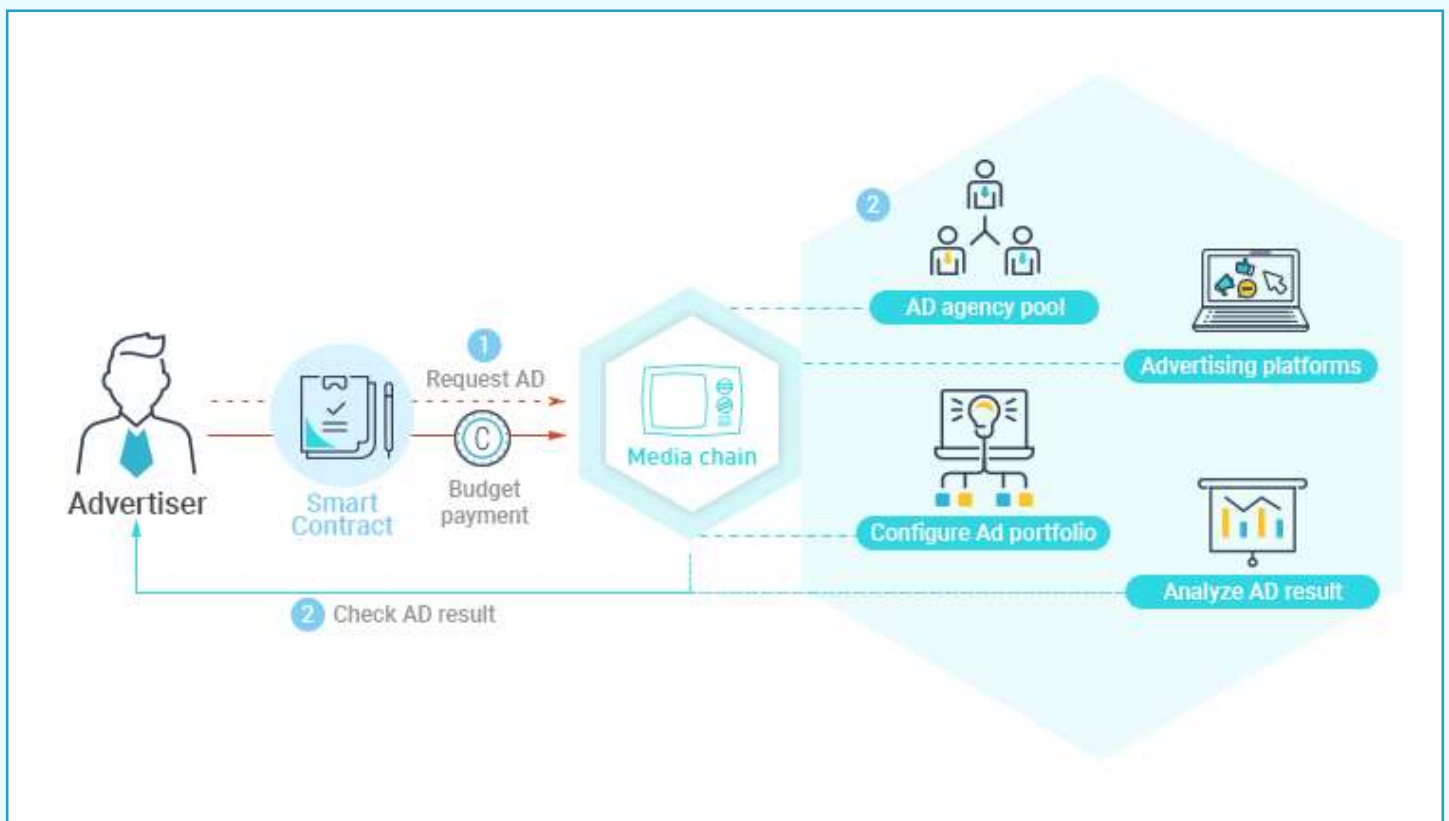


Figure 13. AD activity process through media chain platform

5. Service model

5-2. Service cases of Domain Chain

[Game Chain]

- Current problems

- 1) Constant fraud incidents occur due to the anonymity of the opponent when trading items within a game through the item trading website.
- 2) Every player's effort can be useless if the game service ends.
- 3) Newly launched games spend a huge amount for marketing to attract new customers as assets within a game such as cyber money, items, and characters collected by the player over time cannot be utilized in other games.

- Solutions through blockchain

- 1) Item trading with an unknown can be safely done through the application of P2P electronic cash system provided by the blockchain.
- 2) For most online games, services may end according to the company's management decision, but the game through dApp is decentralized where the service can be maintained forever as long as the network supports it.
- 3) The player's game assets are recorded on the irreversible ledger of the blockchain, making it possible to utilize the existing game assets even in newly launched games.

5. Service model

5-2. Service cases of Domain Chain

· Benefits

- 1) The use of blockchain escrow eliminates the risk of fraud because the exchange of game item and payment are done simultaneously. The game company and the exchange can split the profit generated from transaction fee.
- 2) The environment that allows ever-lasting game can play a role in supporting the value of the characters and items possessed by the game player.
- 3) Democratic forking on game rules can create voluntary new games among participants, and can be used as a marketing tool when acquiring new customers through game assets swap and airdrop.

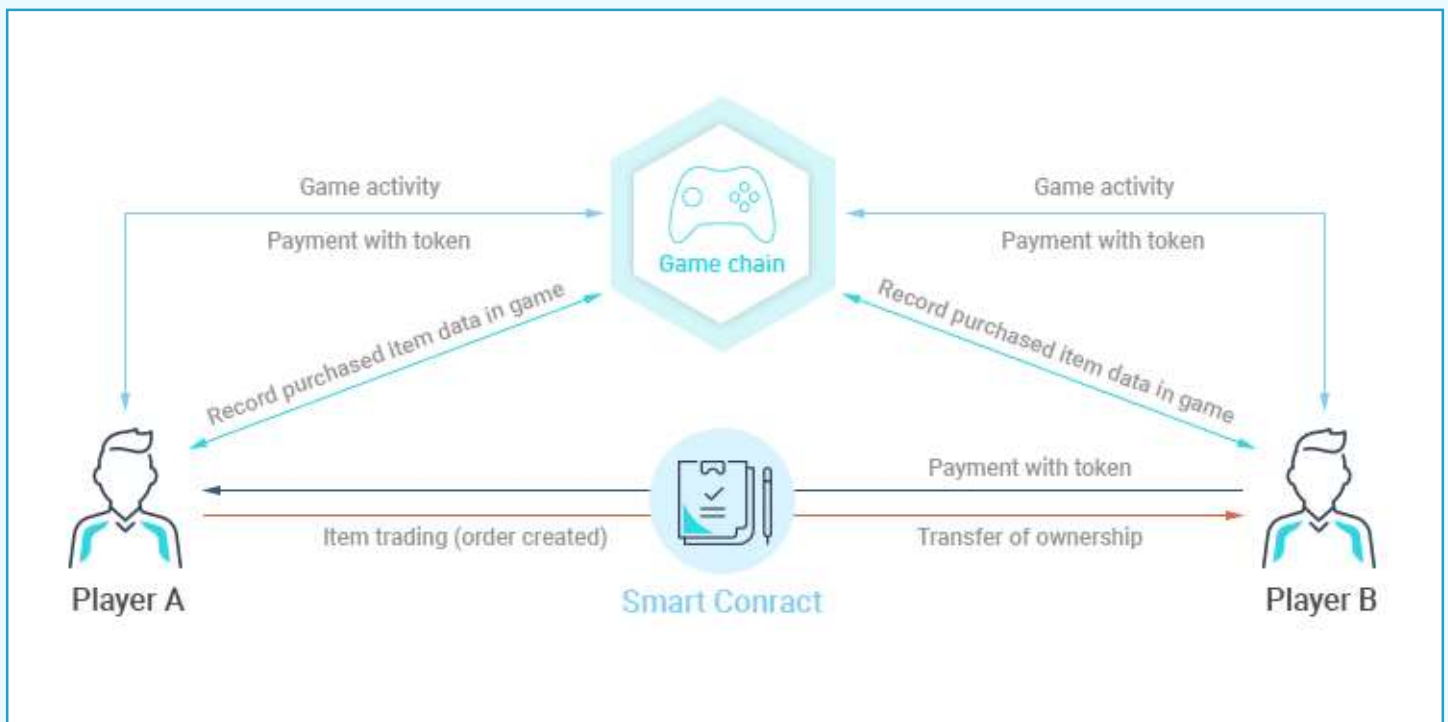


Figure 14. Item trading in game using Game Chain platform

5. Service model

5-2. Service cases of Domain Chain

[Mobility chain]

- Current problems
 - 1) Large volume of data is being generated from various sensors attached to the vehicle. However, there is no platform to store, analyze, and trade data. Therefore, the generated data is temporarily stored in each device and discarded.
 - 2) Data from automobile manufacturers, insurance companies, and repair companies are stored separately which makes it difficult to check each other's data. This makes data vulnerable to forgery and the selling of second-hand vehicles with accidents or malfunctions are done unknowingly.
 - 3) In-car payments for parking, gasoline, highway tolls, drive-thru stores are increasing. But wireless payment has weak security and there are inconveniences to find cash, credit card etc. in haste as payment methods are not integrated.
- Solutions through blockchain
 - 1) Data generated from various sensors are stored on the basis of crypto key which is unique to each vehicle and can be shared and traded among different parties (research institutes, automobile manufacturers, consumers, repair companies, insurers, and public agencies).
 - 2) With blockchain, an unmodifiable digital ledger can be made by combining data from vehicle manufacturers, insurance companies, and repair companies.
 - 3) Blockchain based 'vehicle wallet' can be used as a safe and integrated payment method.

5. Service model

5-2. Service cases of Domain Chain

[IoT & Robotics chain¹⁹]

· Current problems

- 1) Due to the different security levels of IoT nodes, hacking can threaten the entire system and it is difficult to verify and recover data when the data of the central system is altered or forged. Also, if there is a problem with the central processing system, it is unable to use the connected IoT devices.
- 2) Since IoT collects and processes data from various devices, it requires a central server for processing big data which increases the cost of construction and maintenance of the central system.
- 3) There is scalability problem when adding new IoT nodes as the nodes have to be connected to the central server that has limited gathering and processing capability.

· Solutions through blockchain

- 1) IoT data is distributed and stored in nodes so that DDoS attacks against the central server can be mitigated. Since each node holds the data and conducts verification, it is difficult for data to be altered or forged. Also, malfunction of some devices will barely impact on the overall system.
- 2) System construction cost is saved by connecting each IoT device (peer-to-peer) instead of building a separate central processing system.
- 3) New nodes can easily be added in the IoT system through internal system node connection without any additional change or separate equipment.

5. Service model

5-2. Service cases of Domain Chain

· Benefits

- 1) The policy of data access can be stored on the blockchain so that only the data owners can access and control the collected data. Blockchain can provide a secure data trading environment for the collected data from IoT sensors. It also allows to trade data without any third party interruption.
- 2) Public keys of IoT devices are stored on the blockchain which enables to manage keys such as registration, renewal, and deletion.
- 3) Through blockchain, it is expected to overcome the current IoT limitation and contribute to the vitalization of the IoT industry.

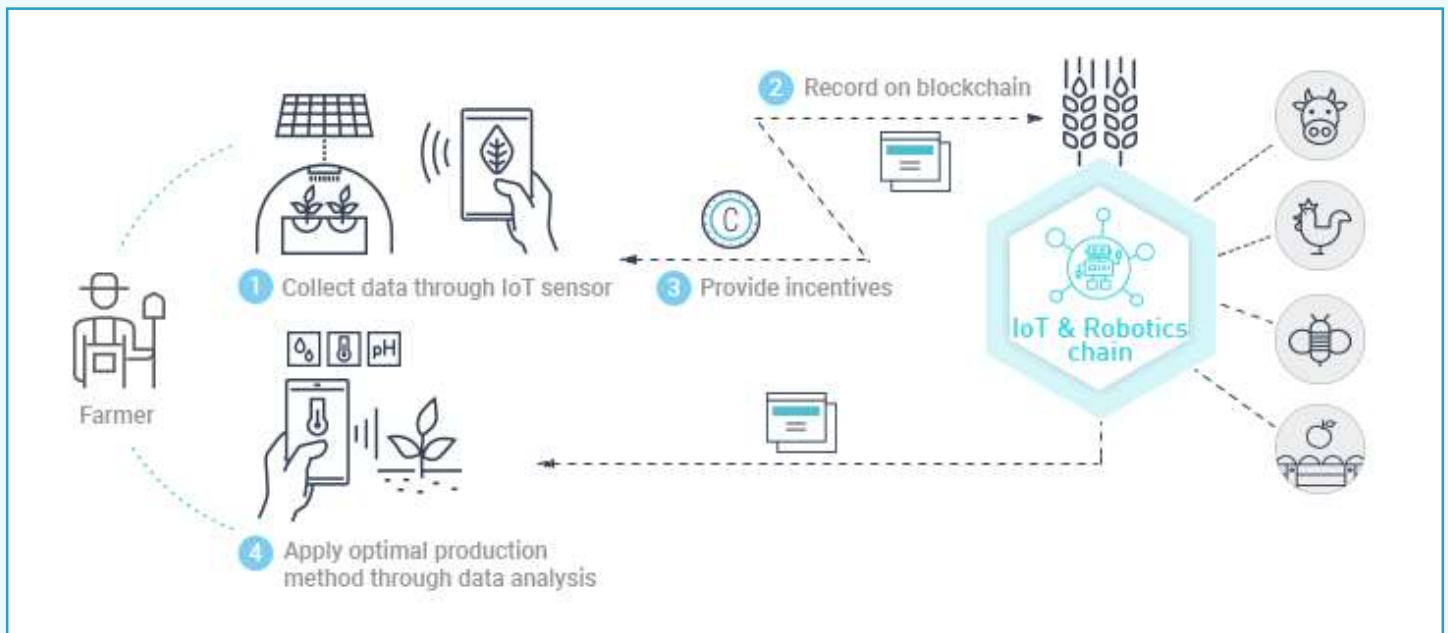


Figure 16. Example of using IoT devices in farming through IoT & Robotics chain platform

5. Service model

5-3. Case of utilizing service by converging data between Domain Chains

[Mobility chain + media chain + token]

- Data from Mobility chain: driving history, driving habits, maintenance history, GPS etc.
- Data from media chain: billboard location, advertisement media details etc.
- New additional services:
 - 1) Provides a service that sends out advertisements to outdoor billboards that is located on a point where many vehicles pass (the driving history and GPS is gathered).
 - 2) Provides a service that sends out related advertisements such as vehicle products by utilizing data of vehicle driving history and vehicle status.
- Token: provides convenient and easy payment for advertisement expenses and vehicle products

5-4. Case of solving current problems by converging data between Domain Chains

[Agri chain + retail chain + logistics chain]

- Problem: A service for franchise companies for effective store management, reducing logistic costs, and stable supply of resources.
- Data from agri chain: status of crops and livestock, environment data (temperature, humidity, growth status, soil nutrients, weather, feed status etc.) collected through IoT sensors.
- Data from retail chain: data for franchise management (sales, order history, stock status, delivery etc.)
- Data from logistics chain: vehicle stock status, driving route, driver details, driving history etc.

With the convergence of data through OASISBloc, it is possible to provide optimal services that allows securing reliability of safe management system for products, cutting costs by selecting the optimal transportation route and delivery reservations, and stability of product supply and demand.

6

OASISBloc token

6.1 Features

6.2 Token issuance

6.3 Token sales

6.4 Token allocation

6.5 Fund allocation



6. OASISBloc token

6-1. Features

The table below shows the main features of the OASISBloc blockchain.

	OASISBloc blockchain	Bitcoin blockchain	Ethereum blockchain
Main features	Financial transactions Smart contract Public/private blockchain	Financial transactions	Smart contract
Consensus algorithm	ePoA (equitable Proof of Authority)	Proof of Work	Current: Proof of Work Future: CASPER PoS
Block generator	39 nodes	×	×
Transaction speed	4,000 tx/sec	7 tx/sec	25 tx/sec
Block time	0.5 seconds	10 minutes	12 seconds
Block size	Dynamic	1 MB	Dynamic
Topology	Dynamic	Public blockchain	Public blockchain

Table 2. Main features of the OASISBloc blockchain

6-2. Token issuance

The total issuance amount of OSB tokens is 500,000,000 OSB tokens. 80% of the total issuance amount (that is 400,000,000 OSB tokens) will be issued along with the Genesis Block, and the remaining 20% (100,000,000 OSB tokens) will be issued as block reward according to the reward rule.

6-3. Token sales

Foundation Oasis will issue OSB tokens and conduct token sales through a presale and an IEO (Initial Exchange Offering) to organize and improve the OASISBloc ecosystem.

Participants may purchase OSB tokens during the presale by making payment in Bitcoin (BTC) or Ethereum (ETH). The relevant exchange rate can be checked on the OASISBloc official website (www.oasisbloc.io).

Participants may purchase OSB tokens during the IEO through participating exchanges. The details of the participating exchanges will be announced on the official website.

6. OASISBloc token

6-4. Token allocation

OSB tokens that are issued as first block reward, will be used to organize, develop, and improve the OASISBloc platform. Subject to adjustments by Foundation Oasis in its sole and absolute discretion, such OSB tokens will be allocated as follows: 46.6% to the participants of the token sales, 10% to Domain Chain partners and for establishing the ecosystem, 2.1% for OIC operation and management, 2% for marketing, 2% to advisors, 8% to the founder and the project team of OASISBloc, 3.5% for platform testing and development, 0.1% for infra operation, 0.1% for business development, and the remaining 25.6% as company reserve for maintaining and enhancing the value of the ecosystem. However, the percentage for 'Reserve' may change depending on the result of the OASISBloc token sales.

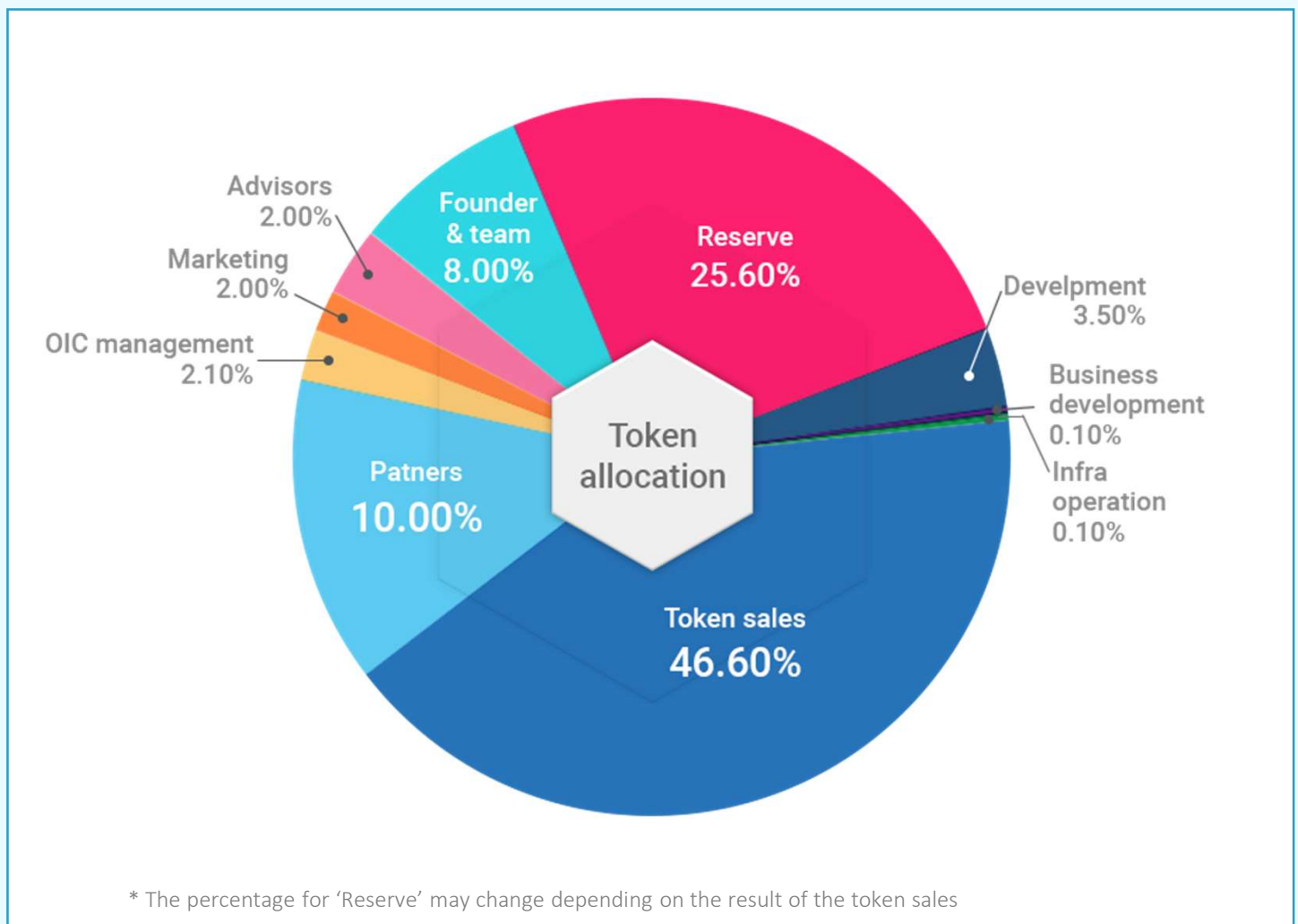


Figure 18. Token allocation

6. OASISBloc token

6-5. Fund allocation

Funds that are raised through the token sales will be used to structure and develop the OASISBloc platform. Subject to adjustment by Foundation Oasis in its sole and absolute discretion, such funds will be allocated as follows: 4.5% to support partners, 2.5% to establish the ecosystem and develop business, 6.5% to manage and operate OIC, 44.5% for platform development, 35% for marketing and promoting OASISBloc, 3.5% to operate system and infrastructure, 0.9% to legal advisors, and the remaining 2.6% as company reserve for security, legal, financial activities and activities for increasing value.

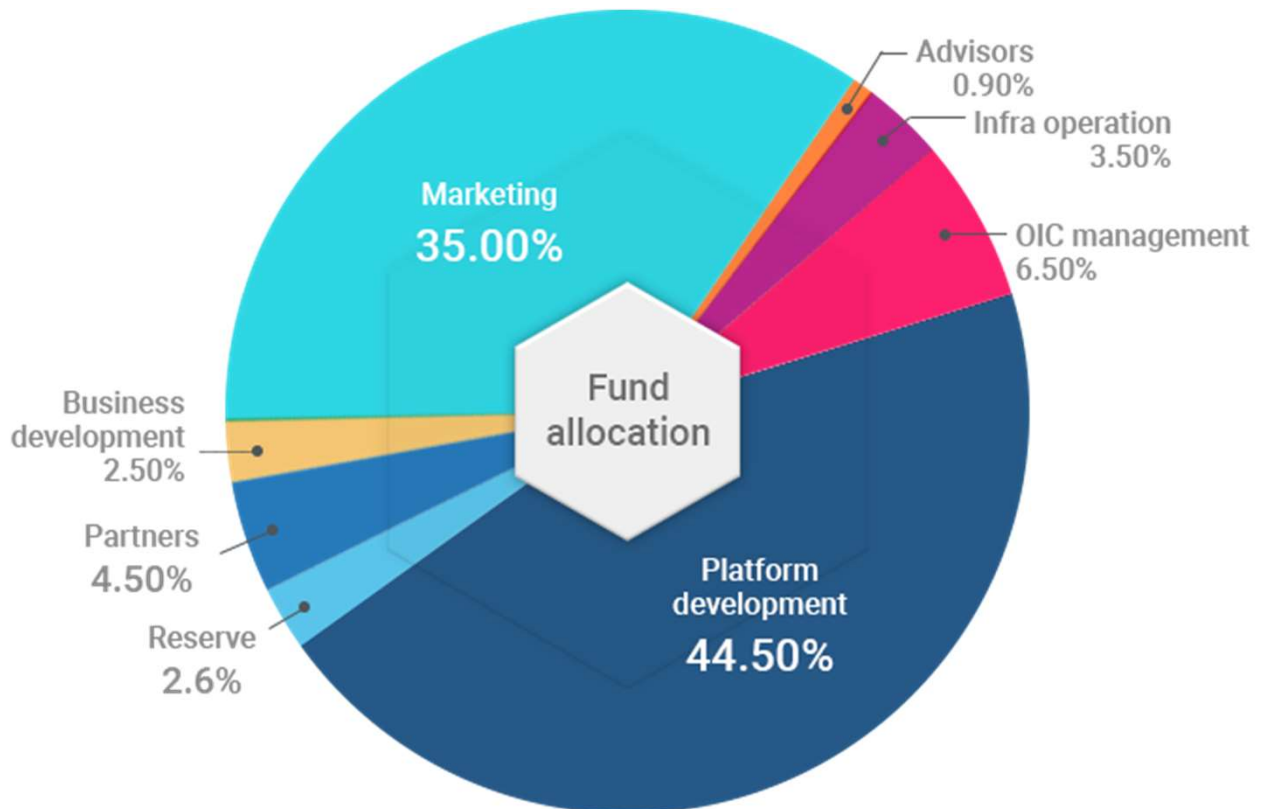


Figure 19. Fund allocation

7

Ecosystem & roadmap

7.1 Establishing token ecosystem

7.2 OASISBloc roadmap



7. Ecosystem & roadmap

7-2. OASISBloc roadmap

5) Phase 5. Improvement of Oasis Chain

- Data security/protection (improvement)
- Various libraries and tools
- SDK provided

6) Phase 6. Advanced developments

- Support data analysis
- Testing and stabilization
- Data exchange connection

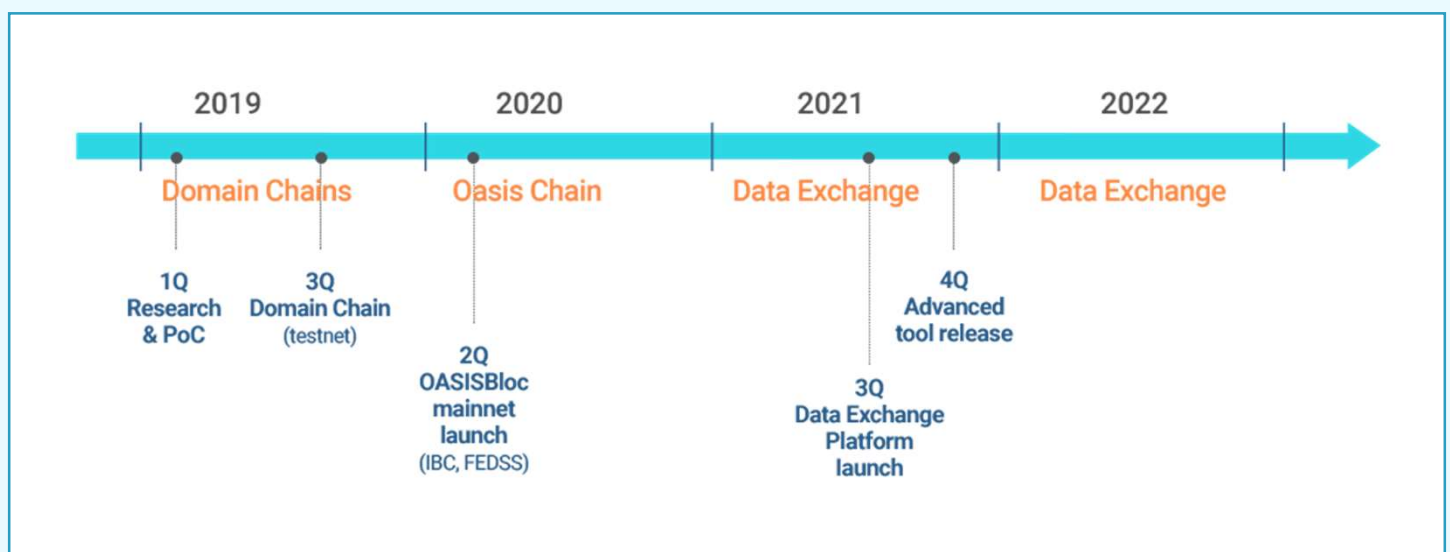


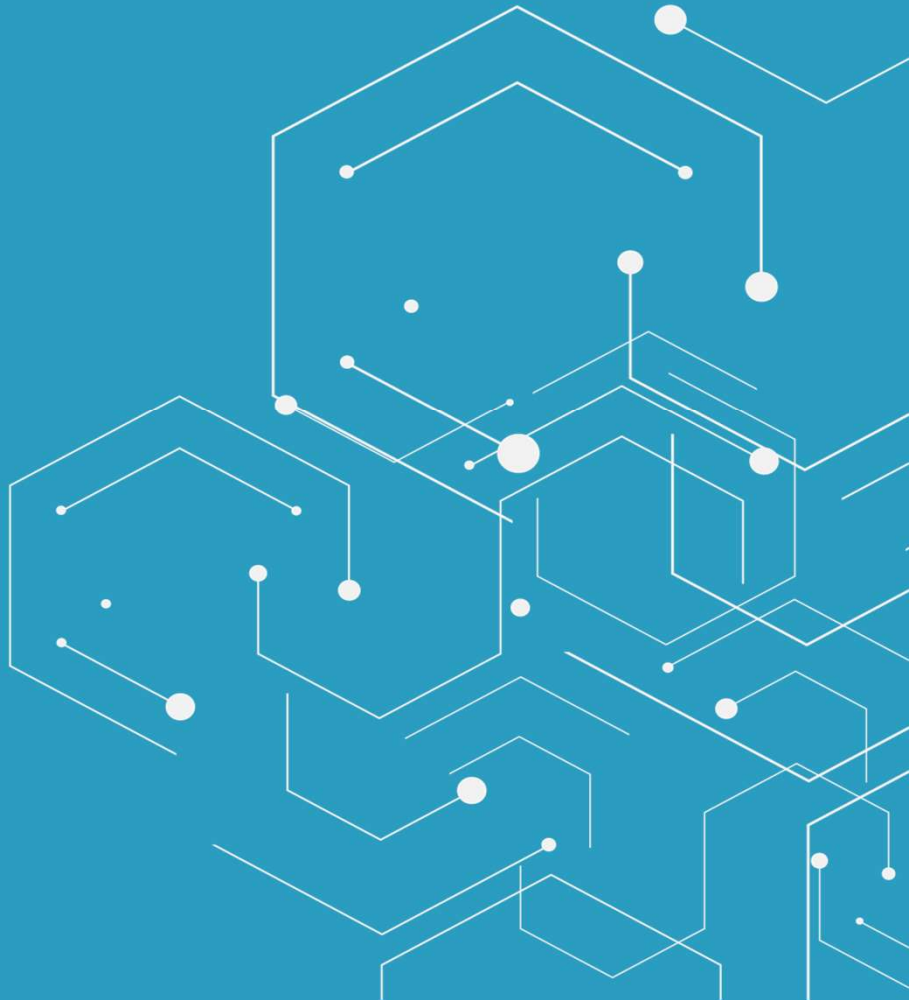
Figure 20. Roadmap

8

Plans for ecosystem development

8.1 Marketing plan

8.2 Partnership plan



8. Plans for ecosystem development

8-1. Marketing plan

1) Objective & goal

Raise platform value through recruiting excellent Domain Chains
 Improve brand awareness of OASISBloc
 Improve accessibility to blockchain for SME that requires blockchain

2) Strategy

Enhance USP as a blockchain platform for data trading and management
 Key selling-line: "The Oracle of Blockchain"
 Statement: OASISBloc is the 1st blockchainized data platform for trading useful data and value between real businesses.

3) Marketing schedule

The token sales are divided into two stages (presale and IEO)
 Optimized marketing plans according to stages (detailed schedule TBD)
 On-going marketing for listing and valuation

4) Key activities

Promotional activities through participating in major blockchain events and hosting regional meet-ups
 Improve quality and global reputation by selecting blockchain, AI, and big data related advisors
 Implement IMC through roadshow/meet-up/media/SNS channels
 Continuous PR of OASISBloc through global PR agencies to enhance value

5) Marketing Materials

Development of marketing materials for target group and IMC

8-2. Partnership plan

OASISBloc has a feature that creates synergy for data by effectively matching the ecosystem and partners in the platform based on healthy alliances. OASISBloc is planning to establish partnerships that will expand the ecosystem by providing various incentives for all partners on the platform.

The OASISBloc ecosystem consists of three main components.

- ① Partner companies joining as Domain Chains
- ② Companies that provide infrastructure technology (AI, big data etc.) required for the platform
- ③ Other blockchain core technology companies/teams for interchain expansion

1) Domain Chain partner

The Domain Chain partnership is categorized into three types.

- ① Type A: Propose business expansion model for companies that have good technology but are still in their growth stage.
- ② Type B: Provide solutions by understanding the needs of companies that have already accumulated a large amount of data in order to increase the number of Domain Chains and to activate high-quality data trading.
- ③ Type C: Expand partnership with multinational companies to maximize synergy through data transactions.

8. Plans for ecosystem development

8-2. Partnership plan

The procedure for Domain Chain registration and evaluation is as below.

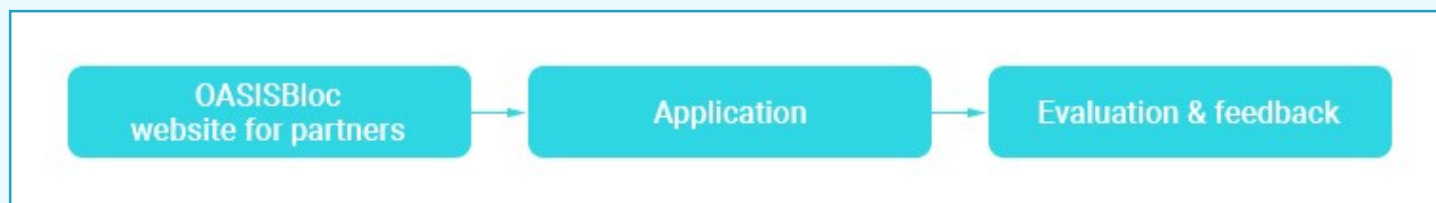


Figure 21. Process for Domain Chain registration and evaluation

When applying for Domain Chain registration, companies are required to submit the basic information of the representative, company introduction, project description etc. The procedure for evaluation is as follows.

- ① Evaluation committee (including OIC members) will be formed
- ② Analyze key competency of the applicant partner
 - Technology evaluation
 - Analysis of current technology, project, and competitiveness
 - Analysis of probable contribution to platform improvement based on project contents
 - Analysis of economic effects and expansion of related market size
- ③ Project evaluation
 - Evaluation of project validity
 - Evaluation of budget
 - Analysis of data applicability and connections with other Domain Chains
 - Possibility of connecting with customers in demand for platform
- ④ Disclosure of evaluation result and voting
 - Disclosure of key competence and project evaluation result
 - Create smart contract and conduct a vote with BGs

The scope of service for Domain Chains will be decided according the evaluation results. The benefits through the platform are as below.

- ① Education services for platform
- ② Support registration and distribution of dApp based on platform store
- ③ Promotional activities through project registration
- ④ Support on marketing tools for a certain period (platform, social network, email, newsletter)
- ⑤ Provide target customer DB and support utilization
- ⑥ Introduce collaborative companies and partners
- ⑦ Provide communication channels with customers through OASISBloc platform community
- ⑧ Provide contact points with customers through subscription system
- ⑨ Diversification of support range by grade
 - Grade: Register > Standard > Advanced > Premier
 - Grade criteria
 - The initial grade will be determined by OIC evaluation
 - Periodic evaluation according to the status of sales and services after the project is launched

8. Plans for ecosystem development

8-2. Partnership plan

- Detailed supports for each grade
 - Able to use education and marketing program, PR, and data storage
 - Able to use management service program
 - Supports on hosting seminars for platform customers and able to use recommended services
 - Able to access specialized services such as case studies, consulting etc. based on data

Every Domain Chain partners have the following responsibilities for the maturity and development of the OASISBloc platform ecosystem.

- ① Support, guidance, and education for healthy operation of the platform
- ② Discuss and implement the proposal for improvement and examine the status of the project proposed by OIC
- ③ Support for discovery of new Domain Chain through partial return of profit based on platform

2) Platform partner

Platform partners are part of the OASISBloc platform which is an internal partner that works directly within the platform. They do not go through the Domain Chain registration process. Platform partners effectively collect and analyze the data generated from each Domain Chain to create added value and match the optimized data to each Domain Chain.

Platform partners are categorized as follows.

- ① Big data partner: creates added value by analyzing the data from each Domain Chain
- ② AI partner: maps optimized data to each Domain Chain based on the value added data through big data analysis
- ③ Auto contract partner: technically supports automatic exchange value of data in Domain Chain through auto contract when data is traded in the OASISBloc platform
- ④ IoT partner: technically supports for transmitting and processing IoT data generated and accumulated from IoT devices in Domain Chains
- ⑤ Cloud partner: infrastructure for Oasis Chain and Domain Chain node operation

3) Blockchain tech partner

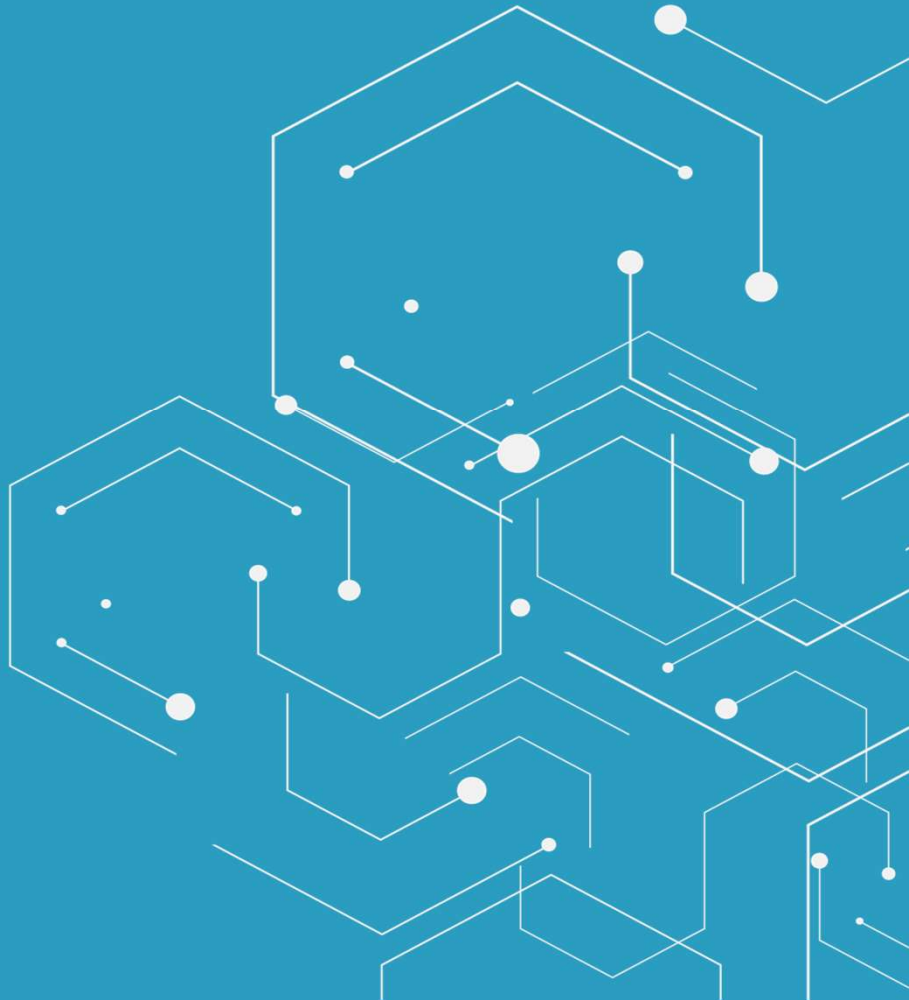
Blockchain tech partner is a technology partner for the second development stage to implement the interchain when the OASISBloc platform and its partners have reached a stable growth stage. Blockchain tech partner is other blockchain core technology companies/teams and they will collaborate with OASISBloc's blockchain core team to increase platform versatility.



Team

9.1 Our team

9.2 Our advisors



9. Team

9-1. Meet our team



William Chun

Founder & CEO

Korea Fintech Platform
Forum / President



Liam Choi

Advisor



Felix Choi

Full Stack Development
Director

Platform Team



Dae Hee Jang

Full Stack Development
Developer

Platform Team



Eun Ji Joo

Full Stack Development
Developer

Platform Team



Dylan Wonseok Choi

Core Development
Director

Blockchain Lab



Young Seol Kim

Core Developer

Blockchain Lab

9. Team

9-1. Meet our team



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Strategy Planning Team



Ji Hyun Choi
Strategy Manager
Strategy Planning Team



Dave Shin
Communication
Manager
Strategy Planning Team



Sung Yong Kim
Strategy Planner
Strategy Planning Team



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Jason Cho
Marketing Director
Marketing Team



Eun Taek Song
Marketing Manager
Marketing Team

9. Team

9-2. Our advisors



Eddy Travia

Chief Advisor

CEO at Coinsilium



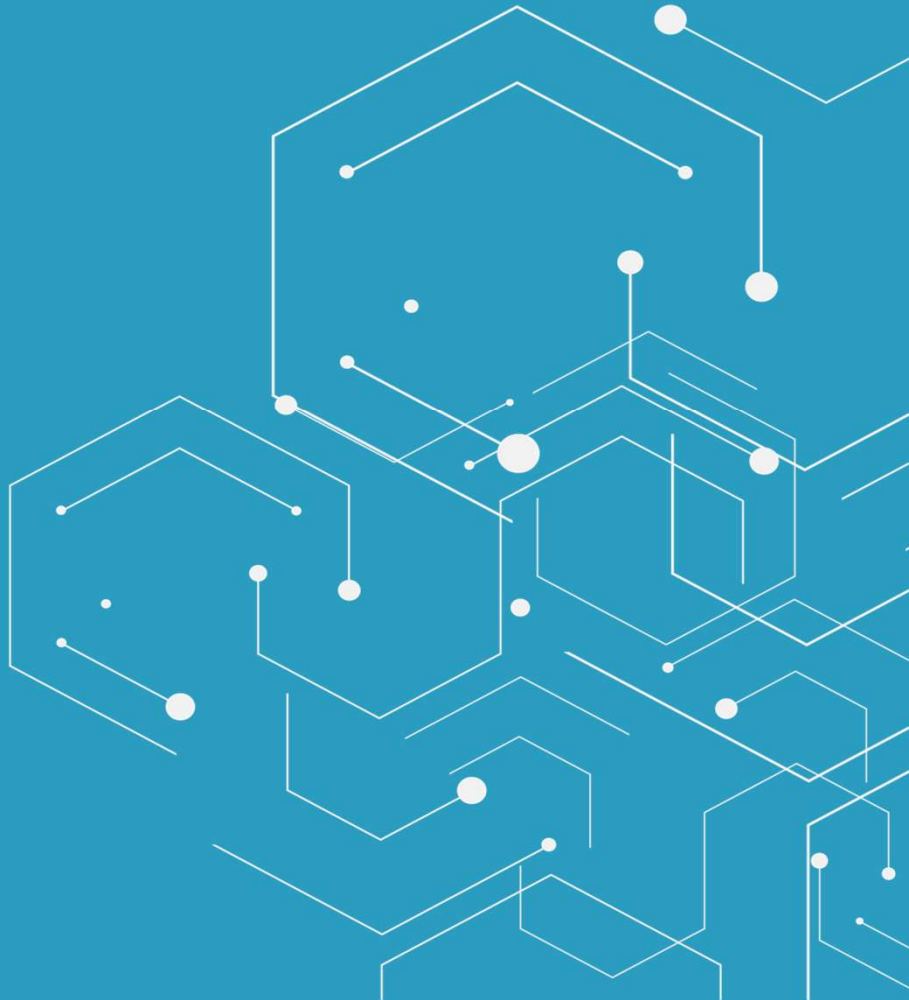
Dr. Thomas C. Bachtold

Legal Advisor

Attorney-at-Law

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10. Legal disclaimer

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