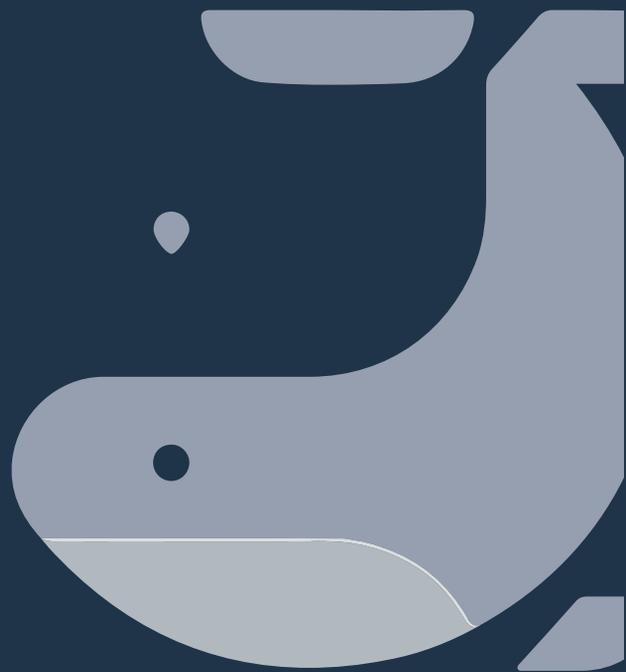# Customer-centered Medical Information Integration Platform (MIIP)

- Next-generation network integration platform that implements network separation effect on top of the TCP-IP
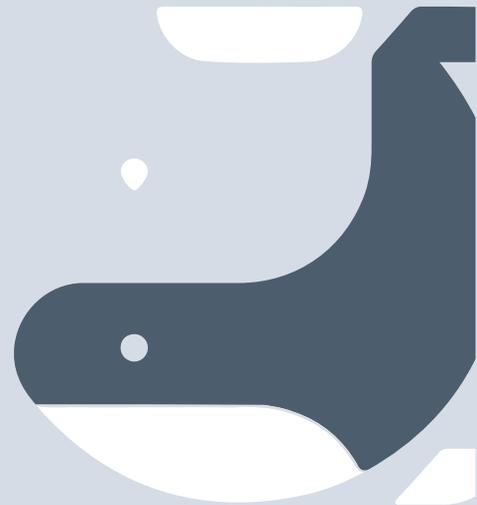- Completely digital security-driven integrated privacy management system

INSSET

Contents

1. Project Background

- Biotechnology
- Prevention of epidemics
- Pharmaceuticals
- Industrial Statistics
- Problem Recognition
- Personal Information Leakage

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1 Project Background

Biotechnology

Blockchain technology is able to run an advanced genome business that is directly requested by existing consumers. The software companies for personal genomics analysis make a profit by providing analysis' results to individuals, so that genomic information is sold to pharmaceutical and biotechnology companies for research and development(Medicate News, 2018).

Prevention of epidemics

The World Health Organization(WHO) has been working with various international organizations and companies since 2011, including global health care and TI experts, to establish AeHIN(Asia eHealth Information Network), and to develop digital health care policies and systems in Asian countries.

At AeHIN 7™Annual Conference for Response to COVID-19, the blockchain-based mobile app "Pass&Go" announced a way to solve the realization problem between decentralization and performance.

It is socially evaluated as an innovative application since It can be a key to personal information security, and isolate confirmed cases so that will completely break away from the existing infectious disease prevention system such as social distancing, community blockade, and promote a major shift in the public health crisis response paradigm.

Pharmaceuticals

One of the blockchain technologies, the inability to modify and erase information, makes each process of production and manufacturing easier, and gives you the authority to track each manufacturing step.

Companies spend a lot of effort and money to check the information of the drugs on the market and sell them on the market, but about $300 billion is wasted every year, and side effects occur to patients who take the drugs. Therefore, we are developing a patient-centered pharmaceutical development model by introducing blockchain technology to overcome these errors and developing an accurate future-oriented pharmaceutical method.

Industrial Statistics

Personalized medical data is collected to enhance security and effective for individual patients

Build a ubiquitous security infrastructure with blockchain technology to exchange medical data. It promotes collaboration among industry participants and can create innovations in medical research through developers and patients.

Chart 1

Global Profit Prospects for Industry Using Blockchain

(Unit : Million $)

Medical IoT The market size is expected

To reach $1.2 billion and expand

to $4.5 billion by 2025, a 246% growth rate.

| 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2025 |

Chart 2

Total Transaction Value in "Digital Payments" Sector

(Unit : Million $)

Year	Online B2C Commerce	Mobile Wallet POS Payments	Online P2P Money Transfers
2014	437,629		2,695
2015	483,759		10,357
2016	526,452		29,935
2017	573,924		62,587
2018	605,332	112,084	30,408
2019	644,839	180,118	35,949
2020	689,381	266,351	40,612

■ Online B2C Commerce ■ Mobile Wallet POS Payments ■ Online P2P Money Transfers

Problem Recognition

Blockchain technology is a technology that delivers information based on a distributed peer network and records and manages transaction information in common among members.

The structure of the past is a 'central system' structure that can control the entire system in the form of collecting data from a trusted third party called 'central' and delivering transaction information.

Transactions between individuals and third parties are stored in the central system data. The data movement also provides the advantage of being able to modify the data that occurs, but in the process, questions arise about the reliability of the central institution and incur data exchange costs.

A typical example is the existing Centralized Information System.
This is a way of sending data to a central, medium-sized computer for business. That is, a single computer is tasked with processing data for all departments within a company.

In summary, as fraudulent and speculative coin services went bankrupt and legal issues such as embezzlement occurred in the current blockchain industry.

It is due to only a few of large companies survived and deteriorated. Therefore, it should be applied after determining the clear technical value and usefulness.

So, after the passage of the Data 3 Act, a new economy must be created so that 'the Internet of information' can be fulfilled as 'the Internet of Value' is realized.

In particular, it is suitable for alias usage, using and managing medical information based on the four main advantages of blockchain: decentralization, security, transparency, and immutability.

The extremely high security guaranteed by the blockchain structure makes it anti-hacking which is proper to manage sensitive medical information.

Personal information leakage

The development of IT technology is also increasing the risk of personal information leakage.

First, the Korean Center for Disease Control and Prevention (KCDC) announced that it will permanently preserve the personal information of millions of people related to COVID-19. Even the position is to destroy all of them when the epidemiological investigation is completed, this may lead to the risk of leaking personal information of millions of people to the outside unless the COVID- 19 is completely ended.

Looking at overseas cases, it is known that even 'Facebook' has exposed personal information of up to 600 million people to internal employees without basic encryption of information, but no follow-up measures have been proceed.

In other words, the standards for personal data protection are absurdly insufficient compared to SNS users to prevent corporate abuse of personal information.
Thus, the government's strong regulations on legal system and Corporate responsibility should come first.

Furthermore, according to the Data Breach Cost Report (2020) released by IBM, the most damaged field from data breaches worldwide was the medical industry during the 10th consecutive year. It was confirmed that data breach costs amounted to 8.5 billion won, an increase of 10.5% over the previous year.

The above cases can be prevented and solved in advance by using blockchain technology.

Cost of Industry-specific Data Breach

Chart 1   (Unit : Million $)
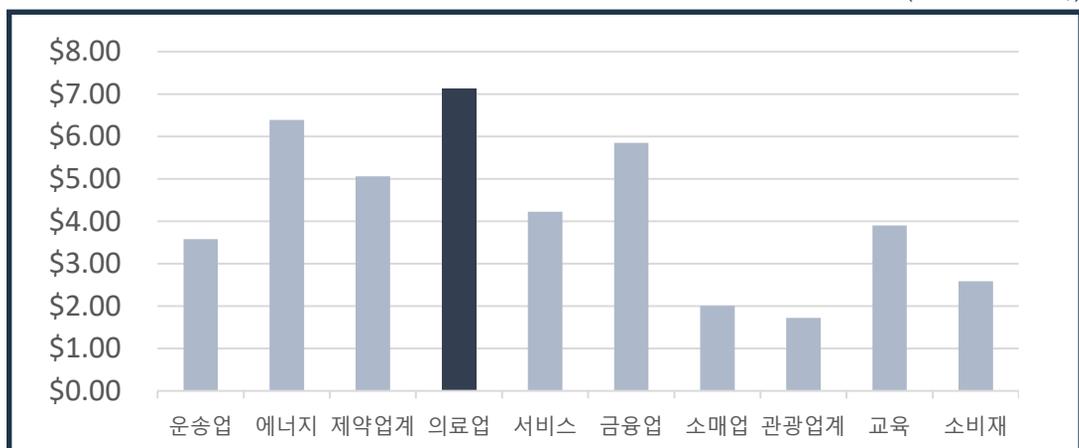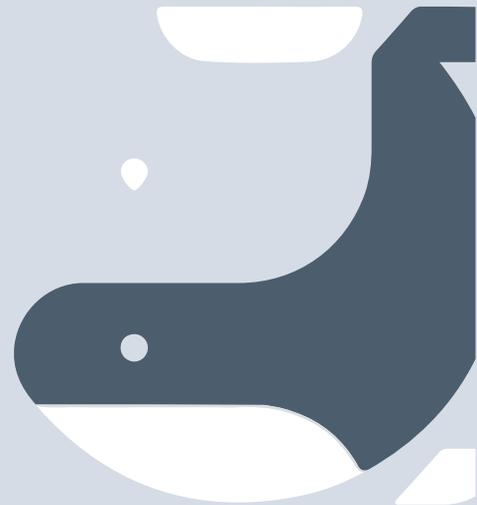

Transport
treatmen
Trade/Ed

2. Background and Necessity

■ The Real-Time convergence of the IT industry and the medical industry

■ Domestic and foreign trends in the use of blockchain technology in the medical field

■ Challenges and Solutions

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2 Background and Necessity

The Real-Time convergence of the IT industry and the medical industry

Information and Communication Technology (ICT) is used and combined in the traditional hospital-centered medical sector to connect insurance companies, medical institutions, and patients.

It is to provide more diverse types of services to develop into the next step of smart healthcare.

Additionally, the medical service paradigm is changing from treatment-centered to prevention-centered due to the increase in medical costs due to the aging problem.

Among intelligent medical solutions, blockchain provides health data by reducing the burden and cost of data adjustment, moreover, it increases accuracy and efficiency when patient data is changed in the secured healthcare system. It improves efficiency and control over patient's personal health data, as well as increase price transparency for pharmaceuticals and healthcare services.

By designating participants on the blockchain, it is possible to create a medical IT ecosystem connected with trusted participants to manage medical data and promote consumer value-based treatment.

As mentioned above, blockchainization is an irresistible megatrend.

Thus, 'INSSET', which intends to build an integrated medical information platform, uses blockchain to solve problems and abuse cases caused by current personal information being managed and collected in a centralized system. Moreover, for smart healthcare in line with global trends, IoT enables providers such as big data, machine learning, and cloud computing to improve resource utilization, create new revenue and reduce costs.

Medical information is the most sensitive and most secure field, and this is to prevent the centralized system from becoming a profit-making tool, such as the terms and conditions that are trusted by some vendors or institutions, and are required for service use.

Domestic and international trends in the use of blockchain technology in the medical field

Table 1

Company name	Main contents
Google	- Deep mind Health, Hospital, England National Hospital Service (NHS - Plan to track patient data in real time by linking (development of medical search engine) - Signed a partnership with Ascension, a US medical service provider, to raise concerns about information leakage, and plan a 'distributed digital record system using block chain technology(2020. 07)
IBM	- To improve the way sensitive healthcare data is shared. (Aetna), (Anthem) etc, - Collaboration with related companies, information fragmentation with blockchain technology, duplication issues and administrative costs, etc. - Solution to facilitate payment processing for patients and medical bills and payers(2019. 01) - When public health data for entering a company or boarding an airplane / entering the stadium, Plan to launch 'Digital Health Pass', a health verification system using block chain technology that can provide only health information necessary for personal information protection (2020. 10) - EMR(Electronic Medical Record), Patient data research including clinical trials, genomic data, and health data from mobile devices/wearables/Internet of Things(IOT)
MIT Media Lab	- A decentralized record and management system that shares information about patient medication through a blockchain ledger, MedRec Proposal-Ethereum - Based on the blockchain platform, only authorized medical personnel and patients can access information
Intel	- A sequence mining platform (SMP) using block chain technology patent registration with the US Patent and Trademark Office(USPTO). A platform to identify and store nucleobase sequences in DNA and RNA
Medibloc	- It is a blockchain-based technology that enables the safe integration and management of medical information scattered in various institutions and medical information produced through multiple devices, including smartphones. Medical information open platform
Kyobo Life Insurance Co.	- Launched 'Smart Insurance Automated Claim Service' in which insurance companies automatically claim and pay insurance money even if customers do not claim insurance after hospital treatment - With the consent of the customer, the insurance contract information of customers who have subscribed to all insurance companies is stored in the insurance analysis system Launched 'Smart Guarantee Analysis Service' that provides customized insurance analysis consulting after automatic input - Can save your identification information in the My-ID app and use it easily when requesting authentication information from other organizations (2019. 06)

Challenges and Solutions

As the world faces the COVID-19 situation, advanced quarantine combined with the 4th industrial revolution technology is emerging as a key point. Then, the voices of the industry are getting louder on the structural issue of improving the quality of data based on data on the costing of medical services, including medical expenses, as well as the appropriate input and distribution of medical resources, which emphasizes "value-based"

The interests of all fields of medical care and various legal and institutional issues that need to be combined with new changes due to independent technology in the rapidly evolving trend toward a patient-centered medical system are tasks that need to be resolved as soon as possible.

**Discover areas where blockchain technology can be applied through the MIIP platform,
Each application model and present the expected effect**

Table 1

Medical industry challenges	
1	Existence of asymmetry of medical information between hospitals and patients
2	insurance claim · Inefficiency of the screening process and insufficient monitoring system
3	Insufficient monitoring system for drug distribution process
4	Personal Health Information Security Risks collected from IoMT

Table 2

Direction of Innovation in the Blockchain Medical Industry	
1	Apply blockchain technology when it needs to manage a patient's personal health record (PHR), Resolve asymmetry of medical information by establishing a patient-centered, transparent and secure medical information integration platform
2	-Establishment of an automated insurance claim review system based on blockchain. -Possible ethical issues that may arise can be prevented in advance. -Reconsideration of the effectiveness of the claim and review process, overcharge, underpayment, etc.
3	By implementing the entire process of drug distribution collected over IoT on a blockchain network, Guaranteeing the originality of medicines and preventing forgery and falsification
4	Storing in the blockchain, Protect your data from malicious hacking

As shown in the table above, the data owner which is the medical subject can directly manage and control information by solving the current challenges of the medical industry applied within the blockchain-based medical information integration platform (MIIP).

Due to the immutability of blockchain, information usage history cannot be changed.

Also, information ownership will be granted to all individuals, allowing individuals other than medical institutions and businesses to manage information.

In other words, this platform is designed to solve the information asymmetry problem of existing centralized systems based on innovation in medical services and high security, reliability, transparency, interoperability, and accessibility.

If data is used for public interest in the medical field and transparent sharing between institutions and the government is achieved through medical information integration platform (MIIP),

there are no doubts that it will not only prevent data abuse, but will also contribute to preemptive defense and quarantine in the future, even in another pandemic such as COVID-19.

3. INSSET(IST) Description

■ Technical Features: IPFS(Inter Planetary File System)

■ Ecosystems

■ Network structure
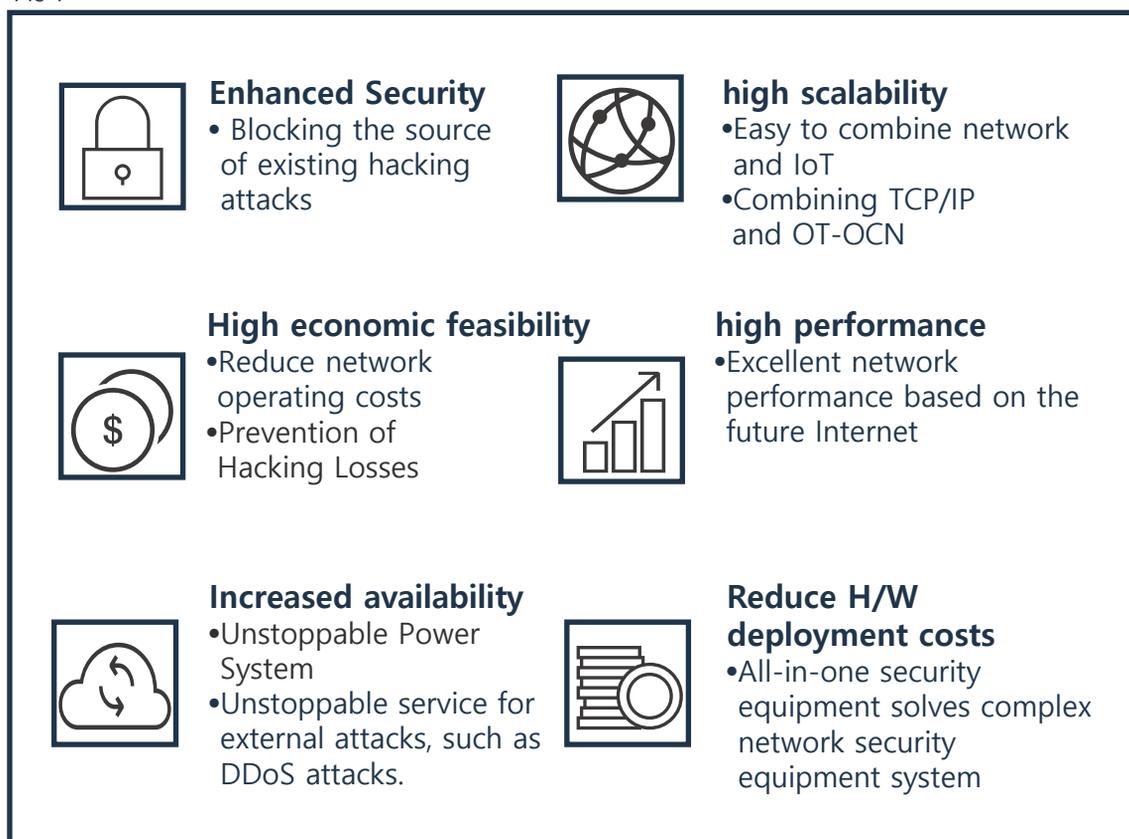
　-P2P System

　-Trading System
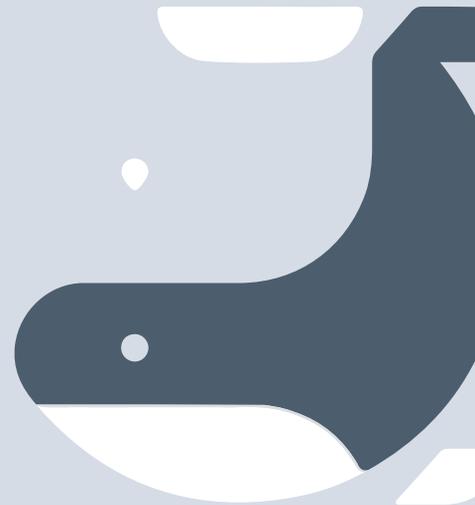
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The Network Protocol Platform

OT-OCN (Next Generation Network)
(**O**peration **T**echnology and **O**peration **C**entric **N**etwork)

Applying next-generation network protocol technology on top of TCP/IPTCP/IP - network separation effect

Pic 1

Enhanced Security
• Blocking the source of existing hacking attacks

high scalability
•Easy to combine network and IoT
•Combining TCP/IP and OT-OCN

High economic feasibility
•Reduce network operating costs
•Prevention of Hacking Losses

high performance
•Excellent network performance based on the future Internet

Increased availability
•Unstoppable Power System
•Unstoppable service for external attacks, such as DDoS attacks.

Reduce H/W deployment costs
•All-in-one security equipment solves complex network security equipment system

Systematic monitoring, authentication system that cannot be forged or tampered with, decentralized medical record management,
Create a service-based, individual-centered information sharing ecosystem such as 'presentation of customs and legal rules, etc.'
With a plan to implement a platform with perfect security, it has high scalability beyond the medical field to beauty, health, tourism, bio and so on.

Smart city-friendly technology, low cost, high efficiency, perfect security

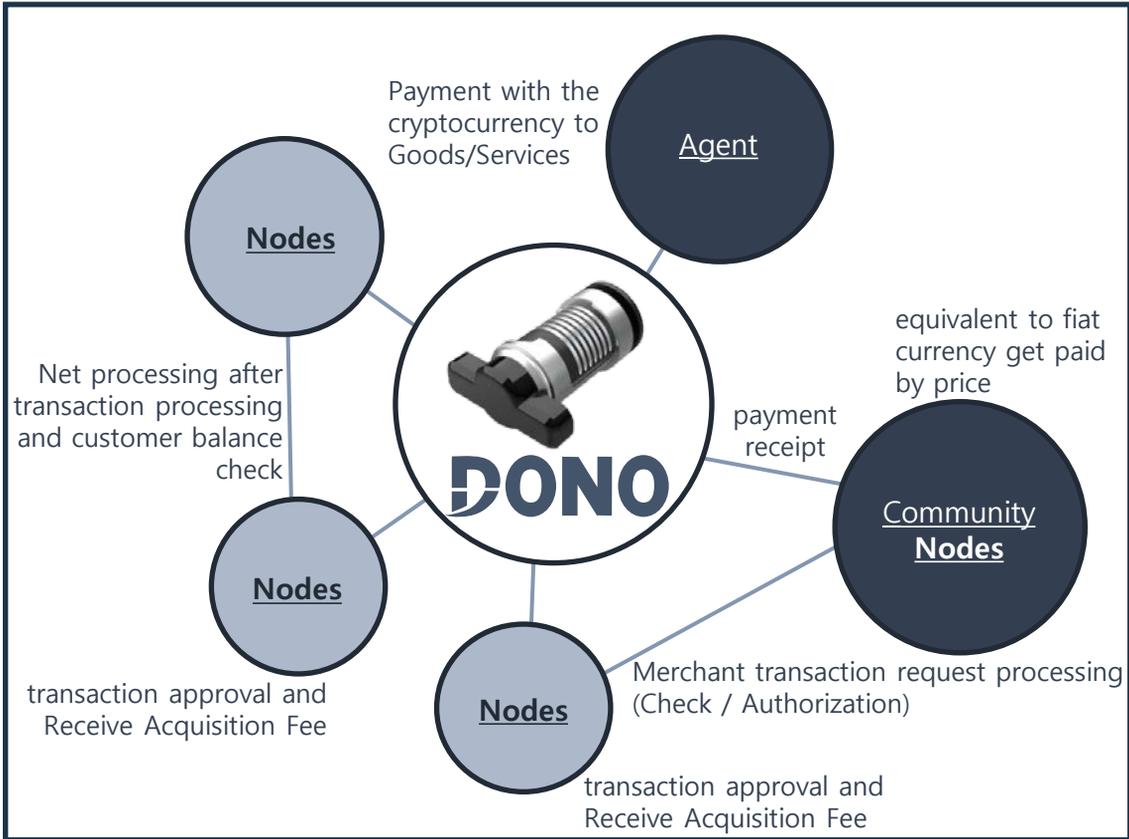# Customer-oriented medical information integration platform

Pic 1
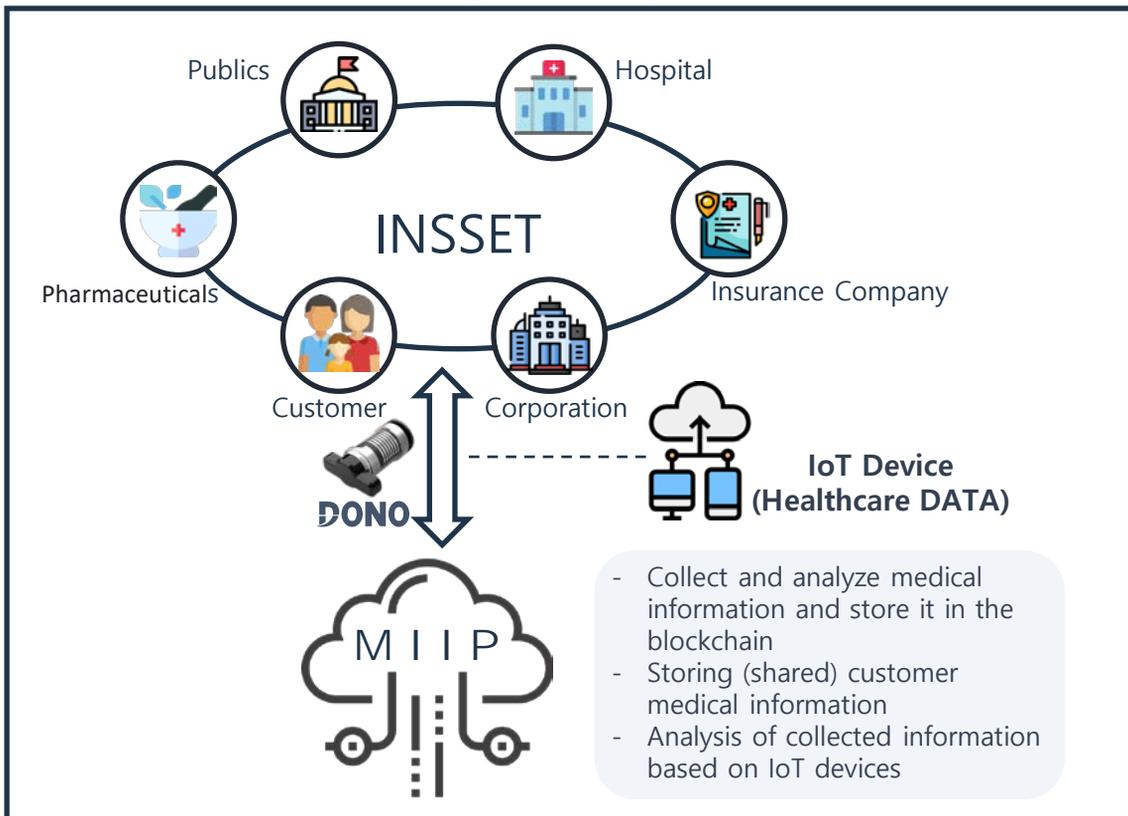
- **Produce**: Medical information generated during patient treatment is electronically documented at the hospital and shared with blockchain participants

- **Store** : Distributed storage and storage of blockchain-based electronic medical records generated through patient care, and separate storage of sensitive data including personal information

- **Search** : Inquire about medical history or prescription contents at pharmacies, insurance companies, and public institutions (Health Insurance Corporation, etc.), Control sensitive data and strengthen personal information protection by granting data access rights between participants by role using inquiry and smart contracts for insurance payment, etc.

- **Uses** : Additional services such as drug development based on de-identified electronic medical records and customer status monitoring based on healthcare devices

Network Structure

Node Structure

Pic 1

Payment with the cryptocurrency to Goods/Services

Agent

Nodes

equivalent to fiat currency get paid by price

Net processing after transaction processing and customer balance check

payment receipt

DONO

Community Nodes

Nodes

transaction approval and Receive Acquisition Fee

Merchant transaction request processing (Check / Authorization)

Nodes

transaction approval and Receive Acquisition Fee

1. Use Case A – P2P System

Pic 2

4. Transaction

Partners

3. Move to payment page

Diagnosis

Beauty

1. Search

5. Payment finished, Transfer the Log

Health

Marketing

2. Results
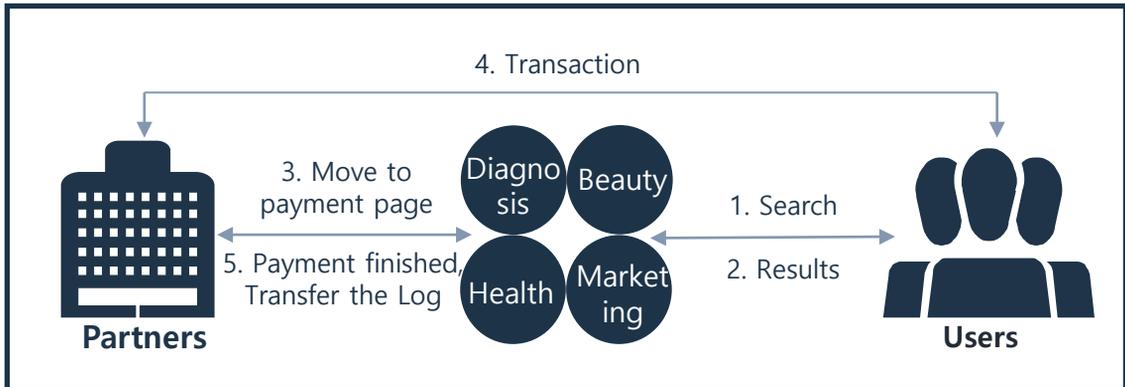
Users

2. Use Case B – Trading System

Issuer

Issuance.
- Attestation
- ZK Credentials
- Verifiable claims

DID Document

**User
SSI-DIDs**

Wallet App

Access to services including:
-Attestations, claims
-Zero-knowledge proofs

**Service Provider
(Verifier)**

-Verify claims
-deny/grant access

-Identity Hashes
-Certificate Hashes
-Verificable claims

Register SSI Identity

-Check revocations of Attestations
-Check Signatures
-Look-Up Identities

Blockchain

Since the medical information platform will provide more convenient services than the existing system that differentiated from the existing centralized institutions and systems, users will not need to learn new things and will get a better experience.

The MIIP platform will support the futures option market and margin trading binary options trading, and it will become a decentralized bank and exchange through its own developed blockchain, allowing anyone to freely deposit, withdraw and exchange money, and has the scalability to be used such as simple payment.

4. Issuance and distribution
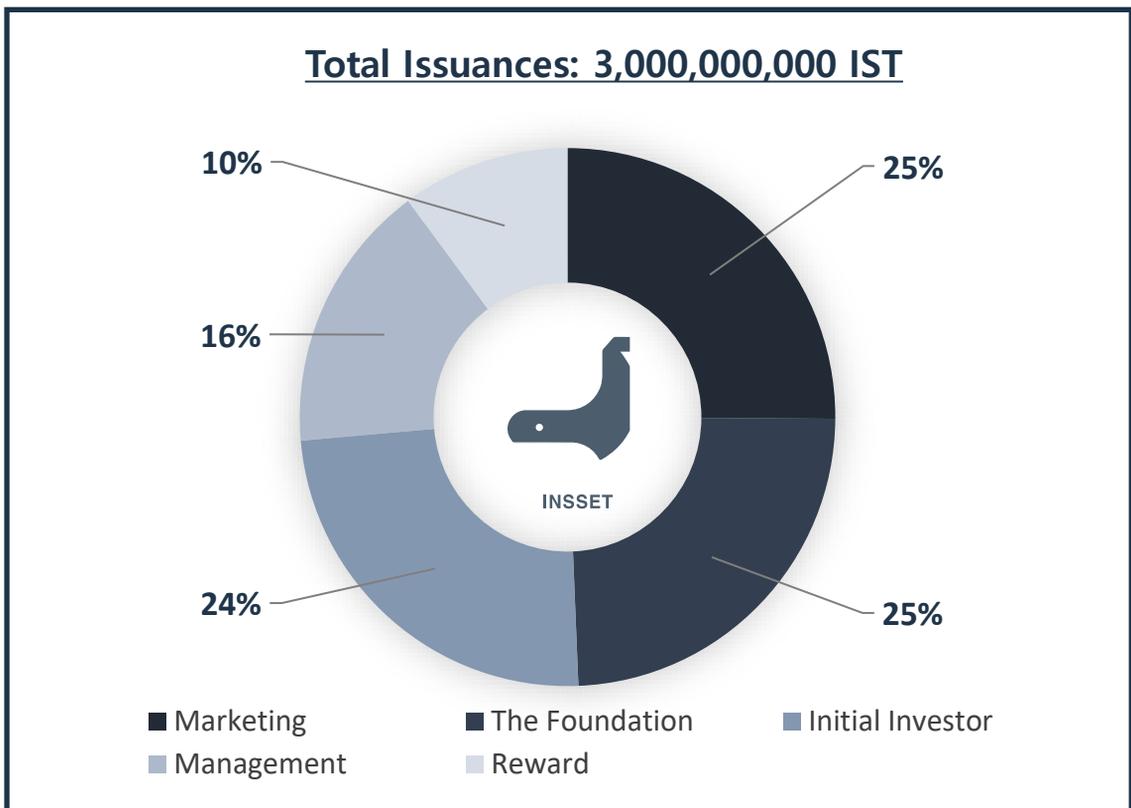
INSSET

4 Issuance and distribution

The below table shows the amount of INSSET coins to be distributed for 3 years after the initial listing.

Distribution volume includes all holdings of investors, developers, partner companies, advisors, and third parties participating in airdrop and demand survey events.

This is subject to change depending on future business developments, market conditions and the progress of further events.

Issuance and distribution

Chart 1

Total Issuances: 3,000,000,000 IST

10%

25%

16%

24%

25%

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■ Marketing   ■ The Foundation   ■ Initial Investor
■ Management   ■ Reward

5 Roadmap

2020

1Q – Founder, Organize team members

2Q – Alliances

3Q – Token Issuance and sell

4Q – Set Platform development

2021

1Q – Hardware wallet Launching

2Q – Start Beta-Service and Payment Services

3Q – Start Medical Information Transaction

4Q – Start Blockchain based - Data Safe Service

2022

1Q – INSSET Platform TEST

2Q – Full-mode INSSET

2Q – Start Platform Service

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6 Legal Notice

This White Paper is intended as a reference to provide information on virtual asset projects and shall be amended or replaced at any time.

Nothing in relation to this White Paper guarantees accuracy and bears no liability accordingly. The white paper and all related documents contain forward-looking statements that are subject to change due to the results of virtual asset funding because of expectations and environmental factors. Thus, there is no obligation to implement or notify them.

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