

# IZE BLOCKCHAIN TECHNOLOGY

IZE Token Project



IZE Fintech Blockchain  
White Paper ver 2.0

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# 1. Background

## 1) Background of the Project

The birth of Bitcoin in 2008 has brought forth the emergence of blockchain technology. The technology is considered to be a value-creating platform technology that will lead the 4<sup>th</sup> Industrial Revolution along with A.I., Big Data, IoT, AR, VR, and other cutting edge technologies. Among these, the Big Data technology has high potential to advance with the use of blockchain.

In the age of blockchain, all data is considered as valuable digital asset that can be used in various ways. Behaviors of individuals, corporates, operations of different countries and other information are stored as big data, which is used to analyze the consumers of different markets and predict the future.

IZE Fintech Project is based on a vision which brings all the dispersed information in the world on a platform to provide it to the data consumers in timely manner. With this vision, we are met with the issue of extracting the valuable data without infringing the privacy of the information provider. To overcome this matter, IZE undertakes the following missions:

Mission 1: A blockchain technology that protects the information and its provider and provides compensation for sharing information.

Mission 2: An Artificial Intelligence (AI) technology and functions to collect fragmented data

Mission 3: A blockchain technology that recreates the collection of fragmented data into valuable data to the data provider and provides appropriate compensation.

The existing blockchain projects related to data mostly deal with the usage of personal information. This phenomenon is due to the foundations' focus on token ecosystem development to create economy for the progress of the business created by the foundations. However, IZE focuses on data provision ecosystem which is a prerequisite to creating data usage ecosystem by different industries.

IZE Blockchain team believes that mission projects such as IZE must be successfully implemented to bring lasting innovation to the data industry market.

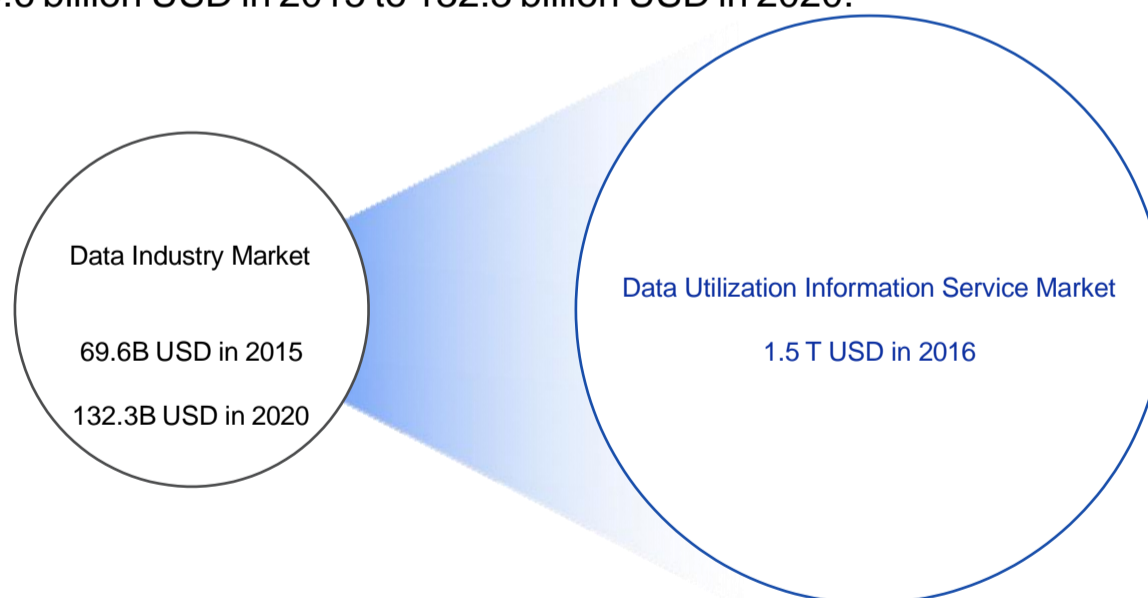
# 1. Background

## 2) Status of Data Market

In the 4<sup>th</sup> Industrial Revolution, data connects different industries. As information is shared among different industries, a new type of business collaboration is made possible. The vast scope of shared information can be used to create various business models to generate more values to the participants.

As the forerunner of the 4<sup>th</sup> Industrial Revolution, AI and Big Data markets are enjoying exponential growth, while the importance of Big Data industry is increasing to aid the advancement of AI industry. This means business is driven by data, and the future of business will depend on the how well the data is utilized. Such data are being shared according to the needs of the different industries. During the process, the data is reformed and reproduced to create even greater scale of Big Data to generate new types of business.

According to “Data Industry Market Report” the data distribution market size is expected to increase from 69.6 billion USD in 2015 to 132.3 billion USD in 2020.



[Size of Global Data Market]

451 Research 'Data Industry Market Report', Outsell 'Information Industry Outlook 2017'

# 1. Background

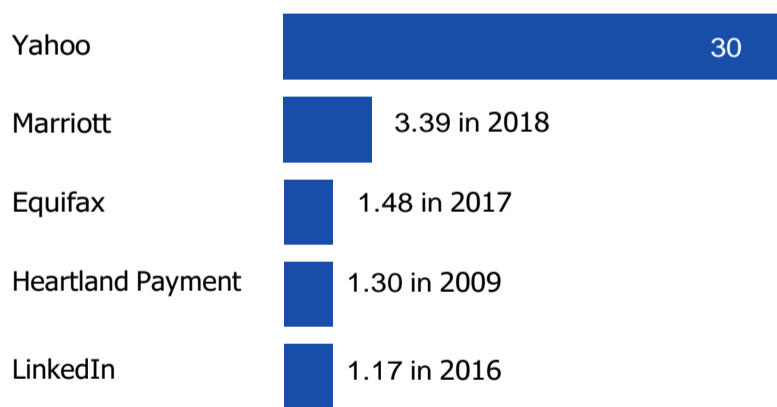
## 3) Issues in the Data Market

### - Security of the Collected Private Information

Private information of the information provider is at risk of hacking, and damages occurred from such accidents are growing. One of the major banks in the U.S., Capital One was hacked, leaking personal information of 106 million customers. The customers' information was found to be stored on Amazon Cloud, causing even more concern that even the data storage service of large cloud service firm could not guarantee complete security on the stored data.

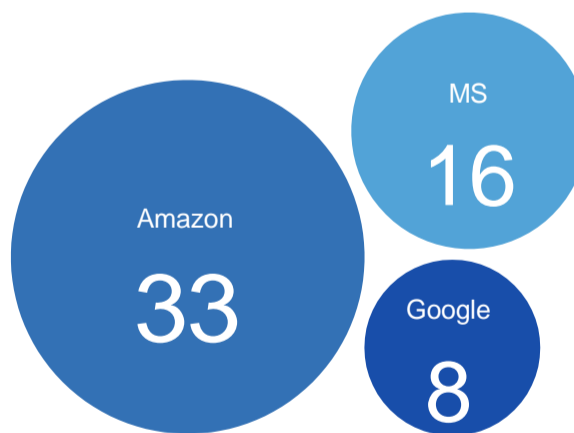
Service providers and other corporates are storing personal information on internal storage system, increasing the risk of being hacked and other leakages. Companies are investing a great amount of time and expense to protect their information, but security of the data protection is not such an easy task as the hackings are taking place all over world.

Major Personal Information Hacking Incidents  
(Unit: 100M people)



\* Leaked Personal Information Source: Wall Street Journal

Major Personal Information Hacking Incidents  
(Unit: %)



\*2Q. 2019

Source: Synergy Research Group

# 1. Background

## 3) Issues in the Data Market

### - No Appropriate Valuation on Private Information

Information providers are not properly compensated for their shared information.

Information providers believe that their agreement to share information is limited within their signed membership services, but this is not true. From the perspective of information collector, the private information creates a new value regardless of the information provider's usage of service. Major internet service providers have access to exclusive personal information that can generate massive profit, thus causing unreasonable transaction structure.

### - Increased Diversity and Efficiency in the Big Data Information Market

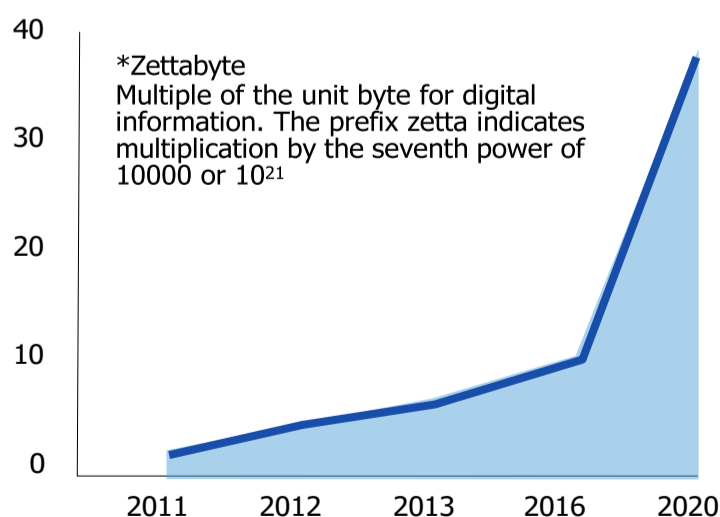
Big Data technology generates, collects, analyses, and expresses massive scale of information collected all over the world. Big data is useful in forecasting the various areas of our society for efficient operation, while providing customized information for each person and realize innovative technologies that were thought to be impossible in the past.

According to Gartner Inc., the size of Big Data will increase from 40 Zettabytes(ZB) in 2020 to 170ZB in 2025.

**Global Data Generation**

Source: Gartner

(Unit: Zettabyte)

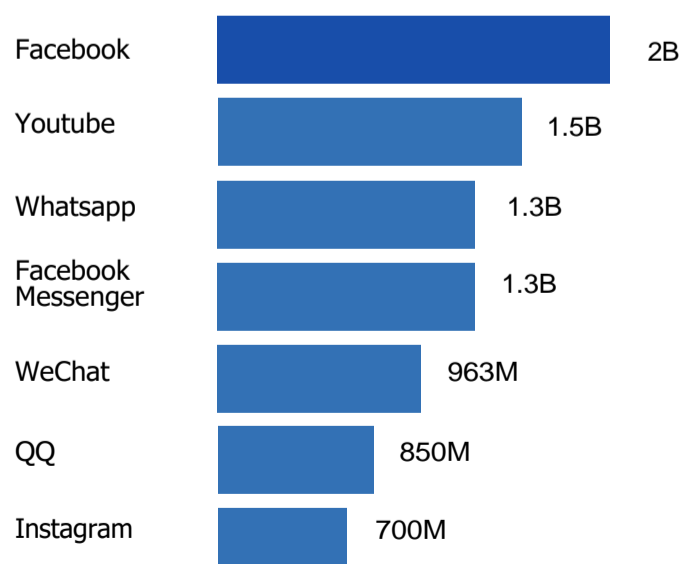


**Global SNS Users**

\*As of Sep. 2017.

Source: Statistica

(Unit: person)



The expanding size of big data is mostly due to the use of SNS. Experts foresee that most of the information will be regenerated through SNS. As of 2017, the total number of Facebook users are 2 billion, Instagram 700 million, and 300 million for Twitter. According to recent statistics, the number of SNS users increase 800 per minute. Newsfeed, shares, and other activities add to the big data.

However, the value and accuracy of the data depends on analysis. Data should be approached from the perspective of demand and usage, thus it is important to improve the understanding and usage of the data. Most corporates are currently working on improving their ways of utilizing collected data. According to IDC, the total profit generated from big data and business analysis will increase from 130 billion USD in 2016 to 203 billion USD in 2020, which is at annual average growth rate of 11.7%.

Weapons of Math Destruction, a book written by Harvard mathematician and hedge fund analyst Cathy O'Neil, warns the danger of big data exploitation to criticize the current trend on unregulated reliance on data usage. O'Neil explains how big data based on logic and practicality can reinforce preexisting inequality. The book emphasizes the importance of human analysis on the big data.

Recently, corporates have begun to hire chief data officers (CDO) to properly analyze the collected data to make the best possible decisions. Such movement illustrates how blockchain technology can be applied to manage the diversity and efficiency of big data.

## - **Bilateral Trust on Data**

As demands for data increase, the providers and users of information question the reliability of information and its protection. While the providers cannot see if their information has been accurately presented to the users, while the users are burdened with evaluating the reliability of the information they have acquired. To improve such shortcomings, information providers must have access to a transparent information sharing system, while the information evaluation tool is made available to the users. Such evaluation system must be undertaken by a third party, making blockchain an ideal technology to take on the role.

The implementation of a decentralized consensus mechanism within the blockchain ecosystem enables all participants to update the reliability of data. This structure will allow users to access the most updated data at all times, creating efficient use of the data for improved performance.

## - **Data Marketplace**

The value of the provided information is determined by the provider and user's agreement. The bilateral consent mechanism must be designed to enable the two parties to decide the value of the information without the interference of a third party, while allowing experts to take part in the evaluation to improve the reliability of the price.



## 2. IZE Project

The following illustrates the model of our blockchain project, which aims to seek efficiency of information acquisition, diversity of information, and to protect the privacy of information provider.

### 1) IZE Blockchain Development Summary

#### - **Strategy 1: Data Acquisition Strategy**

Maximize the amount of data acquired through dualistic method of active and passive data collection.

-Active Data Acquisition: data collected through surveys and direct questions to the information holder

-Passive Data Acquisition: Processing information that the information holder has provided on webpages and other medium.

In active data acquisition, IZE Application will be used to send out online questionnaires and surveys to the users to acquire data. The information provider will receive IZE token as reward.

In passive data acquisition, IZE Add on, a web and mobile Chrome expansion application will be used to process the users' information with an AI solution. The information provider will be rewarded IZE tokens for installing the IZE Add on and the time spent on web crawling. Also, IZE Mainnet maintenance expense will be compensated by IZE Staking on IZE Add-on.

#### - **Strategy 2: Information Storage and Protection Strategy**

To secure protection on the acquired information and prevent hacking, Stroj storage and InterPlanetary File System (IPFS) uses encrypted blockchain-based database and distributed blockchain systems. Confidential information is protected by zero-knowledge proof mechanism.

#### - **Strategy 3: Information Process Strategy**

General purpose Spark technology is suitable for AI technology solution to implemented to process big data. Spark is ideal in implementing large-scale big data analysis and machine learning application programs.

IZE project aims to strategize blockchain information technology for data to complete IZE missions and its business objectives.

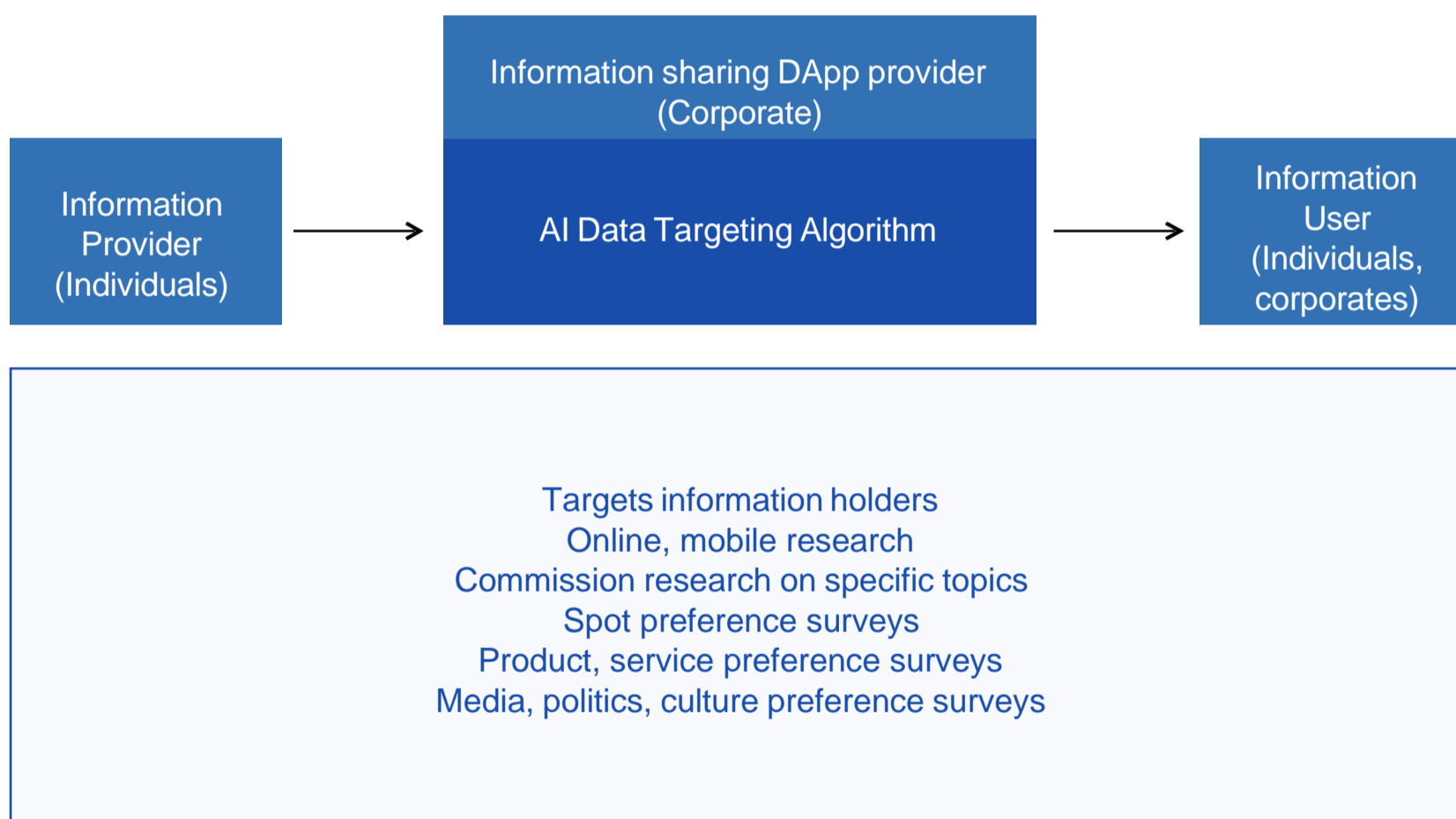
## 2) DApp Feature

### - IZE Application

IZE Application collects information provided online or on mobile to share the collected data to users who need it.

Information collection is undertaken within the range of information that can be directly rewarded, such as areas listed below.

IZE project enables the development of information sharing DApp by using data targeting algorithm that connects information providers and users. DApp providers are given the right to create nodes on IZE blockchain. DApp users can collect data using various devices.



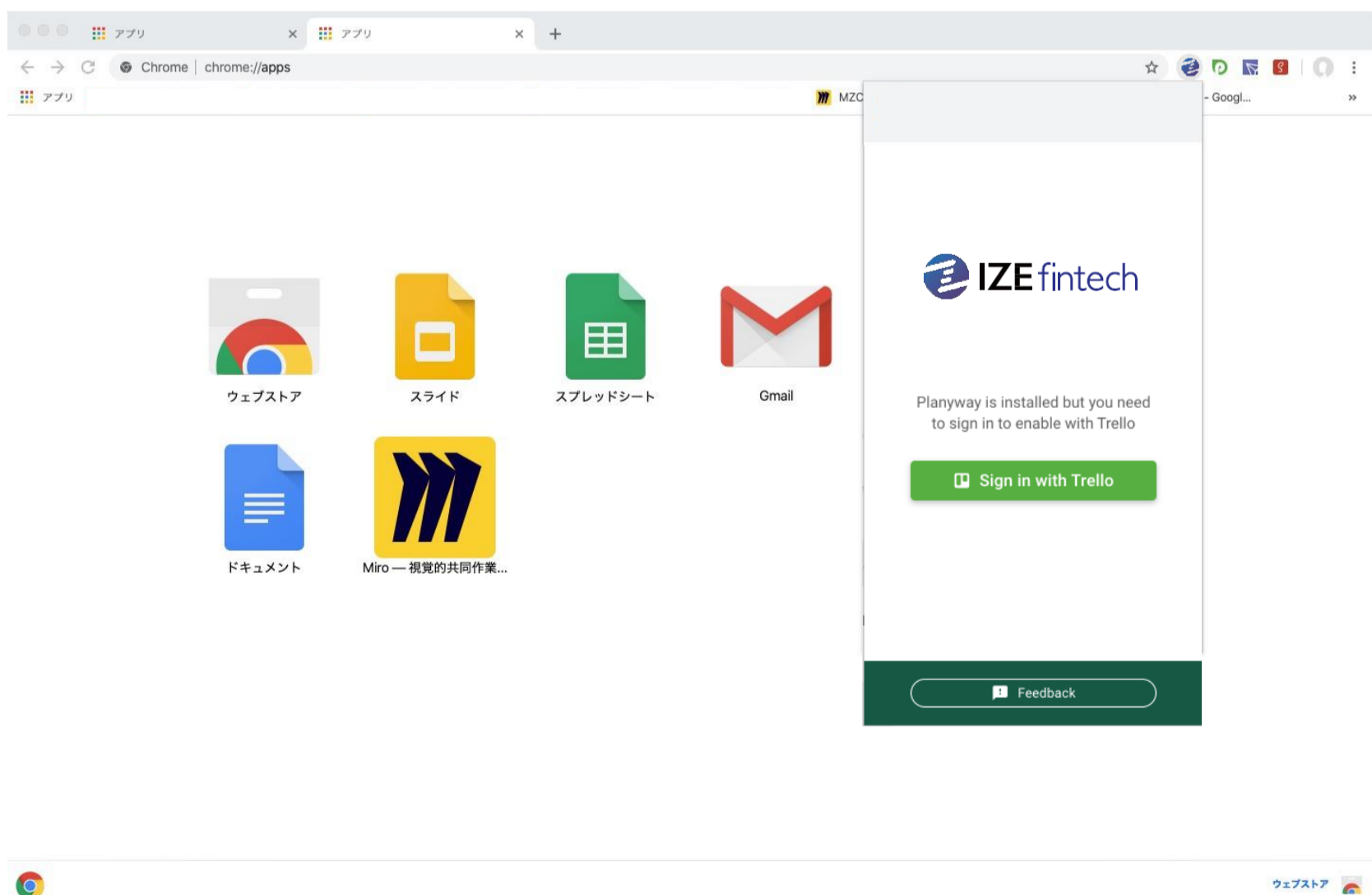
Information users can access more meaningful information based on targeted researches on panels (information providers) analyzed by AI data targeting algorithm. This algorithm enables a more objective and rational model due to AI model participation of DApp provider.

Incentives include: rewards for providing information and taking surveys, and referrals to increase the demands for information providers.

Compensation for data from the panels (information providers) is made in IZE tokens through airdrops that meet the DApp providers' node qualifications. Information users can purchase the information they need with IZE tokens.

### - IZE Add-On Web Browser Add-On Application

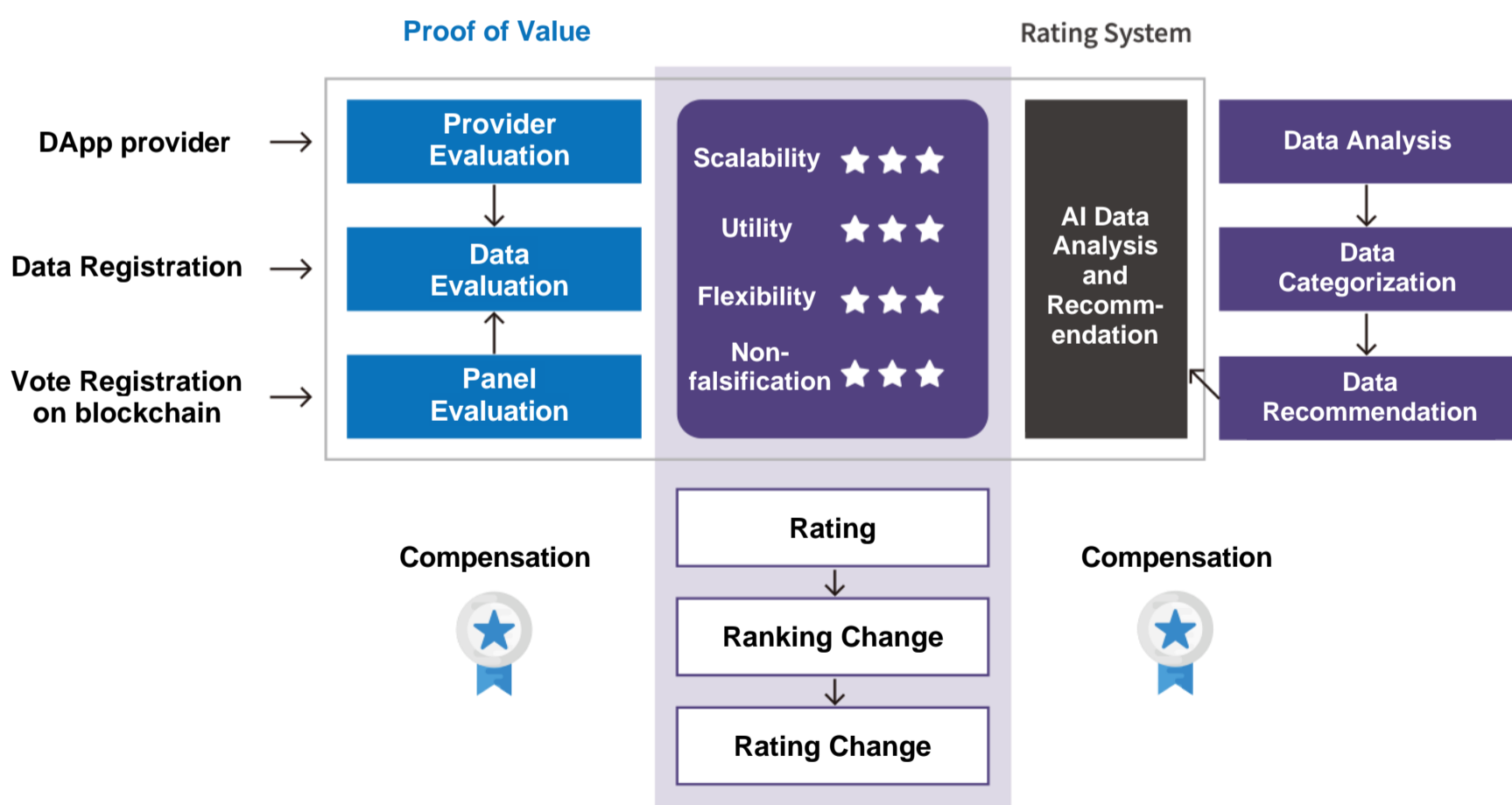
This is used for collect data provided on web browsers by data owners. IZE Add On is developed in the form of a web browser add-on.



IZE Add On is an add-on application for Google Chrome. The application stores information collected from the information providers' crawling. Web browser Add-on data is processed into meaningful information through analysis algorithm. Prior to the AI analysis, the information acquired through crawling must be evaluated on its contribution to data information ecosystem in order to process it into meaningful information. The value provided to the information ecosystem is in proportion to crawled time quantitative analysis, and blockchain algorithm of Proof of Value (PoV) in term of qualitative analysis.

The method of Proof of Value (PoV) is based on the provision of information and its consumption. PoV is derived from the data usage excluding malicious purpose. In our PoV algorithm will include the measurement of consumption as well as a rating system created by the developer of IZE application.

[Data PoV and Rating System]



### 3) Metaverse Feature

#### - IZEverse



IZEverse is a metaverse where social, economic, and cultural activities take place in a 3D virtual world. Users can enjoy various contents, such as learning, hobbies, and games, within the metaverse and grow their avatars through their activities. They can also earn IZE coin as rewards for participating in specific content, which they can transfer to other wallets within the metaverse or use on IZE First Pay for shopping. Users' activity and data within IZEverse are collected and utilized by IZE as big data.

IZEverse is an immersive metaverse that offers a fully-realized 3D virtual world for users to explore and engage with. With a wide variety of activities available, users can find something to do no matter what their interests are.

For those interested in learning, IZEverse offers a range of educational content. From language learning to programming tutorials, users can expand their knowledge and skills while having fun in the metaverse.

Those looking for more casual entertainment can enjoy a variety of games and hobbies within IZEverse. Whether it's playing virtual sports or creating art, users can indulge their passions while socializing with others.



But IZEverse is more than just a place for fun and games - it also offers a unique economic ecosystem. Through the rewards system, users can earn IZE coins for participating in specific content within the metaverse. These coins can then be used for shopping on IZE PAY or transferred to other wallets within the platform.

Data privacy and protection are a top priority at IZEverse. The platform is fully compliant with GDPR and other relevant regulations, and users' personal information is encrypted and securely protected. The IZEverse team collects and utilizes user activity and data to inform and improve the user experience, but always with user privacy and security in mind.

Finally, the IZE staking program offers users the opportunity to invest in the growth and success of the platform. By staking IZE coins, users can participate in the economic ecosystem of IZEverse and potentially earn even more rewards.

In summary, IZEverse is a dynamic and multifaceted metaverse that offers something for everyone. With its educational content, entertainment options, economic opportunities, and data-driven insights, IZEverse is poised to become a leading player in the world of virtual reality.

### **My data selling**

IZEverse users can use the My data selling feature within the metaverse's content. Users provide information to IZE or third-party companies with which IZE has a contract or partnership. The information's scope and type are unlimited as long as they remain within legal limits. The information collected is utilized as big data.

#### 4) Payment Feature

##### - IZE FIRST PAY



# IZE FIRST PAY

IZE FIRST PAY is a revolutionary Buy Now Pay Later (BNPL) platform that offers users a more flexible and affordable way to make purchases. With IZE FIRST PAY, users can buy products and services now and pay for them later, spreading the cost over a series of installments. This makes purchases more accessible to users who may not have the funds to pay upfront or who prefer to spread out the payments over time.

The platform supports a wide range of products and services, from fashion and electronics to travel and entertainment. Users can browse through the platform's extensive catalog of products, and with the help of its powerful search tools and filters, find the products they need quickly and easily.

One of the key benefits of IZE FIRST PAY is its simple and straightforward application process. Users can apply for credit on the platform in minutes, and receive a decision almost instantly. If approved, users can start shopping right away and take advantage of the platform's flexible payment options.

IZE FIRST PAY's commitment to user privacy and security is paramount. The platform securely collects and shares users' information in compliance with relevant laws and regulations. Users have full control over their personal information, with the ability to update, modify, or delete their information at any time.

IZE FIRST PAY is a game-changing BNPL platform that offers users a flexible and affordable way to make purchases. With its extensive catalog of products and services, simple application process, and commitment to user privacy and security, IZE FIRST PAY is the ideal platform for anyone looking for a more accessible and convenient way to shop.

IZE FIRST PAY is not only a flexible and affordable way to make purchases, but it also provides a wealth of data that IZE uses to gain insights into consumer behavior and preferences. With each transaction made on IZE FIRST PAY, IZE collects valuable data on users' purchase history, spending habits, and product preferences. This data is analyzed and utilized by IZE to make informed business decisions, improve the user experience on IZE FIRST PAY, and develop new products and services that meet users' needs.

While the collection and utilization of data may raise concerns about user privacy, IZE takes every precaution to ensure that users' information is secure and protected. IZE FIRST PAY's security features include advanced encryption, multi-factor authentication, and secure storage protocols. IZE complies with all relevant laws and regulations regarding data collection and privacy, including GDPR, CCPA, and PIPEDA.

In addition, IZE is committed to being transparent about its use of data and offers users the ability to control their data through its privacy settings. Users can choose what data to share and what to keep private, giving them control over their personal information.

In conclusion, IZE FIRST PAY not only provides a flexible and affordable way to make purchases, but it also contributes to IZE's valuable big data collection. With advanced security features and user privacy controls, users can feel confident that their information is protected while still benefiting from the platform's convenient and accessible shopping experience.



## 5) IZE Blockchain Structure and Ecosystem

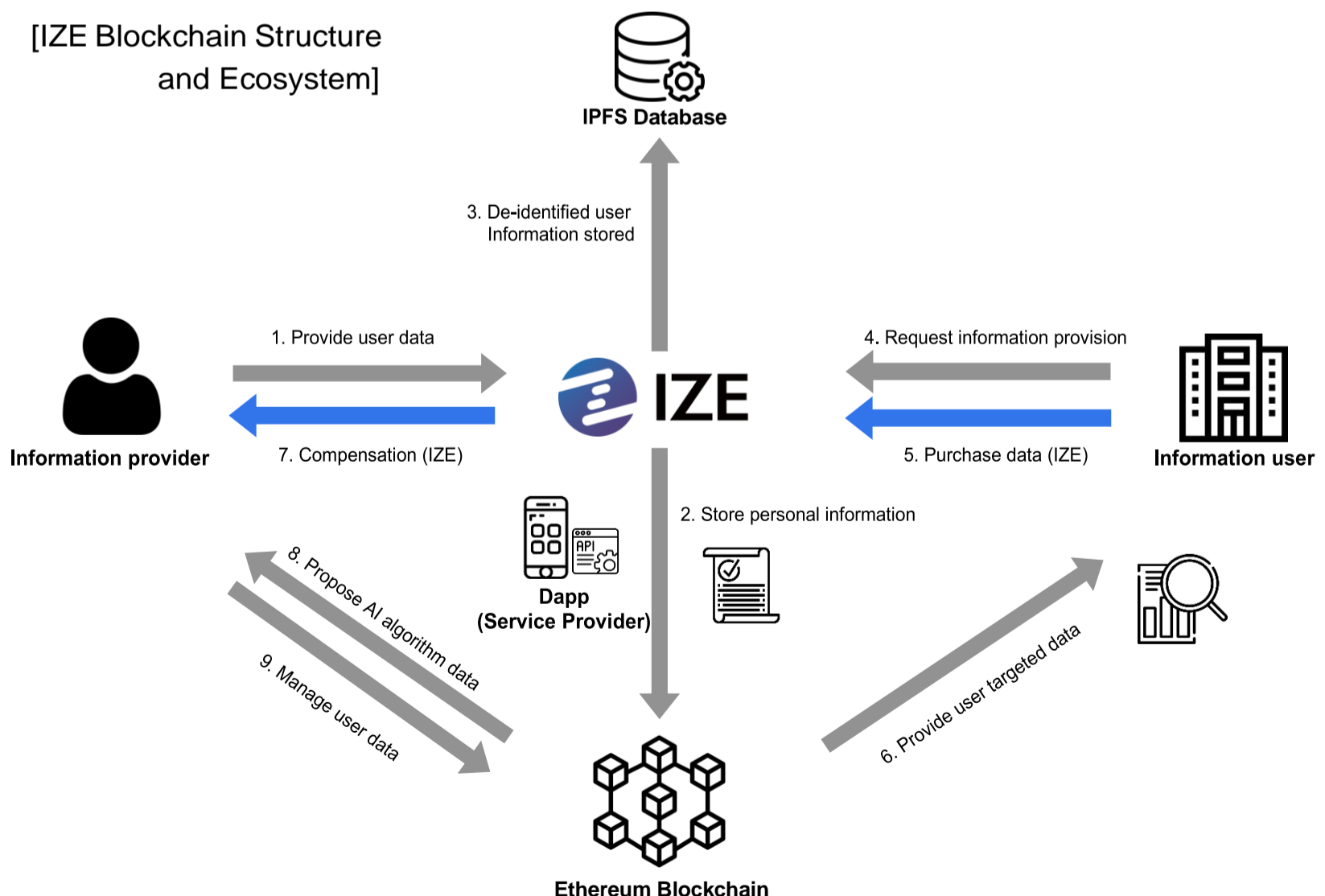
IZE proposes a service in which providers of information in various areas and the data users can take advantage of trustworthy transaction system based on blockchain so that the participants can reap rewards for sharing information and use the information to make profits.

IZE project is designed to protect private information while seeking the efficiency of data information to meet the users demand. IZE application collects information the user needs to operate his business, while IZE Add On service rewards the big data participants with benefits and compensations through Add-On data analysis algorithm.

IZE Project provides two solutions:

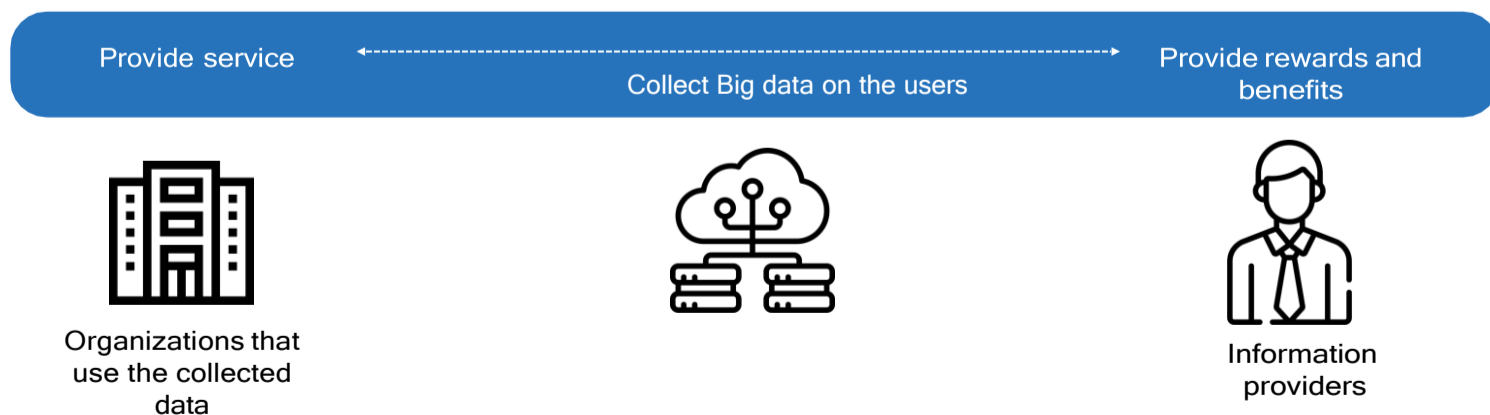
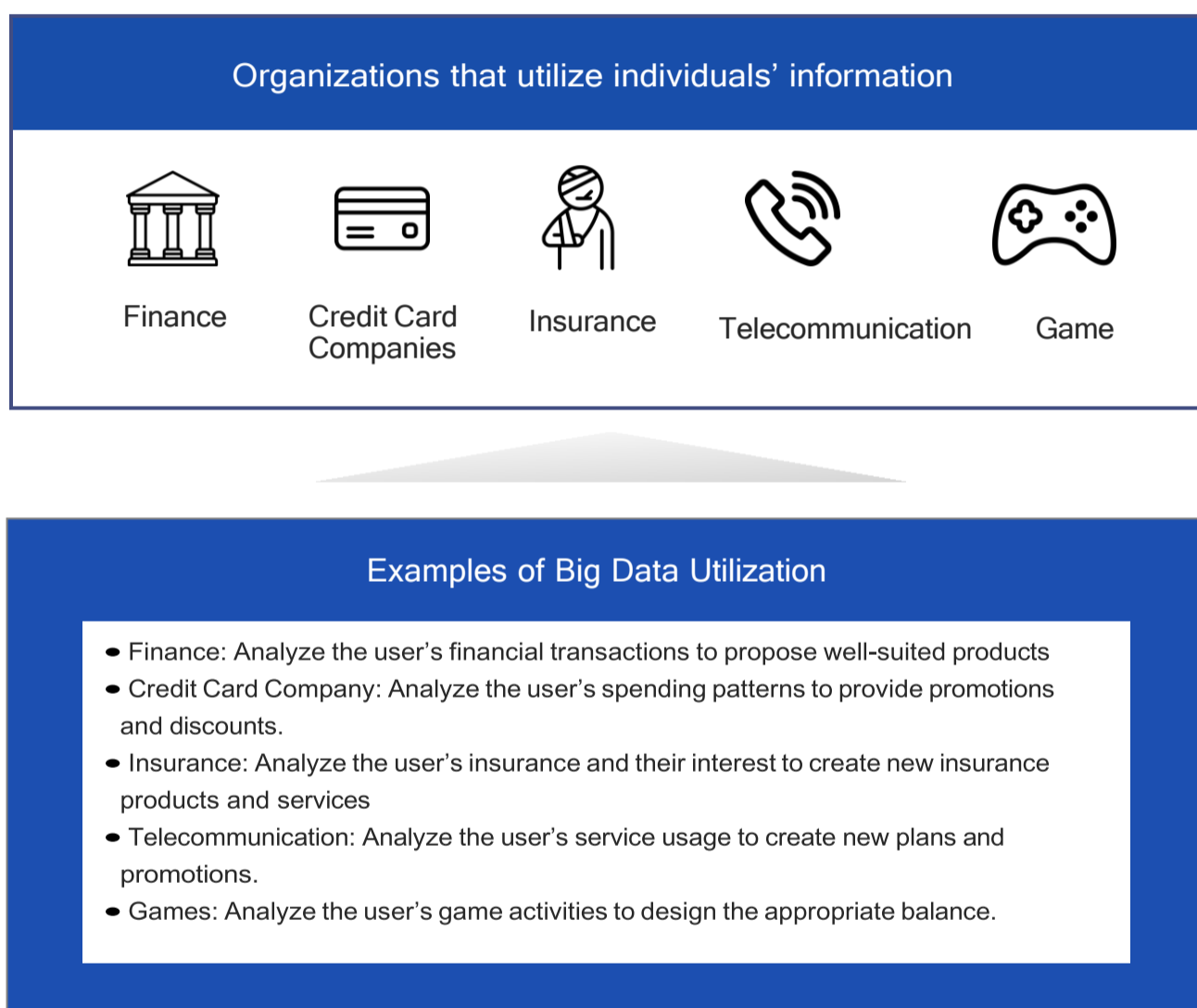
1. IZE Application: this application is designed to motivate various participation of information providers. This is application enables research firms, DApp providers to affiliate for direct compensation and data sales.
2. IZE Add On: IZE Add On browser scaling program analyses the users' information through AI targeted analysis algorithm to provide meaningful information to advertisers and data sales market.

Confidential information is protected through zero-knowledge proof mechanism, while Big data storage is distributed through IPFS to provide encrypted blockchain-based database. Spark technology is utilized to process big data to implement fast large-scale big data analysis and machine learning application program.



## 6) Big Data Business Expanding in Fintech Platform Field

IZE project aims to apply data processed from personal information to various business fields in fintech transaction platform. Individual information providers and the corporate, organizations, and agencies that utilize such information can create a data trading ecosystem in which all the participants benefit from a sustainable business environment. DApp providers of IZE ecosystem can also develop specialized DApps based on the information acquired from individuals.



### 7) An example of Big Data Service in Fintech Platform Field

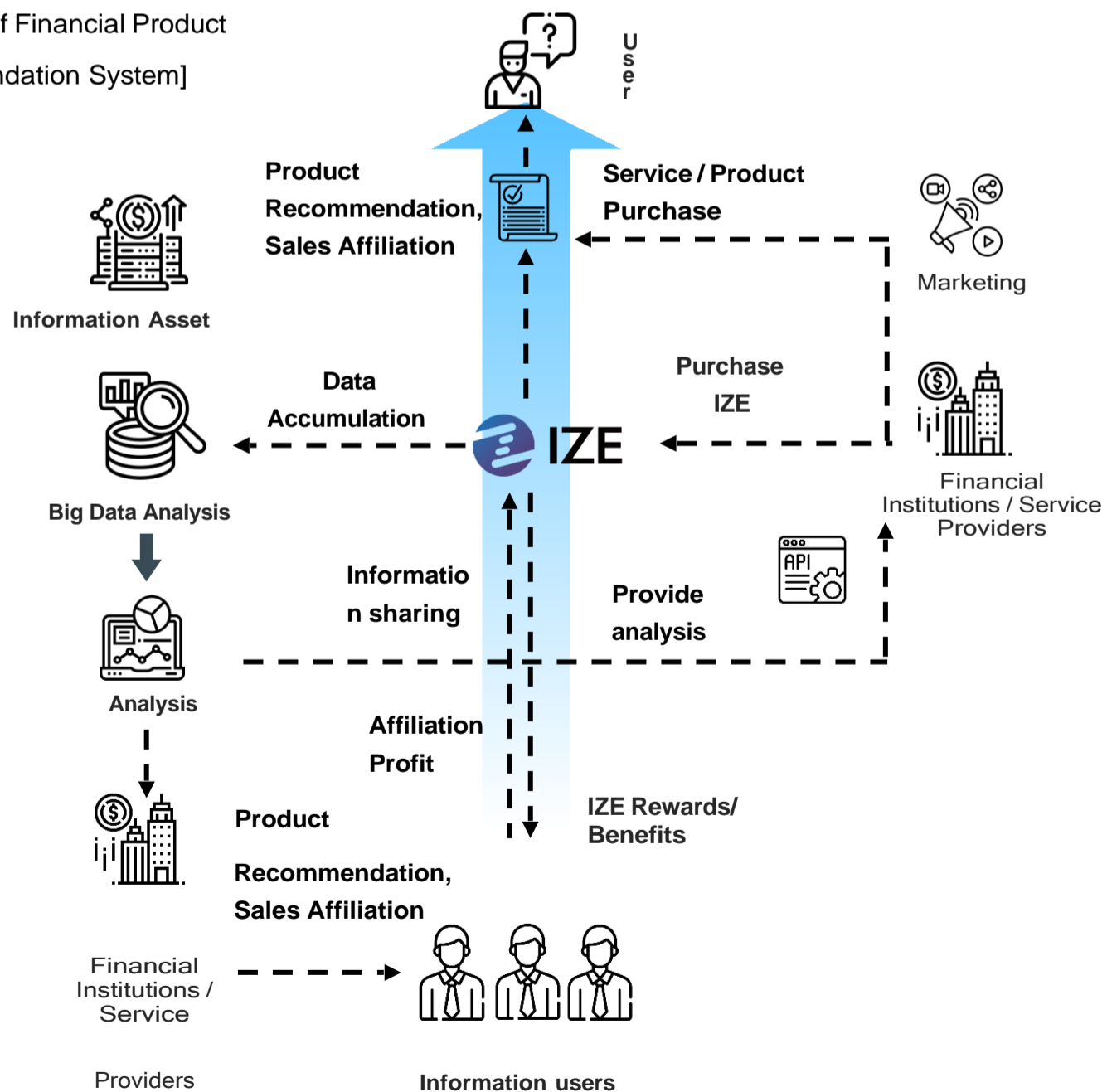
IZE platform implements a shared-economy based ecosystem among individual information providers and groups that use the information such as corporates, organizations, and agencies. All the participants of the ecosystem create a win-win model in a sustainable business environment.

The information IZE Fintech platform providers acquire is utilized by the finance service providers to customize their products and service to individual customers, while the information providers are rewarded in IZE and payment services for the finance service providers.

IZE platform increases the value of individuals' information while the individuals are given the opportunities to enjoy the rewards and benefits for letting the organizations to utilize their information. This model creates a new information-sharing business ecosystem.

Information providers share their information on IZE platform, which analyze the information as a big data to form an information asset. Such asset is then sold to the finance service providers who use the data to customize their products and create affiliation with potential customers and marketing agencies. Information providers are compensated for their sharing by receiving IZE coins, and the information using organization can pay for the usage with IZE coins. Bonus IZE coins can be rewarded if recommended products are purchased by the individuals to strengthen the ecosystem.

[Example of Financial Product Recommendation System]



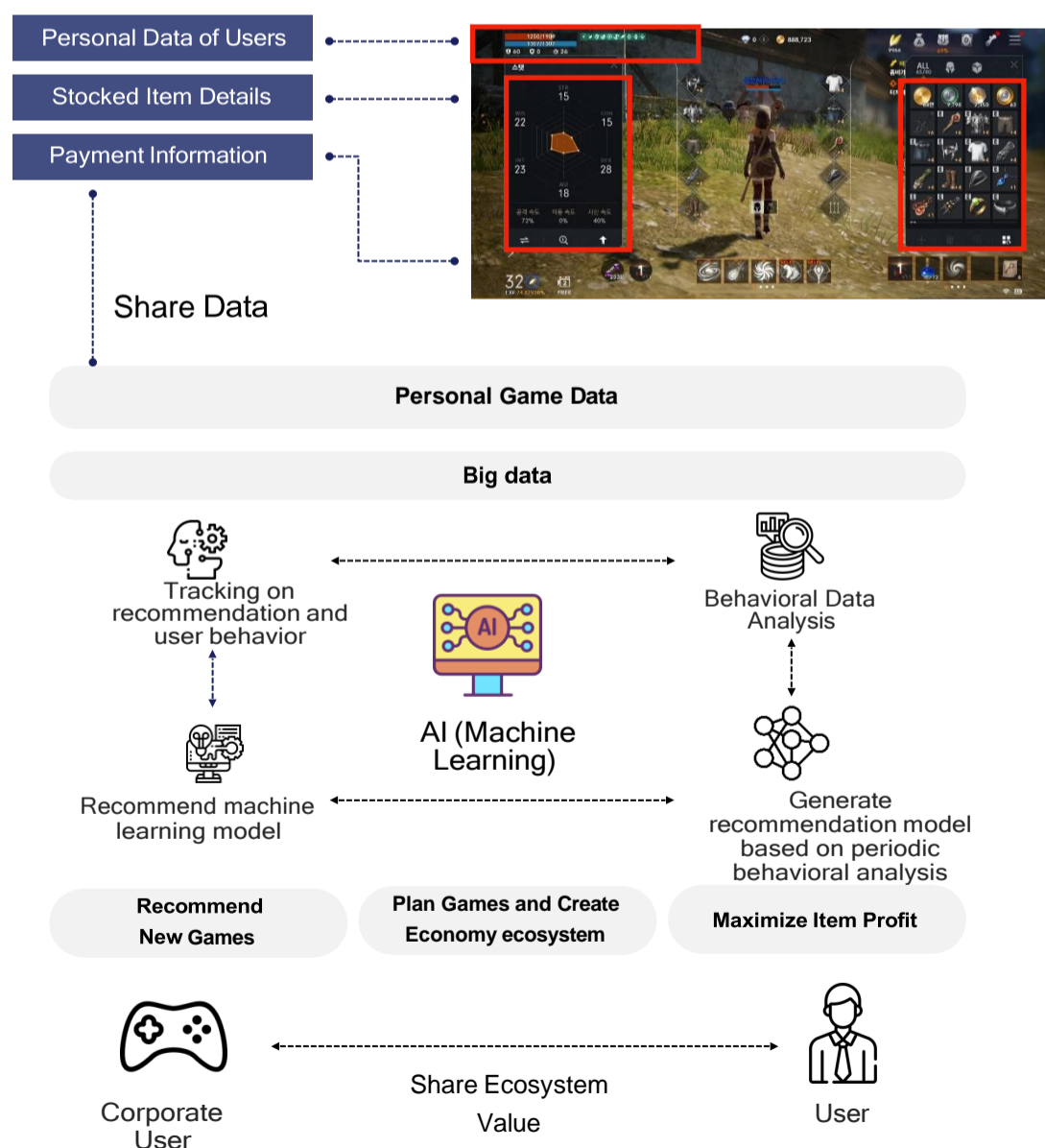
### 8) An example of Big Data Service in Game Platform Field

IZE platform is applicable in game industry in creating a data sharing ecosystem. Initial game economy planning stage undertaken by a few planners can cause big errors, which can cause costly repairs. In IZE platform, game users' information is collected in a big data to analyze the problems of existing games and provide insights for new games. This information can reduce risks during game development and management. The information provider is rewarded with IZE for their sharing of information, and game developers can make payment for the users' information in IZE.

Certain data of the game users such as personal information, items, payment, etc. are collected to be processed a part of big data. Behavioral data analysis based on the big data is processed with AI to create periodical preference model, such as item preference, playing style to customize products for each user. Such statistical data is sent to the game developers in real time to recommend new games, plan new games and implement economy system, and maximize profit on item sale.

Game developers, stores, and marketing agency can make payment for data with IZE, while game users can receive IZE rewards by playing games.

[Example of Game Data Service System]



## 2. IZE Blockchain Technology

### 1) IZE Smart Contract

Ethereum is an open source blockchain platform consisting of decentralized virtual machines that run Ethernet nodes to implement point-to-point agreements by connecting to a distributed computing network, and all devices that operate Ethereum, the dedicated cryptocurrency. “Distributed” means that anyone can create and run an Ethereum node just as like that of a Bitcoin. Although Ethereum is often compared to Bitcoin, there are differences. While Bitcoin is only a blockchain and payment network, Ethereum is a decentralized computing network where a variety of applications can be built by executing customized smart contracts through the blockchain.

Smart contracts are computer programs that run automatically on Ethereum virtual machines, and always perform according to defined rules. They can respond to and store received messages, or send out information and value. In short, smart contracts are the digital version of traditional contracts.

Smart contracts are computer programs that run on the blockchain and can be automatically executed when conditions written in the source code are met. Since the contract terms cannot be manipulated, users can rely on smart contracts.

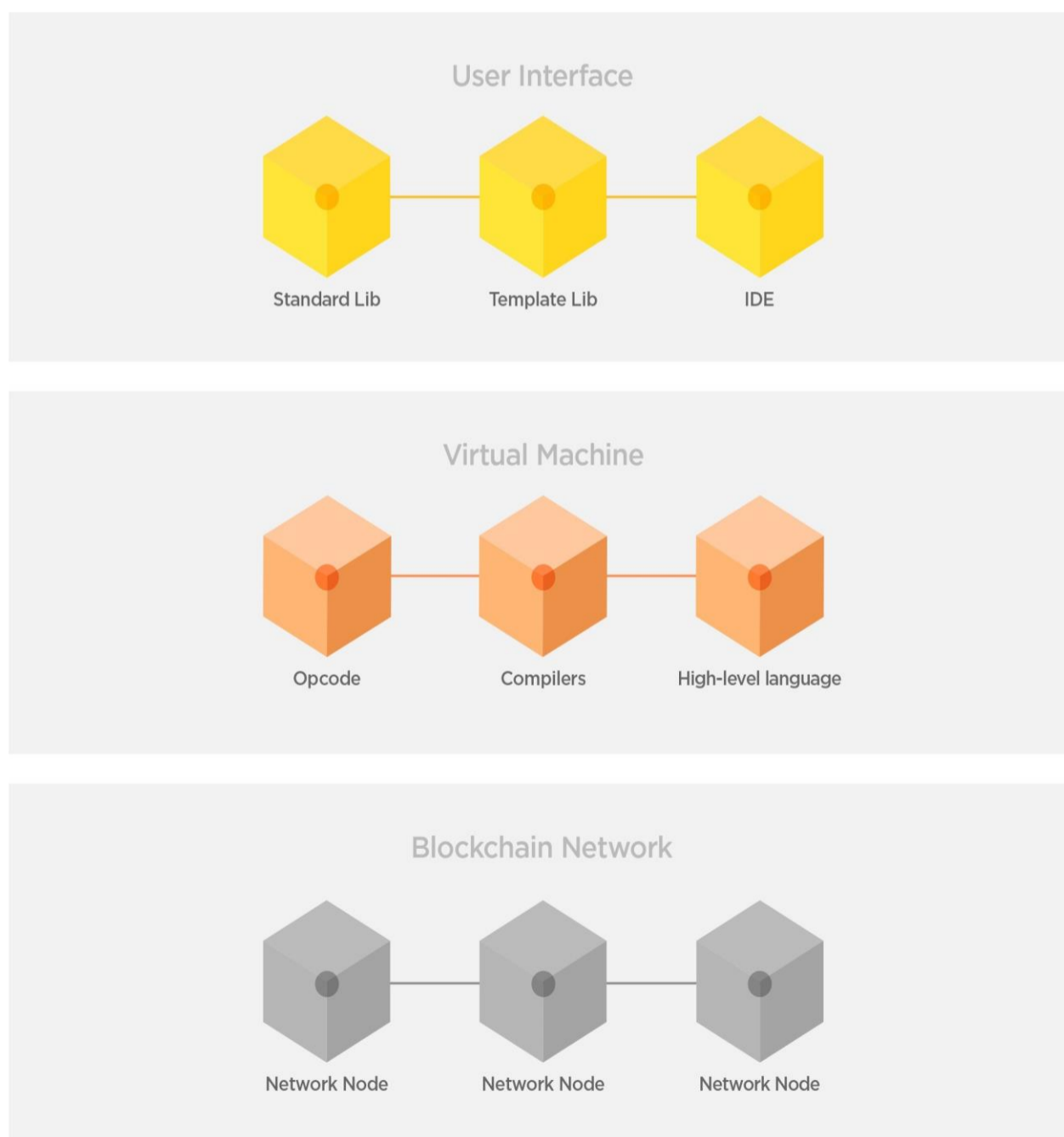
IZE's smart contract represents the data type definition and data manipulation guidelines. This means it includes data structure and its related algorithms. The definition of data manipulation acting as the core of the smart contract because it implements the actual logic flow of smart contract, and the data type definition helps with implementation. IZE smart contract tasks are implemented in a message-based communication structure, and clients invoke tasks by sending messages to Ethereum nodes. Upon receiving a message, the Ethereum node requests the relevant source and executes the smart contract WebAssembly (WASM) code. If the code runs smoothly, the Ethereum node proceeds with other tasks. Several tasks can be combined to form a transaction executed with combined nodes, while tasks can be sent and executed individually or in combination.

Each node in the blockchain network receives a copy of the smart contract from the Ethereum blockchain in the macro phase to executes each task in the contract. After the contract is sent to the blockchain, the smart contract owner receives the verification certificate generated by the node. However, this verification does not mean that the transaction has been confirmed, but that the node has processed it without error. Not all nodes execute each smart contract in the actual process. While some blockchain nodes perform the actual work of smart contracts, other nodes process the validation of the transaction block.

## -Smart Contract Development

To provide improved smart contract development environment, Ethereum has developed more complete intelligence contract platform, implemented Solidity, a Turing-complete intelligent contract programming language, and supports a virtual machine that enables the Ethereum blockchain to develop, test, and deploy smart contracts. Other types of services are rare, and are likely to cause congestion on the Ethereum network when processing a large number of users.

In order to provide a more intelligent contract platform and support the development and operation of large scale business DApp, IZE smart contract system suggests improvement of the standard library based on the following structure.

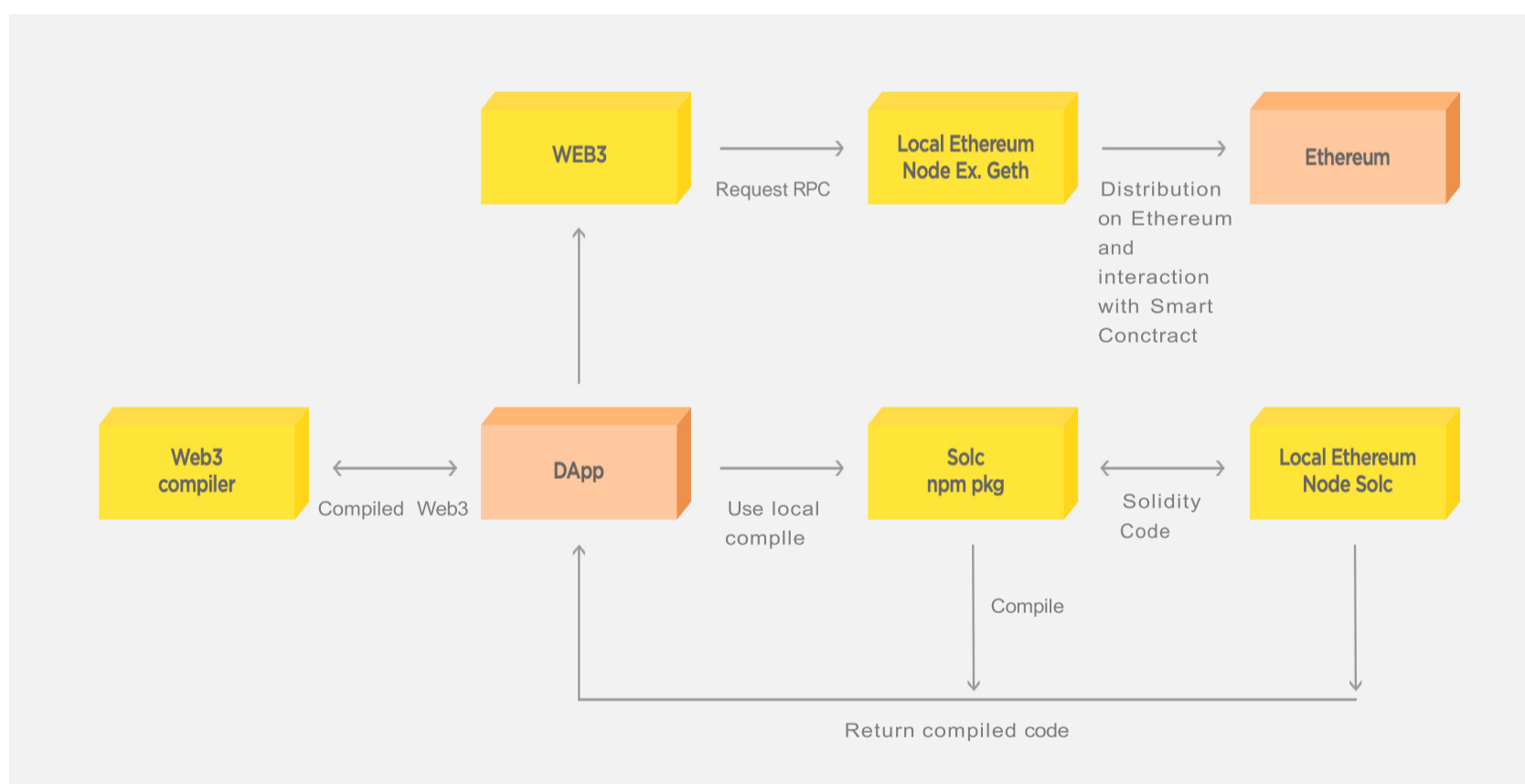


[IZE Smart Contract Components]

IZE implements a high-level application interfaces beyond virtual environments and advanced languages to enable developers to work more efficiently. The general programming languages support the standard library, but it is worth noting that smart contract programming languages rarely provide this type of support. For example, the C programming language specification not only defines retained keywords, data types, vocabulary, and grammar, but also provides a standard library to simplify software development.

Another example is that the C standard library includes a math function (math.h), an input / output process (stdio.h) and a general library (stdlib.h). IZE provides a standard library to ensure its developer-friendliness and minimization of security risks. The standard libraries will encourage developers to build more applications based on IZE smart contracts and help promote IZE's ecosystem.

### - Implementation of Smart Contract



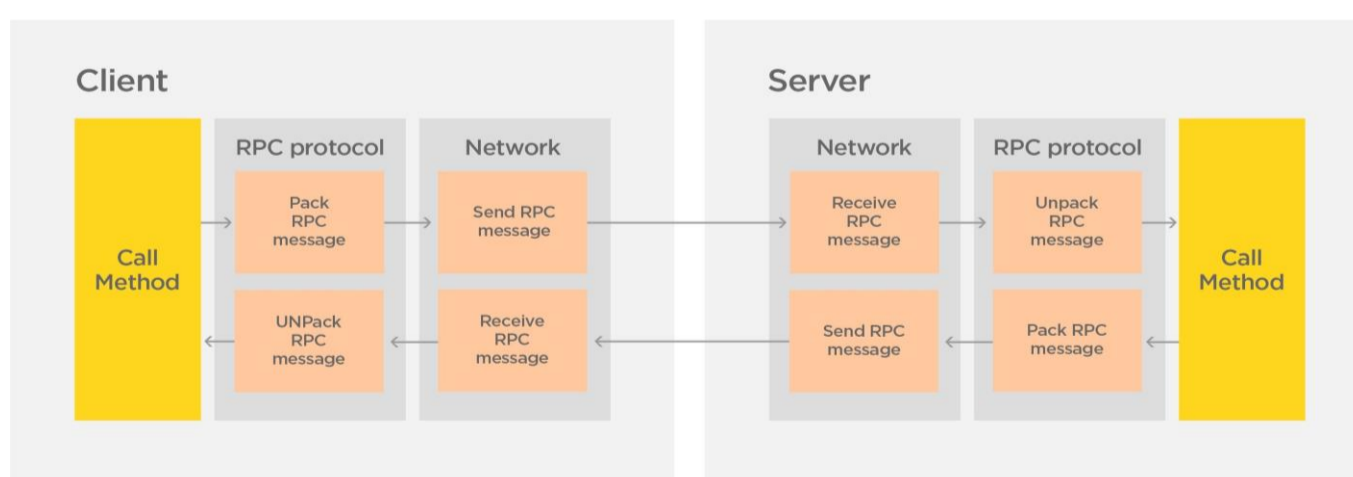
[IZE Smart Contract Execution]

The concrete implementation of the IZE smart contract is a decentralized app, or DApp. The key to DApp is the implementation of secure, efficient and transparent applications. DApps run on a computer network and adjust actions by passing messages or sharing memory between application instances. Blockchains are more available than decentralized databases, and in the event of failure, such as network partitioning, outperforms centralized applications. Currently, it is a common practice to separate most storage tasks from the DApp.

The tasks are performed on other distributed computing nodes and the results are returned in the blockchain to ensure the data integrity and transparency. In relation to the IZE platform, the token usage and transfer process is stored on the Ethereum blockchain to prevent tampering of the transaction records and tokens, and to facilitate the tracking and retrieval of tokens afterwards. Since all IZE records are stored on the blockchain, the transparency of the blockchain technology improves the user's confidence in transactions on the IZE platform (e.g., transaction records can be tracked and audited). The execution process of DApp is as shown in the [IZE Smart Contract Execution] diagram. RPC protocol interaction with the local Ethereum nodes is done through Solidity code compiled locally or from Web3. At the end, smart contracts are placed in the main Ethereum chain according to pre-designed and irreversible logic.

### - RPC Operation Structure

Remote Procedure Call (RPC) is a computer communication protocol that allows programs running on one computer to call subroutines on another computer without the programmer having to program the interaction. RPC is a distributed computing model, in which a client sends a request to a server to execute multiple processes. The server accepts and processes the request using the parameters provided by the client. When the calculation is complete, the result is returned to the client. In the field of distributed computing, there are many RPC protocols such as early CORBA, Java RMI, RPC styles of web services, Hessian, Thrift, REST API, and etc.



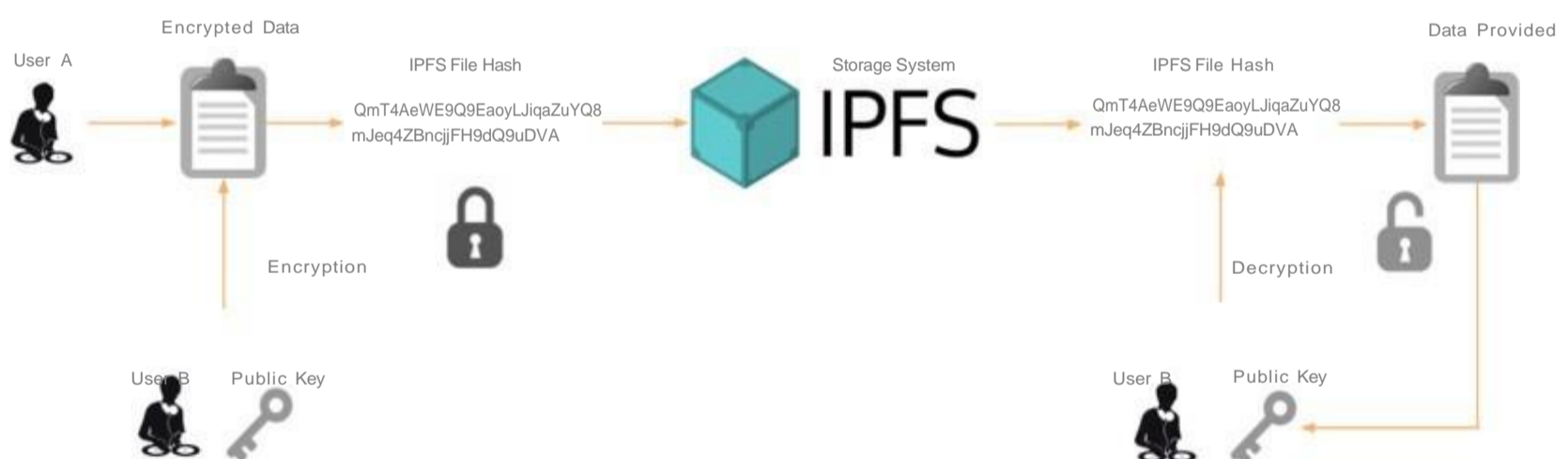
[RPC Operation]

The IZE platform communicates with Ethereum using RPC. Since smart contracts run on the main chain of Ethereum, all IZE user operations enter the Ethereum network through RPC. This can ensure normal interaction of the IZE smart contract.



## 2) IZE Data Storage

IZE allows user data and files to be stored and shared in a distributed storage system called InterPlanetary File System (IPFS). IPFS is an encrypted blockchain-based database, or distributed blockchain file system. Data files such as videos may be stored through encryption and shared with selected users. Specifically, a user can encrypt data using his key pair (asymmetric encryption) and store the encrypted data in IPFS. Asymmetric encryption allows IZE users to encrypt data using the public key of another user to share the data. The selected users can then decrypt the file using their private key to view the files, such as shared media. Unauthorized users cannot decrypt the file because their private key and the public key used to encrypt the data do not match, which ensures the privacy of the users.



The above diagram illustrates the how data is selectively shared with the user's consent.

Details: User A wishes to share the information he submitted only with User B.

IZE uses User B's public key to encrypt User A's media data. IZE uploads an encrypted data file to IPFS to get a hash of the encrypted file.

User B has the private key associated with the public key used to encrypt the file, so he can access the file and decrypt it. However, other users cannot decrypt the file because they do not have the private key of User B.

IPFS can be seen as a data storage protocol similar to BitTorrent, with a variety of operations on files via hash references for more diverse program interactions using fully distributed interactions. Usually, blockchain has a dedicated BPM module that can store simple text records very efficiently, making cryptocurrency a suitable module to run on the blockchain. In the cryptocurrency application scenario, the BPM module only records the sender, recipient, and cryptocurrency of the transaction, making it easy for the BPM module to run efficiently. However, in the case of storing a large amount of data, such as text or personal information, the efficiency of blockchain storage becomes very low because all the data hashes must be calculated and verified each time a block is created. Maintaining chain integrity causes very inefficient block creation.

To solve this problem, recent approaches utilize a combination of IPFS and blockchain. IZE stores only the hash value of the IPFS-generated storage file, or the user data, on the Ethereum blockchain instead of the BPM. This ensures the simplicity of the data required for the blockchain, while achieving the benefits of fully decentralized IPFS simultaneously.



Figure. Block Unit of IPFS File Hash

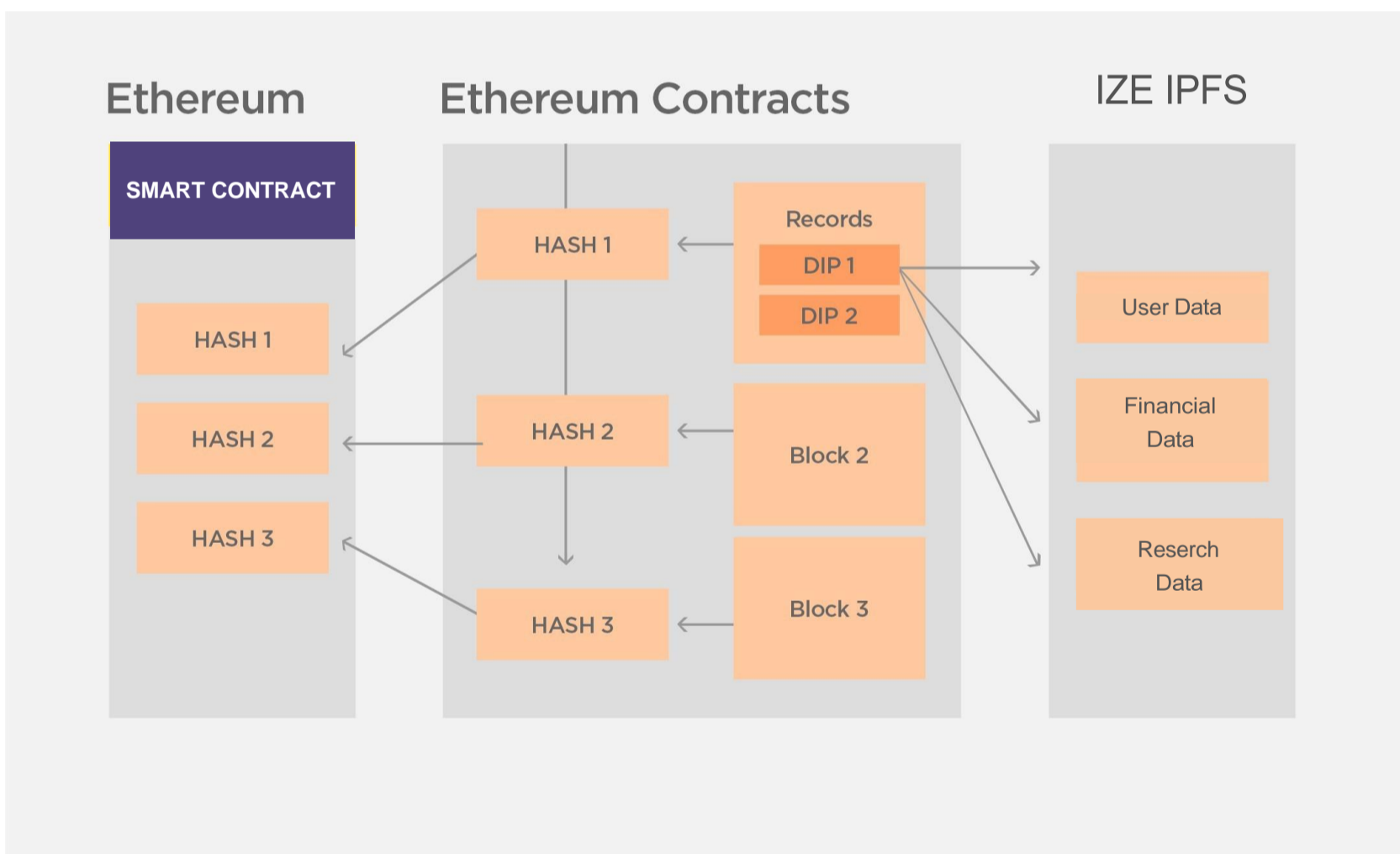
### 3) IZE Data Traceability

At the same time, encrypted data hash can be stored on the blockchain to track all records.

Below is a detailed explanation of how IZE tracks the stored information:

A project configuration file (DIP file extension) is provided that specifies all unique numbers stored in IZE, and is stored in the encrypted blockchain-based database, IPFS. The hash value of DIP is mapped onto Ethereum network and blockchain (sidechain).

A DIP file consists of digital containers that store reference information for digital documents and records. All events can be collected and tracked and the records in the DIP are stored in chronological order. The time stamps and hash values of the previous records form smaller blockchain groups that constitute the transactions within each DIP. The record also requires that the signature of the creator's private key to increase the verifiability of each record.



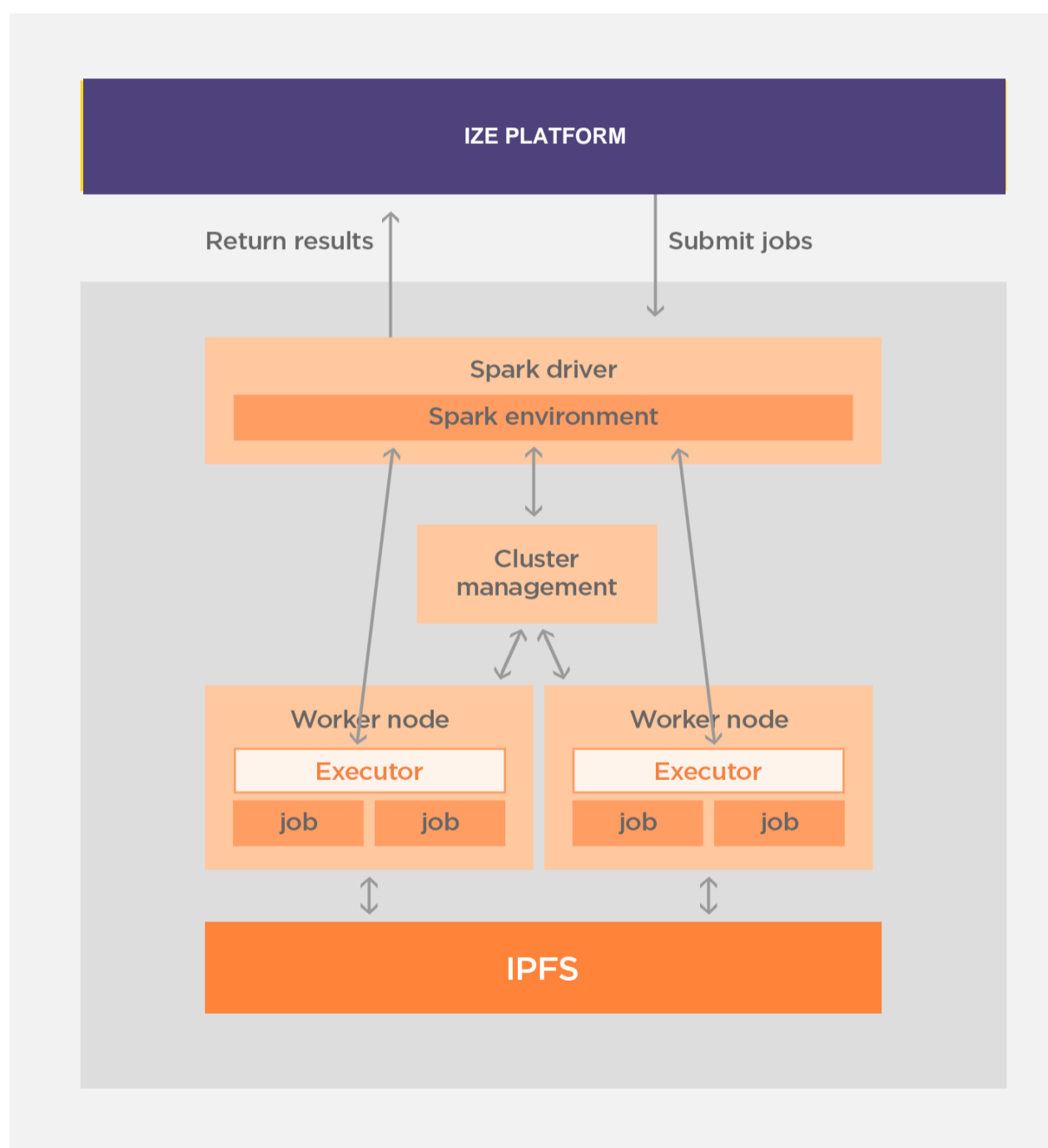
[Blockchain Data Traceability]

#### 4) IZE Data Processing

IZE uses Spark to build a Big Data processing platform. Spark is ideal for building large-scale, low-latency Big Data analytics and machine learning applications and is the required technology of the IZE platform.

The platform can be used to perform machine learning tasks on data related to the user actions in different events. For example, the IZE Big Data Processing Platform can be used to examine the behaviors of users accessing specific files to better understand their interests for more accurate marketing.

Specifically, Spark is an open source cluster computing environment similar to Hadoop, but there are some differences between the two, making Spark better suited for some workloads such as Spark Big Data Processing Platform. In particular, Spark can activate data sets distributed in memory, provide interactive queries, and optimize repetitive workloads.



[Spark Big Data Process Platform]

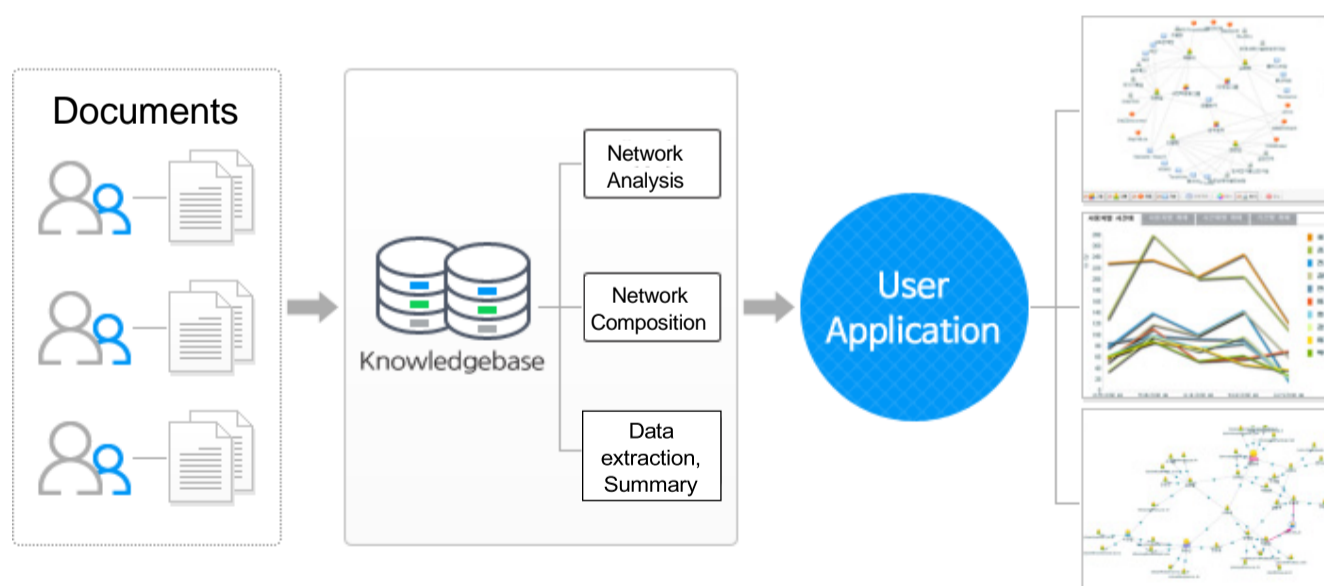
## 5) AI Technology Application Cases

Artificial intelligence solution is used for the IZE Application Data Targeting Algorithm and the IZE add on web browser, Add-On Data Analysis Algorithm.

### - Targeted SNS Analysis

The development of the internet and mobile services has made connection among people more dynamic and complex. The connection among people not only serves a distribution channel for various data and contents, but also influences decisions, including purchasing activities. With the professional AI solutions, IZE will extract semantic nets from social media, email and massive number of corporate documents to analyze their structures to ascertain the knowledge and mutual influence interchanged throughout the network.

Such in-depth analysis based on machine learning enables diverse evaluation on core analysis, cluster analysis, shortest path analysis, key player analysis, core node analysis by subject, related node analysis by subject, and core node analysis by related subject. and many more. It aims to implement the real-time analysis function for the data circulated on the network.



[AI Analysis Algorithm on SNS]

### -Object Recognition Analysis

Machine learning-based object cognitive analysis automatically extracts (boundary distinction) objects (such as company name, person name, area name, date, time, amount, etc.) from data and classifies the extracted objects. It aims to implement a function that enables automatic real-time analysis of correlations.

## 6) Mainnet Development

At the beginning of its development, IZE token will be an ERC-20 token, and the mainnet will be developed to accommodate rapid data transaction, compensation, and AI analysis management.

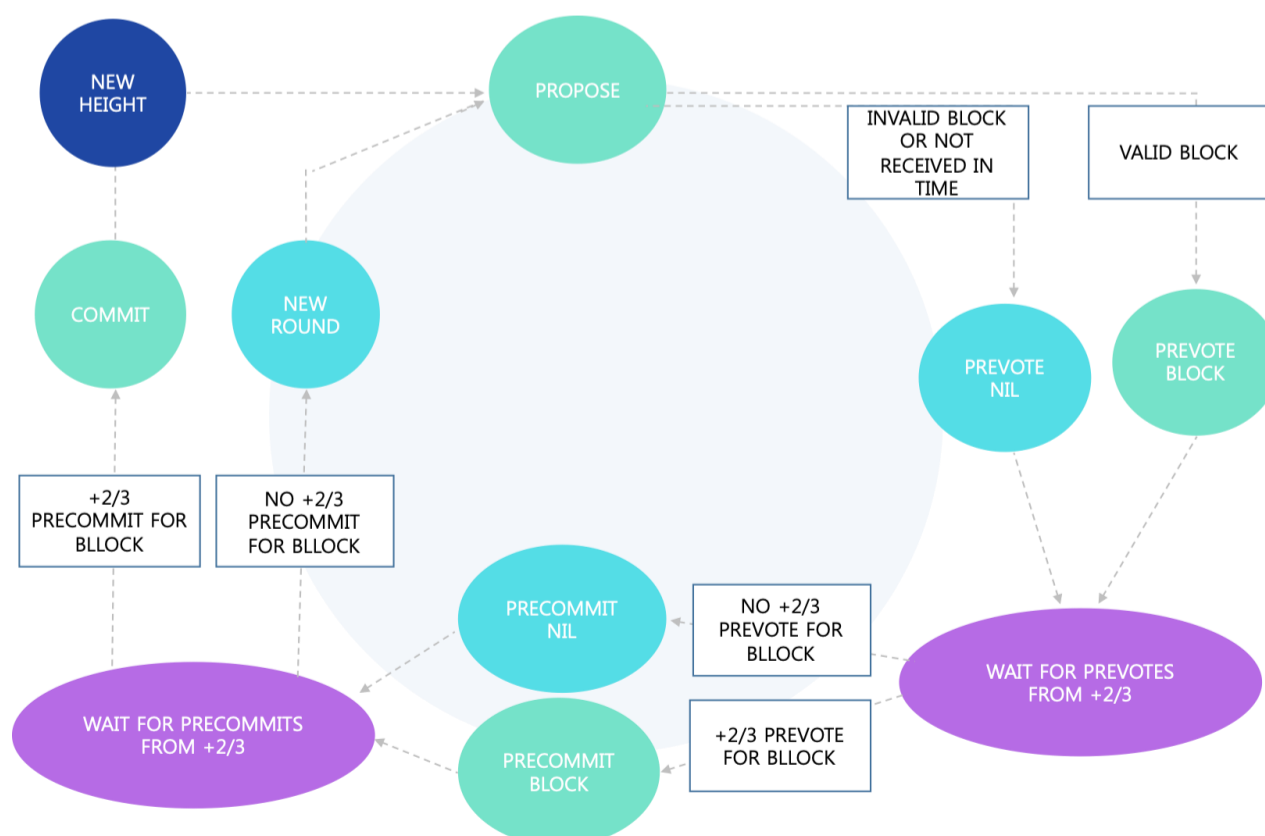
For the future of the platform, it would be necessary for the platform to integrate various blockchain projects. Also a technical configuration to swap or exchange with other coins would be required to enable interaction in the data platform.

Currently, there is no unified protocol between Ethereum-type coins and other coins with each ecosystem being developed simultaneously. It is also ironic that the exchange of coins and tokens can only be done through a centralized exchange.

We aim to develop our blockchain technology to appeal to the current situation. This development would need to improve the scalability and interoperability of the business in the data exchange and reward ecosystems.

Considering various factors, the IZE blockchain platform will be based on the technology of Tendermint-Cosmos Platform, which has been making progress in the blockchain field for a long time.

Tendermint-Cosmos has a Tendermint consensus protocol with a partially synchronous BFT (Byzantine Fault Tolerant) consensus protocol. In other words, Tendermint is a consensus algorithm that blends the Delegated Proof-of-Stake (DPoS) concept with the PBFT concept. The characteristic of Tendermint-Cosmos is interoperability, and to maximize the potential of the blockchain, it is necessary to create an "internet where all the blockchains are connected on a unified protocol." For this purpose, the Cosmos team proposes IBC (Inter-Blockchain Communication) protocol.



Tendermint Reference  
<https://tendermint.com/docs/cosmos>  
<https://github.com/cosmos/cosmos>

## 7) IZE Blockchain Platform Solution

Tendermint-Cosmo blockchain based IZE Blockchain features the followings characteristics.

### Fast Consensus

About 2,000 transactions are processed per second for fast transactions on the platform.

Ultimately it aims to achieve the speed of 10,000 TPS.

### Smart Contract

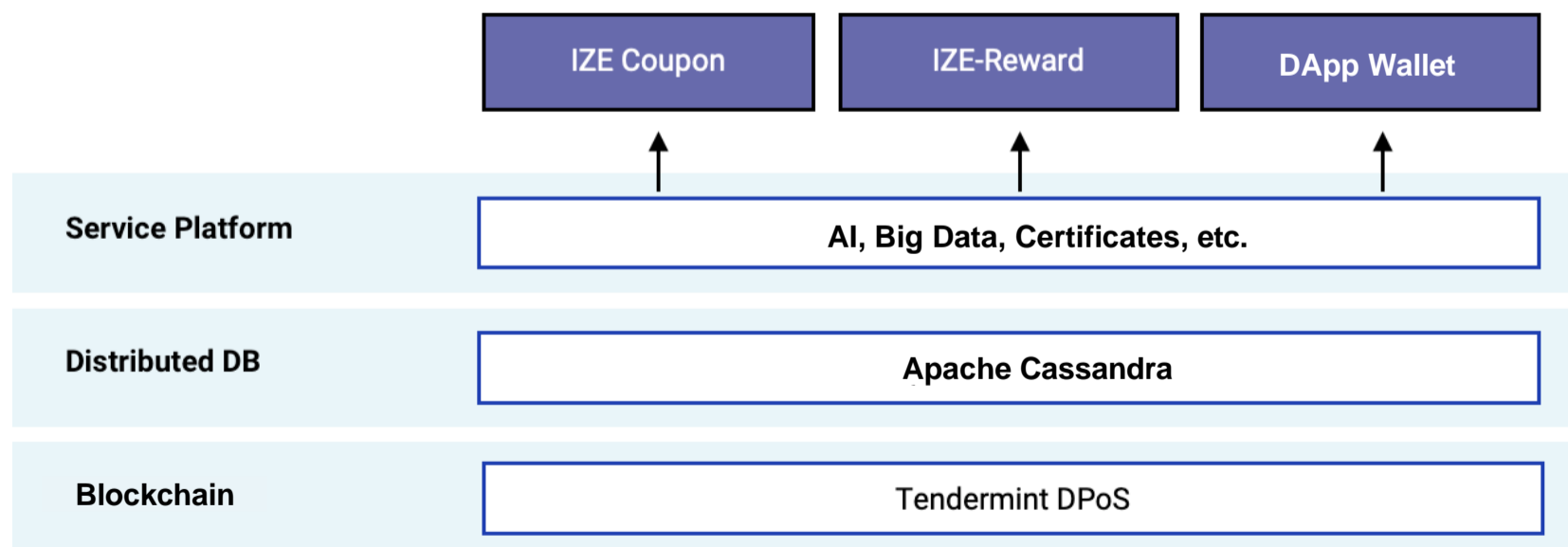
IZE blockchain supports smart contracts with data exchanging organizations, full compatibility with Ethereum, and full conversion of IZE blockchain with other smart contracts without any changes in the distributed application code.

### Safety

Safe transaction of intangible assets such as cryptocurrencies and monetary assets between the data service providers and consumers is equally important as the fast transaction. IZE implements abnormality detection technology to prevent faulty transactions or hackings.

### Low Fee

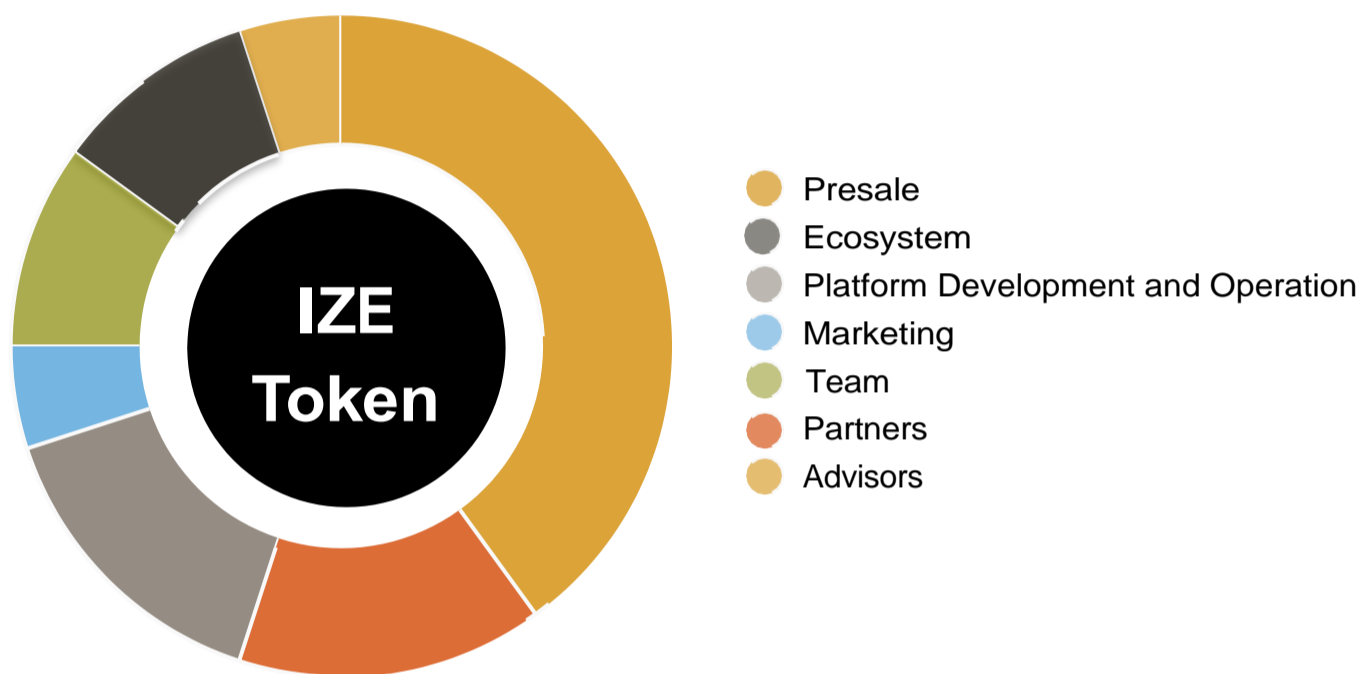
Low transaction fee enables businesses to activate IZE Blockchain ecosystem and protect their profit.



### 3. Token Issuance

#### 1) Issuance Details

The total issuance of IZE token will be 10 billion.



Type	No. of Tokens	Ratio	Remark
Total issuance	10,000,000,000	100%	
Presales	4,000,000,000	40%	
Distribution in the ecosystem	1,000,000,000	10%	
Platform Operation and Development	1,000,000,000	10%	
Marketing	1,000,000,000	10%	
Team	1,000,000,000	10%	
Partners	1,500,000,000	15%	
Advisors	500,000,000	5%	
<b>Total</b>	<b>10,000,000,000</b>	<b>100%</b>	



## 4. Team Members



**Yu Onodera** Founder

- Managed and operated FX management system and IT consultant company
- Over 10 years of experience in various business consulting
- Began research on blockchain technology and drafted the IZE project in 2013
- Contacted several companies and organizations in 2017 to strengthen the foundation of this project.



**Ricky Yujin Lohmeyer** Chief Strategy Officer

- Served at American Airlines as operating agent at Narita International Airport from 1991 to 1996.
- Operated a chemical pumps and oil skimming equipment manufacturing firm from Jun. 1996 to Oct. 2005
- Has experience in sales and processing of chemical pumps used in chemical plants, automobile factories, oil refineries and other areas.
- Managed a general trading company specializing in industrial facilities in Japan from 2006 to 2013
- Has been managing a company that plans and sells prepaid travel cards and a travel agency specializing in inbound and outbound travels since 2014
- Established a joint management company in Sri Lanka to carry out urban development and environmental improvement projects to expand its business into Asia.



**Kanchana Eric Sinharage** Chief Marketing Officer

- Experience in public relations and welfare
- Experience in organizing and networking of various cultural and multinational groups
- Has been involved in various government, private sector, NGO projects
- Project chairman of the road development department of Sri Lanka
- President of Colombo Prison Welfare Association
- Coordinator in Social Service Sector
- Coordinating Officer of Special Project Department of Sri Lanka



**Murilo Osamu Nobo** Chief Technical Officer

- Self-taught cryptocurrency researcher since 2016
- Held private cryptocurrency seminars to spread the knowledge on cryptographic assets
- Participated in Keikoku activities in Cambodia
- Participated in ICE platform smart contract business for ICO related projects
- Appointed as the Director Bear Valley Holdings (blockchain technology developer for Comoros Association)
- Developed blockchain related services for payment service providers, wallet service providers, affiliation providers, etc.

## 5. Partners



Company: AlphaPrime Lanka (Pvt) Ltd.

Areas of business: private banking, fiat exchange, cryptocurrency exchange, cryptocurrency custody, E-wallet, gold trading, microfinance



Company: Bitwide Co., Ltd

Area of business: blockchain game, blockchain investment, cryptocurrency exchange platform development



Company: Ntoz Soft

Areas of business: educational software development, system engineering, mining pool development



Company: Blue Helix

Areas of business: blockchain, decentralized fintech, techFin, exchange



Company: Chain Up

Areas of business: blockchain technology, blockchain solution, R&D, wallets, public consortium

## 6. Roadmap

### 2019

- Finalized project concept and its components
- Finalize team members
- Created CI/BI
- Planning and Design
- Planned white paper
- Finalized basic coin policies
- Sought partner affiliations
- Formed legal and finance team
- Began Pre-Sale
- Reviewed exchanges
- Completed white paper
- Completed DApp planning

### 2020

- List IZE on exchanges
- Design IZE Application
- Design IZE Add-on
- IZE Application MVP developed

### 2021

- IZE Application alpha test
- IZE Add-on MVP developed
- IZE Application beta developed

### 2022

- IZE Application beta test
- Planning IZE Metaverse
- IZE Wallet developed
- IZE Application beta2 developed

### 2023

- IZEverse (IZE Metaverse) beta test
- IZE Application beta2 test
- IZE Wallet beta test

### 2024

- IZEverse open beta test
- IZEverse Grand OPEN

## 7. Disclaimer

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## 8. References

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<https://www.coindeskjapan.com/26006/>

<https://ethereum.org/ja/developers/>

<https://github.com/ipfs/ipfs>