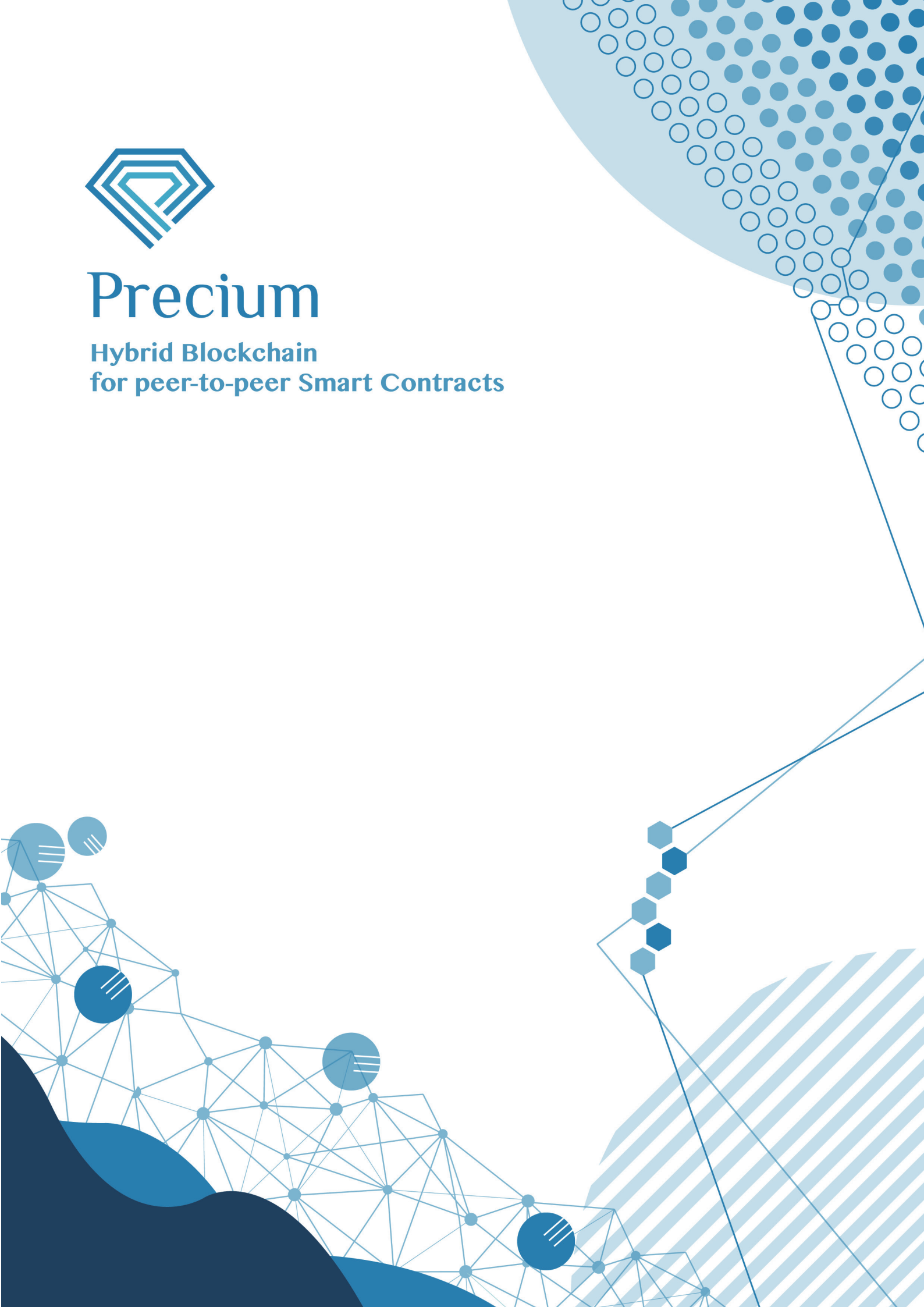




Precium

Hybrid Blockchain
for peer-to-peer Smart Contracts



Whitepaper

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Unlike existing methods of data storage in which all data is stored in a centralized server, blockchain technology allows data to be linked together like a chain and shared among all participants, creating a distributed, immutable system. Smart contracts automatically execute according to contract terms set between the contracting parties, fundamentally eliminating the risk of contract failure without any additional administrative costs. These characteristics give smart contracts unlimited potential. However, smart contracts have many technical shortcomings to address for real-world applications. Blockchain, upon which smart contracts are based, is still technologically inadequate in regards to economic efficiency and the reliability of decentralization. Smart contracts are also difficult for normal users to write and use. Additionally, there is still no method to determine with certainty whether or not a smart contract has been fulfilled.

The Precium platform is a new smart contract platform for peer-to-peer (P2P) transactions that allows contracting parties to create and use smart contracts simply and securely. The Precium platform provides users with a template of code for various contract terms, allowing platform users to select and combine their preferred contract terms to create a complete smart contract. In addition, anyone can create and upload contract terms to the Precium platform. These contract terms go through a validation process to ensure users' safety.

Onyx chain, the core of the Precium platform, is a hybrid blockchain that combines public and private blockchains. Onyx chain employs the raft consensus protocol used by Quorum, a representative private blockchain based on go-Ethereum, and simultaneously preserves blockchain's transparency while enjoying a high transaction rate and high scalability. Onyx chain's unique structure combining both public and private blockchains gives it differentiated advantages over other blockchains. It can also use Oracle technology more efficiently, which is a technology that calls information from an off-chain network to an on-chain network on the blockchain.

Onyx chain can secure a competitive advantage over existing blockchains through Precium's unique and efficient hybrid blockchain structure. With this foundation, the Precium platform will contribute to the development of a robust smart contract ecosystem.

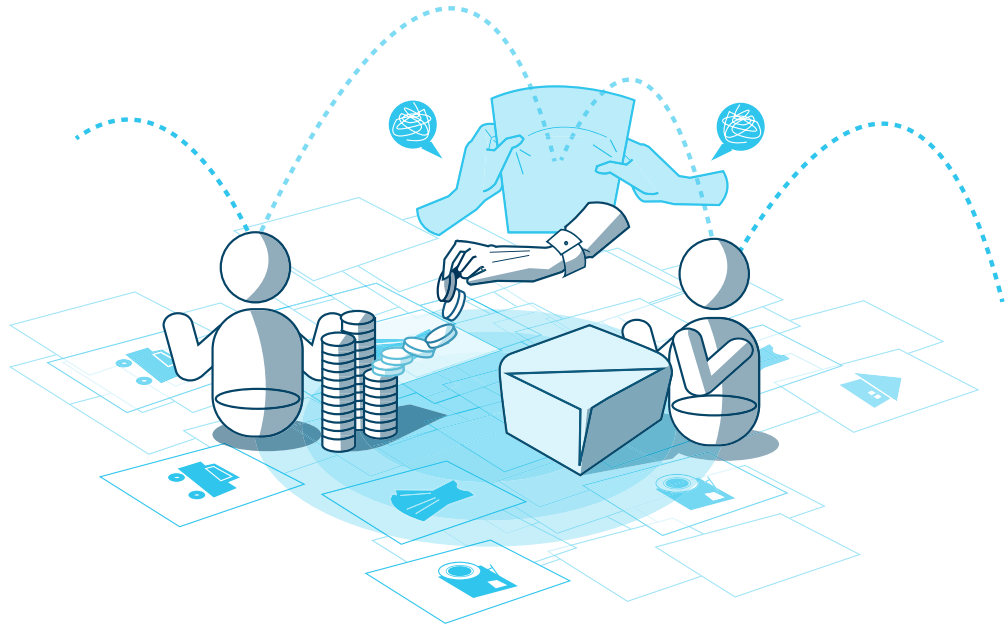




1. INTRODUCTION

Various industries recognize **blockchain** as one of the innovative technologies that will change the future. Enterprises in each industry are making various attempts to apply blockchain to their specific goals. Among these efforts is the active research and development of smart contracts, which can simplify contract procedures. A **smart contract** refers to a contract on a blockchain that automatically executes according to terms agreed upon by the contracting parties; in reality, they are executed according to the agreement of a number of parties. Depending on the purpose of the blockchain, the parties involved can be anyone who can participate in the blockchain or limited to a certain set of authorized users.

These blockchain-based smart contracts have various advantages. Most importantly, they reduce or completely eliminate the dependence on a middleman, a role necessary for traditional contracts. Smart contracts are well-suited for use in contract structures that require trust between the contracting parties, and have a decisive advantage over middleman systems in terms of productivity and cost savings. Additionally, compared to contracts administered manually, smart contracts are faster and much less prone to human error since they can be automatically managed and executed only through the network.

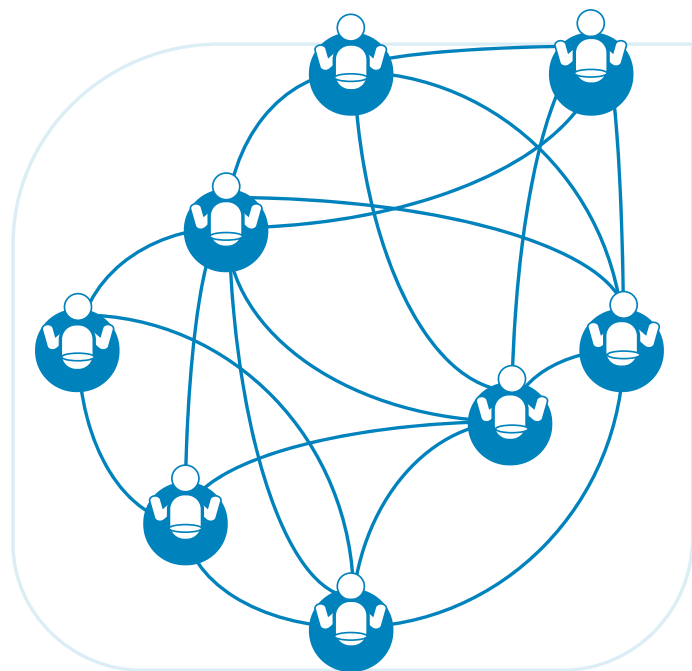


However, blockchain and smart contracts would have many technical shortcomings to address for industrial application. Blockchain, the basis for smart contracts, is still technologically inadequate in regards to economic efficiency and the reliability of decentralization. Smart contracts are also difficult for normal users to write and use. Additionally, there is still no method to determine with certainty whether or not a smart contract has been fulfilled.

1.1 Issues of Blockchain

In blockchain, information is recorded on a ledger that is distributed on a peer-to-peer (P2P) network rather than stored on a specific institution's centralized server. This new distributed database management system, also referred to as a distributed ledger, is jointly recorded and managed by its participants. This system highly differs from existing database structures in which jointly-used data is collectively managed in one place. By using a consensus algorithm, the data to be recorded on the distributed ledger is sorted and validated to maintain its integrity.

***Public blockchains** and **private blockchains** can be distinguished based on who has read and write permissions, as well as who has permission to participate in the consensus.*

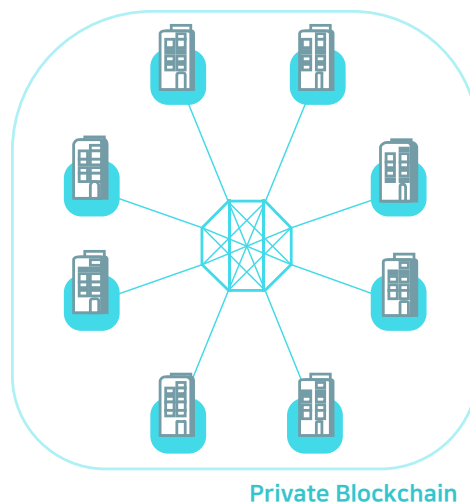


Public Blockchain

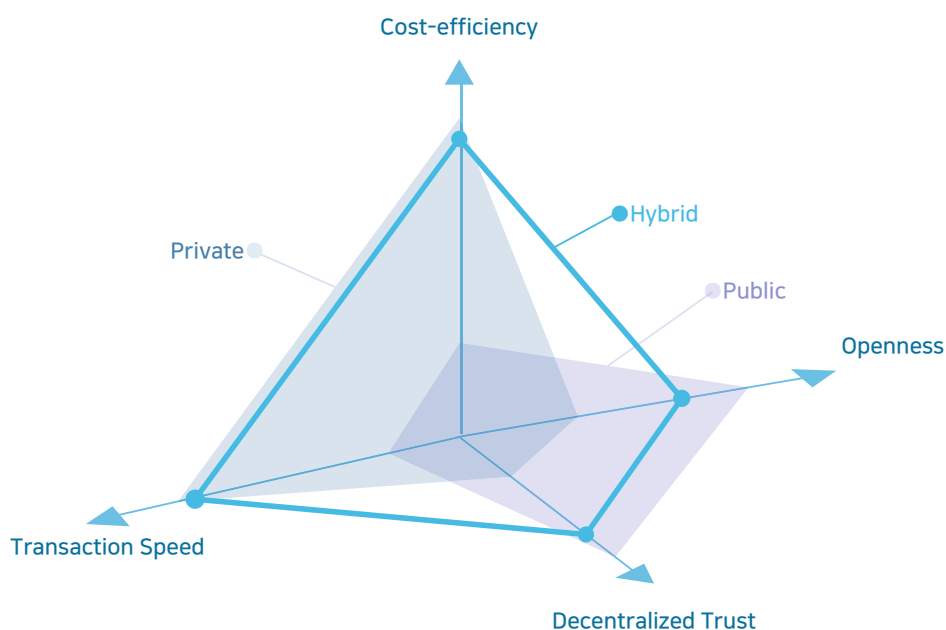
A **public blockchain**, also referred to as a permissionless ledger, is a distributed database management system in which all transaction parties share and store transaction information on the distributed ledger, ensuring the transactions' transparency. Therefore, any network participant can validate, create, or view transactions. The widely-known Bitcoin and Ethereum blockchains are two examples.

While public blockchains are more secure from hacking and issues involving trust compared to centralized management systems, they suffer from technological challenges such as slow processing speed and limited scalability, as well as price volatility. These issues make real-world industrial application difficult to achieve. Of course, there are many technologies such as Plasma, Sharding, Raiden, and DAG being researched and developed to overcome public blockchain's technological limitations. However, there has not yet been a solution to the blockchain trilemma—that is, simultaneously maintaining decentralization, security, and scalability.

A private blockchain, also referred to as a permissioned ledger, is a blockchain in which only certain nodes can participate. Recently, this blockchain structure has drawn the attention of many companies. From a company's perspective, being able to directly select trustworthy nodes makes private blockchain management easy; moreover, since the nodes are trusted, private blockchains can secure higher processing speeds and scalability through consensus methods different from public blockchains. However, private blockchain nodes are limited to a certain institution or company, forcing the system to depend entirely on the service provider and introducing limitations regarding trust.



Public and private blockchains have clear pros and cons regarding transparency, security, scalability, and confidentiality. Public blockchains emphasize decentralization since anyone can join the network; they are also very secure because their many participants all share and store the ledger. On the other hand, only authorized nodes can join a private blockchain, which better protects private information and introduces significant performance and cost benefits.



As a result, there is a trade-off between trust and speed when considering the advantages of public and private blockchains. Many blockchain experts expect the boundary between these two types of blockchains to blur in the future.

1.2 Issues of Smart Contract

Smart contracts, first proposed by Nick Szabo in 1996, were further enhanced through Turing-completeness and the Ethereum Virtual Machine (EVM). The heart of the technology is its automated contract mechanism.

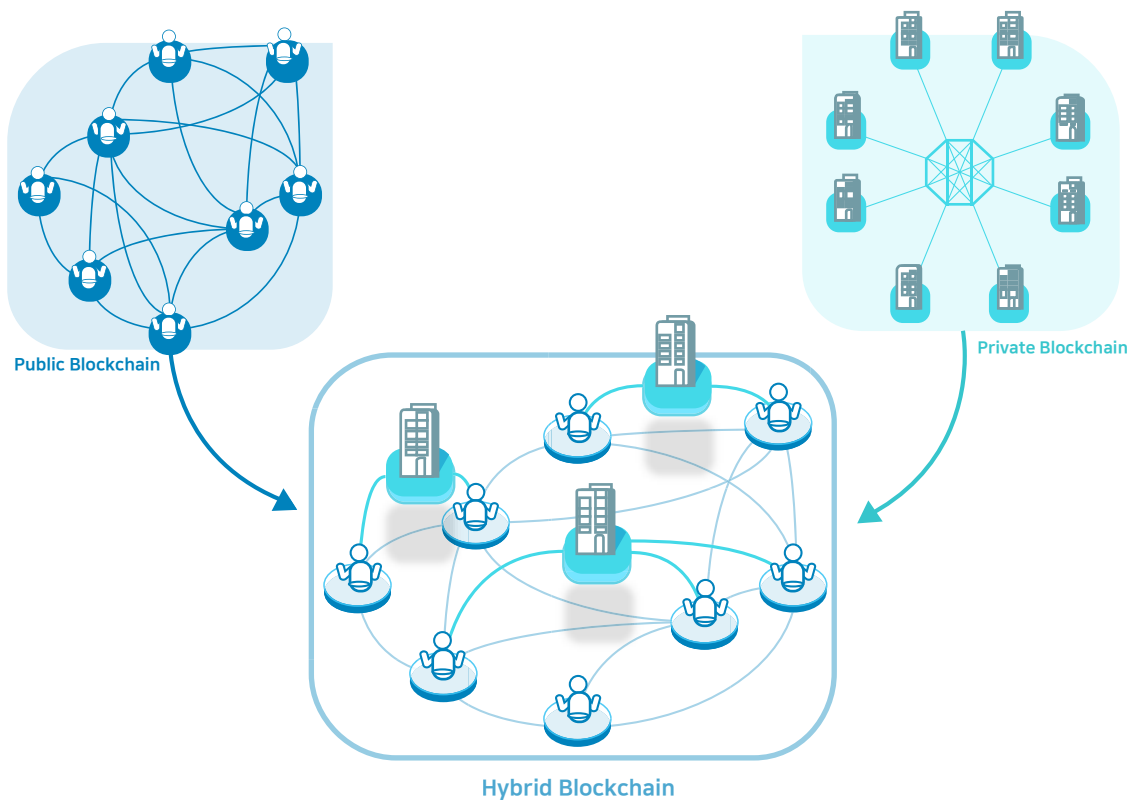
Smart contracts' greatest strength is their ability to create reliable contracts without the use of a middleman.

This leads to cost savings and low execution risk, catching the attention of companies in various sectors, including those involved in financial transactions, real estate contracts, and trade.

However, there are many technological shortcomings to address to freely implement smart contracts for real-world application. First of all, in order to create a smart contract, a programming language must be used to code the contract terms and content; this is difficult for everyday users to do themselves. Additionally, an existing smart contract cannot be partially modified nor reused, introducing inefficiencies. Particularly in regards to security, any errors or vulnerabilities in the code can cause huge damage to users.

There is also no complete blockchain consensus process to determine whether or not the conditions in a smart contract are fulfilled. Smart contracts are saved on the blockchain, so whenever external information is used, the reliability of the smart contract will depend on the reliability of that external information. Therefore, if information taken from outside the blockchain network (off-chain) is tampered with or contains discrepancies, then bringing that information onto the network (on-chain) can severely damage the reliability of the smart contract. In addition, in order to validate on-chain information, many nodes need to continuously retrieve external information. This process can also introduce many other problems.

1.3 Solution of Precium



*Precium seeks to solve blockchain's current problems through the development of **Onyx Chain**, a **hybrid blockchain** that combines public and private blockchains.*

With its structure combining public and private blockchains, Onyx chain employs the Raft consensus protocol used by Quorum, a private blockchain based on go-Ethereum, and simultaneously preserves blockchain's transparency while enjoying a high transaction rate and high scalability.

Onyx chain remedies public blockchain's problems with smart contracts and aims to remain reliable in real-world applications. The smart contract's basic information is disclosed through the public blockchain, while the contract's detailed information is confirmed by the contracting parties through the private blockchain, protecting confidential information. In addition, Oracles, technology that brings external information onto the network, are used on the private blockchain, making it more efficient than if used on the public blockchain.

With Onyx chain as a foundation, the Precium platform aims to make secure smart contracts more convenient to use. Without any programming, users on the Precium platform can select and combine their preferred contract terms to conduct smart contracts on the P2P network. Moreover, anyone can create and upload contract terms to the Precium platform. These contract terms go through a validation process to ensure users' safety.

2. PRECIUM PLATFORM



2.1 Introduction

The Precium platform is a **smart contract platform based on the Onyx chain** for peer-to-peer (P2P) transactions that allows users to create and use smart contracts simply and securely. Existing smart contract platforms require developers to code terms directly into a smart contract for users. However, this existing structure introduces a huge barrier to entry for the general public who may wish to create their own smart contracts.

The Precium platform provides users with a template of code for various contract terms, lowering users' barrier to entry for creating smart contracts.

Precium platform users only need to select and combine their preferred contract terms to create a complete contract. The platform then combines the selected coded terms from a template to provide a complete smart contract. Therefore, without any programming, users can employ smart contracts to engage in P2P transactions with their desired peers.

This process is also highly efficient in reusing smart contracts. In daily life, contracts made for different purposes may still share many common terms. This includes terms such as contract duration, the number of times the contract should be executed, and for what amount of time it should be executed. The Precium platform stores pre-validated code for not only the above common terms but also for a variety of contract terms specific to certain fields. This code is then provided to users in a template. As such, it is very easy to reuse contract terms. Errors and other issues are also reduced, since the same validated code is used repeatedly.

2.2 Architecture



Precium's architecture comprises three layers. The most fundamental, the **Onyx Core Layer**, contains the Onyx chain where all contracts on the Precium platform are generated. The Precium Platform Layer has a Template Creator that templates the code related to the smart contract and a Platform User to build a smart contract. In the Precium platform, template creators are provided with the various functions needed to template the codes used for smart contracts, and platform users can use the functions of payment, wallet, reward as well as smart contracts. The top layer, Application Layer, has various applications that utilize the features of the Precium Platform Layer.

2.3 Onyx Core Layer

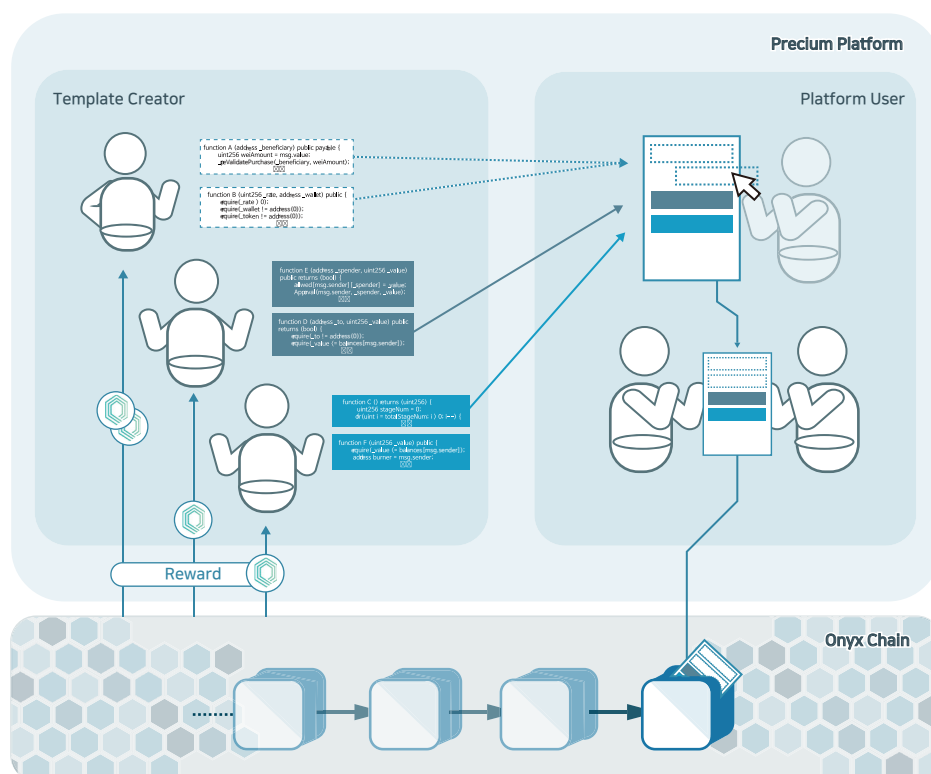
Onyx chain employs the Raft consensus protocol used by the private blockchain Quorum, and simultaneously preserves blockchain's transparency while enjoying a high transaction rate and high scalability. Quorum is an Ethereum-based distributed ledger protocol developed by JPMorgan Chase, and was designed as a minimal fork of the go-Ethereum client.

"Quorum is an Ethereum-based distributed ledger protocol that has been developed to provide the Financial Services Industry with a permissioned implementation of Ethereum that supports transaction and contract privacy." – J.P.Morgan

Quorum has key features such as transaction and contract privacy, multiple voting based on the consensus mechanism, network and peer node participation permissions, and high performance. In particular, in contrast with Ethereum, in which all nodes can freely participate, Quorum is classified as a private blockchain because nodes must first receive permission to participate. Onyx chain aims to maintain Quorum's inherent features as much as possible while also retaining public blockchain's transparency and security.

2.4 Precium Platform Layer

The Precium Platform Layer has a template creator that implements the terms of the smart contract as a code and provides them as templates, and a platform user who uses this to create and use the smart contract.

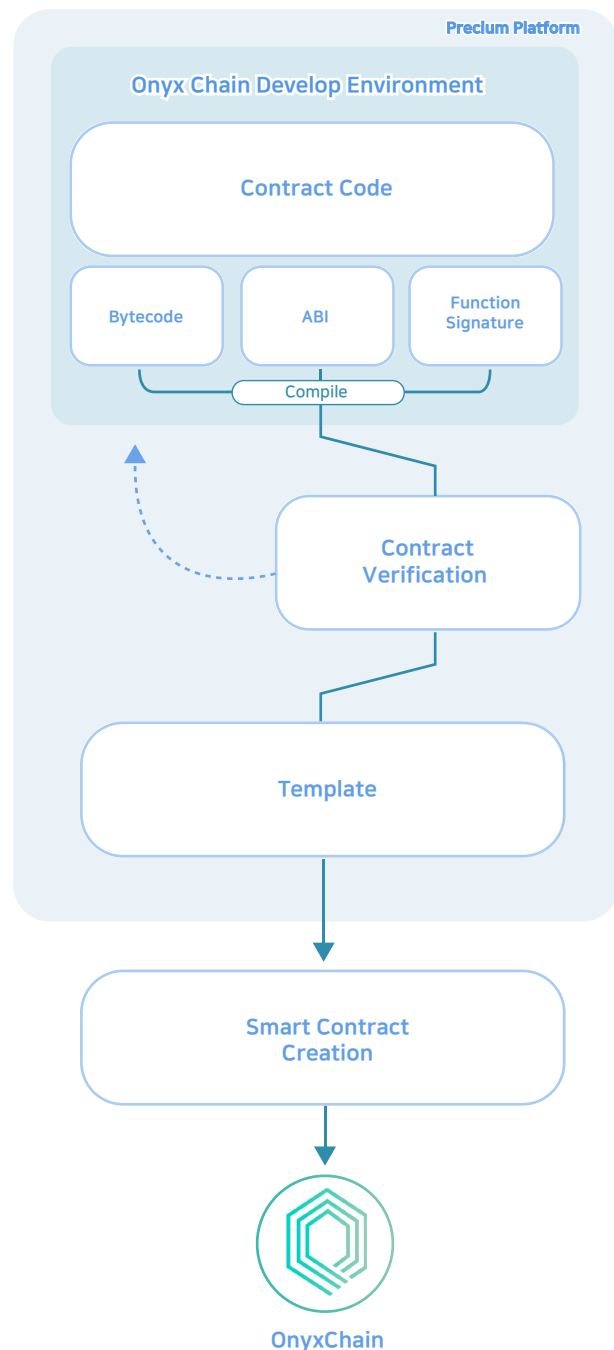


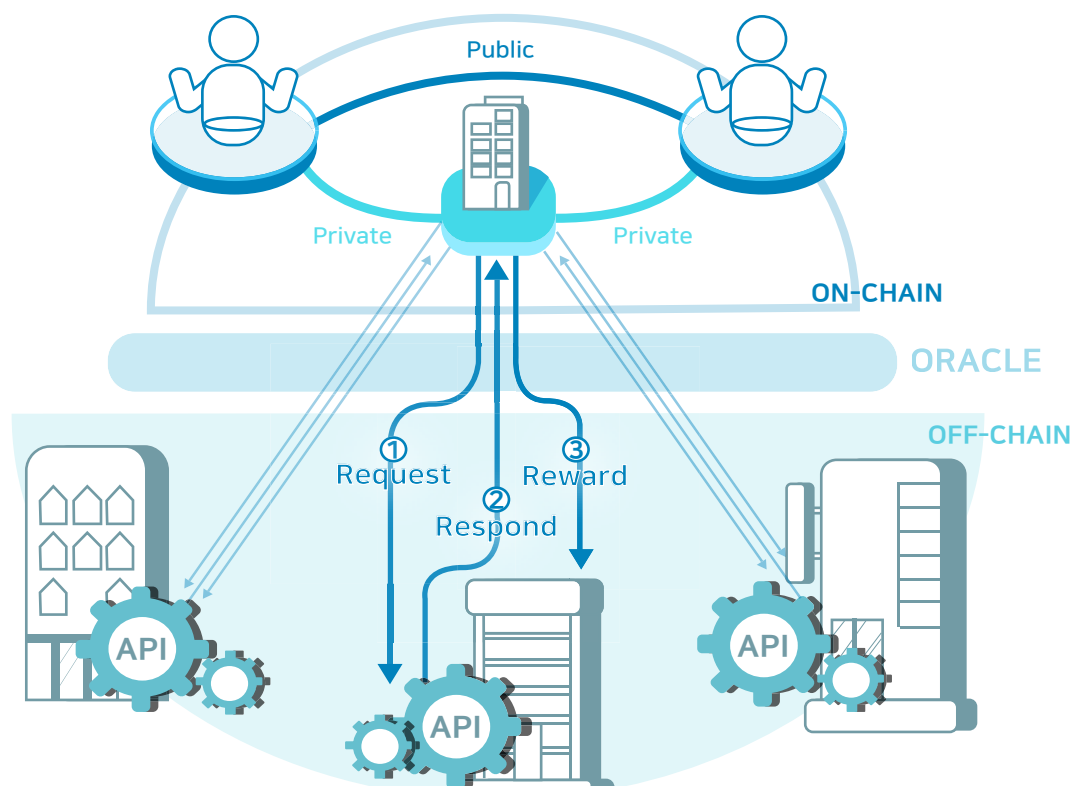
Template creators codify specific contract terms that can be used for smart contracts, test them directly on the Onyx chain and upload them to the platform. These uploaded templates are validated on the platform, which prevents various problems that may occur due to errors in the code. The verified code is made into a template and provided to the Precium platform user. If the platform user makes a contract using the template, the template creator who provided the template can receive Onyx Coin as a reward.

The Platform users can build a smart contract by simply combining the contract terms that they need among the contract templates provided. This smart contract is then saved and automatically executed on the Onyx chain. As mentioned above, the smart contract's basic information is shared through the Onyx chain's public blockchain, and its detailed information can be confirmed by the contracting parties through the private blockchain, protecting confidential information.

The Precium platform provides an optimal environment for Contract Creators to make contract templates on the Onyx chain. Once the Contract Creator programs the contract terms through Precium Solidity, the code is compiled; bytecode, Function Signature, and ABI are provided for compilation. Bytecode is the compiled smart contract code expressed as hexadecimal numerals, while Function Signature and ABI contain the smart contract functions and parameter metadata.

Since Onyx chain is built on the Ethereum-based Quorum, this is the same as Ethereum's smart contract development environment. This means that Onyx chain smart contracts guarantee as much stability as Ethereum smart contracts. The author can then transfer fully-compiled contract code to the Precium platform, where it is then validated. Finally, verified template is added to the platform and provided to users, and the template creator can be rewarded for this. The created smart contract template provides platform users with a convenient and secure smart contract environment. They can create smart contracts in the Onyx chain by selecting and combining the contract items they want from various contract templates, which can be freely used and distributed within the platform.





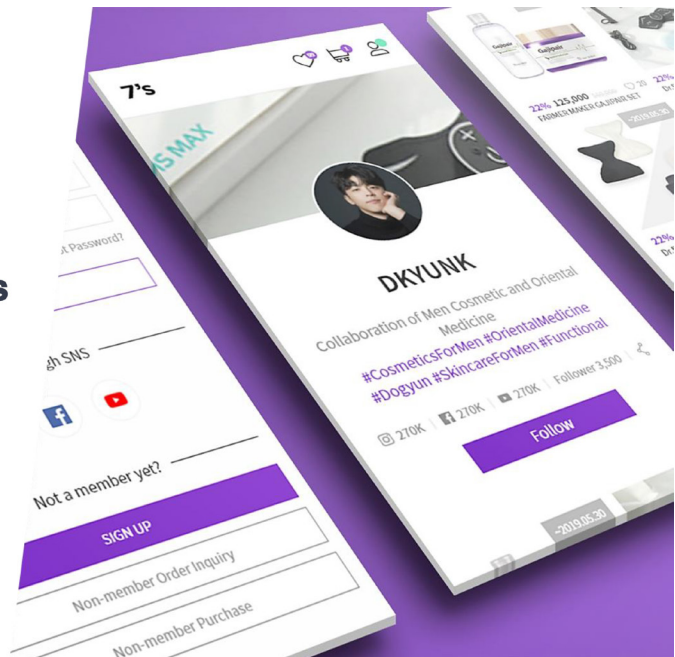
Bringing external information onto the blockchain through Oracle technology is integral to maximizing the reliability of smart contracts. This is because outside information accessed by the Oracle is used to determine whether or not a certain smart contract's conditions have been fulfilled. To increase reliability and provide developers with optimized APIs, Precium seeks to partner with organizations and research institutes that develop the APIs that provide external information to Oracles. Through this, Contract Creators can use reliable external information to help code contract terms. Additionally, organizations and research institutes that provide APIs may receive Onyx coins as compensation in proportion to the frequency of use of their APIs employed in the smart contracts. Beyond simply receiving reliable information, we hope for the Precium platform to catalyze a variety of markets in which smart contracts can be used.

2.5 Application

7render's

Where the Trend Begins

The New Paradigm of E-Commerce



7render 's is an influencer commerce platform that operates celebrities and mega influencers based on the network of KCENT, the largest influencer management company in Korea. With 7render's, Influencers can efficiently advertise and sell products provided by brands, consumers will be able to buy products at a relatively low prices and rewarded by participating in related reviews and referral events.

As mentioned in the previous section, Onyx Chain, a hybrid blockchain, has the advantage of having high transmission speed and high scalability while maintaining transparency. In addition, the Precium platform provides a structure that enables easy use of smart contracts and information protection through public and private blocks. These advantages of Onyx Chain are optimized for the e-commerce market where various contracts are made between brands, influencers and consumers. 7render's will be utilized as a representative platform of influencer commerce platform.

2.5.1 Necessity and Role of Onyx Chain

There are a variety of contracts on the Influencer Commerce platform:

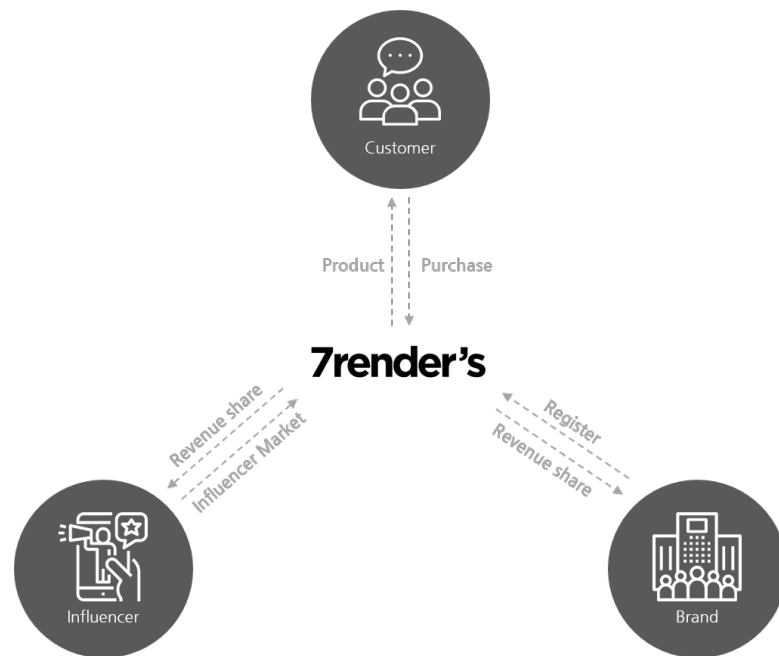
- Product advertising agreement between brand and influencer
- Sales revenue sharing agreement between brand and influencer
- Sales revenue sharing agreement between influencer and platform
- Contract for ordering products between influencer and consumer
- Product advertising agreement between platform and brand

Some of the above agreements require that some must be transparently disclosed to everyone, while some may only be shared between participating parties. For example, the contracting process between a brand and an influencer or an ordering and selling process between an influencer and a consumer must be transparent, but the brand may not want to disclose the share of revenue with the influencer. In this case, the public blockchain, where all the information is on the chain and is made public, cannot solve the problem. Also, due to the nature of the commerce platform, which has various types of contracts, slow transmission speed of the public blockchain can result to unexpected problems when used in real life.

Since Onyx Chain is a hybrid form in which both public and private blocks exist together, above problems can be solved by keeping a part of the contract content in a private block. In addition, it has faster transfer speed than public blockchains, making it suitable for real-life use. The various contract templates provided by the Precium platform can help to make 7render 's a safe and powerful commerce platform by allowing brands and influencers to conveniently create smart contracts.

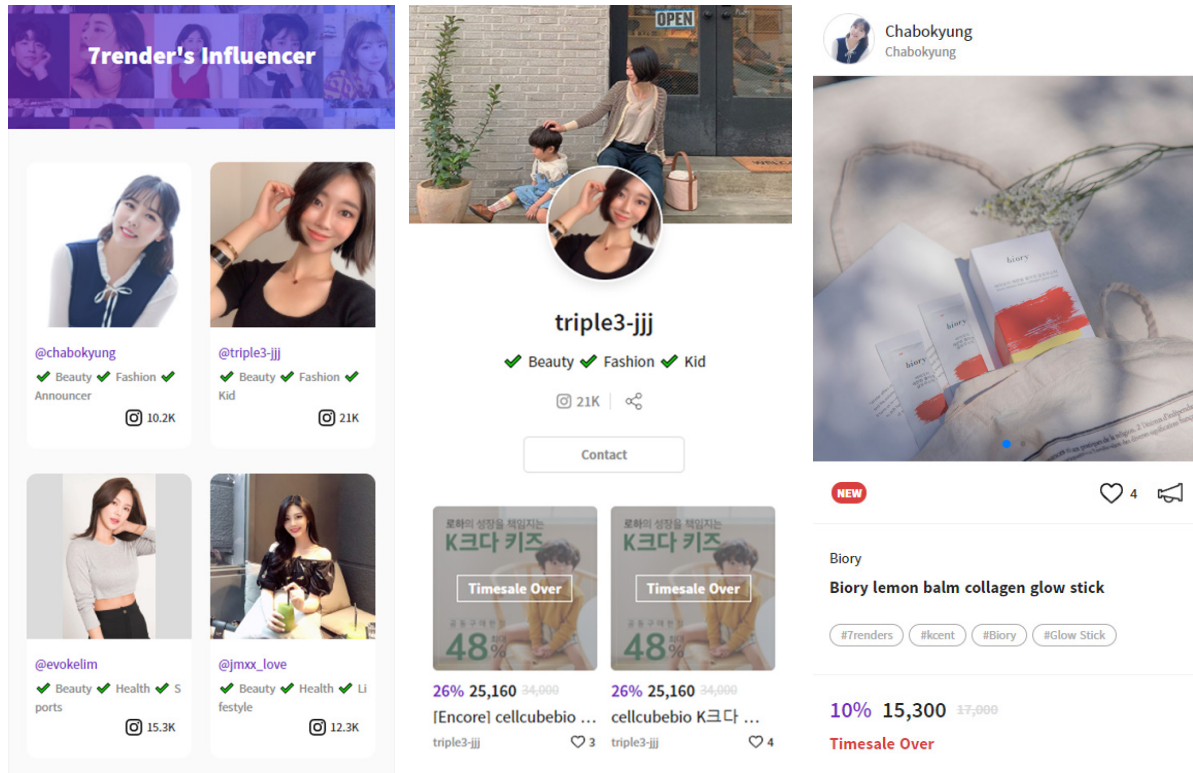
2.5.2 Ecosystem Components & Service Flow

The 7render 's ecosystem is composed of influencer, brand, and consumer, with each participant's role as:



■ Brand

- Contact influencers to promote their products and make advertising contracts or offer to sell products.
- Earn revenue by selling products directly to consumers and share profits with the platform.
- Register a product on the platform, the brand must stake a certain amount of PCM.



■ Influencer

- Make an advertising contract with brand, sell products in private market within 7render's, and share profits.
- Hold PCM to increase their reputation, giving them the opportunity to promote their market.

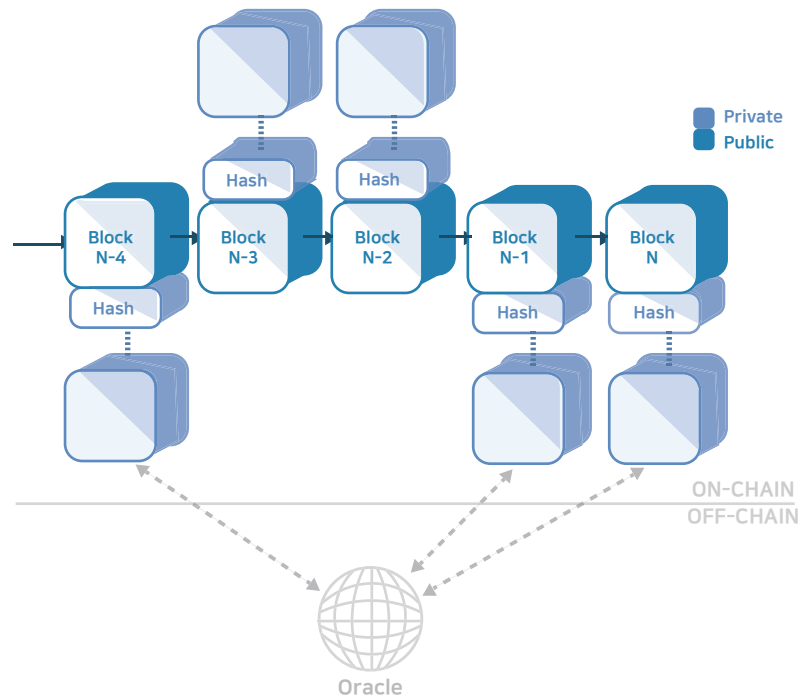
■ Customer

- Purchase products from the brand market and receive cashback.
- Purchase products from the influencer market and receive cashback.
- Write review and get rewarded.
- Receive PCM rewards by participating in the referral system.
- Receive various benefits by holding PCM.



3. ONYX CHAIN

3.1 Hybrid Blockchain



Onyx chain is a hybrid blockchain combining public and private blockchains. As shown in the diagram above, each public block contains the hash value of the private block corresponding to the pair, securing the connectivity of the two blocks. Thus, while anyone can freely view Onyx chain's public blocks, a private block can only be viewed by its corresponding user. In addition, the private blockchain is used when the Onyx chain receives external information through Oracle technology. This makes it more efficient than the public blockchain, which requires many nodes to access the API to validate the contract content.

In conclusion, Onyx chain can be described as a blockchain with the structural nature of a hybrid blockchain that uses a public blockchain to notarize the hash of a private block.

Onyx chain has a highly efficient structure for using smart contracts. In the case of smart contracts on a public blockchain, anyone can view the contract's content regardless of the will of the contracting parties. In the case of Onyx chain, however, detailed contract information is stored on private blocks, allowing only the contracting parties to view the content.

3.2 Technical Overview

A variety of consensus protocols can be used on Quorum; QuorumChain, Istanbul BFT, and Raft are a few representative protocols. They differ in characteristics such as block generation speed and method and transaction finality. Raft is an asynchronous consensus protocol used in existing distributed systems. It enables the creation of a coherent system that can survive even if a portion of the servers comprising the system fail. Each server will always be in one of three states: Leader, Candidate, or Follower.

Normally, there is one leader and the remaining servers are followers. The followers only respond to the requests of the leader and candidates and do not make any direct requests themselves. On the other hand, the leader handles all of the clients' requests, while a system member transitions to the candidate state when elected to become to the new leader. Each member saves a term number for the current time in the system; each term is an arbitrary period of time. These term numbers are exchanged whenever the servers communicate with each other; in the event that the term numbers are different, they will update to the most recent one. In addition, a leader or candidate will become a follower if in possession of an old term number, and requests with the old term number will be rejected.

Through this process, information is shared among the servers, updates are made, and the system runs smoothly. The Raft protocol comprises the key components of **leader election**, **log replication**, and **safety** when reaching consensus among the members of a distributed system.

■ Leader Election

In the Raft protocol, one of the nodes is elected to be the leader every term. If the leader election fails that term, then a leader will be elected the next term. The elected node has strong influence. Here, the leader election ensures that at most one node can be elected as leader. During a certain period of time, the elected leader communicates with the other nodes and decides what gets added to the logs.

■ Log Replication

In the Raft protocol, the elected leader handles client requests. Each client request includes a command; the leader first appends the command to its log and then sends a remote procedure call (RPC) to the other nodes so that they can replicate it as well. If the followers respond slowly, do not perform the operation, or suffer from some network problem, then the leader will continue to repeat the request until all followers save the appended log. The leader can only add new entries to the log; it cannot modify or delete existing entries.

■ Safety

Aside from the aforementioned leader election and log replication, the Raft protocol ensures safety by adding restrictions to each member that can be elected as leader. The leader elected in a certain term must possess all entries added in previous terms. In other words, whenever a log entry is added during a certain term it must be the leader's most recent log entry, thereby ensuring safety.



Based on the above features, the Raft protocol ensures that the entire system will continue to operate smoothly even if certain members of the distributed system fail.

However, since the Raft protocol has features suitable for private blockchains, it is not suitable for use as a consensus protocol in the Onyx chain, a hybrid blockchain.

Existing distributed systems are based on the trust of each individual member that makes up the entire system. However, since the Onyx chain combines public and private blockchains, one should assume that it would be difficult to trust all of the nodes participating in the system. The entire system must continue to operate normally even if some nodes act in their own interest. This introduces a need to supplement the existing Raft protocol.



3.3 Consensus Protocol for Onyx Chain

The Onyx chain uses a modified version of the Raft protocol that supports Byzantine Fault Tolerance (BFT), a technique developed to solve the problem of unreliable nodes that make up the system.

*The new protocol used in the Onyx Chain is based on the **Practical Byzantine Fault Tolerance (PBFT) consensus algorithm**. Reaching consensus with the existing BFT consensus algorithm is only possible on synchronous networks, while PBFT can also reach consensus on asynchronous networks with Byzantine nodes.*

In this protocol, each node on the system stores an encrypted hash value for the log entry; to obtain the log entry's current encrypted hash value, one must employ a recursive method using the old encrypted hash values to verify the integrity and completeness of logs recorded in the past. This is possible because it uses the characteristics of encrypted hash values accumulated from previous records. Byzantine nodes can be prevented from tampering with the logs by matching accumulated logs.

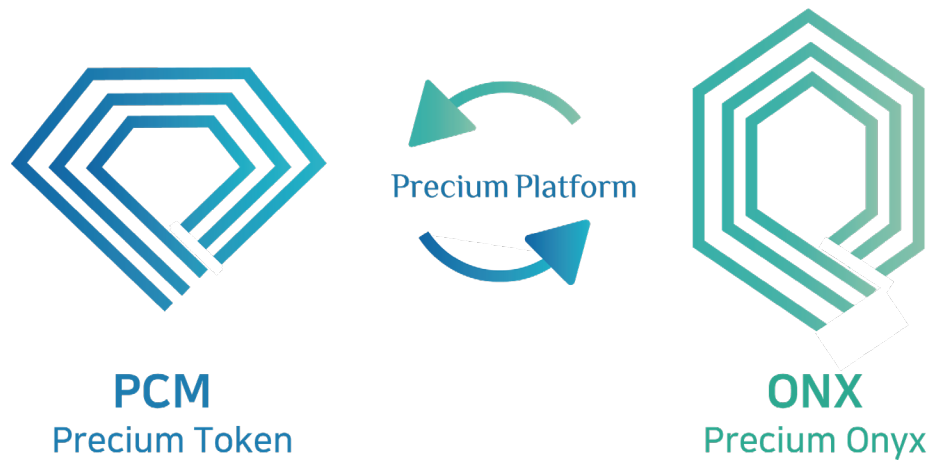
Each node on the Onyx chain has its own public key and private key. Each node and client shares one another's public key, while messages are signed with the node's private key. The message recipient validates the signature using the public key of the node that signed; the message is rejected if the signature is invalid. This system prevents Byzantine nodes from behaving like normal nodes.



If the current Onyx chain leader is a Byzantine node, then a situation may arise in which the leader maliciously ignores all system requests. To prevent this, clients can mediate the leader's rights if the leader does not act maliciously. The election of a new leader can also be initiated, preventing a Byzantine leader from interfering with the system. Additionally, during a leader election there should be one candidate for each term; the nodes each become candidates depending on a certain schedule for several terms. To initiate the leader election process, the node must receive a number of election requests above a certain amount from other clients. This ensures that the leader does not behave negatively for over a certain period of time and prevents Byzantine nodes from initiating leader elections at will.

Recently, various techniques are being researched for supporting BFT in the Raft protocol. Precium will continue to develop a consensus protocol that can be optimized for the structure of the Onyx chain, eventually leading the development of a hybrid blockchain.

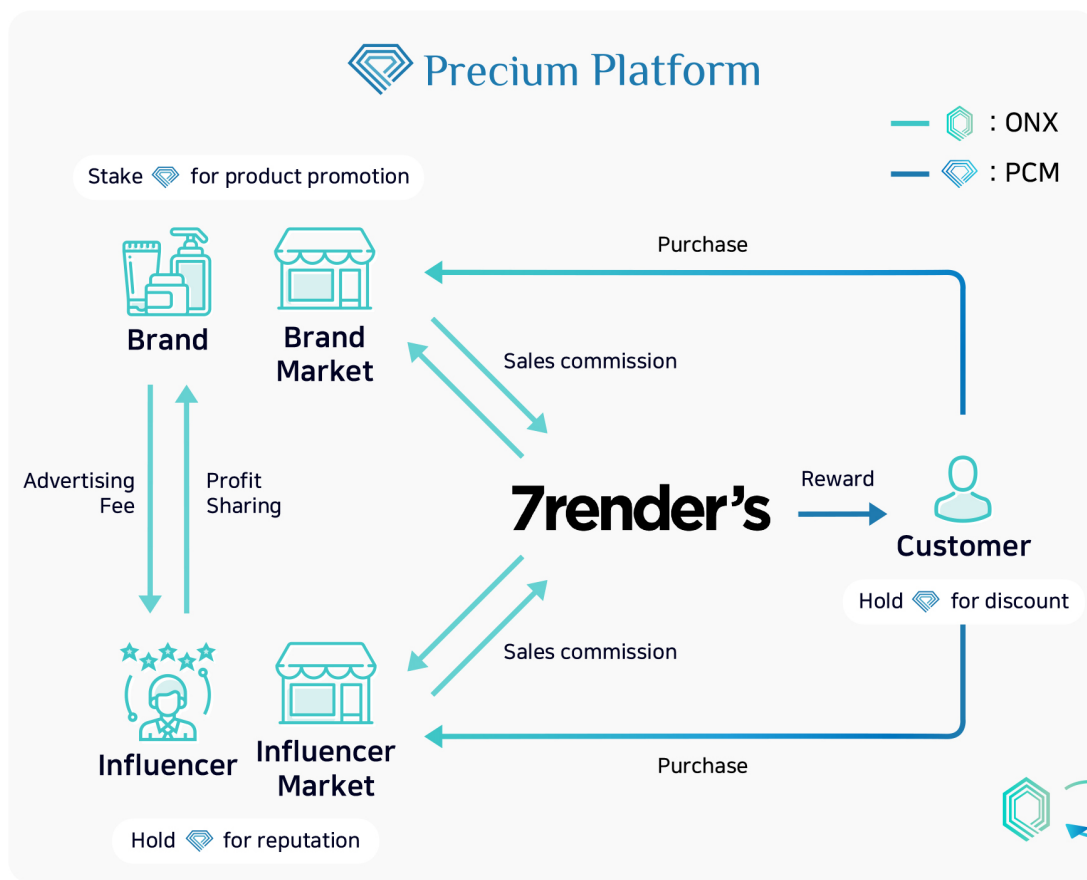
4. TOKEN ECONOMY



Precium platform coexists with Onyx Chain's ONX coin and PCM tokens based on ERC20, a token standard that guarantees the compatibility of tokens that can be distributed on the Ethereum network. This is a strategic choice to provide stability to the ecosystem of many use cases where the Precium platform will be used. It is very confusing to use only coins that are not stable value in making contract or selling products on any platform, and it may cause platform instability.

To solve this problem, the Precium platform enables major contracts and transactions through ONX, a stable coin that guarantees fixed value. ONX uses the onyx chain that is used only within the Precium platform and can be used for various functions such as smart contracts, payments, and rewards.

PCM, whose price is determined by externally traded market value, can be applied in many use cases and will allow the token ecosystem to circulate continuously with appropriate supply and demand within various applications of the Precium platform. For example, 7renders, the first use case of the Precium platform mentioned earlier, has the following virtuous circulation structure:



■ Demand for PCM token

- If a commodity supplier wants to build a referral based network through the onyx chain, they must stake a PCM.
- Influencers who sell actual products or have various contracts with brands and customers can stake PCM to improve their advertising efficiency.
- Platform users can stake PCM for more rewards, cashback and discounts on the platform.

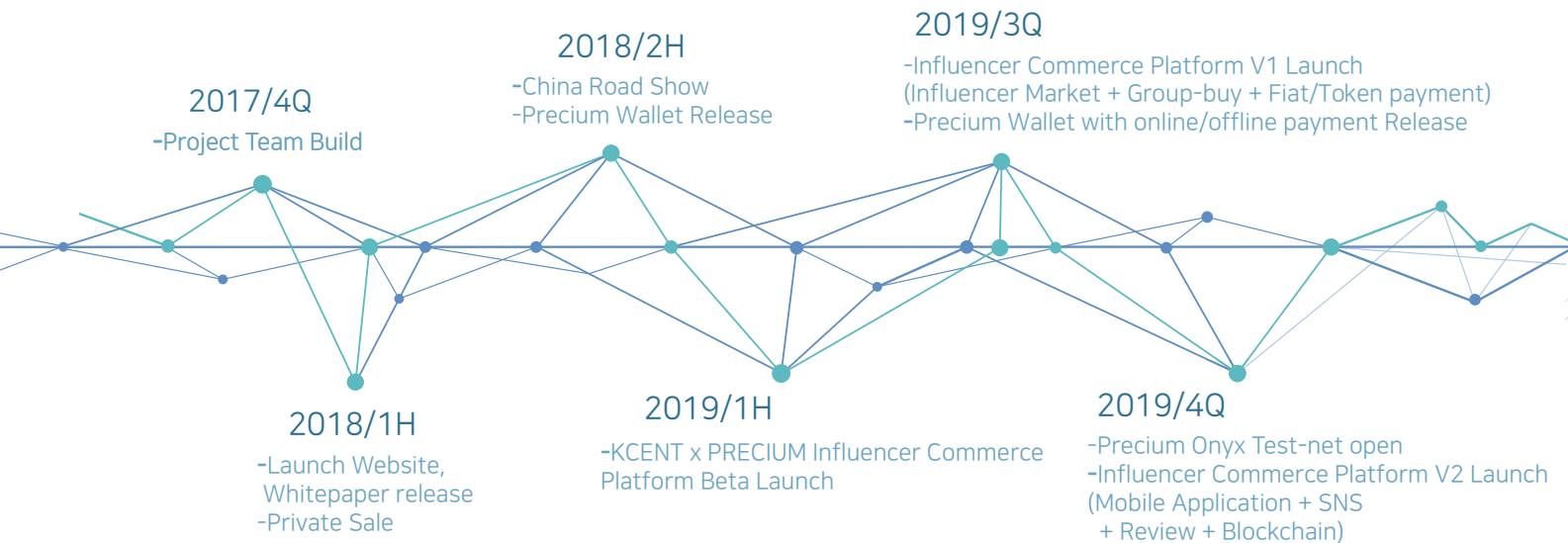
■ Supply for PCM token

- Platform users can purchase products, receive cashback or PCM through product reviews.
- Platform users can invite more users through the referral system and receive PCM in return.

Precium platform, which will secure the stability of the monetary value through ONX, will discover additional use cases even after 7render's, attracting more users to the platform and gradually increasing the PCM token circulation.

5. ACTIVATION PLAN

5.1 Roadmap



5.2 Marketing strategy

As a blockchain consulting firm, the Precium Foundation has partnered with the Korean-Chinese Silk Road International Association, which is responsible for promoting exchange between Korean and Chinese companies under China's Belt and Road Initiative (BRI). Through this partnership, the foundation will play a key role as the base for fruitful blockchain technology exchange between Korea and China. We have also partnered with Kcent, a leading entertainment group in influencer marketing, and TWOAB, an agency specialized in internet celebrity marketing in China. We are currently working on the first project to vitalize the Precium platform, the Influencer Marketing Project.

The Precium platform's Onyx chain provides users with a template of contract terms that can be used directly to make smart contracts. We plan to support contracts for all tangible and intangible transactions, including transactions for used items, rentals, employment. Through future strategic alliances with various enterprises, Precium will expand the real-world applications of its platform and replace existing middleman-based contract systems not only in the Korean and Chinese markets but worldwide.

Through training, seminars, and content creation, the Precium Foundation plans to widely promote not only the Precium platform, tokens, and smart contracts on the platform but also the benefits of blockchain technology and cryptocurrency. The foundation headquarters is currently being operated in Korea, with a branch in Singapore and a branch planned to be established in China in the future. In addition, we will forge relationships with Korea's top universities to promote blockchain research and education and help cultivate the talent of blockchain developers.

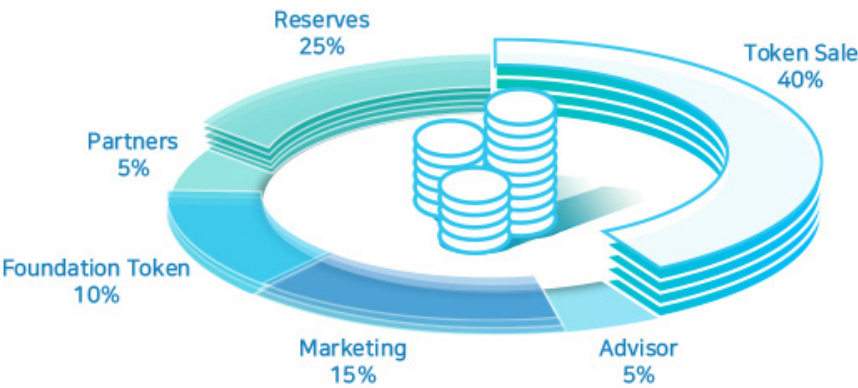
6. TOKEN DISTRIBUTION

6.1 Introduction

TOKEN SYMBOL	PCM
TOKEN ISSUED	750,000,000 PCM
TOKEN SALE (40%)	300,000,000 PCM

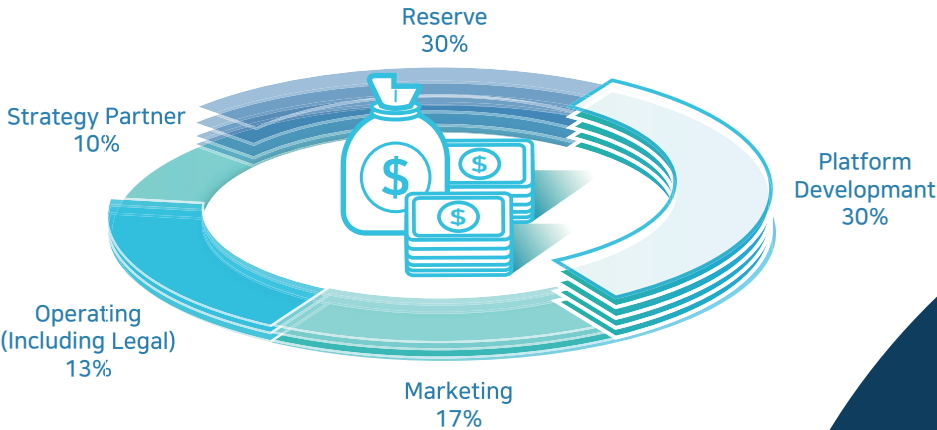
6.2 Token sales and ICO fundraise managements

TOKEN SALE



* Foundation Lock-up: 24 months
* Advisor Lock-up: 12 months lock-up with vesting period of 12 months following

FUNDRAISE



Team Precium



Han Kim

CEO / Founder

- Korea Univ. Electrical Engineering
- Former Software Engineer at LG CNS
- Designed and Developed Chatbot Service for Home Shopping (70% of market share)



Alex Lee Ph.D.

CTO / Co-founder

- Korea Univ. Electrical Engineering
- Korea Univ. Electrical and Computer Engineering, Ph.D.
- Developed Algorithm More Than 10 Government/Enterprise Projects



Jay Ye

Architect / Co-founder

- Korea Univ. Electrical Engineering
- Korea Univ. Electrical and Computer Engineering, M.S.
- Involved in International Standardization (IoT Sector)



Jiho Kim

Marketing Director

- Korea Univ. College of Business
- CFO at TeamEXE Inc.
- Co-founder of KCENT Inc.



Ray Kim

CFO

- Toronto Humber College, Canada
- Former Head of Overseas Business Team, Ever Techno Co., Ltd.
- Former Director of TXR Partners



Woongrae Son

Marketing Lead

- Korea Univ. College of Business
- McKinsey & Company Consultant
- CSO at KCENT Inc.



JinYong Kim

Developer

- Korean Minjok Leadership Academy
- Yonsei Univ. Energy Engineering
- Developed Apps for Analyzing Vehicle OBD2 Data in KewTea



JD Ahn

Developer

- Korea Univ. Electrical Engineering
- Former System Engineer at LG Electronics Inc.
- Involved in Algorithm Development of BMS in Electric Car



Yerin Kim

Global Marketing

- Korea Univ. College of Liberal Arts
- Vice Chairman at ITS in Korea Univ.
- Involved in Chinese Translation at IME Labs of Korea Univ.



KH Byun

Solutions Architect

- CTO of MOVILEST
- Leader of CircleCI Korea User Group
- Managing Operator of AWS Korea User severless group
- Kwangwoon Univ. Electrical Engineering



In Ho Kim

Senior Developer

- Participated in KT IOT project
- Participated in Ministry of SMEs and Startups IoT proejct.
- Developed fingerprint sensor Device & SDK
- involved in Biometrics Certification Standard
- involved in FBI-PIV & India STQC lab



Mark Jang

Developer

- Graduate School of Information and Communication Engineering, Korea Aerospace University
- Android developer in Movilest



Sanghuck Yu

Developer

- Kwangwoon Univ. Electrical Engineering



Sa Rang Yun

Designer

- Sungkyul Univ. Korean Literature
- HIVE CENTER Corp. Web Designer (2016-2018)



Sangeon Park

Designer

- Seowon Univ. Multimedia department



Kim Minwoo

Managing Director

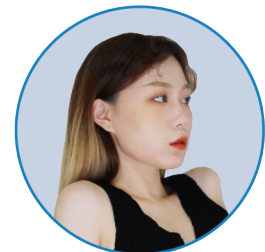
- Korea Univ. Electrical Engineering



Jay Choi

Manager

- Korea Univ. Electrical Engineering
- Former Research Engineer at LG display Involved in Algorithm Development



Heily

Design Lead

- Ewha Womens' Univ. Visual Design



Hoontak Jung

- CEO of SidusHQ
- Advisor of Korea Entertainment Management Association
- Founder/CEO of I Love Cinema



Daniel Kang

- Sogang University BA/BS.
- Deputy Managing Director at Geometry Global Korea. Part of world's largest global communication group: WPP.
- Brand communication expert providing marketing consultancy to multiple Fortune 500 companies.
- Winner of international creative awards: PMAA Dragons, Shop!, IDSA, K-Design, Luerzer's Archive.
- Youngest Senior Management official within Korea's WPP Agency Network



Jonathan Lee

- BS in Management Science, University of California San Diego
- COO of Yello Digital Marketing Group
- Business Development Director of WPP Korea
- Experienced blockchain start-up advisor, other projects include SIX Network, XCHNG, Blue Block Capital and HARA



Michael Song

- Co-founder of YSK MEDIA&PARTNERS
- Advisor of YAP Chain & YAP Company
- Co-founder of E-Sports Team Worldgamestar(WGS)
- Business Development Manager of Samsung Corporation



Nicko Deng

- Master of Information Technology and Management, University of Nottingham, UK
- Emerging Investor
- Professional blockchain consultant
- Investment reviewer of Tencnet
- Investment reviewer of Decent Capital (Founded by Jason Zeng, Co-founder of Tencent)
- Participated in more than 15 blockchain projects



Wyeth Lee

- CRO, Omni Commerce (China)
- CEO of Samsung Opentide China
- President of Samsung SDS China Corporation
- Owner of residence permit in China (Green Card)



Jung Hyun Kim

- Serial Entrepreneur, Angel investor

Current

- Founder and CEO of WOOZOO shared house

Former

- Founder/CEO of Delight (Acquired By DaewonPharm)
- TNNATION Founder and CEO (Acquired By IOK Entertainment)
- The First Korean Member of the World Economic Forum's Year of The Social Entrepreneur (2015)
- Entrepreneur of the Year by Forbes Korea (2013)
- Presidential Award of the Korea Human Resources Award (2011)



Daniel Doohyun Han

- Bachelor of Business Administration, Iowa States University
- Founder of Tiny Big
- Founder of LLH Partners
- Chicago Kintetsu
- KPMG Strategic Consulting Team Consultant in Korea

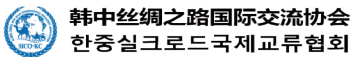


Alex Kim

- Vice Chairman of Precium Foundation
- Graduate School of Media Studies, Korea University
- Standing Director of National Players Association
- Delegate of The Korean Association of National Team Members
- Chairperson of Physical Education Committee of the Yeouido Institute
- Publisher of MBC Economy Magazine
- Olive Nine, Managing Director, KT Group

Precium
Partners

HANKY&PARTNERS



KCENT



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