PK CHAIN

The world's first public chain of blockchain to subvert the iGaming and betting market ecology

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12 Risk and Legal Disclaimer

Risk disclosure

- Policy risks
- Market risk
- Technical risk
- Capital risk

13 Reference

Abstract

In October 2015, The Economist published a cover article: A machine for creating trust - how the technology behind Bitcoin will change the world.

The advantage of block chain is that it can solve the identity identification and personal credit of network transaction at very low cost and avoid the traditional centralized clearing structure by using point to point transaction, which can greatly improve the operational efficiency of the financial system and even the whole economic system.

Although the blockchain is born with the appearance of technology, it is far beyond the scope of technology itself, just as the Internet has brought us. Blockchain is not only a technology, a tool, but also an idea. The core spirit of blockchain, such as openness, sharing, and decentralization, coincides with the Internet. The difference from the Internet is that the blockchain further extends this idea from the transmission of information to the transmission of value.

At present, the blockchain is mainly used in the digital currency market, and the next large-scale application scenario will be in the iGaming and betting market, which will subvert the traditional iGaming and betting market ecology.

PKC aims to quickly switch the traditional iGaming and betting platform to blockchain through the PK Chain. With the help of platform engine, some traditional underground bankers and private betting and so on can all carry out their own business on the PK Chain. For ordinary users, they can also use the platform engine to publish certain betting projects targeted, like professionals. Becoming the world's first the public chain of iGaming and betting blockchain that subverts the traditional iGaming and betting market ecology.

Market and policy

2.1 International market

In accordance with Juniper Research, a well-known market research institution in the UK, published a "2015-2020 mobile and online gaming" shows that by 2019, 10% of adults in the world will conduct online gaming or mobile gaming and global gambling revenue is expected to reach $525 billion.

According to a September data report that published by Sensor Tower, which published all APP income rankings on APP STORE+GOOGLE PLAY in the United States. The report shows that in the 30 most profitable APP in the United States in September, there are 5 poker casino games on the top of the game. The list of poker casino games is as follows: "Slotomania" (ranked eighth), "Double Down" (ranked sixteenth), "Slot Machine" (ranked eighteenth), "House of Fun" (ranked twentieth), "Big Fish Casino" (ranked twenty-two).

2.2 Domestic market

The "2017-2023 China Game Market Depth Monitoring and Future Forecast Report" released by Zhiyan Consultation Co., Ltd. shows that the game market in domestic scale is 165.5 billion yuan, and the mobile games market is 81.9 billion yuan. At present, the proportion of mobile board games in all games is expected to be around 5%. Then the board games market scale in domestic is 8.2 billion, and the mobile board games scale is 4.1 billion. Although the overall gameplay of the board game is relatively traditional and the users of which have obvious characteristics:

The target user is wide and large, which the younger is the trend and 20-40 years old is the main group.

The user stickiness and loyalty are high. Nearly 60% users play board games

more than one hour a day, and two million users spend more than 8 hours a day.

The game has long life cycle, low developmental cost and stable profits.

2.3 Good law and policy

At present, more than 100 countries and regions around the world have legalized the gaming industry. In recent years, the attitudes of all countries in the world regarding the legalization of online gambling have changed in varying degrees. By the end of 2016, a total of 85 countries had legalized online gambling, creating a tax of about $37 billion.

Since 2017, many countries and regions have joined the ranks of the legalization of online gaming operations, and online gambling offers high taxes to the government. According to incomplete statistics, online gambling will be legalized in Jamaica, Columbia, Switzerland, Portugal, Poland, Romania, and Massachusetts, Michigan and Pennsylvania which in the United States.

Gaming industry is gradually gaining recognition from more countries in the world, and online gambling, formed as a combination of gaming industry and modern technology, is developing rapidly. The online gambling market, which is the development direction of the gambling industry in the future, has broad prospects for development, and the industry contains unlimited energy.

On April 11th, the CPC central committee and the state council issued the "Guidelines for the CPC Central Committee and State Council on Supporting Hainan's Comprehensive Deepening of Reform and Opening-up," and clearly stated that "support the construction of national sports training south base and Provincial Sports Center in Hainan, encourage the development of sand movement, water sports, horses racing and other projects, support to build a national sports tourism demonstration area. Explore the development of betting type sports lottery and major international events and so on."

2.4 Global capital market is active

Global capital market continues to be active in the market of board game and iGaming as well as betting.

- On October 13, 2016, Giants Interactive acquired Playtika, a subsidiary of Caesars Entertainment, which focuses on casual social mobile games, for $4.4 billion in cash.
- In early April 2017, IGT sold Double Down, a social game developer, to Korean company DoubleU Games for US$825 million. IGT spent USD 500 million to acquire Double Down in 2012.
- In early December 2017, Australian gaming machine manufacturer Aristocrat announced the acquisition of Big Fish Games, a social gaming company based in Seattle, USA, with a total purchase of $990 million dollars.

The problem of market

Although the market continues to be active and legal policies continue to bring convenience and benefits, there are many problems in the market.

3.1 High commission

Due to the high risk of operation of the centralized iGaming and betting platform, the operators of the platform need high enough revenue to ensure the normal operation of the platform. Then someone needs to pay for it. The regular iGaming and betting platform returns 7.5%-8%, while those illegal platform returns can reach 30%-40%.

3.2 Lack of mobility

The gold coin produced by the player in the game has no effective way to circulate to the market. All the value (gold coin) that the player produces in the game platform can't be effectively converted into actual income, which should belong to the player's interests eventually or concentrate on the center platform operators.

3.3 Low technical threshold and lack of credibility

The traditional iGaming and betting platform is based on a centralized business model (controlled by a certain company or individual), which means that participating in iGaming and betting requires the transfer of their assets to a centralized platform for trusteeship. However, due to technology and entry barriers are very low, the qualifications and reputation of many centered iGaming and betting platforms are worrisome; these centralized iGaming and betting platforms generally suffer from technological loopholes and leakage of

sensitive user data and so on. Users who participate in iGaming and betting bring great risks and uncertainties.

3.4 It is cheating in iGaming and has betting without transparent

The operator of the centralized iGaming and betting platform is very controllable. They have the right to modify the rules randomly and even to reinvent them. In the past, the old players knew that the odds of winning and losing in the game platform of board games are all controlled by the operators who charge the backstage controller and declare superficially how faithful they are and no robots, which exactly are the same as others.

3.5 Privacy

Due to centralized payment methods, customer payment records exist forever so customers are frozen and tracked at any time, and customer information is always leaked or stolen, and even sold by a centralized platform so that personal data cannot be securely protected.

3.6 Legal risks for paying complex and settlements of Legal Tender

Despite the advancement of technology, the payment of online casino gaming platforms still has complicated form of payments, and because of the restrictions of laws and policies in different countries and regions, there is a high legal risk in using Legal Tender to settlement.

PK Chain

Based on our accumulation of traditional iGaming and betting platform, as well as continuous attention and self-developed research on blockchain technology, our team aim to adopt a solution based on dual currency economic system with PK coin and PKDT and development of PK Chain that based on EOS optimized to provide a brand-new and healthy platform ecosystem based on PK Chain for traditional iGaming and betting platform and to establish a consensus mechanism and form a profit community based on PK Chain, solving a series of problems in the traditional iGaming and betting platform, and better serve the industry.

4.1 Decentralization

The platform of the iGaming and betting blockchain built on PK Chain can not only achieve the functions of all traditional centralized iGaming and betting platforms, including sports betting, board games iGaming, etc. It will also be able to carry the same or even greater trading volume as traditional centralized platforms, while also addressing the common problems in the industry.

Based on the decentralized nature of blockchain technology, there are no organization or individual can control PK Chain, which enough to demonstrate its justice, openness, fairness, and transparency and so on. At the same time, all our iGaming and betting business is implemented by smart contracts so that users no longer need to worry about platform credit.

4.2 Everyone can be a banker

In PK Chain, there is no need for technology or too much money and everyone can become a banker. PK Chain has many built-in game engines that can be configurable so that users can only become bankers with a small margin.

4.3 Tamper-proofing

The blockchain records the hash values of all transactions. These hash values are obtained from the original data of the transaction by hash algorithm and even slight modifications of the original data will have different results. These records of block are linked to each other and all these data are existed in each node so that it is impossible to tamper with the data.

The blockchain is based on a time series of double-entry bookkeeping. The transaction is the basic unit of the book, and the block is the container for recording the transaction records. All the transaction records are recorded by the Merkle tree , and each block is associated with a hash value. These books are recorded in various nodes on the network and cannot be tampered with by anyone, ensuring that the user's assets will not be affected by a server attack or some nodes being attacked or having problems.

4.4 Transparent rules based on smart contracts

Another revolutionary innovation of the blockchain is smart contracts which are written in code. All executions are pre-written, and smart contracts are also recorded in the blockchain that you can find out contract code and the rules are transparent, so that the fairness of the iGaming and betting platform can be guaranteed.

The block browser is a display system of PK Chain application data, but also provides tools for the user to search smart contracts on the PK Chain. It displays

and queries all smart contracts codes, transactions data, account balances, betting transactions, and lottery results based on smart contracts and transactions data recorded in the blockchain. All data are transparent and inherently irrevocable.

4.5 Based on the next generation of blockchain technology

Due to the characteristics of iGaming and betting, it involves frequent transactions and operations, while Bitcoin version 1.0 and Ethereum version 2.0 of blockchain have problems that low concurrency, shortfall in TPS processing capacity and serious network congestion and so on. And their high fees are obviously not in line with the iGaming and betting market.

However, the emergence of EOS version 3.0 of blockchain solves the problems of the last generation blockchain, which has powerful concurrency, TPS that can handle millions of transactions per second and basic design with completely free of transaction, which makes it become the technical foundation for constructing the PK Chain.

4.6 PK Chain provides platform engine

We provide the PK Chain to allow existing iGaming platform practitioners to easily migrate their business to the blockchain platform. At the same time, we provide a complete set of platform engines so that newly-entered practitioners can use their resources to easily enter, reduce the industry's threshold, and allow the industry to enter a healthy competition.

For many offline lottery stations, we provide a platform engine tool group to allow these offline lottery stations to quickly issue blockchain-based lottery to open the state for participation by all citizens.

At the same time, for facilitate the iGaming platform to better operate its own business, we provide a complete set of operational analysis platform and BI-based business intelligence analysis and decision platform.

4.7 Ecosystem

Business system

IGaming platform

Based on our existing iGaming and betting platform, through our PK Chain platform engine, we gradually migrate our existing business to PK Chain.

We not only provide iGaming games but also introduce battle games, such as online Table Tennis Competition.

By introducing the PKDT based on the PK Chain, players can enter into a variety of iGaming, including Texas, Baccarat, etc., through iGaming that based on H5 and halls of client Game. By integrating the wallet into the client, players can easily recharge the Legal Tender to the PK coin and convert it to PKDT. Conversely, players can also convert the chips that win from games into PKDT, then convert them to PK coin, and convert PK coin into cash or currency transactions through exchanges.

When players play iGaming, they also provide computing power of random numbers for the iGaming themselves, making the iGaming fairer. The platform will provide certain mining incentives to encourage players, which will be automatically issued to the player's account through smart contracts.

We will also provide casual iGaming gameplay to attract more users to our PK Chain.

We will also encourage the third party's iGaming service providers to access the PK Chain, and we will provide support for one-stop access services, including:

- Share user resources of the PK Chain
- KYC certification service for areas that require KYC for board games
- PKDT docking service

- True random number algorithm for iGaming data.
- Data storage service for saving iGaming data

Regardless of the self-operated iGaming or the access of third-party iGaming service providers, the Foundation will extract no more than 1% of the game's revenue as operating expenses of the PK Chain. The extracted fees are automatically executed through smart contracts and are open and transparent. In addition, the fund's funding address will also be made public and audited by everyone.

Betting platform

Introducing the PK Chain, we can solve the fair and justice problem in betting games well. We will set up a set of fair and justice betting ecological platform by providing a platform of betting and introducing the form of third party gambling service providers.

The services provided by the PK Chain include but are not limited to the following content:

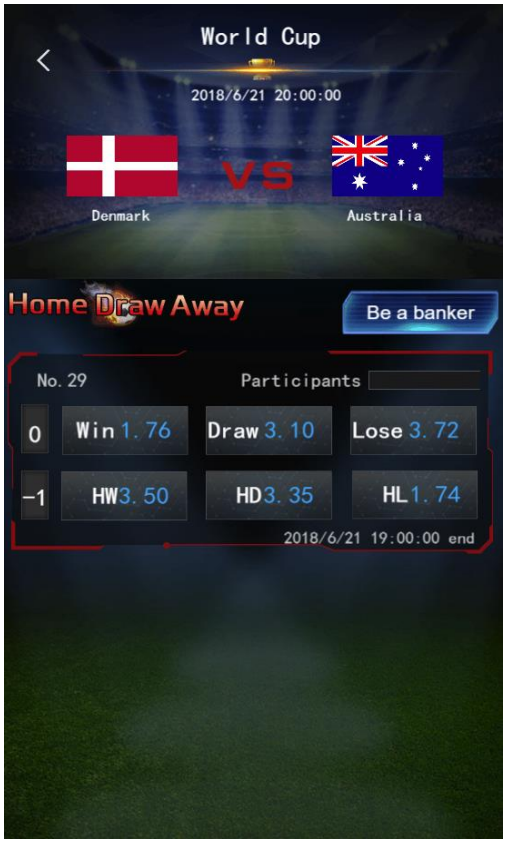
- Provide match betting
- Provide events betting
- Provide Chain-terminal betting
- Provide events betting that create by ourselves
- Access authority lottery platform

The betting and gambling platform will also provide a model for self-operation and the introduction of third-party gaming service providers, which have equal status in the public chain of iGaming and betting blockchain. The Foundation will extract no more than 1% of the game's revenue as operating expenses of the platform. The extracted fees are automatically executed through smart contracts and are open and transparent. In addition, the fund's funding address will also be made public and audited by everyone.

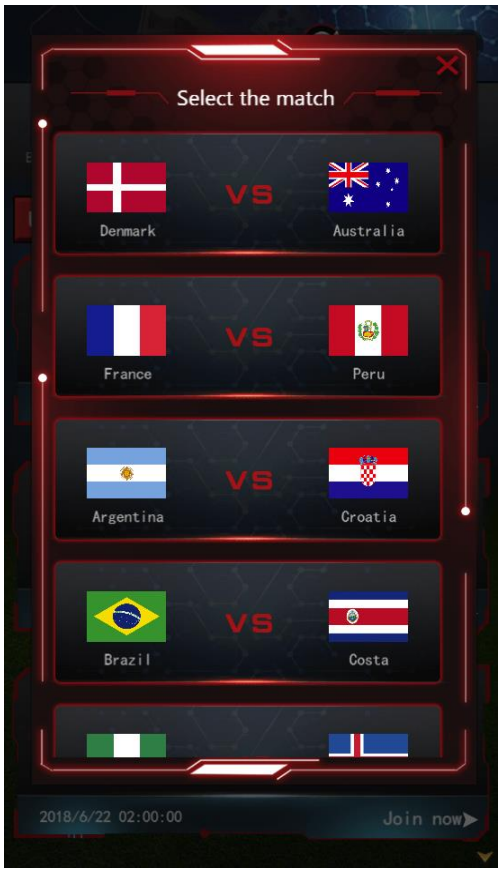
IGaming platform	Betting platform
• Texas hold'em • Baccarat • 诈金花 • 斗地主 • 锄大地 • Mahjong • Battle games	• Sports betting • Events betting • Chain-terminal betting • Events betting that create by ourselves • Lottery platform

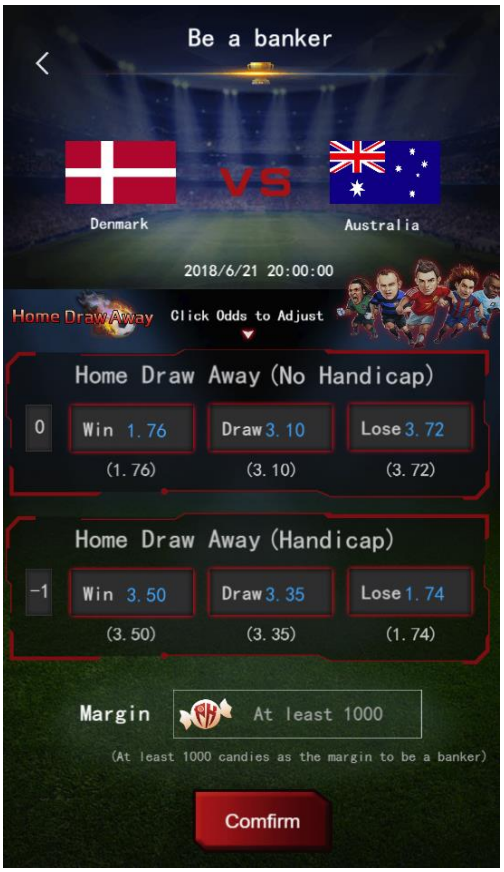
IGaming and betting of World Cup

The World Cup is coming soon and our iGaming and betting project about World Cup is already online. Users can click on our iGaming and betting link to participate in the event:



Users can also choose to open the house and their own bureau to betting in the World Cup project.





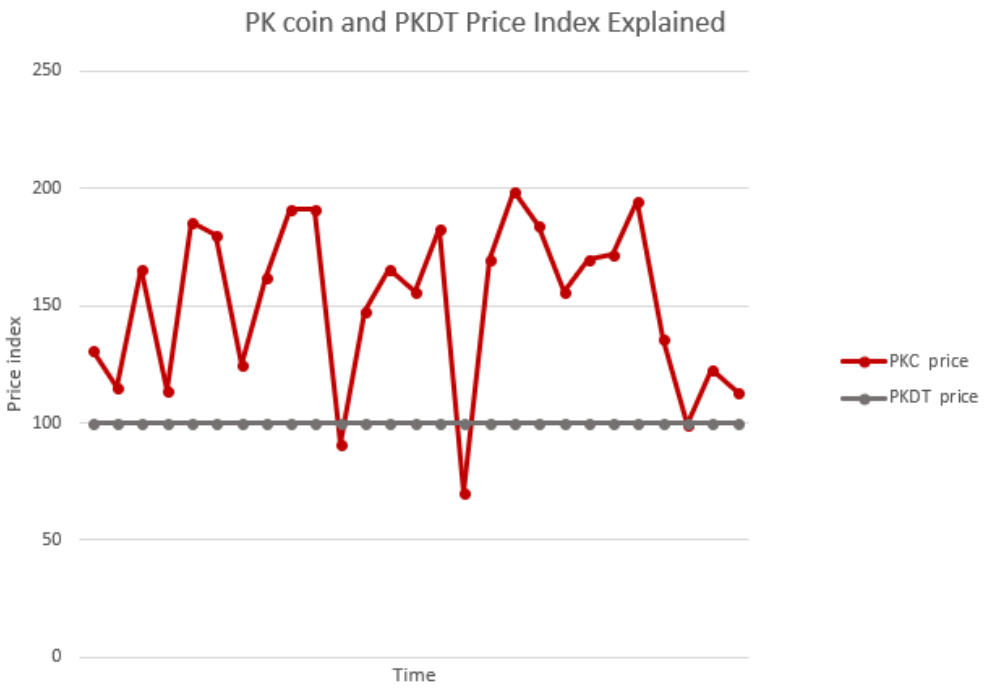
Dual currency design

If regard the PK coin which has the characteristics of circulation and transaction in the secondary market, as a digital chip, it will have big problems when it is applied to the PK Chain, including:

- The fluctuation of the monetary price of the PK coin in the secondary market will not only bring huge uncertainties to the user, but also cause troubles on calculations for betting, which will greatly reduce the user experience.
- As a game platform provider, it needs to hold a certain amount of PK coin to meet the needs of user entering or exiting the platform. And due to price fluctuations in the secondary market, game platform will also bear huge uncertain risks.

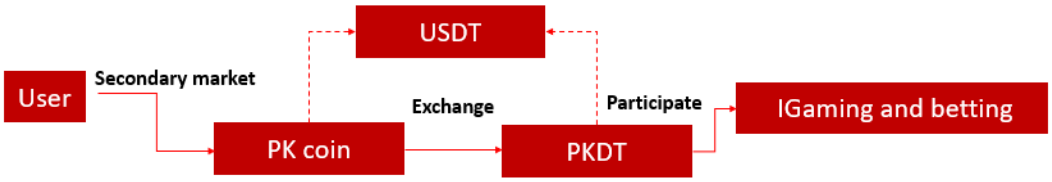
We will issue a PK coin based on the PK Chain. The PK coin will be circulated in the secondary market which will be exchanged directly with the mainstream digital currency, like BTC, ETH, etc., and can also be used offline Legal Tender transactions. At the same time, PKDT will be created on the PK Chain as an intermediate tool for isolation.

PKDT is equivalent to the hard currency of the digital currency market - gold which price is stable. PKDT is provided by the iGaming public chain and managed by the foundation as well as not in the secondary market. And PKDT benchmarks the USDT and keep a constant price of 1:1. PKDT is only exchanged through PK coin, while PK coin is a digital currency circulated in the secondary market, which price is regulated by the market. The price of PK coin converts to PKDT is based on the price of PK coin benchmark USDT at the time and users can get PKDT to play games directly.



After the user completes the game, the PKDT enters the exchange to transactions of realizing cash by converting the price of PK coin to PK coin at that time.

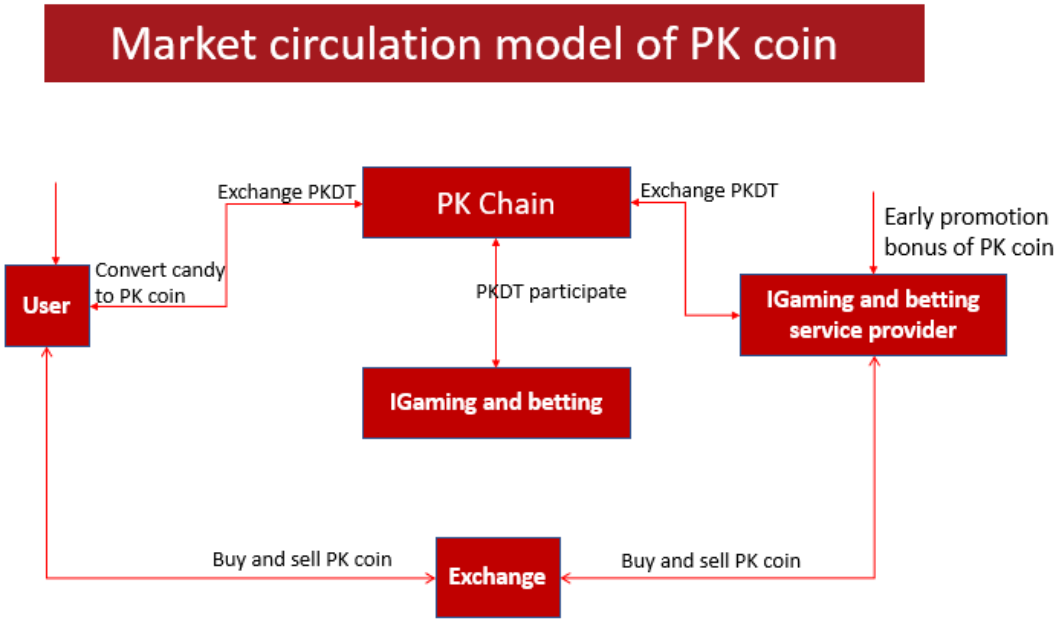
The public chain platform of iGaming and betting blockchain is designed with dual currency, which enables PKDT to avoid the uncertainty caused by the large fluctuations in the secondary market and eliminates great risk concerns about the price fluctuations of user and game platforms caused by the secondary market of digital currency.



Comparison between PK coin and PKDT

PK coin	PKDT
• Can exchange PKDT • Circulation in secondary market • Prices fluctuate with the secondary market	• Can exchange PK coin • Can't circulation in secondary market • Constant price that benchmarks USDT

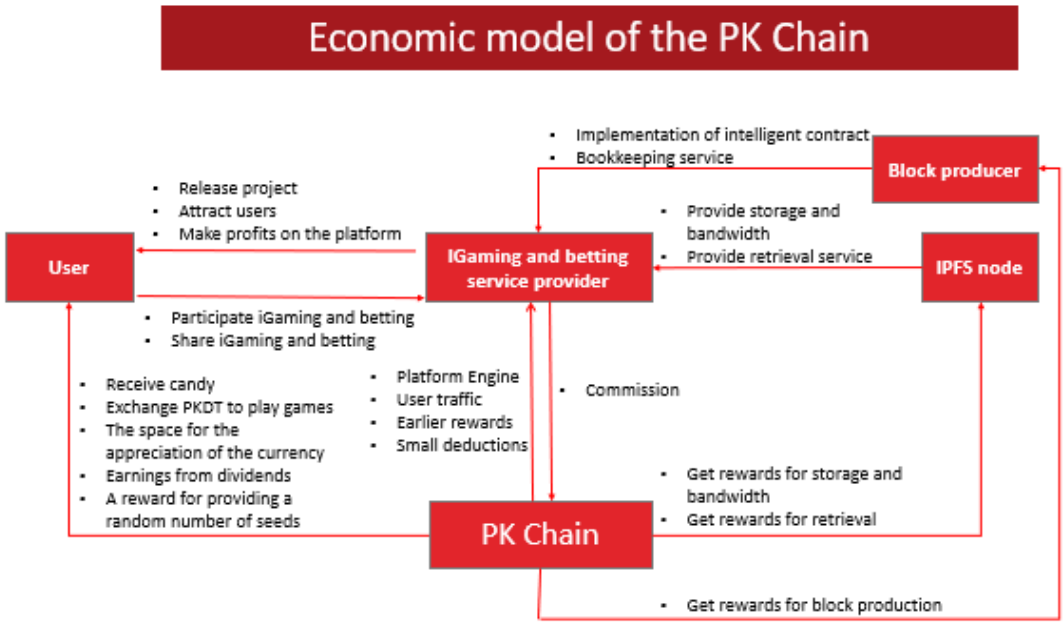
Market circulation model of PK coin



Economical model

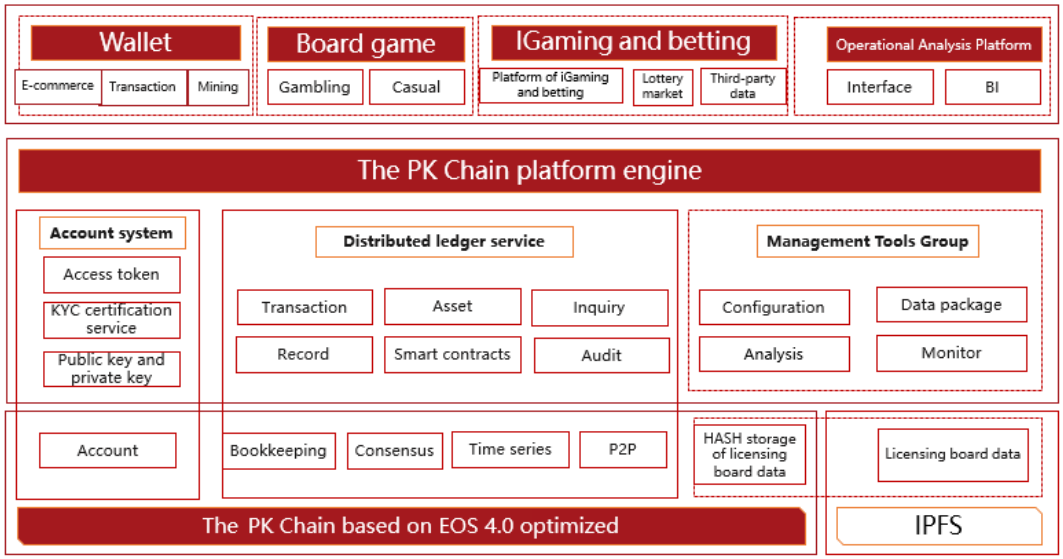
The PK Chain balances the interests of all parties and acts as the main body of the PK Chain's operation through foundations. But the foundation is non-profit and all revenue and fees issued are defined by smart contracts of the PK Chain, which guarantees the fairness and impartiality of the PK Chain operation and audited by anyone.

Compared with the traditional iGaming and betting platform, it will have a high rate of return if you post your own application on the PK Chain. The PK Chain automates the iGaming and betting business and drastically reduces the operating costs of iGaming and betting service providers.



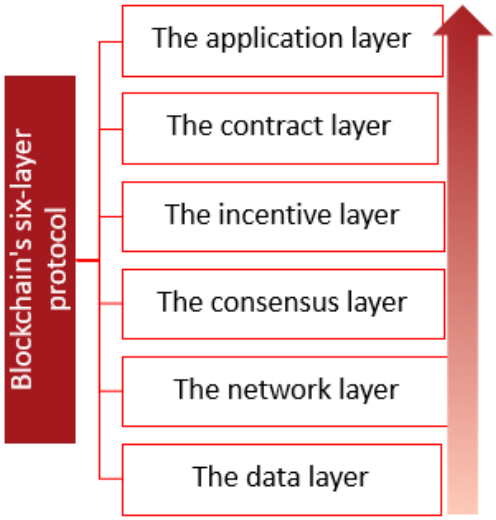
IGaming and betting service providers use the platform engine to quickly publish applications and utilizes existing user traffic on the PK Chain and can also promote his own operations to attract users to participate in iGaming and betting. They can make profits on the PK Chain and return it to the PK Chain. After the user exchanges the PKDT, they participate in iGaming and betting and provide the platform to a random seed to obtain mining incentives. Users who hold PK coin can get dividends from the platform and expect the appreciation of PK coin to take profits; Block producers provide execution and billing services of smart contracts for the PK Chain. IPFS nodes provide storage, bandwidth and retrieval of iGaming and betting data. The PK Chain will give them corresponding incentives.

Technology Architecture



We aim to build the PK Chain based on EOS optimized and use the InterPlanetary File System(IPFS) to save iGaming and betting data to ensure that the entire platform is fair, impartial, irrevocable and audited.

5.1 Blockchain's six-layer protocol structure



5.2 The data layer

The data layer is the bottom layer of the blockchain model, packaging the chain structure of the data blocks, uses asymmetric public key and private key encryption technologies and timestamp technology to ensure that the data records are transparent and open, tamper-proofing, and irreversible.

In the design of PK Chain, data nodes are divided into block producer nodes and ordinary nodes, which have high requirements on the block producer nodes, and will also give corresponding rewards to ensure normal block generation with power trading concurrency capabilities, ordinary nodes only participate in accounting and dissemination of accounting data and do not participate in block production.

5.3 The network layer

The blockchain is a point-to-point (P2P) networking mechanism. After the block is produced, data is transmitted and verified through the network broadcast. Because of the characteristics of P2P and the mechanism of automatic networking, blockchains are often referred to as Distributed Autonomous Corporation(DAOs).

5.4 Platform data storage to blockchain

The InterPlanetary File System is a global, point-to-point distributed version file system that attempts to connect all computing devices that have the same file system. In the future, IPFS will replace the widely used HTTP, which can solve a series of problems such as inefficient HTTP and over-reliance on the Internet backbone network. It saves the files in different nodes for storage, avoiding problems such as centralized data loss and inaccessibility.

IPFS is used to save platform data to ensure that users can access the data

at any time. At the same time, the hash value of the content of the platform data file is stored in the blockchain and is associated with iGaming and betting data so that all games that have been completed can be traced.

Because of the nature of casual games and to avoid wasting the storage and bandwidth of the InterPlanetary File System, the data of such games is not chained.

The IPFS nodes saved by the platform data will be provided by the game operator or a third party for storage and bandwidth. The nodes will provide corresponding fees from the 20% of the reserve of issue and the commissions extracted from the iGaming and betting to ensure the platform to run normally.

We have also been investigating and developing incentive mechanisms based on storage and utilization of bandwidth and we will release some technical and motivational details in the later stages.

5.5 Consensus mechanism based on BFT-rDPoS

The excellent consensus mechanism is the basic condition for guaranteeing the normal operation of the public chain platform of iGaming and betting blockchain.

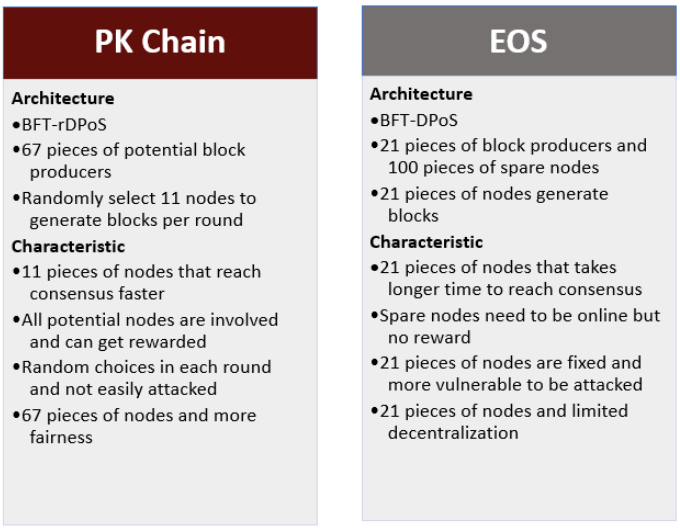
The PK Chain will use the latest version of EOS as the basis for development. At the same time, it will also carry out a series of optimization and updating based on EOS's BFT-DPoS (Byzantine Fault Tolerance - Deligated Proof of Stake) consensus and the consensus mechanism design of BFT-rDPoS (Byzantine Fault Tolerance - randomized Deligated Proof of Stake) was proposed.

EOS will select 100 pieces of spare nodes and 21 pieces of block producers from the candidate nodes by means of election. The 21 block producers will produce all the blocks and the spare node will only become a block producer when 21 pieces of nodes have problems.

We propose the design of consensus mechanism of the BFT-rDPoS (Byzantine Fault Tolerance-randomized Deligated Proof of Stake), which has 67 pieces of high-performance servers as potential block producer nodes, no concept of spare nodes, and only potential block production nodes. In the six blocks production cycles, a set of random number algorithms are used to select 11 pieces of nodes as the block production and verification of this round, and 11 pieces of nodes take turns as blocks production. The random number algorithm can not only ensure that the production master nodes of the 67 blocks can participate in block production, but also guarantee the randomness of block producers of the next block.

The advantages of the design of consensus mechanism of the BFT-rDPoS (Byzantine Fault Tolerance - randomized Deligated Proof of Stake) include:

- Through the BFT consensus algorithm, 11 pieces of nodes randomly selected can reach a consensus.
- The selection of all potential nodes by Randomized ensures fairness and justice in accounting, although 67 pieces of nodes are less than 100 pieces of spare nodes of EOS, but because these 67 pieces of nodes can participate in the production and validation of the block, it is more representative than the 21 pieces of nodes of the EOS.
- All potential nodes can participate in block production and receive rewards, which avoids the problem that spare nodes can only participate in the block production until the block production node is "dropped", and avoids the waste of spare node resources.



67 pieces of nodes and randomly electing 11 pieces of nodes in each round as the mechanism for producing block producers, including the selection criteria, entry and exit mechanisms, and geographical factors of these nodes, are still under discussion and verification. The purpose is to achieve decentralization and balance with efficiency and create a more secure platform.

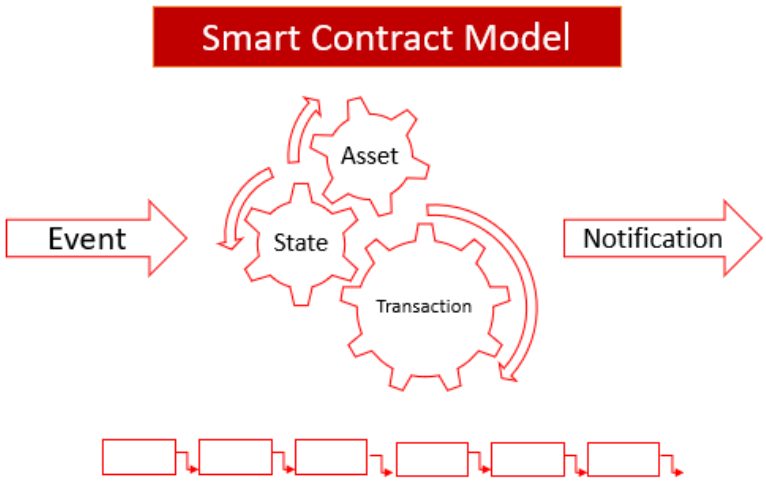
5.6 The incentive layer

In the PK Chain, the incentive layer automatically sends the interests of all parties to the accounts of the parties through smart contracts.

5.7 The smart contracts layer

Each block of the blockchain has the characteristics of programmable and embedding code. The contract layer contains scripts, algorithms and smart contracts that can be simply understood as a custom electronic contract. It is called smart contracts because the contract can not only trigger the execution automatically when the constraint condition is reached without human intervention, but also can automatically terminate the contract when the conditions are not satisfied, which in theory can trigger the implementation of all

the terms agreed in advance. This is also one of the core technologies that blockchain can be used to reconstruct the credit system.



Smart contracts play an important role in several places in the PK Chain.

- Responsible for the distribution of various incentives for platform operations and avoid under table dealing.
- We provide smart contracts templates for iGaming and betting as well as lottery. Users can perform iGaming and betting activities only through simple parameter settings. Moreover, the award distribution of iGaming and betting activities is also distributed through smart contracts, protecting the rights of participants.

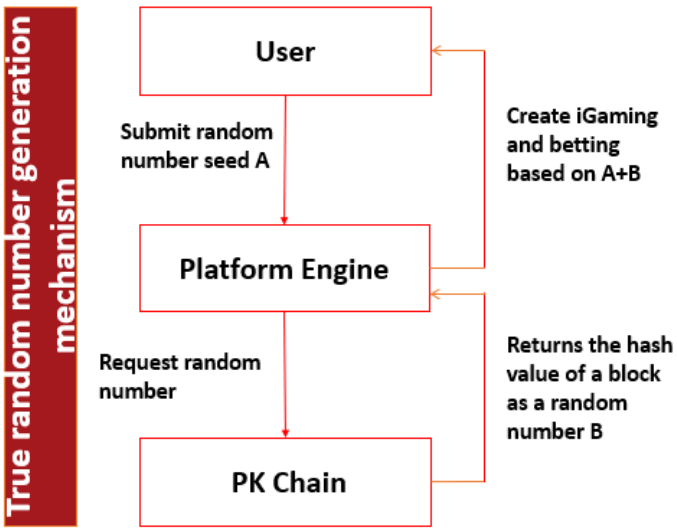
5.8 Guaranteeing the fair random number generation mechanism of PK Chain

The random number generation mechanism of the traditional platform of iGaming and betting is often controlled by the service provider of centered platform of iGaming and betting, which causes the generation mechanism to be opacity, under table dealing and cheating and so on.

The random number generation mechanism is the most important guarantee for the fairness and justice of iGaming and betting.

We propose a user-involved random number generation mechanism based on smart contracts of blockchain to ensure the fairness and justice of the game. The basic flow is as follows:

- Prepare stages to submit their own random seed by user.
- The server collects the user's random seed and server seed and submits them to smart contracts to generate iGaming and betting data.
- The iGaming and betting data will be recorded on the blockchain before start, ensuring that the data cannot be changed, and the user can review and check the transparency of the entire process.



5.9 Application layer

Platform HD Wallet Compliant with BIP-32/BIP-44 Standards

To ensure the balance between convenience of use and security of the wallet in PK Chain, the platform adopts a platform-compliant HD wallet that conforms to the BIP-32/BIP-44 standard.

Based on the implementation of the BIP32 standard, the seed can derive the master key, and the master key derive the children keys, and the children keys derive the grandchildren keys, thereby recursively.

With BIP39, wallet mnemonics and rules of seed generation can be defined:

Generate mnemonic steps:

1. Generate a random sequence of 128~256 bits.
2. Take the first n bits of the entropy hash as a checksum (n=entropy length/32).
3. Random sequence + checksum.
4. Cut the results of step 3 every 11 bits.
5. Match every 11-byte from step 4 to a word in the lexicon.
6. The result of step 5 is mnemonic.

Generating seeds through mnemonics

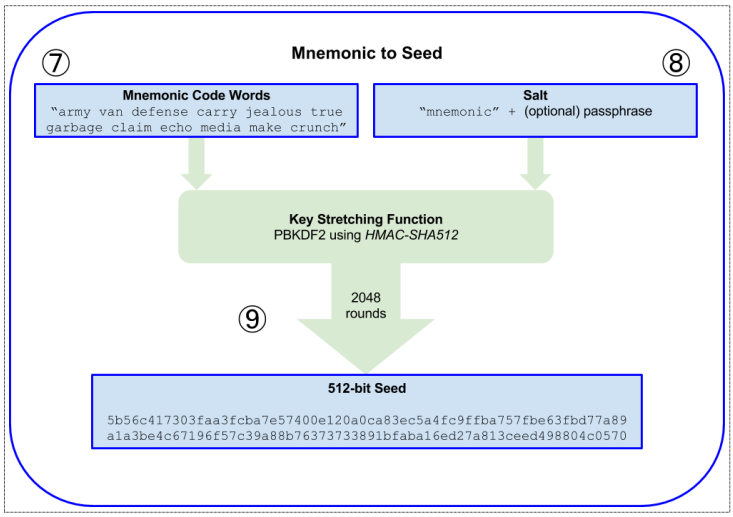


Image Source： https://blog.lelonek.me/bitcoin-wallet-seed-in-elixir-fabb9753a5ba

Account system for user

The PK Chain provides a unified account system but users have two roles in the game platform. One is the user's role in the game which information includes the game user's nickname and phone as well as head portrait. The other is the user's account role information in the EOS system, which includes the home account of PK Chain, account, public key, private key, authorization and so on.

Authorized registrar

The user of the PK Chain is registered by an authorized registrar who is designated by PK Chain. In principle, the operator of game development on the PK Chain can be used as an authorized registrar.

The introduction of authorized registrar can also solve the security of the PK Chain and avoid problems that have plagued the industry for a long time, such as zombie accounts and spam.

KYC certification

For certain iGaming and betting scenarios, we will connect to KYC certification. The KYC certification data is recorded on the PK Chain through encryption technology so that the data cannot be changed. At the same time, zero-knowledge proofs can be achieved through the automatic issuance of smart contracts, which can both authenticate information of user and protect user privacy.

Register

Registration mechanism is provided. Users register by mobile phone number and verification code. After registration, the PK Chain will automatically establish an account for the user on the PK Chain and generates the corresponding public key and private key.

When registering, the user can set the PIN code so that it can log in next time.

Logon user login to the system through the phone and the set PIN code. If they are bound to the mobile phone and other hardware devices, they can log in directly after checking the user information.

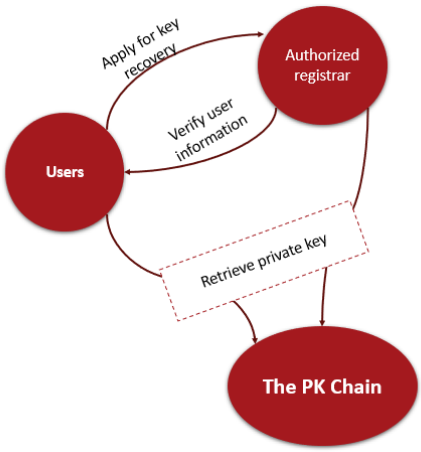
Stolen key recovery

In Bitcoin and Ethereum, once the user loses the key, the user's funds cannot be retrieved, causing huge losses to the user.

The PK Chain uses EOS as the underlying technology architecture to support recovery of stolen keys. Since the PK Chain introduces an authorized registrar, the user's stolen key recovery will also pass. Authorized registrar to complete the cooperation, the specific process is:

- User submits application to authorized registrar.
- Authorized registrar verifies user's information through user-reserved phone numbers and identity information.
- After authorization by the authorized service provider, authorized registrar as user account associated account will help users retrieve stolen keys.

Retrieving a stolen key is accomplished through a multi-signature transaction between the user and an authorized registrar, but it is very different from a simple multi-signature. Through a multi-signature transaction, the authorized registrar will become a party to each execution transaction. In contrast, recovery partners only participate in the recovery process and do not have the right to participate in daily transactions, which greatly reduces the cost and legal responsibilities of all participants.



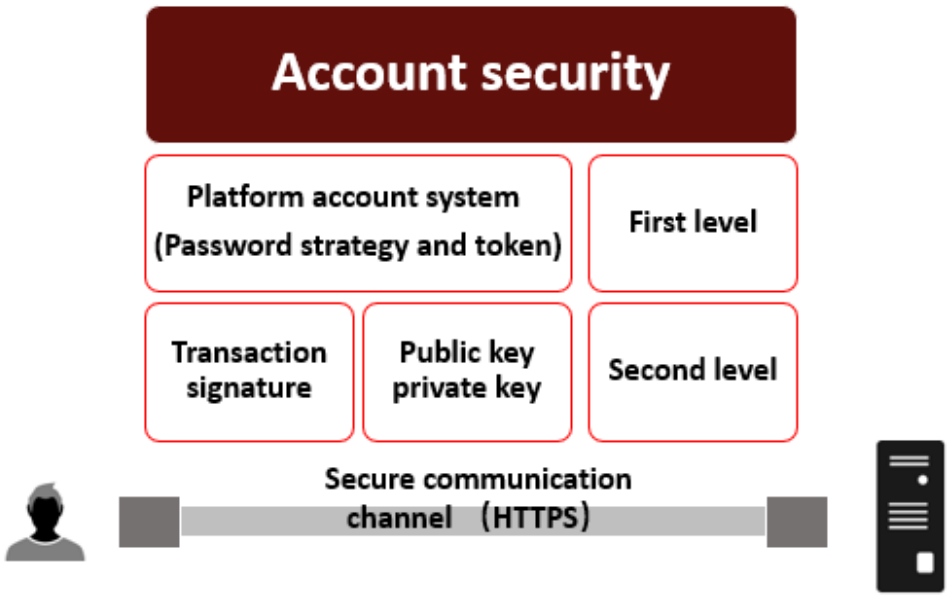
Private key preservation

Users can choose to export their private key for transfer to a safe place. Users manage their own address and private key in their own wallet. The platform does not save the user's private key. The user can use the wallet with the mnemonic + password, which can be transferred and collected.

Account security

The PK Chain uses a secure SSL-encrypted HTTP channel (HTTPS) as the only channel to access the back office, and provide content encryption, identity authentication, data integrity, etc. to establish a safe channel of information and confirm the authenticity of the website and prevent tampering by a third party.

The platform provides two levels of account verification to ensure the security of the system platform. User log in the PK Chain and server of iGaming and betting platform through account and password. And the PK Chain transfer transaction are made through the private key. The login server provides password policies, login token, and failure mechanisms as the first layer of the security barrier. Through asymmetric encryption of public key and private key encryption mechanism to ensure the security of user transactions, provide the second layer of security protection mechanism.



The PK Chain engine

To ensure that the platform of iGaming and betting access to the PK Chain canonically, we have defined a set of platform engines to regulate the access of all parties.

- Unified access to the KYC standard

  The PK Chain will perform KYC certification for certain users according to the requirements of each region for the users to participate in the iGaming and betting business, and the platforms of all parties only need to verify the user's real information through accessing engine interface to avoid duplicating the development of KYC system.

- Unified use of verifiable random number generation mechanism

  The random number seed provided by the platform engine can be verified by the platform engine to avoid manipulating the game.

- Unified standard that data saves to blockchain

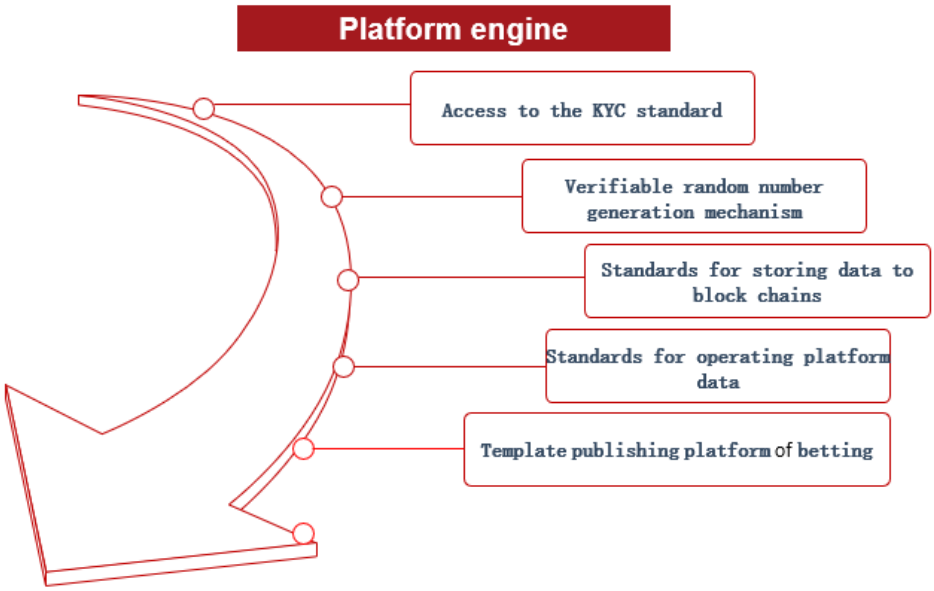
  When the platform of iGaming and betting accesses the PK Chain and uses the records on the chain as well as saves data of iGaming and betting, it needs to provide data that meets the standards.

- Unified standard of operating platform data

  A unified operating platform is provided, and what the iGaming and betting platform has to do is using data standards that are accordance with the Peak chain when the platform engine is used to access the Peak chain.

- Template event betting publish platform

  It provides background management services, according to the template of the event betting template, follow the platform's publishing wizard, complete the project application of event betting, and directly share the project application to various social platforms.



Blockchain browsers

The PK Chain is an open and justice as well as decentralized public chain that recorded data is unchangeable, and everyone can read the bookkeeping. It is difficult for ordinary users to check the block information.

Each transaction and iGaming and betting data has an unchangeable time series. The PK Chain provides a blockchain browser so that users need not only to query all iGaming and betting data and transaction data, but also to search all their own historical records through the browser of PK Chain. Let users see at a glance.

Across the chain of transactions

PK Chain provides ERC20 cross link trading gateway compatible with Ethernet standard, supporting most of the Ethernet shops and the token trading on the Ethernet shop.

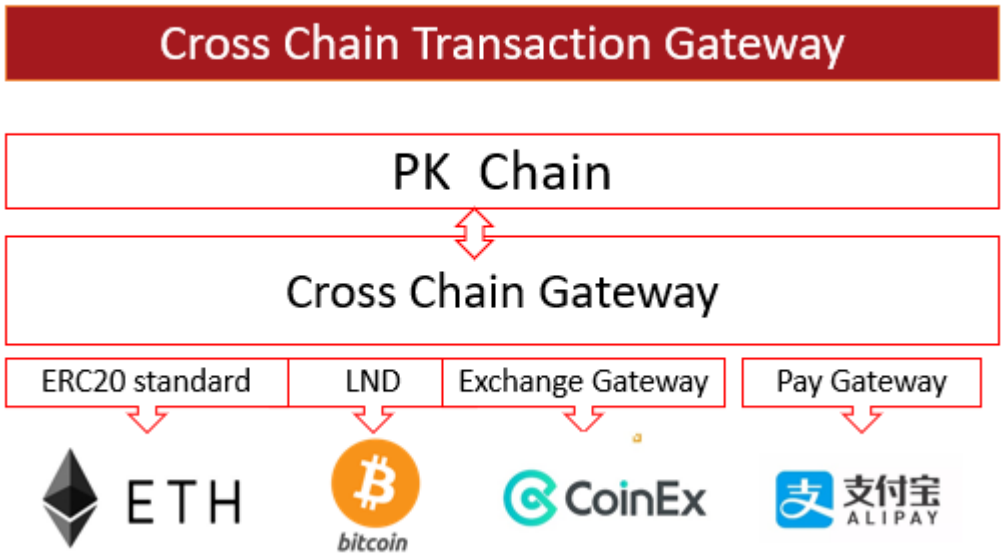
Access to the lightning network, through a revocable sequential maturity contract (RSMC), ensures that direct transactions between two

people can be done off-chain. At the same time, the HTLC with hash guarantees that the transfer between any two individuals can be accomplished through a "payment" channel. At the same time, the Hash time locking contract (HTLC) guarantees that transfer between any two people can be done through a "payment" channel.

Open the channel of the token public issuance transaction through the exchange gateway and make differ adaptations according to the access interfaces of differ exchanges. By opening the channel with the exchange, more digital currencies can purchase PK coin to participate in iGaming and betting, and allow the digital currency in the hands of users to circulate.

By accessing Alipay and other Legal Tender payment channels, PK coin can be traded more conveniently with Legal Tender in the secondary market.

Smart contracts play a central role in all cross-chain gateway transaction business models.



Security

Node security

The block producer of the PK Chain is the selected 67 nodes. These nodes are the master nodes of block production, and randomly select 11 nodes as block producers in each round. These 11 nodes or potential 67 nodes may be attacked by malicious attackers. The most serious of these attacks is DDoS attacks. There are many DDoS attack methods. The most basic DDoS attack is to use reasonable service requests to take up excessive service resources, so that legitimate users can't get the response of the service.

Node producers avoid the impact of DDoS attacks in the following ways

- Node producer server adopts high defense server and installs professional anti-DDoS firewall
- Upgrade the system to the latest patches and take effective compliance configurations to reduce the risk of exploitation attacks
- The node producer server verifies each other through digital signatures
- It can limit specific traffic and filter out unnecessary services and ports

In addition, due to the new consensus mechanism based on BFT-rDPoS is adopted in the PK Chain, the selected 67 nodes are the master nodes of block production, and 11 nodes are selected randomly as block production nodes in each round, and the algorithm will temporarily remove the nodes that work abnormally, which can make the attacker not find the attack target. This greatly increases the difficulty of the DDoS attack. Even if some nodes are attacked, many reserve nodes can continue to work.

Initial coin offering of PK coin

Currently, as the PK Chain is still under development, we will release the PK coin that meets Ethereum ERC20 on Ethereum as a front-end raised token. Once the PK Chain development is completed, the tokens raised in Ethereum will map to the major network of PK Chain.

6.1 Initial coin offering

Total circulation：One billion

Team：15%

Private placement：35%

Accepted：ETH，Minimum delivery：100ETH equivalence

Soft cap：5000ETH，Hard cap：12000ETH

Private placement：1ETH = 50000 ~30000PK coin

	Total circulation	Standard pricing	Private placement (Phase one)	Private placement (Phase two)	Private placement (Phase three)
	1000000000		350000000		
Every ETH exchange		20000	50000	40000	30000
Total ETHs raised			7000-12000		
Discount			40%	50%	60%

Foundation：20%, and commissions drawn from iGaming and betting (no more than 1% of revenue) to maintain the daily overhead of PK Chain operations and to distribute dividends for users who hold PK coin.

Community：20% as the community operating expenses

Consultant：5%

Legal and fiscal tax：5%

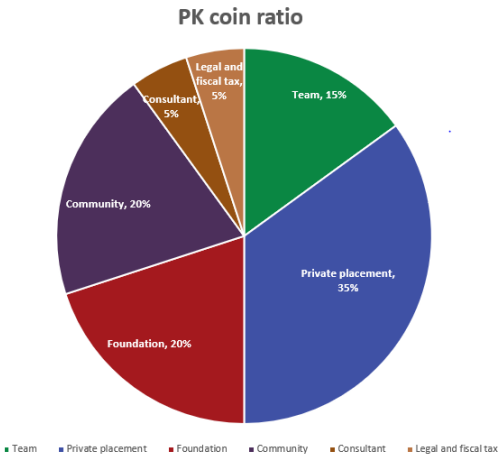
6.2 Use of funds raised

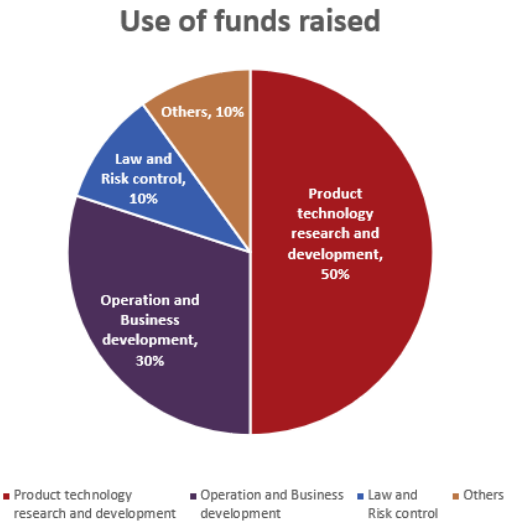
Product technology research and development：50%

Operation and Business development：30%

Law and Risk control：10%

Others：10%

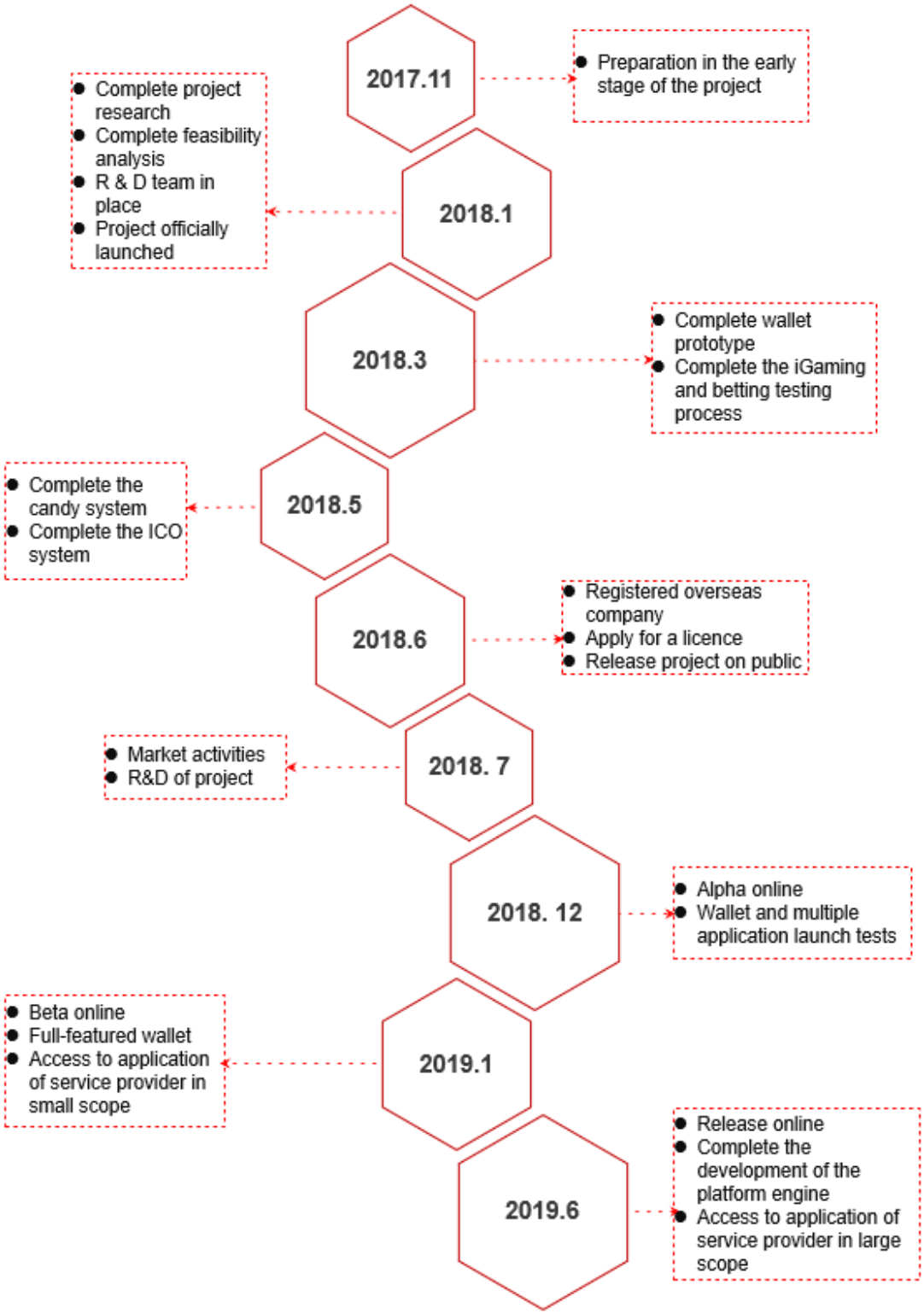




6.3 Lock-up period

Member	Lock-up period	Release rules
Founding Team	24 months	After the lock-up period, the maximum release is monthly 20%，20%，20%，20%，20%
Consultant	6 months	After the lock-up period, the maximum release is monthly 20%，20%，20%，40%
Legal and fiscal tax	6 months	After the lock-up period, the maximum release is monthly 20%，20%，20%，40%
Private placement	3 months	After the lock-up period, the maximum release is monthly 20%，20%，20%，40%

Roadmap


2017.11
Preparation in the early stage of the project
2018.1
Complete project research
Complete feasibility analysis
R & D team in place
Project officially launched
2018.3
Complete wallet prototype
Complete the iGaming and betting testing process
2018.5
Complete the candy system
Complete the ICO system
2018.6
Registered overseas company
Apply for a licence
Release project on public
2018. 7
Market activities
R&D of project
2018. 12
Alpha online
Wallet and multiple application launch tests
2019.1
Beta online
Full-featured wallet
Access to application of service provider in small scope
2019.6
Release online
Complete the development of the platform engine
Access to application of service provider in large scope

Laws and regulations

Operation subject

The PK Chain is a decentralized platform. All parties on this platform are autonomous sovereign identities, relying on the PK Chain to establish mutual trust and not as a profitable tool by organization or individual. Therefore, the operating body of the platform is the PlayChain Foundation, established in Singapore, approved by the Singapore Accounting and Corporate Regulatory Authority (ACRA) and regulated by Singapore company law.

The Foundation aim to operate the PK Chain openly and fairly and without profitability, and to provide financial support for the PK Chain development team.

The PK Chain will establish a review committee for each country that meets the local laws and policies to ensure that the content published in this country complies with local laws and regulations and culture.

Team

The team is composed of a number of professionals who have long been engaged in the game and blockchain industry. The project was launched at the end of 2017. During the past six months, the underlying technology of the project of PK Chain and the prototype of the iGaming and betting project have been developed. Professionals from different fields have joined the team and our team includes professionals in programming, marketing, finance and law.

Team member

Viktor Pavletic – Founder(CEO)

Since 2009, a number of Internet game companies have been established. After 2011, he entered into the mobile game industry and has conducted several self-developed mobile games with good reputation. In 2015, it began to focus on the blockchain industry and devoted itself to the integration of the blockchain and gaming industry. He founded PKC.one in 2017 and has been the general manager and CEO of PKC.one.

Adam Seleznev – Chief Operating Officer(COO)

For many years, he has been engaged in marketing work. He is an expert in marketing and leading mobile game operations to gain market scale and profitability in the industry. In 2016, he began to plan the operation of major blockchain projects.

Eugene Kulbashian – Chief Technology Officer(CTO)

Studying mainly cryptography theory and artificial intelligence, he is a professional master of information processing and an author of many cryptographic papers, and has more than 10 years of research and development experience in the field of information security.

Duncan- Blockchain Technical Director

He is a blockchain expert and early adopter of encryption technology, has participated in numerous encryption projects, has also developed high-frequency trading algorithms for cryptocurrency transactions, and was the founder of the CasinoCoin Foundation, which is through its CasinoCoin (CSC) brand to start attracting casinos and online gambling.

Daniel Lemmon - Chief programmer

He is a contributor to a number of github community projects. He is proficient in development languages such as C++, ObjC, and Ruby and has extensive research on the LLVM compiler architecture.

Tony Ulyanov - professional freelancer programmer

Community code contributors, development and maintenance of multiple code libraries on github.

Jamal Seleznev – Front-end Web Developer

Since 2010, he has been engaged in front-end page development, proficient in Html5, CSS3, Javascript, etc., and has conducted in-depth research on Ethereum's web3.

Partner

PLAYWORLD PTE. LTD.

Leo Mu –CEO

He graduated from North China University of Technology, major in industrial engineering and management, with 15 years of experience of game development and operation. He once worked as a product manager in strategy at Aspire Technologies and started the development and operation of mobile games in 2003. He successfully introduced and operated Tetris and other famous mobile games. Co-founded WangYiDa Technology in 2004, specializing in mobile games development and in 2005, he organized the development and operation of board games. In the era of smart phones, he became the first batch of producer to successfully produce the "Bouncing Island" and the "Speeding together" series game. The above products on the one hand, parts of them contracted to some well-known publishers, such as hero entertainment, EQE, VNG of Vietnam. On the other hand, he has established a distribution system covering the whole world, with a cumulative recharge amount of more than one billion yuan.

David- COO

He graduated from Jiangxi Normal University, majored in Business Administration, and had ten years of experience in the game industry. He is the proponent and founder of the industry refinement service. He successively worked in major research and development and issuance of listed companies, responsible for the community operations of game products and the operation of users, achieving billions of dollars. At the same time, he is responsible for the

promotion of chess and card at home and abroad, and through the integration and promotion of online and offline resources, the product has achieved over RMB 100 million.

Brain Hu- CTO

He graduated from Xidian University. He has worked in the media industry, internet companies, etc. He has provided Internet industry experience for the past 20 years to provide digital asset solutions for the newspaper media industry. Newspaper media clients include Hong Kong's Apple Daily, Economic Daily, and Malaysia's Sin Chew Daily. He also provides commercial digital asset management solutions for Hong Kong's Chow Sang Sang, Shanghai Disney, etc. The main research direction for the past three years is the application of blockchain in digital assets and digital copyright industries.

Stephen Chou

He has more than 10 years of experience in game research and development, and has been engaged in many start-ups and service for listed companies and served as CTO. He led the team to independently develop voice social software, multiple game system frameworks, and also implemented engine functions. He has done a lot of betting poker and prediction products and has a deep understanding of iGaming and betting products.

Advisor

Advisory Team

Nicko Deng

He is a master of information technology and management at the University of Nottingham, UK, a founding partner of Zhicheng Capital and an investor of China's cutting-edge. He is also an early participant in the Bitcoin project and a true fan of the Ethereum community. He has a deep understanding of blockchain technology and applications and has participated in several blockchain projects and served as a consultant.

Simon Schwerin

He has written master's thesis about blockchain and privacy, especially about GDPR. After graduating, he worked as a business development manager at XAIN and is now CEO of medixain. He is dedicated to building solutions in the healthcare and blockchain areas. Previously, he worked in BigChainDB, responsible for business strategy and project management. He also led the German Public Blockchain (aka Federal Blockchain) Working Group.

Gi Nam Lee

He is a legal advisor and a member of the Korean Gaming Association. He is well versed in the digital currency related policies and laws of various countries, and has rich experience in the blockchain market, and serves as a legal adviser of many blockchain projects.

Svetlin

Svetlin has 20+ years of experience as software engineer, technical trainer and digital entrepreneur, focusing on the technical challenges of building decentralized blockchain projects. He is a blockchain trainer, consultant and tech advisor of several successful ICO projects, author of 9 tech books. Svetlin holds a PhD in computer science and ten tech awards. He trains with passion thousands of software engineers in his digital skills university SoftUni.

Risk and Legal Disclaimer

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Risk disclosure

Policy risks

At present, the state's regulatory policies for blockchain projects and swap financing are not yet clear, and there is a certain possibility of loss of participants due to policy reasons.

Transaction of digital assets including PK coin has extremely high uncertainty. Due to the lack of strong supervision in the field of digital asset trading, the tokens are in a situation of skyrocketing and plunge. If individual participants lack experience after entering the market, they may be difficult to resist the pressure of asset shocks and psychological that brought by market instability. If regulators regulate the trading of digital assets including PK coin, the tokens purchased during the swap period may be affected, such as fluctuations and restrictions in price and availability.

Market risk

Market risk means that the PK Chain is not accepted by the market, or there are not enough users, business development is stagnant, and there is insufficient profit.

The PK Chain is not expected to be popular or widely used within a short period of time after release. In the worst case, the PK Chain may be marginalized over long periods of time and attract only a small percentage of users.

Technical risk

The PK Chain project is still in the development stage. Due to the complex technology of product system, it will face major problems in the underlying technology, leading to the inability of the PK Chain projects to achieve the intended function, and the risks of key data being tampered with or lost. If this kind of technical defect does exist, it will damage the availability, stability or security of the PK Chain project, and therefore have a negative impact on the value of the PK coin of the PK Chain project.

Capital risk

The risk of capital refers to the major loss of the project funds, such as the theft of funds, the loss of funds, the sharp depreciation of reserves, etc. Although the PK Chain project team will adopt the most advanced technical solutions in industry to ensure the safety of crowdfunding, the behavior of certain hackers is still difficult to completely block.

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