KUBERA: INNOVATIVE GAMING PLATFORM POWERED BY ETHEREUM BLOCKCHAIN

Kubera Team

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Note: this is only a draft. Please go to https://kuberacoin.com for the latest version.

I. Intro

Kubera is an innovative platform for playing online games with a crypto currency. We use the Ethereum blockchain to provide a cryptographically secure payment system and provably fair gambling with smart contracts for games in the future phases of the project.

Eliminate Player Deposit Risk
Kubera will enable players to have full custody over their funds by using Ethereum smart contracts to escrow tournament buy-ins and autonomously distribute payouts based on game outcome.

Trust and Gameplay Fairness
Using peer-to-peer and cryptographic protocols by applying smart contracts in latter phases, all gameplay outcomes reach consensus at the end of each game using a Byzantine Fault Tolerant consensus mechanism.

Reducing Player Costs
Our innovative architecture, powered by the Blockchain network of Ethereum, allows Kubera to considerately eliminate expenses for payment. We aim to pass these operational savings back to our players to encourage player retention, creating a more balanced game ecosystem.

Building a Decentralized Gaming Network
Kubera's goal is to build out a core underlying decentralized online game network that developers and third-party operators can plug-into and build upon. We hope that new functionalities are built on top of the platform.

Short-Term Objective
The success of a new online game platform is largely dependent on network effects in maximizing liquidity pools. Our short term goal is to be an innovative gaming platform with a breakthrough payment system powered by Blockchain technology. As well as becoming the first decentralized online game platform to market and to leverage this first-mover advantage in establishing Kubera as a legitimate market contender.

Long Term Objective
As for the long term goal, we want to lay a good foundation for the built-in currency, Kubera tokens (to be explained more specifically later in this paper). We plan to reach out to other fields in order to create an ecosystem in which our token is the primary currency. By owing Kubera tokens, people will have access to not just the gaming platform to compete with each other and win tokens but also to be able to use those tokens for a wide range of services including online shopping or trading on various exchanges. We believe with this strategy will be the right move to rocket the price of the Kubera token and will bring substantial benefits for investors and token holders.

II. Team

1. Core Team

Nakamoto Masakazu, CEO

Over the past 20 years, Mr. Nakamoto has been active in creating a venture company of IT planning for many companies in Japan and also throughout Asia. At the moment, he is engaged in numerous consulting services for securities and gaming companies.

With years of researching on Blockchain technology, he is convinced that the Kubera project is the future platform of online game development including casino development management.

Currently his company has about 20,000 users throughout Asia who are are consistently gaming. The Kubera project hopes to develop new innovative environments for these users and create even larger markets.

Nakamoto Kengo, CMO

Mr. Nakamoto established an insurance company in 2015 and made his full entry into the field of encryption currency starting from 2016. He also gained experience with Blockchain in Okinawa and developed a platform for DAG technicians. Currently, Mr. Nakamoto teaches introductory courses on Blockchain and DAG to high school students as well as some junior high and college level courses in Okinawa. He is also expanding his business by offering consulting services of Blockchain all over Asian, especially in Japan, with the annual revenue of approximately 500 million Yen from more than 500 individual investors.

Yonashiro Yuu, Director

Since 2011, Mrs. Yonashiro has started four businesses including real estate holding, car and motorcycle rental, nursing care facilities and remodeling. She has also been running about ten new businesses and helping two startups launch and scale up. After seeing the potential of cryptocurrencies and Blockchain, she is willing to combine those technologies with existing business and undergoing business development. As Kubera coins function on Blockchain, she hopes that its characteristics of transparency and trust can be used as a currency to shine light in the Japanese gambling industry.

2. Advisors

During the planning phase and implementation phase of the project, we have received invaluable advices from:

- **Danny Kim**, expert in the field of IT computing, to sharpen the project strategy;
- **Daniel Jeppsson**, technical lead of VR (virtual reality) department of Google with office based in California, to implement both traditional and VR games to be included for Kubera project;
- **Anders Jeppsson**, a digital innovator and creative IT strategist, to help the team to improve the UI/UX of the games, build business development and manage the marketing plan of the project.

III. The Market

Turnover in the international gaming industry reached 50bn in 2017 with a projected turnover of 56bn [1]. 60% of online gaming platforms belong to 22 leading networks. Another 30% are subsidiaries of popular offline e-game platforms, and private individuals own the remaining 10%.

In most cases, online games cause distrust on the part of the players. However, up until the development of platforms like Ethereum, which enable automated trust, there hasn't been a viable solution.

Common Issues in the Online Gambling Industry
The vast amount of issues that currently impact all aspects of the gaming industry originate from trust. From provability and user balance account management to security and transparency.

Common problems experienced by the players

- After transferring money to a game account, it is not credited or is stolen
- After withdrawing money from a deposit, it is not credited to the wallet
- The player has not received the promised bonuses
- The player is not able to log into his gaming account
- Hidden fees: games charge a fee for the gain withdrawal
- The player can only withdraw funds on a certain day

Some of the existing issues in the market of online gambling

- Risk of fraud on behalf of online games
- Inability to check the result of the draw
- High and hidden fees
- High entry level for the game developers
- High costs of running an online gaming
- Operations overheads such as integrating payment systems & user account balance management

Global Gaming Market
The global gaming market is experiencing explosive growth, reaching US$108.9BN in 2017 and a projected US$128.5BN by 2024.

Virtual Goods Market
The value of the Global Social Gaming market is estimated to reach US$17.4BN by 2019. Virtual goods, advertisements and lead generation offers are the primary revenue generation sources of the global social gaming market. Among these, the virtual goods segment is likely to expand the fastest at a compound annual growth rate of 15.20% over the forecasted period.

Mobile Game Market
2.2 billion gamers across the globe are expected to generate US$108.9 billion in game revenues in 2017. Mobile is the most lucrative segment, claiming 42% of the market. In 2020, mobile gaming will represent just over half of the total game market.

IV. Problems

1. Market problems

Due to the regulatory constraints placed on the industry, operators are restricted in their ability to serve customers across major jurisdictions and regions. Jurisdictions are grouped into the following categories based on regulatory response (exact nomenclature varies):

Black Markets
Black markets are jurisdictions that have either classified online gaming as illegal or only allow intrastate games to be played.

Dark Grey Markets
Dark grey markets are jurisdictions that don't explicitly prohibit online gambling and/or have legislation that is unclear.

Grey Markets
Grey markets are jurisdictions that have regulated online gambling or have not taken any action against remote operators.

2. Operators

Within this regulatory framework, operators choose either to operate in multiple markets with single or multiple licenses, or all markets with a single or no license. These can be classified as "onshore" operators and "offshore" operators.

Onshore Operators
Regulated operators have obtained at least one gaming license from a respected gaming authority and typically operate in most grey and dark-grey markets. These operators adhere to AML/KYC, tax, and other compliance policies, and many are publicly traded companies on various exchanges around the globe.

Offshore Operators
Unregulated operators often reside in offshore jurisdictions in Costa Rica, Curacao, Cyprus or on Indian Reservations. They have usually offered their services to customers globally including black markets. Relatively minimal data can be obtained on these operators.

An increased number of jurisdictions and countries around the world have begun regulating online gaming, leading to a greater portion of regulated online gaming traffic.

Competition
Online gaming networks' success is dependent upon establishing large global liquidity pools of players. Thus over time, the market has been reduced to a few large operators within their respective target markets, leaving players with limited playing options and enabling operators to charge higher fees.

Unregulated B2C Market
The unregulated online gaming market is slightly more fragmented. Sites put minimal investment into anti-cheating practices such as bot detection or multi-accounting, leaving players to fend for themselves on their platforms. Many players have gravitated to these platforms because of limited playing options, or high competition on regulated platforms. However, the lack of due diligence and reporting requirements of these

companies leaves players with minimal insight into daily operations, and provides negligible recourse options should these sites go offline, lock players out of their accounts, or be accused of wrongdoing.

Gaming Bots
Gaming bots can run without human oversight and vary in their complexity: they can be bought off-the-shelf or can be custom built and employed by an individual actor. They vary in their degrees of success, and ultimately, only the most sophisticated of bots can beat skilled professional players. Gaming bots pose a significant threat to the future success of the industry.

Third-Party Tools and Software
Many online players use third-party tools and software that targets recreational players via a multitude of methods. These tools include (but aren't limited to):

Player Databases: A database of players that can be queried to find players with low win rates across multiple gaming networks.

Auto-Seating: Automatically seats players at quality checked cash game and Sit & Go's, as well as color coding players based on player statistics.

Player Scanning: Scans players currently in a gaming site's lobby who match specific criteria.

Heads-Up-Displays: Displays real-time statistics of opponents at active games.

These tools are designed to give players access to information about their opponents and are used by regular online gaming players. Unfortunately, these tools create a disadvantage for recreational players that are not employing these programs and are unknowingly targeted by highly skilled professionals.

Conclusion
Players face several disadvantages in the current online gaming marketplace. They must combat malicious software, high fees and stiff competition in regulated markets, and are forced into playing on sites that lack accountability and transparency in black markets. Overall, increased competition, higher fees, and distrust among recreational players has led to a growing strain on the global gaming economy.

V. The Kubera Solution

1. Overall

The Kubera team has spent years researching the current market dynamics in the industry. Our goal is to address industry shortfalls through the creation of a new decentralized online gaming network with built in trust, transparency and accountability.

We seek to reinvigorate online gaming through the utilization of the Ethereum blockchain, peer-to-peer networking, user-owned identity, and cryptographically secured payouts. While also creating an improved playing experience at a lower cost to players.

Using these new frameworks we will fix the broken gaming economy, provide reduced costs to players and create the safest and most secure online gaming platform. This will enable all players to have a fun experience and develop a more balanced online gaming ecosystem.

User Flow
Kubera will run without storing customer funds even it stores keystore files of their wallets as those wallets are encrypted by a password which is defined and known by the customers only. This means if users forget or lose access to the password they use to encrypt their wallets, we will not be able to recover access to their funds.

Game Clients
The Game Client will initially be a state-engine desktop or mobile application that runs the game Logic and includes a light wallet. It will connect to other players at a given game.

Registration
Users will be required to create an identity (if they haven't already created one). The user will also have to receive an attestation regarding country of residence and age prior to playing on Kubera when necessary.

Funding Wallets
The user will be brought to a page that directs them to fund the light wallet that is pre-built in for the client. The built-in Kubera wallet uses Version 3 format of Ethereum blockchain wallet, which is the most popular format used by well-known clients such as Metamask and MyEtherWallet. Because of this, users will find no problems in importing and using the same wallet with a different client.

Create or Join a Game
The user will have the option to create a private game. He or she can invite other players to join or go to our lobby which will show all publicly available games via our gaming registry.

Buy-In
The user can either join a public or private game by sending Kubera tokens, in-platform tokens (to be discussed later), to the system's Ethereum address to have the funds locked, this will play as assurance that winners will be paid by the end of the game. The system address will sit on the Ethereum blockchain and act as an escrow account while gameplay is conducted.

Gameplay
The peers at the game will form a P2P subnet.

2. How Kubera works in the first phase without smart contracts

For the first phase after the ICO ends, we will release games which require only skills from the players themselves, as well as games using Kubera tokens. Because of this, smart contracts are not a compulsory part at that time. System components consist of the following:

a. Identity Management

A registration and identity validation mechanism to prevent underage gameplay and multi-accounts. Users will be required to sign-in via our system each time they want to play games on Kubera.

Illustration of Identity Validation

- Step 1: A user goes to the user portal, creates an account with a personal email and password to access the account later. A verification link will be sent to the specified email address and the user needs to follow that link in order to verify the email address and proceed with the further steps.

- Step 2: Next, the user has to provide a phone number and uses the verification token sent to this number from the system to verify it.

- Step 3: A scan of the user's ID (resident card or passport), a selfie with the ID and other personal information such as full name, date of birth, nationality are required and must be entered/uploaded manually by the user themself. After submitting this, the information will be sent to administrative system to proceed offline KYC/AML procedure in order to determine whether the user is legally eligible to participate in the ICO. The KYC/AML procedure takes time and it is likely the most time consuming step so users are urged to be patient while waiting for approval before continuing to the next steps.

- Step 4: After being approved by the system administrators, the user must proceed to initialize their wallet to be able to invest in the ICO. Users can choose either to create a completely new wallet by entering a passphrase or import an existing wallet into the system by uploading its keystore/JSON file. The equivalent address of the wallet will then be imported into a list of authorized addresses which are allowed to send money into the ICO contract a.k.a the ICO contract only accepts investments coming from addresses specified in the authorized list which is stored inside the ICO contract.

Please note that if the user chooses one of two options to initialize his/her wallet above, the wallet still stays encrypted and the user needs to enter the passphrase in order to decrypt the wallet and make transactions from it. The system stores only the wallet as the form of keystore/JSON file, the encrypted form, and does not store the passphrase of the wallet which means the user will permanently lose the funds the wallet holds if he/she does not have access to the passphrase, the system will not be capable of recovering the wallet or passphrase.

b. Game server

As smart contracts will not be involved in the gaming process in this phase, a game server will be responsible for handling the game outcomes and player payouts. Game records will be then be collected and sent to a database by the game server and funds will be processed accordingly to payout for those who win.

Handling game outcomes

Player moves in games during this phase will be synchronized in real-time for all parties' end via the game server thanks to the P2P messaging protocol. As a result, the game server is able to keep track of the game play, assure information that all parties have are identical, logical and relative to precedent moves so no one will be able to fool the server or the other players in a game with a nonsense result.

Game payout

When a tournament or a game is completed, or when a player leaves, the platform will auto-execute and payout each player when winnings are due. Those payouts will stay locked but available to use to play other games in the platform. Those funds are available to transfer to any other wallet, whatever pre-built light wallet of the system or external Ethereum accounts which are managed by popular tools such as Mist, MyEtherWallet or Metamask.

3. How Kubera works in latter phases with smart contracts

From the second phase of development, the Kubera platform will utilize several sub-components for different purposes within the application:

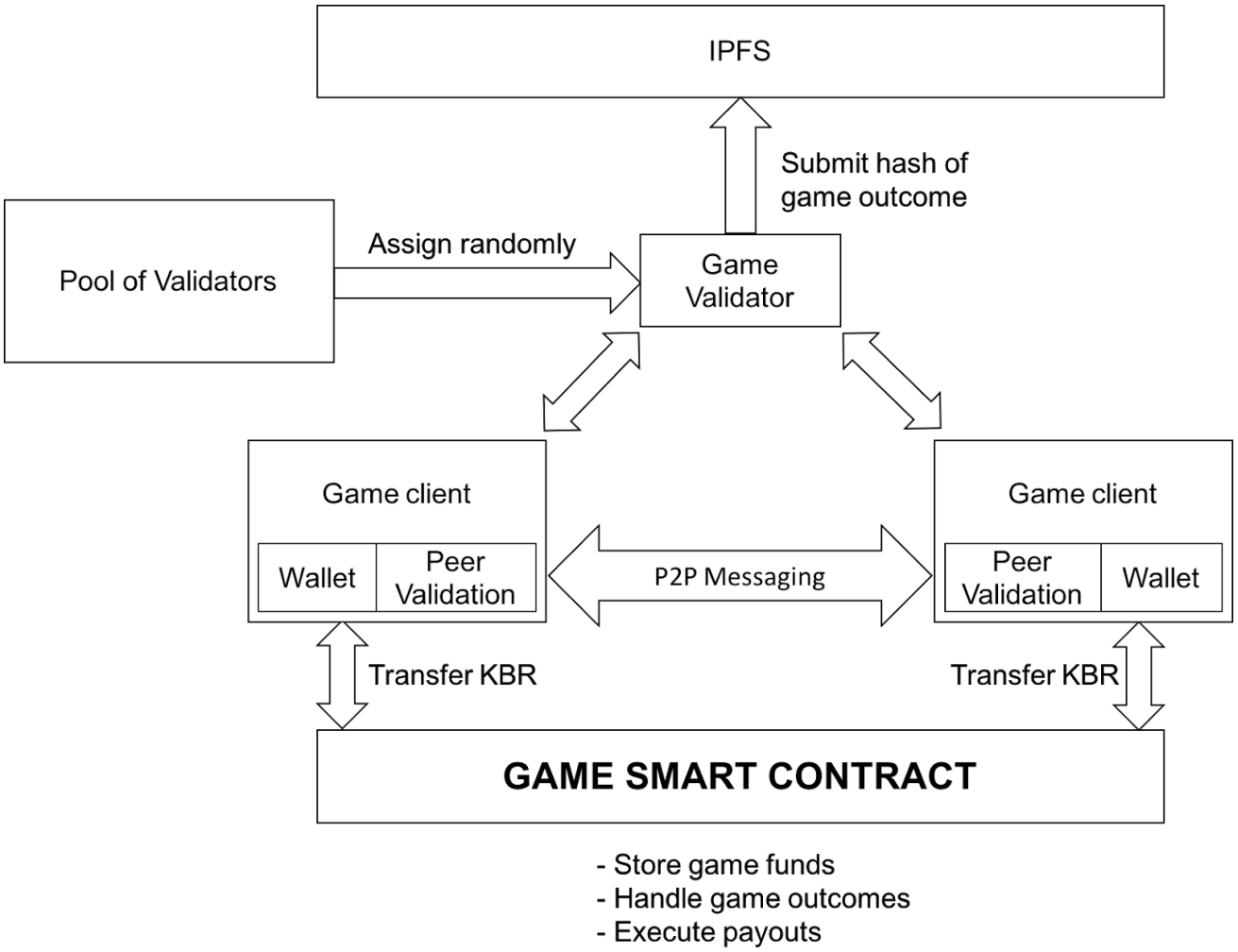

Illustration of how the Kubera platform works with smart contracts

a. Identity Management

The registration and identity validation mechanism built in the first phase will remain consistent in latter phases to assure that the system is stable and trustworthy from the risk of underage gameplay and multi-accounting.

b. Ethereum Smart Contracts

Ethereum contracts are utilized for several purposes:

- as a registry for all active games on the platform
- as a short-term escrow service for players seated at a given game
- as a repository for all game-specific parameters such as buy-in amount, payout percentages, and game type
- reporting end game results

c. Ethereum Smart Contracts

After a player has verified their identity and created their account, the user is brought to the e-gaming contract.

Gaming Contract

The Gaming contract contains a registry of all available games, as well as recently completed games. Its functions include game creation as well as matchmaking and other frontend, user, and game-management tasks.

It represents a single instance of playing a game in Kubera. When a decision is made to start a game of gaming with a particular set of rules and limits and a given set of players. Pots get paid upon completion of the game.

During play, the game contract serves several purposes. Primarily, it is the repository of all information regarding the rules and settings for the game being played. It also maintains a list of the players in the game, information about them needed by the other players and is responsible for distributing winnings. Additionally, it is where funds used for gameplay are stored.

When a player joins a game contract, the funds needed to cover the game buy-in are transferred to the game contract and credited internally to the player's stakes. The player then receives the necessary information from the contract to communicate with the other players at the game, and play begins.

As play progresses, the contract is informed as to the state of the game and updates accordingly. When the player leaves the game, the contract transfers any funds due to the same account from which the player originally paid them.

Player Interactions and Game Contracts
As currently architected, transactions by players are sent to game contracts in the following instances:

(1) to join a game
(2) at the end of each game
(3) when a game is completed (for tournaments) or when a player leaves a game (for cash games)

Our goal is to minimize the number of transactions sent to Ethereum to reduce gas costs and improve gameplay speed.

At the end of a game, each player cryptographically signs the end-results, and sends a transaction to the game contract which updates each respective player’s stake accordingly. This consensus mechanism and transaction submission by the peers at each given game functions as an “oracle,” enabling the contract to keep an updated game state, and to know when to pay players.

This process happens asynchronously as games are played on the platform enabling players to move onto the next game while a previous game result is validated by the blockchain.

Multi-game Tournament Contract
For tournaments that involve play across multiple games, the multi-game tournament contract acts as an organizational tool for managing the distribution of players across the games. Any aspects of the tournament that exist at a higher level than the game itself are governed by this contract.

Peer Validation and Contracts
A Validation is created by peers in the game. A special case of the player client software which participates in the peer-to-peer gameplay of a game, but does not participate in play or place wagers. Instead, this peer is externally incentivized to act as a "more trustworthy" peer in the game subnet in such a way that a set of them at a game can be used to resolve certain potential disputes and to log the game data.

To both distribute the workload and discourage any potential for collusion between validators and players, the validators are assigned randomly to games from a pool, and rotate through games after a certain number of games. The Validation Management Contract is responsible for keeping a registry of available validators and also assigning them to the games.

d. Peer-to-Peer Messaging

P2P Messaging for Game Client Synchronization

Decentralized technologies are required to provide a practical, consumer-oriented gaming service. The downloadable game client software consists of separate "frontend" and "backend" processes. The front end displays the current game state to the local user, accepts input when appropriate and passes it to the backend, which then broadcasts it to the other clients in the game. The backend contains the logic needed to apply the rules of gaming to the input events that it receives from the frontend and other clients. As a result, every client is applying the same code to the same data as all the others.

Off-Chain Gameplay

A programmable blockchain technology like Ethereum makes it possible to have data storage for things that might otherwise be handled by a single server, like managing the players at a particular game. The ability for client software to interact with contracts on the blockchain also allows for the trustless, distributed management of player funds and game stakes, and provides a tamper-proof record of these interactions.

The blockchain cannot simply be used as a replacement for a server for all aspects of the game partly because data and instructions sent by a client take time to propagate across the chain. It is, therefore, impractical to use in the management of game events at a finer granularity than at the game level.

Game events occurring at a higher rate, like betting, must be managed by the client software itself, or more precisely: by the software that manages the peer-to-peer subnet consisting of the clients playing a particular game.

The use of digital signatures allows each client to verify that messages received have been sent by the claimed sender, preventing forgery. Fault tolerant consensus formation techniques are used to ensure that at each step in the gameplay process, every client agrees with every other client as to what exactly has happened. In addition to catching errors and hardware failures, Byzantine faults (intentionally bad data) are also detected.

At the end of each game this consensus data - digitally signed by every client - is passed to the blockchain for processing, and the clients themselves move on to the next game. Disagreements among clients, or peers at the game are resolved by validators.

e. IPFS: Game Storage and History

To provide a permanent record of the actual play of each game, the signed game event messages need to be stored, as well as the state information tracked by the blockchain when it processes the end of a game.

This turns up a second weakness in current blockchain technology: using the chain to store significant amounts of data can be expensive, so sending all log data to the blockchain is not practical.

Fortunately, technologies exist (IPFS, Swarm) that can provide reliable, distributed data storage.

At the end of a game, before reporting to the blockchain, the client software sends the game's log data to IPFS, which provides it with a single "hash" value that can be used to locate it at a later time.

That hash is included with the state data sent to the blockchain contract, and since each game's log data includes the hash of the previous game's log, it is possible to request from the blockchain the most recent hash, and use it to chain back through the entire logged history of the game.

A distributed storage platform removes singular points of failure present in various forms of centralized storage systems.

f. Game Security

There are several forms of cheating that plague online gaming. Common forms are outlined below.

Collusion
Collusion is defined as two or more players collaborating at a game by sharing information and utilizing cooperative betting strategies to create an advantage against other players for financial gain.

Multi-accounting
A single user may use several accounts across one or multiple machines and then take multiple seats at the same game to create an unfair advantage in a tournament or cash game.

Data Mining
An unfair advantage is any instance in which a user accesses or compiles information on other players beyond that which the user has personally observed through the user's own game play.

Gaming Bots
As described previously, gaming bots are either off-the-shelf or self-programmed software programs that can operate without human oversight.

Account Sharing
Account sharing can be defined as when two or more players use one account to take advantage of the gaming site or other players.

The gaming site can be taken advantage of if they offer higher % rewards. Other players can be taken advantage of with nefarious actions such as selling an account deep in a tournament, as well as a stronger player using a weaker player's account.

Provability System to Prevent Cheating
In order to combat collusion and cheating, the Kubera team will be developing a validation system.

Validators are non-playing peers who provide security and protection to players on the Kubera network and in exchange receive fees from players.

Validators on the Kubera network sign each outcome for every game on the platform and submit game histories for storage to IPFS. The functions described below are automated: there is no manual oversight needed for a user to run a validation node.

Dispute Resolution
In the rare instance where two peers at a game disagree about the state of the game at the end of a game, a validator can resolve the dispute in real-time and award the pot to the winner.

Data-Feed
A validator submits each action of every game to Interplanetary File System (IPFS) so that game histories can be stored. This is required by gaming regulatory bodies and ensures essential services such as collusion detection, bot detection, and multi-accounting identification can be conducted.

Player Encryption Keys
Validators will store a decryption key for the players at the game.

The "dropped player problem" in games is defined as when a player drops out of a game before a game is completed. This is problematic, as all players must share encryption keys for community cards to be revealed and for a game to be completed.

Each player's keys can be encrypted and split amongst all players plus the validator. If the player drops, the validator can request the pieces from each player and decrypt the assembled pieces so that the game can be completed.

A validator node on Kubera can be activated by downloading the Validator client to a machine, opening the application and activating the Validator.

VI. Kubera Architecture

Kubera is still under heavy development, parts in this section are subject to change.

For a short-term plan until June 2018, Kubera aims to offer a fully decentralized gaming platform made possible through the use of new technologies like Ethereum and IPFS along with other solutions.

Games and applications of Kubera platform will be designed and implemented to be cross-platform applications so we will use Unity framework for games and React Native for applications. For games, they will include the platform engine, the gaming client and a network infrastructure that allows for communications with the Ethereum blockchain as well as a peer-to-peer subnet for game instances to use for lower-latency messaging required in human gameplay.

1. Components

The major components of a game that will run in Kubera platform are:

Game Engine
Contains the game logic.

Ethereum
Uses as a repository for game parameters, escrow service, results reporting, player management across multiple games, and Validator Management.

GameNet
Provides a single component the engine can use to communicate with the outside world.

P2PNet
Used by GameNet to manage a game-instance-specific p2p subnet.

Web3.js
The Ethereum compatible JavaScript API which implements that communicates with the Ethereum nodes (https://github.com/ethereum/web3.js/). For those to be implemented in Unity, we will be using .Net version of web3 which can be found at https://github.com/Nethereum/Nethereum.

Unity or React Native Application
Cross platform framework.

Game Client

The game client that will be used by players. Most games in the platform will be implemented with Unity framework or React Native to make those games runnable not only on mobile platforms but also on web browsers or even desktop.

IPFS Client
Interfaces with the IPFS network to store game records. Users have the option of running their own IPFS node or connecting to the default Infura node.

2. Game Engine

State Machine
The game engine is the core of our application. Our game engine is a finite-state machine that controls the transitions within the game state and implements the game rules. Depending on user interactions with the application and the network responses, the game engine will trigger actions and will move to the next state.

Connected or Offline State
Kubera runs through the following process when a user logs into the application:

1. The application is not connected, so we are in an offline state.
2. The user inputs login details and performs a login.
3. The game engine will receive the input and triggers the action to perform the login.
4. After login, the game engine will move to the next action and notify the Game UI.
5. If the login is successful we will move to a connected state.
6. If the login has an error we will keep the user in an offline state.

Game records
Kubera uses IPFS to store and distribute game records in a decentralized manner, ensuring that no single user is responsible for the integrity of the game data.

IPFS files are content addressed (meaning that their hash-based identification comes from the contents of the file itself), any discrepancies between logs, that may have resulted from intentional or accidental changes, can be easily found by our Game Security team.

VII. In-platform token

Kubera solution has its own tokens to let the whole system functions called Kubera token (KBR). Kubera tokens are Ethereum-based assets which means they only function on Ethereum blockchain and it costs ETH (built-in currency of the Ethereum blockchain) while using Kubera tokens.

As Kubera tokens run on one of the most stable and powerful blockchains in the world at the moment, Ethereum Blockchain, investors or holders of Kubera token can benefit the following advantages:

- Security and stability: as using Ethereum, one of the most robust Blockchain in the world, it is not viable to attack the network nor hacking the whole system so Kubera holders will not have to worry of losing funds from their wallets as long as they assure the access to the passphrase of the wallet.
- Portability: Kubera token is created using the best practice with ERC20 protocol of Ethereum-based tokens so it is supported by almost all exchanges. This also means that Kubera holders will find it is trivial to keep track or trade Kubera tokens with other holders on various exchanges.

- Transparency and immutability: every Kubera transactions will be stored publicly on Ethereum blockchain so everyone can easily verify whether a transaction has actually happened and once it happened, there is nothing that anyone can do to change or revert that transaction.

VIII. Token sale (ICO) terms

1. Token sale summary

Kubera ICO (Initial Coins Offering) is to be organized within 10 days from the beginning of November with a stable rate of 19,000 KBR per 1 ETH. The ICO is expected to raise at maximum 110,526 ETH or 2,100,000,000 KBR to be sold. If the ICO fails to reach the minimum expectation of 13,684 ETH (~260,000,000 KBR to be sold) when the time is up, all funds raised will then be returned to investors.

Even though, there are at maximum 2,100,000,000 KBR to be issued during the ICO, there will be an extra of 900,000,000 KBR to be distributed to the ICO owner (Kubera team by default) after the ICO ends and a maximum of 105,000,000 KBR, equivalent to 5% of the total supply, as bonus for referrers. This means there will be in total at maximum 3,105,000,000 KBR in circulation at a specific time.

Token Protocol	ERC20
Token Rights	Access, Payment
Token Symbol	KBR
Token Cost	1 ETH = 19,000 KBR
ICO Min	260,000,000 KBR ~ 13,684 ETH
Token Supply	2,100,000,000 KBR
Start date	October 31, 2017
Issuance Period	11 days
Distribution of tokens to ICO owner after the ICO ends	900,000,000 KBR
Referrer bonus	5% of referral investment
ICO contract address	to be updated

2. How to participate in Kubera ICO?

In order to participate in the Kubera ICO, firstly, potential investors must register to our portal by following the identity validation process of the platform. By applying the KYC (Know Your Customer) procedure, the Kubera system can comply the AML (Anti Money Laundry) regulations. Secondly, only approved users with identity validated will be able to send money into the ICO by using investment tools in the user portal. This means the ICO contract is managed to accept investments from a list of certain people, those who are not tracked by the system will not be able to arbitrarily send their ETH into the ICO contract and purchase KBR tokens.

IX. How will the funds collected from the sale be used?

1. Overall

Platform Development
The Kubera team has spent over 2 years developing games for the platform, and will need to continue to build out our development team to create a fully functional platform, especially with the goal to make the system fully decentralized with breakthrough features coming from smart contracts.

Kubera will hire developers to improve our P2P messaging backbone, create custom interfaces, write secure and effective smart contracts, and implement storage functionality.

In addition, our team will integrate with ongoing Ethereum infrastructure projects including distributed storage, and identity management.

Kubera will also re-skin our current applications and build out a user interface for our platform which meet standards for a commercial quality front-end.

Marketing
Kubera will compete with market incumbents with large marketing budgets and sophisticated customer acquisition processes.

We will dedicate significant marketing resources to guaranteed tournaments and freerolls, marketing analytics software, and other paid marketing initiatives, including partnering with affiliates.

Sponsorships and Community Development
Kubera will sponsor popular gaming forums, websites, blogs, and events. In addition, our team will build a vibrant community for our platform.

Legal
Our team has already begun consulting with well respected law firms and with regulators around the globe. We plans to continue consulting with these resources as we navigate applicable legal and regulatory frameworks. We also intend to pursue a gaming license prior to our launch to ensure our platform adheres to compliance standards and our players are sufficiently protected.

Further Development
The Kubera team is growing a core team and will use the proceeds from our sale to continue to develop our team and the Kubera platform.

At the very first phase of the project, only racing games are selected in which require only player skills in order to win the game. In order for our platform to be successful, in latter phases, we must also provide games of luck and this is where smart contracts will come into play for the role of trustless middle-man. However, in order to achieve this goal, the Kubera application must undergo significant testing to ensure the games are sufficiently fair, the registration and identity verification method prevents low level multi-accounting and underage gambling, and our data storage mechanism is able to track data points necessary for compliance and to detect cheating.

Other services are under consideration for the team to implement with the goal to create the first and unique ecosystem based on Blockchain and Ethereum-based tokens.

Improve P2P Messaging Backbone

The application uses runtime-swappable plugin implementations for different transports, and is currently using a very basic HTTP-server-based message exploder. For deployment, Kubera will implement a more industrial strength backbone.

2. Specific roadmap

- **01/2018:**

Release open beta for games using KBR and wallet app

Multiplayers games and tournaments will be released for selected users around the world to play and test. Kubera team will collect feedbacks from those players, conduct meetings and improve gaming UI/UX.

- **02/2018:**

Integrate Kubera token in various cryptocurrency exchanges

One of the most crucial moves in order to make the project a successful one is to increase the visibility of Kubera token on popular exchanges, hence increase the liquidity. A successful ICO can be considered as a convincing factor while negotiating with exchanges to place our token in their system.

- **03/2018:**

Public launch for games using KBR and wallet app on iOS, Android and Web

Official version of games in the first open beta vague should be ready after two months of improvement.

- **05/2018:**

Release open beta for smart contracts games

At this phase, we will be releasing games which are based on luck and skills so this is where smart contracts must involve to ensure the fairness and randomness of the game outcomes. There will be at least two games to be launched for beta testing at this time: Rock-Paper-Scissors and Black Jack.

- **07/2018:**

Public launch for smart contract games on iOS, Android and Web

As we need to make our games available to mobile OS such as iOS and Android, we will spend a lot of resources for the testing process to make sure those games function well with smart contract features before launching a public release.

- **10/2018:**

Public first non-gaming services for Kubera ecosystem

Kubera team members, with not only software engineers but also economics experts, have been planning to launch non-gaming services using Kubera tokens such as e-commerce, online shopping, lottery, etc.

- **11/2018:**

Release open beta for VR games

As VR (Virtual Reality) has become so popular in the last few years, we firmly believe the Kubera platform should follow the trend by developing VR games in order to be more competitive and stay relevant in the market. The Kubera team already has engineers experienced in such domain and one year should be enough for them to release interesting products for open beta.

- **01/2019:**

Public launch for VR games

2 months after the open beta, a public release for those VR games is expected to be a highlight for the Kubera platform to enforce its competition in the market.