

WHITEPAPER



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This white paper provides a high level view of scope and dynamics of working of BB Token, a disruptive crypto asset targeted at revolutionizing online Gaming industry.

WHITEPAPER DRAFT

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TERMINOLOGY

BBE : Big Bang Ecosystem

BB : Big Bang

ERC : Ethereum Token Standard by Fabian Vogelsteller

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DLT : Distributed Ledger Technology

JSON : Javascript Object Notation

REVISIONIN REPORT

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DATE : 03 Feb 2018

TARGET : APAC Crypto Community

LANGUAGE : English US

LEGACY PARADIGM

In 2008, the crash of the financial market gave birth to a new kind of currency, not linked to any country or organization. **A trustable decentralised currency running on untrusted systems.** This idea was revolutionary and different but so different that it took a while for the people to accept it. Now people have realized the true potential of cryptocurrency and have started using it to solve other problems.



Over the last few years, a disruptive innovative behemoth known as the “blockchain” has emerged as a potentially game changing technology. The core of the innovation is built around the concept of a distributed ledgers. The database, also referred to as the DLT, is maintained by a network of computers. The ledger makes it possible for the entire network to create, evolve and keep track of an immutable record of transactions. Some most prominent blockchain based application thus far has been Satoshi Nakamoto's cryptocurrency known as Bitcoin, which he outlined in his seminal paper, “Bitcoin: A Peer-to-Peer ElectronicsCash System” in 2008. This powerful technology has so far been used in the numerous unregulated cryptocurrencies that exist online. Worldwide online gaming institutions are only beginning to understand the potential applications of blockchains in conventionally regulated industries.

At a fundamental level the blockchain is a data structure that cryptographically links blocks of transactions or any potential transfers of value. As a tool, the blockchain allows for true privacy to exist between those involved in a transaction, online gaming

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For
the Online
Gaming world this
would result in a more
limited reliance on third
party trust mechanism
enabling a direct
contractual interface
between two
parties involved
in the transfer of
value.

MARKET DYNAMICS

Online gambling is the betting of something of value, usually money, on the trigger of an event using the internet. This gaming industry include activities such as poker, casinos (here people can play traditional games, like roulette or blackjack online), lotteries, sports betting, bingo or other popular showstoppers. Usually casino and sports betting make up the lion share of the market. USD Volume of online gaming was expected to reach 51.96 billion U.S. dollars in 2018 more than doubling since 2009.

Breaking its own records in 2015, only U.S. casino gaming market revenue amounted to 71.1 billion U.S. dollars, where Las Vegas received 42.31 million visitors in the the same year. Although land-based gambling still dwarfs the internet activity, but the online gaming platforms are catching fast. With the advent of web II and web III technologies the online gaming market can only become better from here. The Asia Pacific market is somewhat less mature and is the target of this ICO.

Another aspect of online gaming is sports betting which is illegal in many countries and causes severe rifts between the authorities and illegal self regulators. When you bet on sports in the market, you have to trust crooked bookies and mostly tor protected, illegal websites having a central point of failure. The issue here is that these unregulated slimy bookies and other actors can easily take off with their money, or get shop closed down by government regulators hanging bettors without payouts and without any chance of recovery on their losses. Unfortunately thats gambling



“The global sports betting market is worth up to \$3 Trillion, the vast majority of that generated by illegal gambling. Millions of people bet billions of Dollars every year.”

United Nations conference hears
©Roslan Rahman (AFP/File)

BIG BANG ECOSYSTEM (BBE)-GOALS

The Big Bang Smart Blockchain Ecosystem is a decentralised and self regulating environment operation on state of the art cryptographic rules and algorithms comprising components like BBIgnition- the big bang E wallet, BBX - crypto exchange, BBDom - Our Gaming Application and BBToken - Crypto Asset. One of the important part of the Ecosystem is the BB Token which is essentially a blockchain based asset to be used in online casinos, sports book & lottery platform developed and powered by using Ethereum smart contract blockchain technology.

Given the fact that BB Tokens are distributed on the Blockchain and can be held privately in BB E-Wallets makes sure that you remain in possession of your money. Even if you do a transaction all the transactions are immutably recorded on the blockchain making sure that at any point of time any bettor would have proof of the online transfer made to the bookie or casino web service.

In order to fulfil our mission in the best possible way the first goal is to make sure we make the whole online casino, sports book and lottery platform fully transparent: every ticket sold, every win, all the token holder rewards distributed and financial results will be published on the blockchain. These qualities allow BigBang to deliver secure, private, and safe sports betting, lotteries, poker, and casino games to the entire world. Players would avoid the high fees, corruption, legal repercussions, and violence prevalent in today's industry and would be able to get their fair share of the rewards. BB Ecosystem is accessible, fair and safe to use.

We make sure that players don't have to worry about changing regulations or crooked bookmakers. If you are one of the players or bettors you can easily say goodbye to risk and regulation, and say hello to BigBang, an asset optimised to grow in value as the BigBang economy absorbs pent up demand for secure, trust-less betting.

Big Bang token - The Next Generation Blockchain Decentralised Smart Gaming Platform . Big Bank Ecosystem will be rolled out in two phases : BBToken(an ERC20 based token) for fund raising and BBE(a master node based ecosystem for supporting Decentralised Gaming Applications and faster load times).

Using Big Bang Token network ecosystem, we are building an open-source system providing web architecture that is free of all the above issues. The primary focus in the development of the system is scalability and extensibility. The BBE network in a nutshell is a collection of globally connected nodes, having a standard blockchain shared ledger with proprietary software to provide micro transections and content management is the most secure manner. Big Bang Tokens turns the business case argument on its head and takes the finances out of the hands of online gaming whales and institutions and puts it directly in the hands of the people through a decentralised finance model.

BB Token are cryptocurrency token**BIG BANG TOKEN - CYBER RICH CORPORATION LIMITEDS** (BBE) issued to participants via a crowd sourced ICO (initial coin offering). Those funds are then used to finance the BB Gaming app, the decentralised gaming platform. BBBToken would be able to plugged into most of the gaming architectures around the world. Our intention is to dramatically speed up the process of online payments for online gaming industry around the world. Through the sale of finite supply of BB Tokens, a cryptocurrency created on the Ethereum blockchain, participants from all around the world will be able to participate in this Initial Coin Offer. This is a digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central authority or bank.

The capital raised through the sale of BBE tokens will fund high yielding state of the art Gaming applications. As these projects generate profits the investors will be getting the profits from the development as explained in section "**INVESTMENT INCENTIVES**".

As a part of the future roadmap the funding raised will also be used to fund startup focussing on Online Gaming industry with no loans and no liability to traditional financial or banking institutions which avoids profit destroying interest rates. This aggressive approach is in lines with the Big Bang Gaming Application that would be rolled out by mid September this year.

DISRUPTIVE INNOVATION



The second goal is to make BigBang platform as decentralised initially as virtually possible. The plan is to slowly graduate the BB Ecosystem to a more permissioned Ecosystem with payments entered around our decentralised token. This will make sure that Network latency and scalability issues with current Blockchain platforms are met and we can make sure that all regulations are met on demand.

The third, probably the most ambitious goal is to create a platform which could be used by private companies, charitable foundations and even governments to set up any kind of lotteries. As the first step, we plan to create BigBang tokens (BBToken) which will grant their holders an access to daily rewards and entitle them to vote on the games and lottery's future development.

The fourth and long term goal is to bring (AR: Augmented Reality MR: Mixed Reality) into all BBToken player's comfort at home, players can now enjoy the impression of the dealer handing out cards, the sight and sounds of a slot machine win, and, essentially, all of the other happenings which regularly occur in the brick-and-mortar places to play every day. players can share the excitement of wins with augmented reality face effects, with a rain of dollar bills falling from the sky, or coins bouncing off their head, all simulated by the software, in a sort of Snapchat Lenses tailored to the betting and gaming experiences



BUSINESS SCENARIOS

Sports Betting



Live Dealing



Lotto



Poker



Slot



SPORTS BETTING

A dynamic night soccer match between two players. One player in a red jersey is dribbling the ball towards the right, while another player in a white jersey is running alongside him from behind. The background shows a stadium with bright lights and a cloudy sky.

Using BBE state of the art betting smart contracts the BB gaming platform escrows stakes, verifies results, and pays out winners. By eliminating central authorities, BigBang solves the most pernicious problems in the industry. Reducing corruption and risk results in predictable operation. BBE wallet would help to make sure the transactions are processes in milliseconds and the bettor isn't waiting for the Ethereum network latency. This would be supported by our deferred transaction settlement protocol.

(AR: Augmented Reality)

Reality MR: Mixed Reality. It is a technology that exchanges not only reality but also virtual reality and augmented reality with each other. A new research from Juniper Research has found that gross wagers from [Virtual Reality gambling will grow from over \\$58.5 million this year, to just under \\$520 million by 2021, representing an increase of 800%](#). Juniper's latest research, [Mobile & Online Gambling: Casinos, Lotteries, Betting & VR 2016–2021](#), found that VR gambling deployments over the next five years will be concentrated in the casino space, which will potentially offer immersive, real-world VR locations. The Global Mixed Reality Market is accounted for \$28.34 million in 2015 and is expected to reach \$1374.29 million by 2022 growing at a CAGR of 74.1% from 2015 to 2022.

Many gamblers enjoy placing bets and playing casino games online. The reason being it is easy and so convenient. This said, they lose the exciting atmosphere of brick and mortar casinos. Augmented / Mixed Reality Gambling is on its way to change such experiences pretty soon. Gambling will allow you to enjoy a real lifelike experience when playing with real money online casino games. **Augmented Reality promises to keep all the benefits of internet-based casinos while removing the main disadvantage. Historically, casinos have spent huge amounts of money in buildings and structures which are designed to attract and entertain gamblers and their families.**

The Bellagio in Las Vegas is a perfect example of an incredible destination. It displays a visual feast with its World famous music waterfall show next to incredible gambling experiences. Online Casinos do not have such resources so they try to lure players by presenting them with promotions and special offers, like first time deposit bonuses, free bet, etc. All this is changing thanks to augmented and virtual reality, also coined as mixed reality. Online Casinos are finally able to add such awesome attractions.

LIVE DEALING



The main goal of this new lottery platform is to use the Blockchain to bring transparency to the game, as well as solve some common problems involved with lotteries — such as fair drawings, collecting winnings, and limited access to ticket purchases. After a player buys a ticket, the funds will be distributed as follows:

LOTTO



POKER

"As organisations compete to provide better and more seamless customer experiences through digital offerings and solutions, there is an inherent trade-off between enabling a seamless customer experience and fraud management. The service providers who can balance this first will emerge the winners of their categories in time to come."

- Ben Elliott, CEO Experian Asia Pacific.

Experienced and casual players alike appreciate the easy to use wallet that integrates advanced options like poker entertainment and setting the line for head to head bets. Investors large and small can hold a stake in the system by operating Oracles or simply holding BigBang. Users of the platform, both gamblers and operators, could have a score calculated on top of the protocol layer with the counter fraud system, combined with personalised recommendations. This score would serve as a way to calculate and track trust individually and over time, based on actions posed within the network. A high trust score (or low risk score, based on what metric creates the biggest impact in the user's mind) means the user has access to more functionalities, such as higher deposits, faster withdrawals, etc.

Users could give feedback on operators to weight in and add a social component to further incentivize good behavior. The reputation and trust score would be visible from the e-wallet and linked to the user's profile, therefore accessible in the standalone module as well, and not necessarily for the online lotto business only.



SLOT

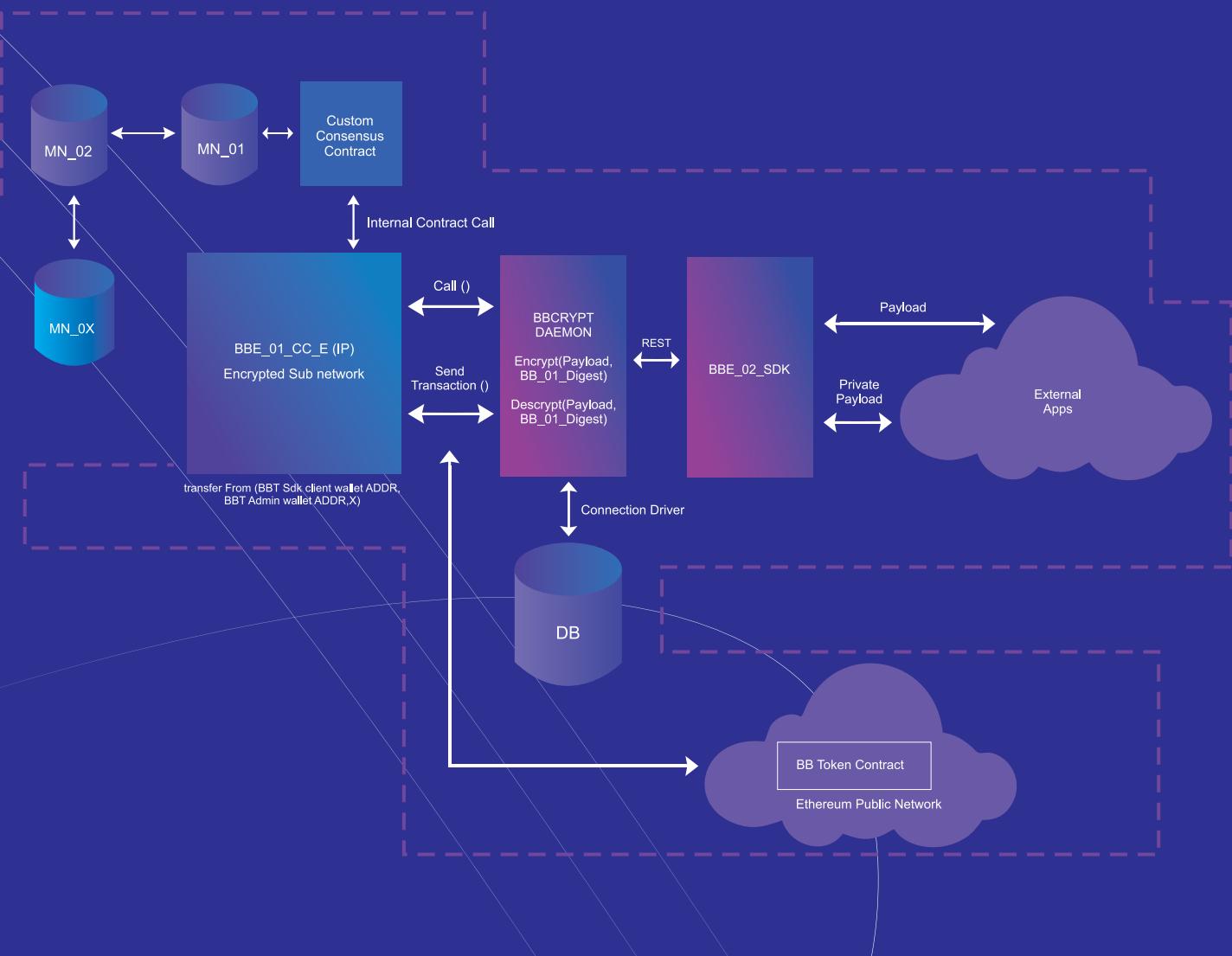
Using BBE smart contracts, we will eliminate any doubts about game fairness. But transparency isn't enough. Users should never have to wait for their next game, nor should anyone have to shoulder the burden of blockchain transaction fees for each spin of the slot, or hand of blackjack. Our ground-breaking approach to Random Number Generation and 'Fate Channels' delivers the seamless experience that 21st century gamers demand.



BLOCKCHAIN GAMING ECO SYSTEM BBE PERMISSIONING HIGH LEVEL ARCHITECTURE

As BB Ecosytem is a hybrid between public and private systems therefore the consensus can be maintained on the contract level. Each call would internally refer to the consensus contract and would be selecting the prefer BBE Masternodes. Master node should be added before the network bootstraps. Cluster would also maintain an encrypted ledger with a whitelist based authentication which would be unique to members of the Blockchain Gaming App users making sure that only KYC based authentication is allowed.

For transactions in ledger no Tx Fee would be deducted making the BBE totally free of the cost issues of other prominent networks. The whole process would occur given the Client BB wallet has required number of BBToken to begin with. New members can be added to the whitelisted member contract and should be able to see the cluster data. Members can further initiate private transactions making the data digest double encrypted in the main BB ledger ecosystem.



BBE ECOSYSTEM

TECHNICAL COMPONENTS

Architecture

The BBE network will have below components :

SDK

For supporting development of different application leveraging the network's functionality. The sdk will communicate with the abstraction layer using well documented RPC calls which will make it easier for the community to build support for different languages. We are planning to support javascript and golang.

Messaging

Distributing messaging functionality for realtime use cases. The messaging protocol is designed to provide robust low level api to be used by developers to be used in their applications.

Filesystem abstraction

A distributed file system abstraction providing a flat file storage system with ACL (access control list) implemented to provide the storage layer for the applications.

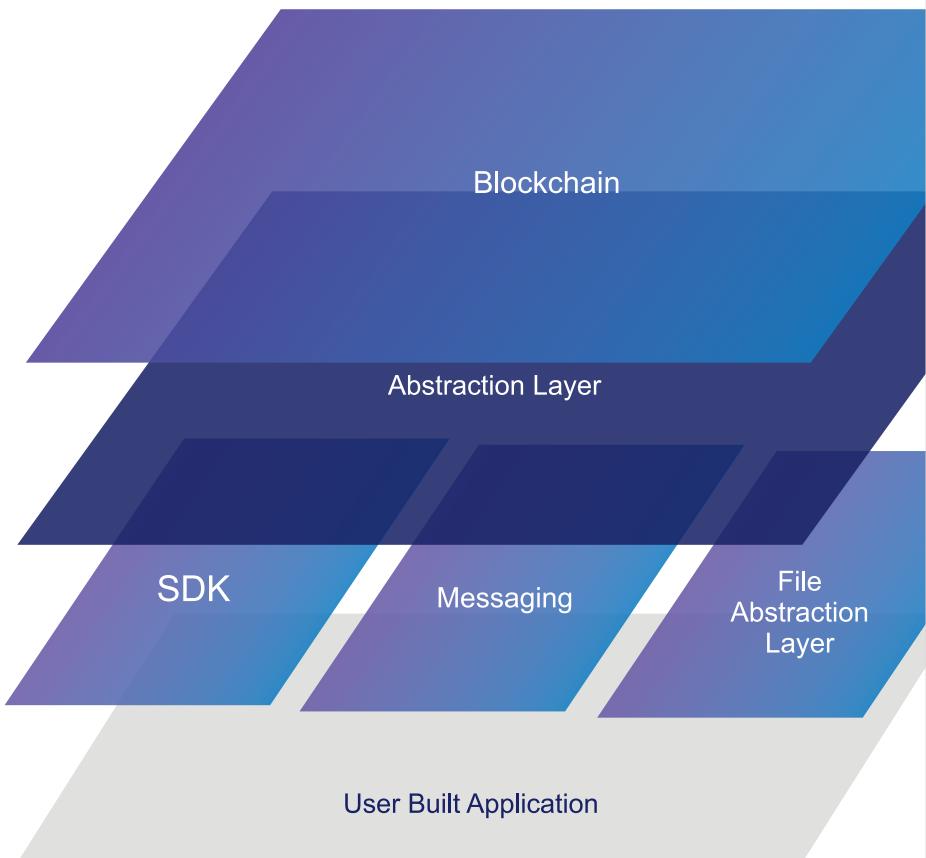
A GUI and web based wallet offering for the end user to use the basic operations such as messaging, signing, storage and sending tokens with other users on the platform. The platform supported will be MacOS, windows and linux. In the future stage, mobile application providing the similar features will be released.

BBE Node :

This is the primary node providing all the features supported the network. It is designed in a layered manner, each layer abstracting the features provided by the layer under it. This design makes the system internally decoupled and teams can work independently on these layers.

The blockchain implementation has a standard block specification which has capabilities to store any kind of data in encrypted manner. The abstraction layer will be responsible for managing the data and its type.

On top of the abstraction layer, three primary layers will be built:



Filesystem abstraction

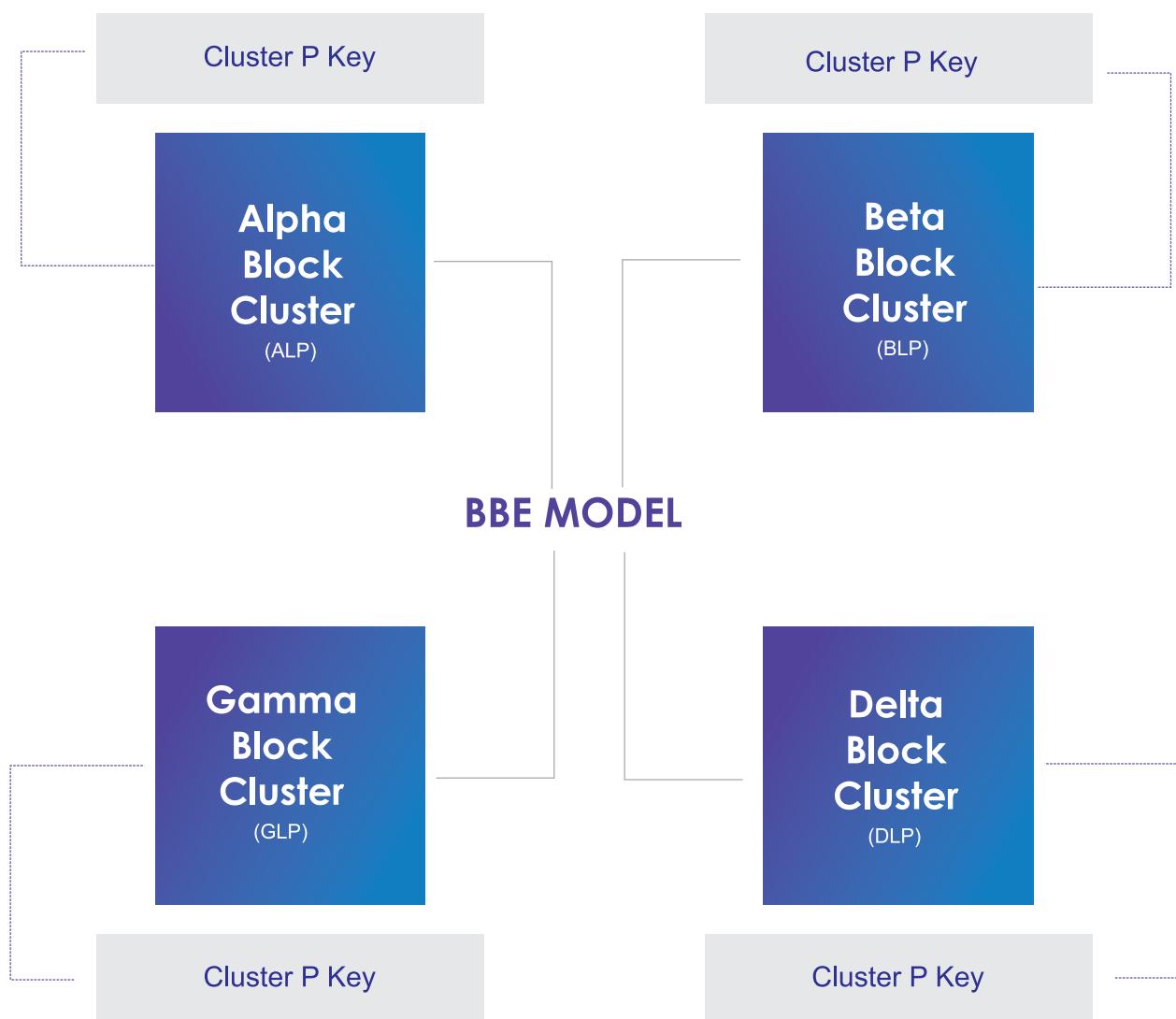
BBE Speed Node is a testing Node used by developer to quickly prototype and develop application using the SDK. The node is designed to replicate the main node behaviour but will have tools such as testing Tokens, simpler mining protocols and virtual distributed environment to facilitate development.

BBE MONITOR

BBE Monitor will be a offering which will provide data analytics and machine learning capabilities on the data stored on the blockchain. The application built on top of the BBE can also use this offering to gain insight for our product.

The capabilities provided by the monitor are :

- Log aggregation.
- Proxy for other enterprise tools like splunk and tableau.
- data analytics directly on the blockchain.
- Integration with LDAP like enterprise auth systems.
- As BBE Monitor is a paid offering it will not be open sourced and is decoupled from the system.



Event PUB/SUB -

This layer is responsible for generating events for interactions happening on the blockchains. The events will also be used by the messaging system. The current implementation has base event producers. These base events will send all the information that has changed in the system which can be used by developers for debugging purposes. Based on these events developer can register different custom event types which will select information from the event tree and only be fired when that information is change.

Account System -

The address generation, signing, importing and other similar features will be present in this part. In the enterprise version of BBE an extra module for LDAP and similar authentication will be provided as a plugin.

Consensus Mechanism -

The consensus mechanism used here is proof of stake which is proven to have less power consumption and better scalability than the Proof of work counter part (currently being used by bitcoin). This will allow low powered devices to be used nodes reducing the bar of entrance. We are aiming for smart contract based consensus that will further help in the custom selections.

Messaging

The messaging is one of the most important feature of BBE, it will provide the developers to develop real time Gaming application without interacting with the blockchain. The idea of peer-to-peer messaging system fits naturally in the blockchain because it can leverage the already interconnected systems of nodes to relay messages and as every user finally connects to one of the nodes in the system, it has the capability to receive messages. The protocol used here will be UDP based multicast. The use of UDP will make the connection light weight and multicast will **BIG BANG TOKEN - CYBER RICH CORPORATION LIMITED** help in quickly propagating the message through out the network.

To make sure that messages do not circulate in the network forever we have considered some parameters:

- 1) **Max Hop** - Inspired from the protocols used in routers, a counter of maximum hops is kept on each message. This counter is used to keep track of the number of hops performed by the message. For each node, the counter will be reduced by one and the message will be drop once it reaches 0.
- 2) **Node Hash** - The nodes have a short lived cache of message hashes which it will use to check for duplicate messages.

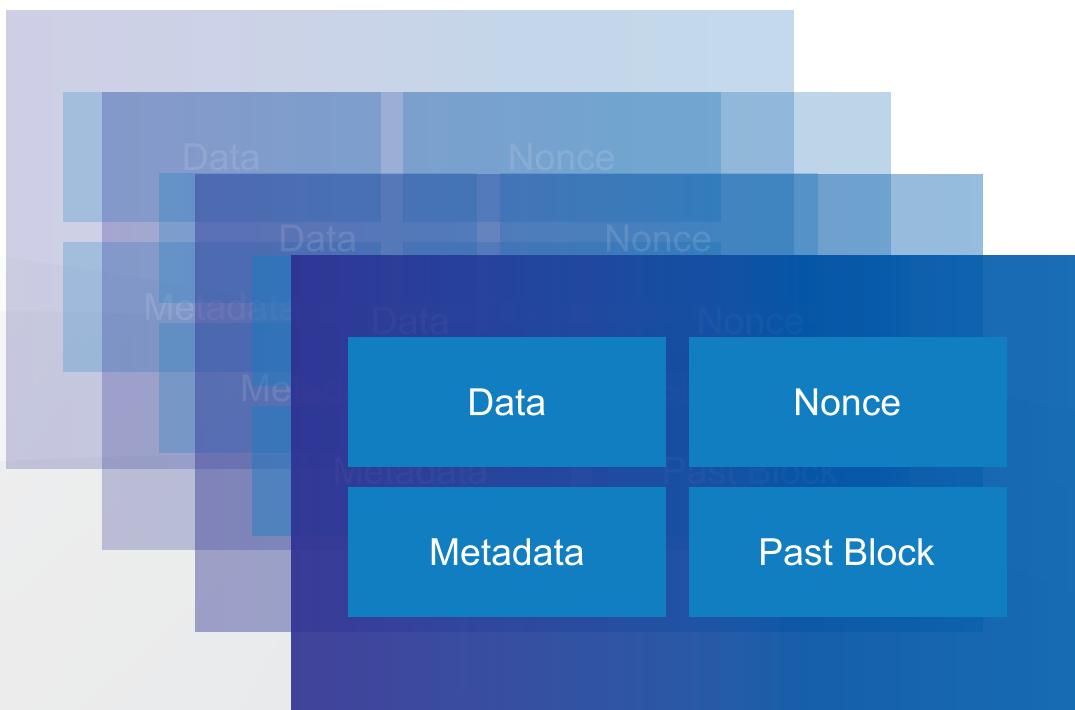
IMPLEMENTATION

This section will explain each and every BBE component in more detail :

Permissioned Blockchain

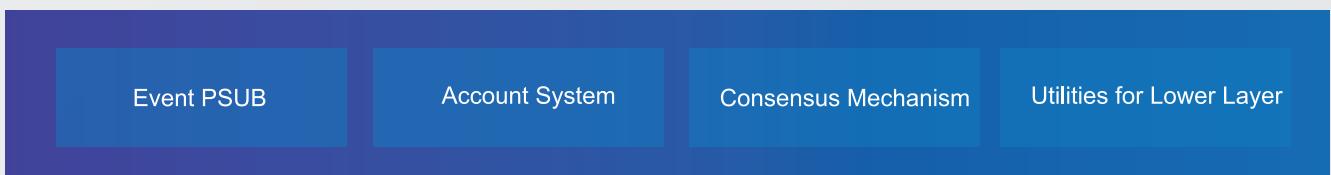
The permissioned blockchain implementation is divided into two logical parts, serialisation layer and the core blockchain store. The serialisation layers has the logic to serialise the data, the current implementation uses GOB object binary format to store it on the disk. This data is then sent to the blockchain which is responsible for keeping track of the metadata and location of the block.

The separation of concern here makes this design more generic and open to extensions. For example a serialisation layer which uses RLP encoding (encoding used by ethereum) to store content hence making it possible for a developer to fork and make a compatibility bridge between ethereum and BBE.

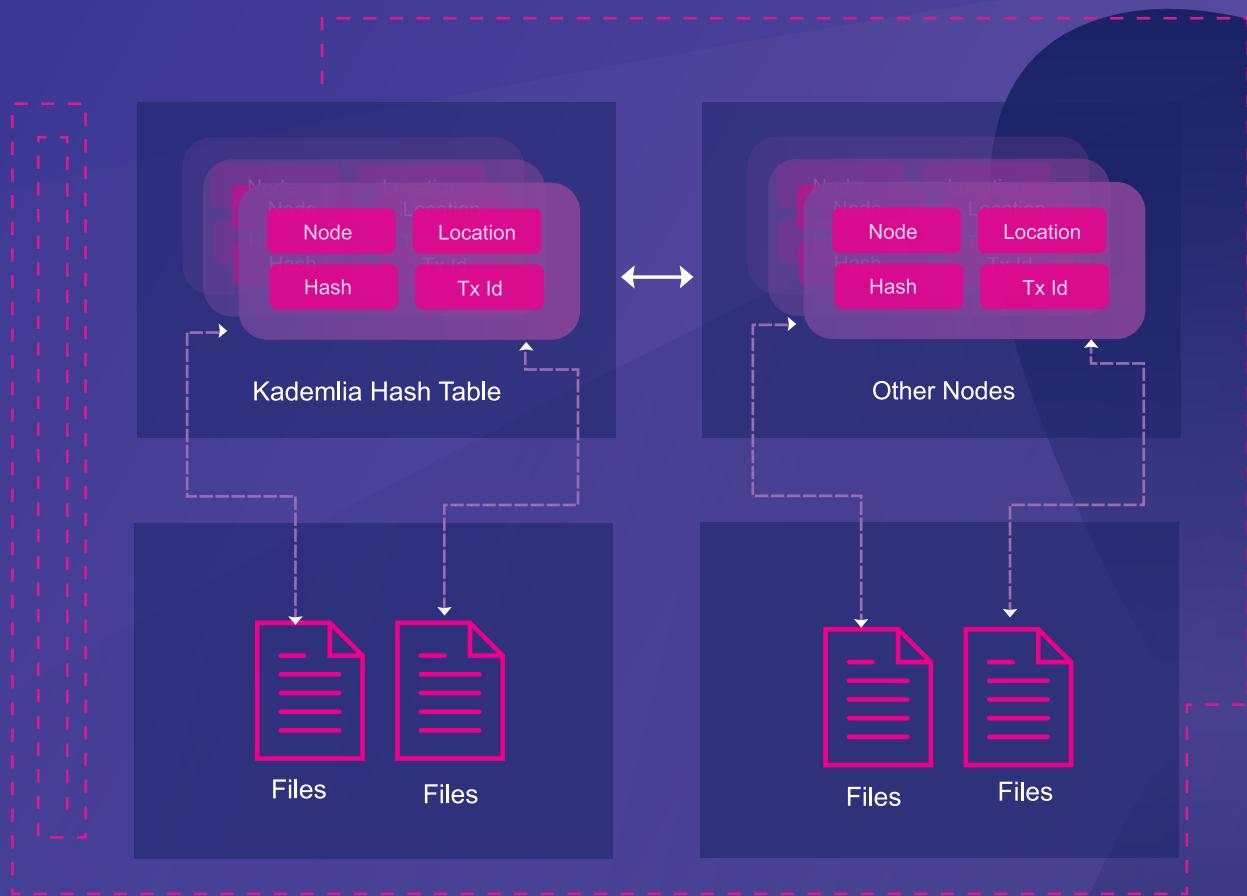


Abstraction Layer

This is largest piece of the system. It contains the consensus mechanism, account management, event pub/sub system and other operations. It also exposes the serialisation layer with some extra helpers which would be used by the messaging and file storage system.



File System



The file system used in core BBE application will have two components -

- 1) **A Kademlia Hash Table** - This table will be used to store metadata of the files like location, replication, SHA-256 Hash and many more . This table will be replicated across the nodes. The enterprise edition of BBE will have ACL Policies to allow sharing of files with other users in the LDAP Environment.
- 2) **The blob storage** - The blob storage is the blockchain layer with some utilities for serialisation. The filesystem provided by BBE is flat. There is no concept of directories, so the amount of meta data required is also less. The file will be stored in data section of the block and it will be traced using the Transection ID.

While designing this file system, we will make sure that even if the interface provided to the developer or the end user is rudimentary, it is robust and can be used extended whenever required.

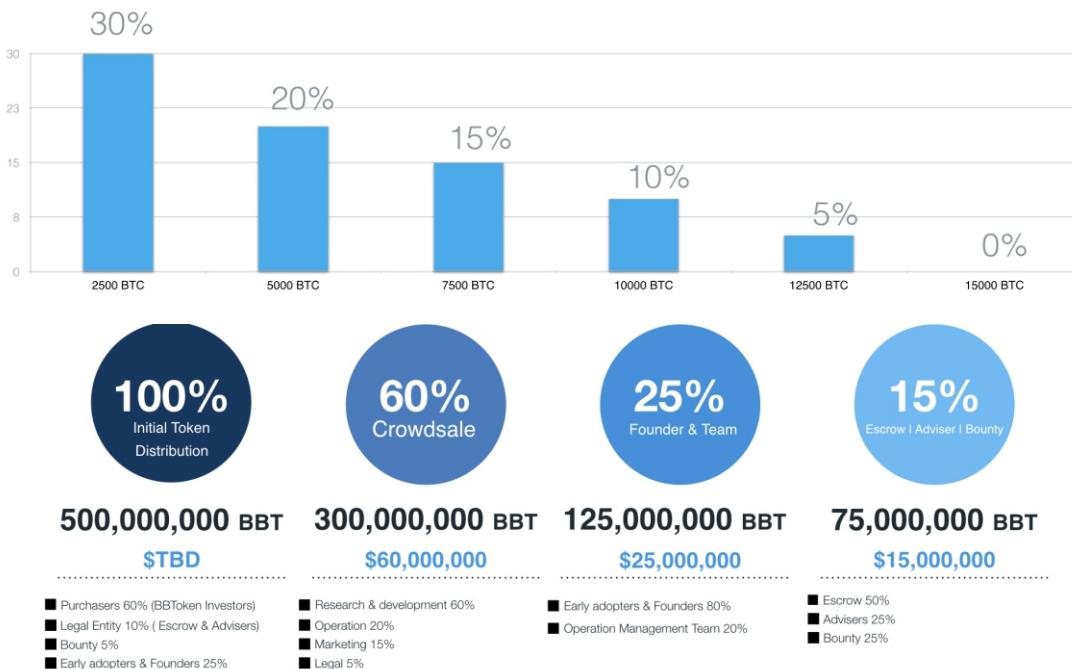
File Interaction Model

This section explains how the BBE ecosystem will interface with current online business models.

The BBE ecosystem with technically tangible components like Wallets, middleware and Hedging algorithms which would be used for escrow payments will be used to have the interfacing with the Online Gaming Institutions.

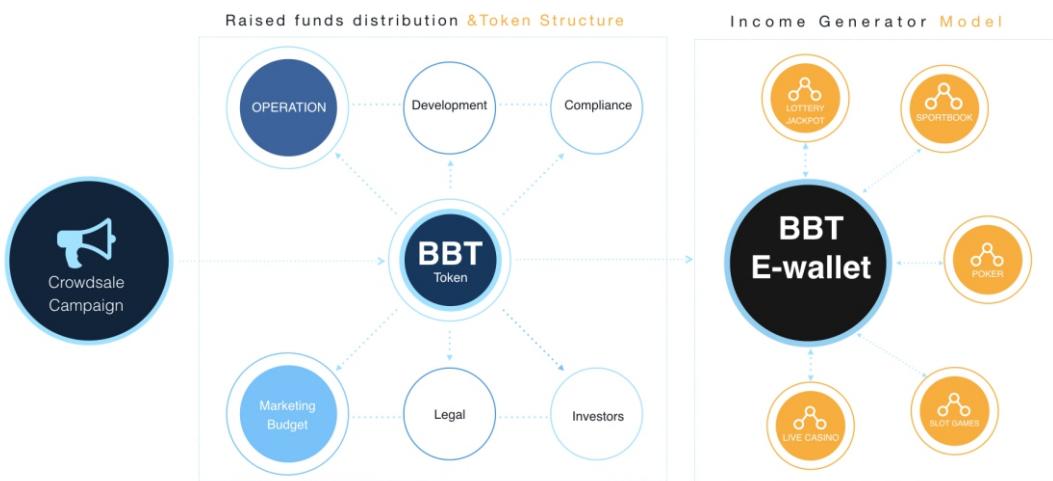
Token Economics

BB Token Sale begins in <TODO> in order to distribute 60% of all BigBang tokens (BBT) within the community. The team will own 25% of the tokens to remain motivated to keep on developing the project. The remaining 15% will be used to pay for advisers, escrow and bounty services. All unsold tokens will be burned. There will be 300'000'000 of the BigBang Tokens (BBT) issued at the rate of 0.05 BTC per 1000 Token. During the 1st -3rd round each ICO 100'000'000 Tokens will be put on sale. 10 to 15% of the ticket sales revenues will be proportionally distributed between all the BigBang Token holders.

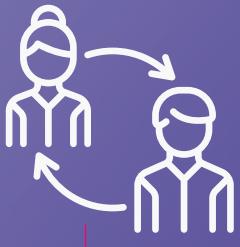


During the crowdsale, all participants of the BigBang ICO will be allocated a number of BBTokens depending on their contribution and current bonus. Once the crowdsale is over, the BigBang team will distribute tokens on BBToken smart contract. The price of the 1000 BBToken is 0.05BTC. During the ICO we'll be collecting the funds in Bitcoin, Ether and Litecoin. Token Sale goal: 15,000 BTC including the bonuses.

BBE Team earns from the earnings generated from trusted funds from our investors and bettors. The profits generated are out there on the public blockchain for our investors to see. <TODO>



Investor Incentive Schemes

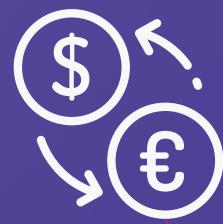


EXCHANGE REGISTRATION

BB Token will be registered on multiple different exchanges as per the roadmap mentioned in section 10 of this paper. Given the fact that we have a strong team and dynamic use case for future development we will make sure that there are active liquidation

PAYMENT DISCOUNTS

Payments done with BB Tokens would be applicable for 20% discounts. Using BB Token Mobile android wallet currently under development we are making sure that we will also target the mainland casinos along with the staple online industry. To make sure that BB Token is the preferred way of settling your wagers we will run the lifetime discounts on any online gaming payment made through our tokens.



PROFIT SHARING MODEL

We at BBE family believe that a community can only grow if everyone feels a part of the ecosystem's profit. As a measure 15% of profits earned by BBE Ecosystem and App will be shared with the investor community based on the stakes of BB Token held. These profits will be distributed in form of airdrops of BB Tokens on selected end of each financial quarter.

CARDANO SUPPORT

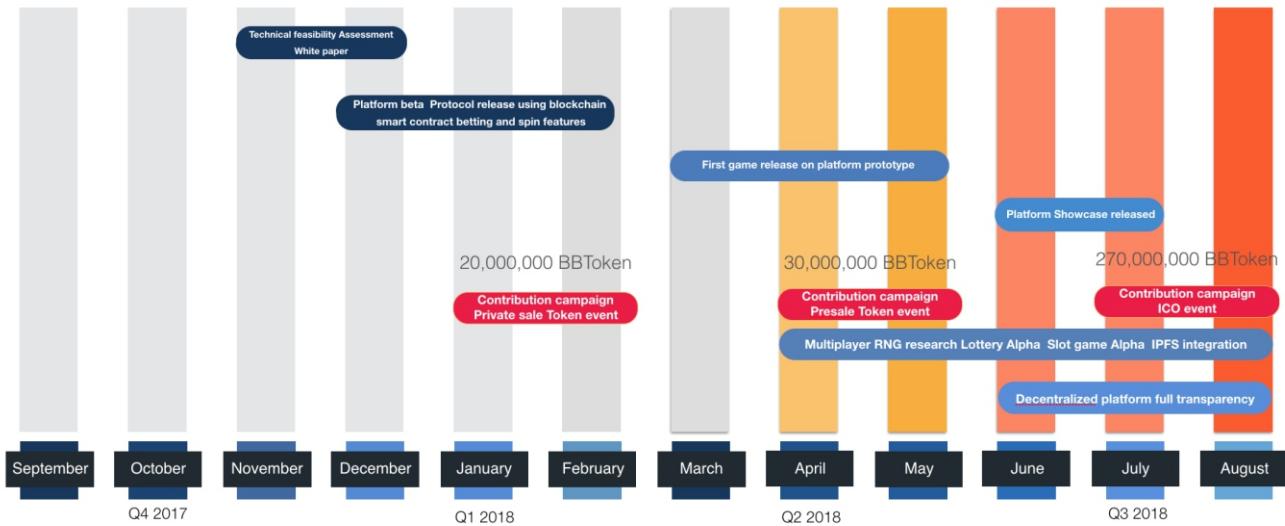
BBE will be partnering up with Cardano Team for leveraging the Blockchain 3.0 technology of ADA. With a market cap of \$9,138,410,844 USD we are pretty sure that this will inturn boost the stability and scalability of the ecosystem and inturn give the much desired push to the BB Token inturn driving the token demand.



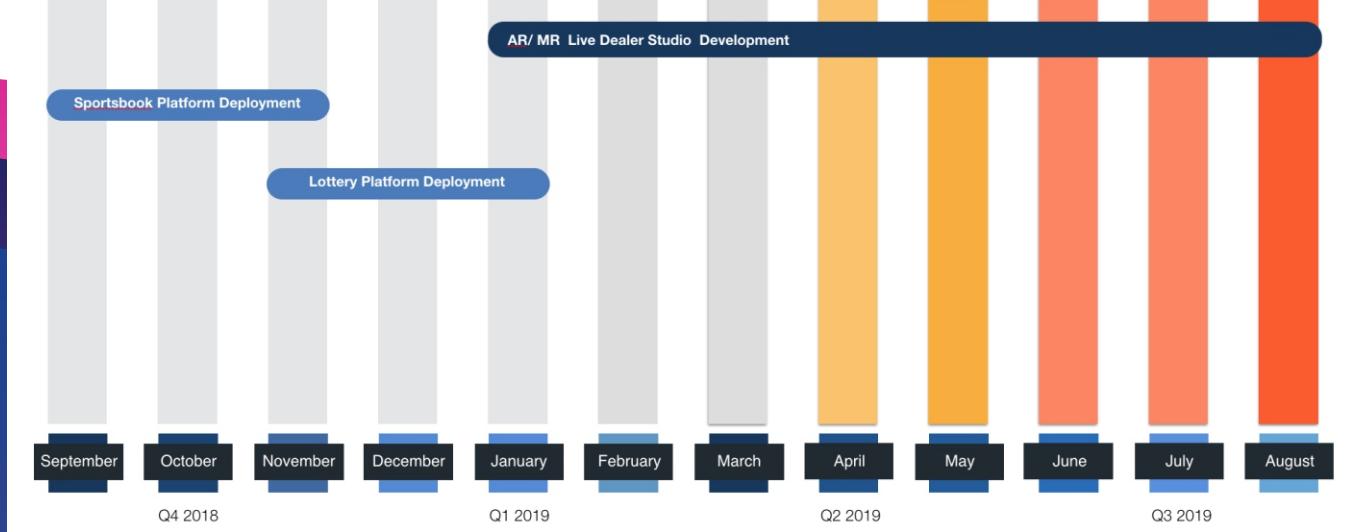
Roadmap

BBE Roadmap takes a 10 stage approach as described below:-

Stage 0. Development concept (Concept + MVP) 3 month development Stage 1. Beta release 100.000 tickets testing Stage 2. Pre-ICO Stage 3. Token Sale Stage 4. Development and Marketing Stage 5. Decentralized platform



Stage 6. Sportsbook Platform Deployment Stage 7. Lottery Platform Deployment Stage 8. Pre-ICO Round 3 Stage 9. Token Sale Stage 10. AR/MR Live Dealer Studio



“By 2020, 50% of all searches will be done through voice”

LONG TERM PLAN

I . GOING PHYGITAL

Mobile biometrics, natural Language Processing, Semi-Autonomous Game Generation, Virtual Reality and Mixed Reality could offer unprecedented opportunities for different types of customer interactions with the products.

“By 2020, 50% of all searches will be done through voice”

- ComScore

II . VOICE ASSISTANTS & SEO

Siri, Cortana, Alexa and the Google Assistant are fast learners. They understand more than a lot of people think and brands need to position themselves to be there to bring value and answer questions with content ready for this medium.

This is something that is being developed right now and that we need to embrace in the coming months.

III . VIRTUAL REALITY GAMBLING

Data from Juniper Research has found that gross wagers from VR (Virtual Reality) gambling will grow from just over \$58.5 million this year, to just under \$520 million by 2021, representing an increase of 800%.

Juniper's latest research, Mobile & Online Gambling: Casinos, Lotteries, Betting & VR 2016-2021 , found that VR gambling deployments over the next five years will be concentrated in the casino space, which will potentially offer immersive, real-world VR locations.

The research cautioned that the high cost of VR devices would inhibit the extent of user adoption, with the addressable base in the short and medium term largely limited to early adopters. That being said, the Pareto principle tells us that 80% of revenues are likely to come from 20% of the users (more like 110% / 10%).

“These will be coupled with a niche clientele, often high-rollers, thereby resulting in comparatively large average wager amongst these early adopters.”

- Lauren Foye, Juniper Research

MOON SHOT

Involve collaboration with select media and content partners to develop new exclusive formats and technologies which cannot be found elsewhere (Hulu, Amazon Prime Video, Netflix Original, Musical.ly, SnapChat's AR program...). Mergers & Acquisitions could also be considered.

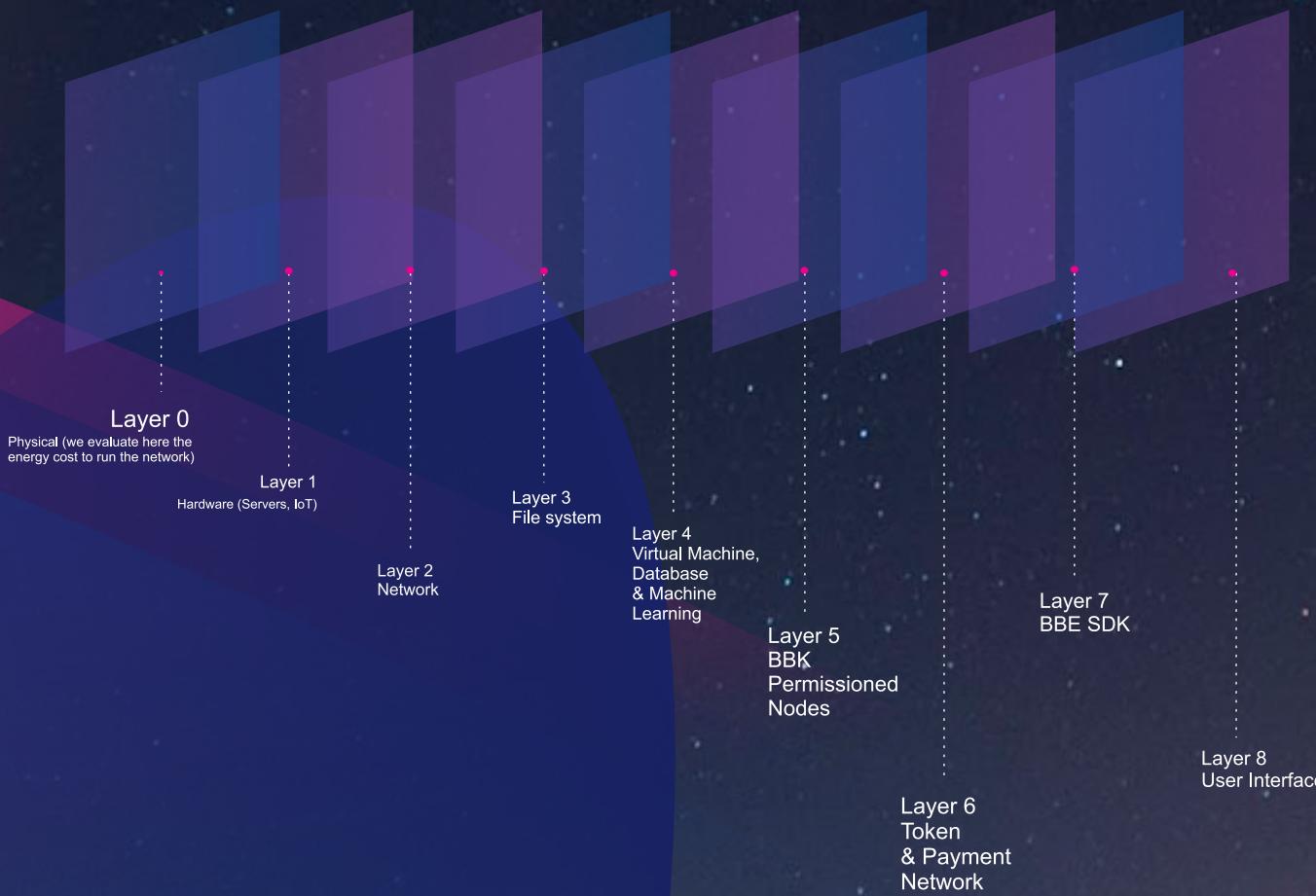
In countries such as Canada, R&D expenses can be deduced (as refundable tax credits) up to 80%. Allocating money to research and develop new types of content could serve two crucial purposes to help the project succeed:

1. Strengthen the business strategy and unique positioning;
2. Increase the overall appeal of the white label solution.

MARS SHOT

A hybrid web infrastructure could be useful to support the operator application in a decentralised way. It will work by joining together the spare computing capacity of all its users, with everyone's data and applications residing on the newly created network.

The following represent the various layers of technologies to produce a decentralised web infrastructure:



CONCLUSION

BBE Monitor will be a offering which will provide data analytics and machine learning capabilities on the data stored on the blockchain. The application built on top of the BBE can also use this offering to gain insight for our product.

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- Proxy for other enterprise tools like splunk and tableau.
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