



White Paper

Blockchain Securities Exchange of the World



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1 Abstract

BEX is a business system using Blockchain Securities Protocol (BSP) to describe any equity in blockchain world and the real world. Based on BSP, BEX reorganizes the equity by means of structuring and standardizing to publish Rights-backed Blockchain Securities (RBS). Then everyone's equity can be traded in a fair and decentralized way in the blockchain world.

An equity can be a Facebook stock, a forex contract, or a ten-year tenure of an apartment in midtown Manhattan, and can also be a Bitcoin / Ether, or a football lottery. BEX let users trade the above equities conveniently in the blockchain world.

In BEX ecology, each equity is transformed to RBS by standard protocol, and is traded in an open and transparent way. The equity's value will ultimately be discovered in BEX. In a sense, BEX is the Global Securities Price Center (GSPC).

2 Background

2.1 Problems in Equities Exchange

An equity is a right of property ownership or dominant. At present many problems occur in equities exchange. It is not only limited by legal tender, but is of low efficiency. These problems objectively restrict trading activities. If the problems can be solved, a more dynamic market will be expanded. Specifically, the following market segments are as examples to analyze the problems in equities exchange.

- **Traditional securities market**

Global trading of stock, futures, and forex is essentially equities exchange. Because existing global securities market is restricted by national boundaries of legal tender, the security assets in different countries are priced by different legal tenders. When investors make international trades, they have to face legal differences among countries and resulting complex procedures of foreign currency exchange. Under the tendency of globalization, the securities trading based on legal tender causes much inconvenience for global investors.

- **Blockchain assets market**

With continuous development of blockchain industry and blockchain assets trading market, investors are not satisfied with current limited trading methods, but need more trading methods including futures, margin, index, EA (Expert Advisors) automated and quantitative trading to meet their different trading demands like hedging and arbitrage. To sum up, in mature blockchain assets trading market, flexible and diversified trading methods should be provided to fulfill all kinds of investors' differentiated trading demands.

- Prediction market

The valuation adjustment mechanism provided by prediction market is an efficient financial instrument for hedging risks, however the liquidity and variety of traditional prediction market are very limited, and problems of legal supervision and assets security also exist in centralized betting platforms. At present decentralized prediction platforms like Gnosis and Augur bring new vitality to traditional prediction market, but they cannot supply trading service of prediction contracts. When result of prediction event is announced, the prediction contract participants undertake all earning or loss. Although they change their judgement as situation evolves, they cannot sell the contract. Continuous transaction of the contract is conducive for the participants to hedge huge risks in prediction market, and this demand can expand new market space. A fair trading place with high liquidity is needed in the market for the participants to conveniently trade the prediction contracts before the results of prediction events are announced.

2.2 A New Thought to Solve Equities Exchange Problems

In a sense, essence of blockchain is a collaborating system driven by equity exchange. Value is discovered through equity exchange and is transmitted into blockchain. A blockchain application is an incentive system based on token system and equity exchange to discover and transmit the value. This incentive system efficiently coordinates and promotes positive development of all parties.

Take Bitcoin system as example. This system is based on Prove-of-Work (PoW) protocol to issue tokens. The value of the tokens is discovered by trading, and is transmitted to miners, which are motivated to process system transactions and guarantee stabilization of the Bitcoin network.

It can be said that equity exchange is the engine of blockchain world, and blockchain system driven by equity exchange deeply influences the real world. Therefore, a new method of equity exchange is needed to transform equities to RBS according to standard protocol, and everyone can trade equities in fair and decentralized manners in the blockchain world. This business ecosystem is BEX.

3 Design Concept of BEX

3.1 Rights-backed Blockchain Security (RBS)

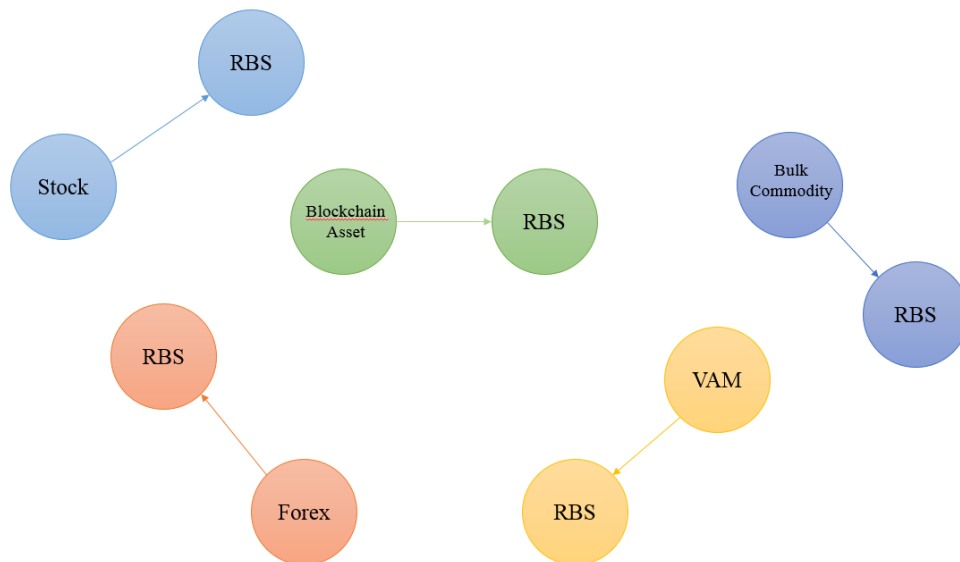


Figure: Rights-backed Blockchain Security

The Rights-backed Blockchain Security is a proof of equity which is transformed from an equity of any property by standard protocol. It is expressed in a unified form in the blockchain world and is compliant with related standard. Based on the standard protocol, any equity in real or virtual world can be defined uniformly.

According to the standard protocol, users can publish specific equities and participate in RBS trading using blockchain digital currencies as base currencies. Specifically, the RBS includes the following elements:

- 1 RBS Title
- 2 Linked Equity
- 3 Liquidity Provider
- 4 Contract Delivery

RBS Title is in a standard form to show key elements including linked equity, trade direction, and contract time. For example:

Zcash-Monthly Contract-IF1712

FC Barcelona VS Real Madrid CF-Away Win-20171219

Linked Equity is a specific property equity represented by RBS. It can be an Amazon stock listed in the New York Stock Exchange, or a prediction contract.

Liquidity Provider can be a market maker, or a blockchain assets exchange protocol which provides liquidity by carrying out smart contract. The market maker should pay guaranteed deposit to BEX, which increases as platform users grows, to ensure users' trading security. BEX provides an open platform where liquidity providers participate in market competition, to guarantee the platform users can have liquidity services with high efficiency.

Contract Delivery aims at futures contract and valuation adjustment mechanism, and includes centralized and decentralized delivery methods. Related business providers can be prediction market platforms or futures business platforms. They can be connected to BEX platform to provide delivery price and result of related RBS. *

**The detailed regulation of market maker and contract delivery will be described in white paper of the*

follow-up BEX subsystem “BEX Market Maker” and “BEX Contract Delivery Plan”.

3.2 Blockchain Securities Exchange of the World (BEX)

In a narrow sense, BEX is an exchange to provide trading services of RBS to fulfill users’ trading demands in various fields.

In a broad sense, BEX is a business ecology. It uses RBS to describe equities in various fields, and organize equity suppliers, equity demanders, and trading ancillary service providers including liquidity providers.

BEX will be a business ecology center connecting the real world and the blockchain industry.

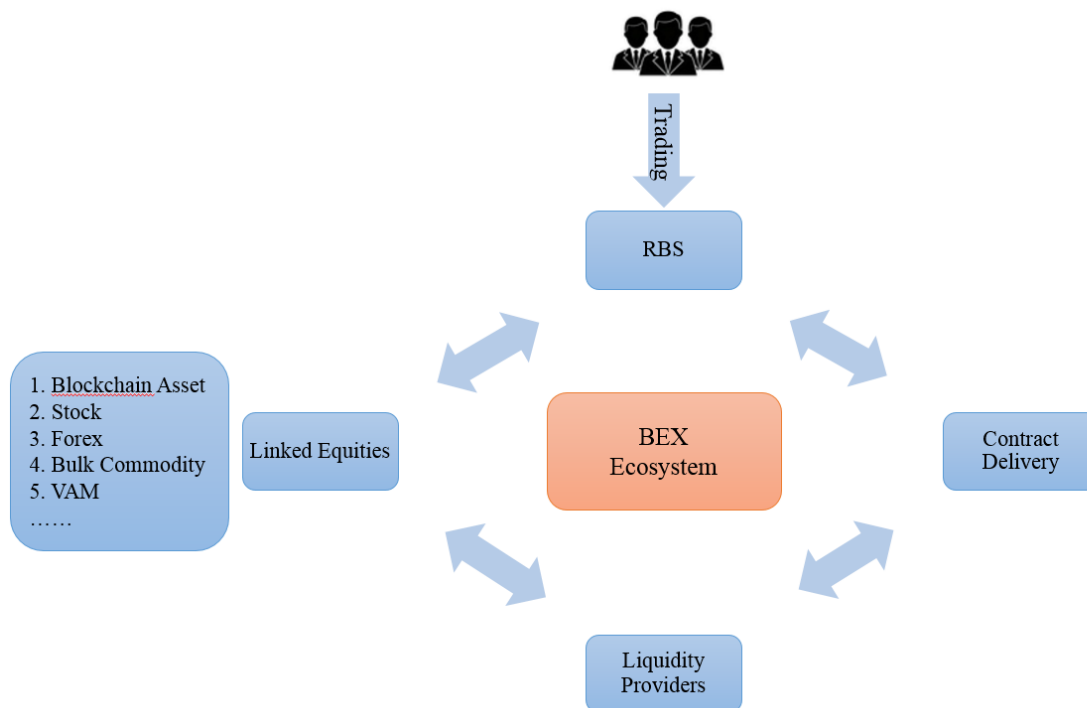


Figure: BEX structure

4 Stratification Structure

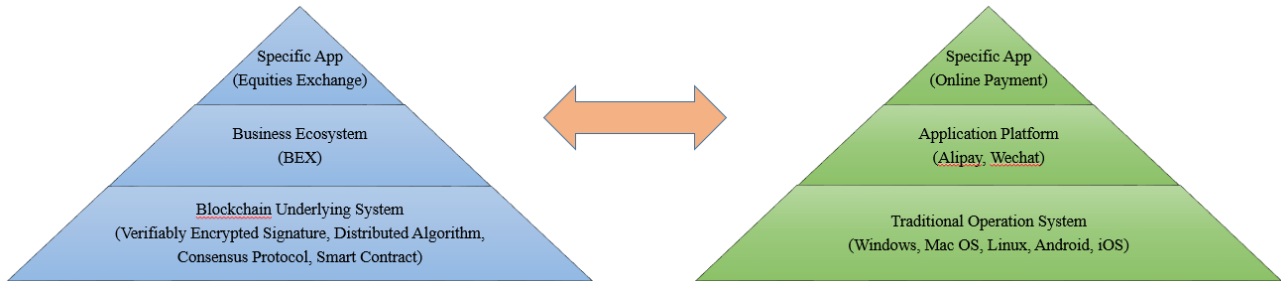


Figure: Stratification structure comparison

The “Underlying System – Business Platform – Specific Application” stratification structure is generally an outstanding structure to solve realistic problems according to new technologies. As traditional operation systems like Windows, Mac OS, and Linux establish foundation of development platform for all kinds of Internet applications, the blockchain underlying system establishes infrastructure of the blockchain world. At present the development of blockchain industry focuses on breakthrough and development of techniques in underlying system.

Success of new technologies should be based on solving realistic problems and meeting market demands. However, applications which aim at solving specific problems cannot straightly build on underlying techniques generally. Take Internet technique as an example. When the open platform interface of Alipay took place, online payment in various fields could be implemented in it. Like Alipay as an open online payment platform connected the Internet with realistic merchants, the position of BEX is an open business platform to connect trading parties and market makers to organize and manage various property equities in real world in order to provide an operable solution. At the present stage, similar platform has not appeared yet, which means a historic opportunity coming with. In the near future, giant corporations like Alibaba and Facebook will come into the blockchain world, and BEX team will take advantage of its business strengths in blockchain and security industries to make overall arrange and take a high ground in the market in advance.

5 Self-Fairness Proof (SFP)

5.1 Background

Consensus protocol is a significant part of blockchain underlying protocol. Various blockchain applications are based on it to constitute the whole blockchain industry. However, in specific applications, especially blockchain assets trading, the trust problem is still to be solved.

Most blockchain assets trading is centralized at present, and users' currencies and blockchain assets are actually placed in trading platforms. When users trade blockchain assets in platforms, they actually trade IOU issued by the platforms, which is guaranteed by platforms' credit to be exchanged to corresponding blockchain assets in their wallets.

However, the blockchain assets trading is not under well-established legal supervision, and moral risks exist in centralized trading. For example, users' account information and transaction data are all recorded in platform inside ledger, and the platform may apply capital to create huge fluctuation of blockchain assets' price in order to make unjustifiable profits while their users suffer huge losses.

Also in centralized exchange mechanism, all currencies and blockchain assets are deposited in trading platforms, which will inevitably increase possibility for the platforms to suffer hacker's attack. Platform users will straightly suffer most losses when Black Swan Event like hacker intrusion occurs.

The current situation mentioned above not only contradicts the trust attribute of blockchain, but let some investors scruple to participate in blockchain assets trading, which objectively restrains the increase of blockchain assets trading and straightly influences the further expansion of the blockchain market.

5.2 Mechanism of SFP

5.2.1 Objectives

In order to solve trust problems occurring in existing blockchain assets trading platforms, BEX establishes three SFP principles to guarantee that the platform operates in a credible way:

- Do not access user's assets.
- Do not set or influence trading price.
- Exchange data is open and transparent. Do not falsify transaction.

Specifically, BEX need to reach the following goals:

- Users' assets are separated from platform operation.
- Users' trading is separated from transaction clearing.
- Exchange data is transparent and traceable.

Based on the above goals, BEX creates Chain-based Hosting Mechanism (CHM) and Chain-based Clearing Mechanism (CCM) in order to protect users' assets safety and establish a trust relationship between BEX and users.

5.2.2 BEX Chain-based Hosting Mechanism, CHM

BEX establishes hosting mechanism based on smart contract in order to separate users' assets and platform operations. It is realized by smart contract which records all rules of hosting and funds transfer. This mechanism is called Chain-based Hosting Mechanism (CHM)*.

CHM can guarantee that asset transfer is executed by rules in the smart contract. Anyone (including BEX) cannot influence the asset transfer and cannot take the fund out unilaterally. This mechanism fundamentally solves problems of funds hosting and supervision.

Based on the above mechanism, BEX will apply trust property of the blockchain to establish 100% reserve fund system and protect users' asset safety.

**The detailed regulation of Chain-based Hosting Mechanism will be described in white paper of the*

follow-up BEX subsystem “BEX Chain-based Hosting”.

5.2.3 BEX Chain-based Clearing Mechanism, CCM

In order to establish transparent and independent clearing system, BEX builds Chain-based Clearing Mechanism (CCM)*. In this mechanism, clearing is completed on blockchain to separate users' transactions from clearing, and ensure the clearing is open and transparent.

The clearing is conducted by smart contract on-chain. Clearing rules are coded in smart contract to make sure that asset clearing operates transparently and independently on the blockchain according to the established regulation.

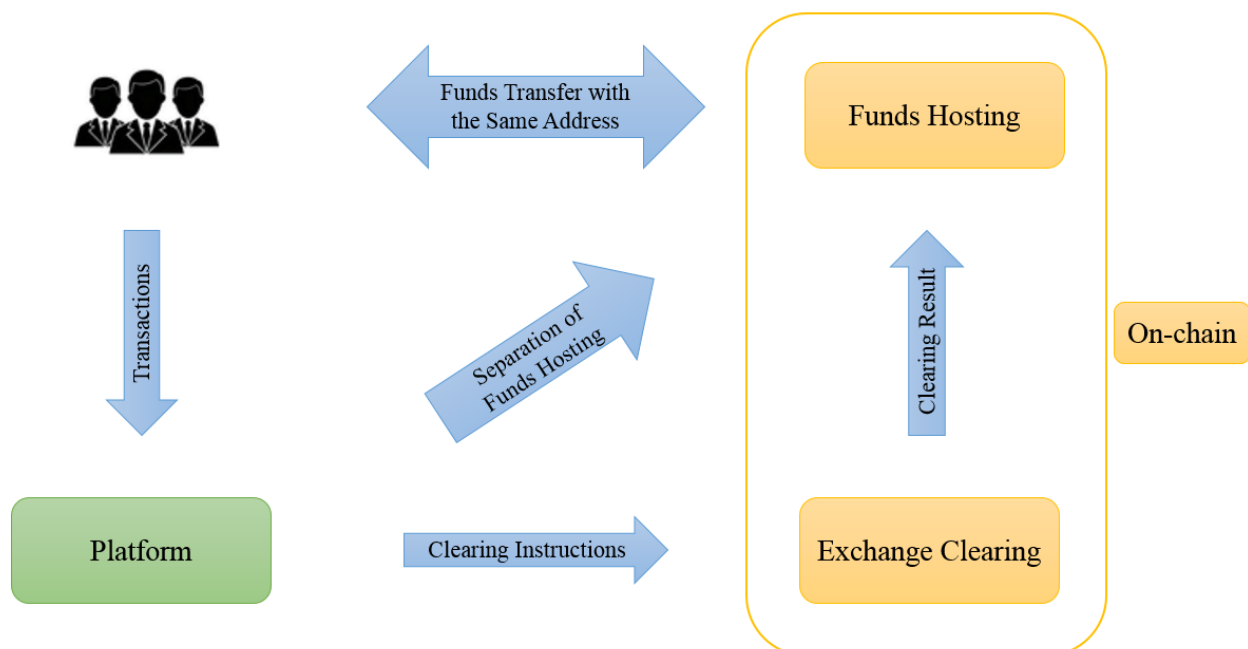


Figure: BEX chain-based hosting and clearing mechanism

In conclusion, CHM & CCM provide a new thought and solution for blockchain trading. BEX will make continuous efforts for a more open and transparent blockchain trading environment.

**The detailed regulation of Chain-based Clearing Mechanism will be described in white paper of the*

follow-up BEX subsystem “BEX Chain-based Clearing”.

5.2.4 Traceable Transaction Mechanism

In order to ensure the transaction detail is also transparent and traceable, BEX will pack the whole transaction data at set intervals and upload the generated hashes on the public blockchain to guarantee the transaction data is real and cannot be tampered. Every user can download the initial transaction records and trace any transaction.

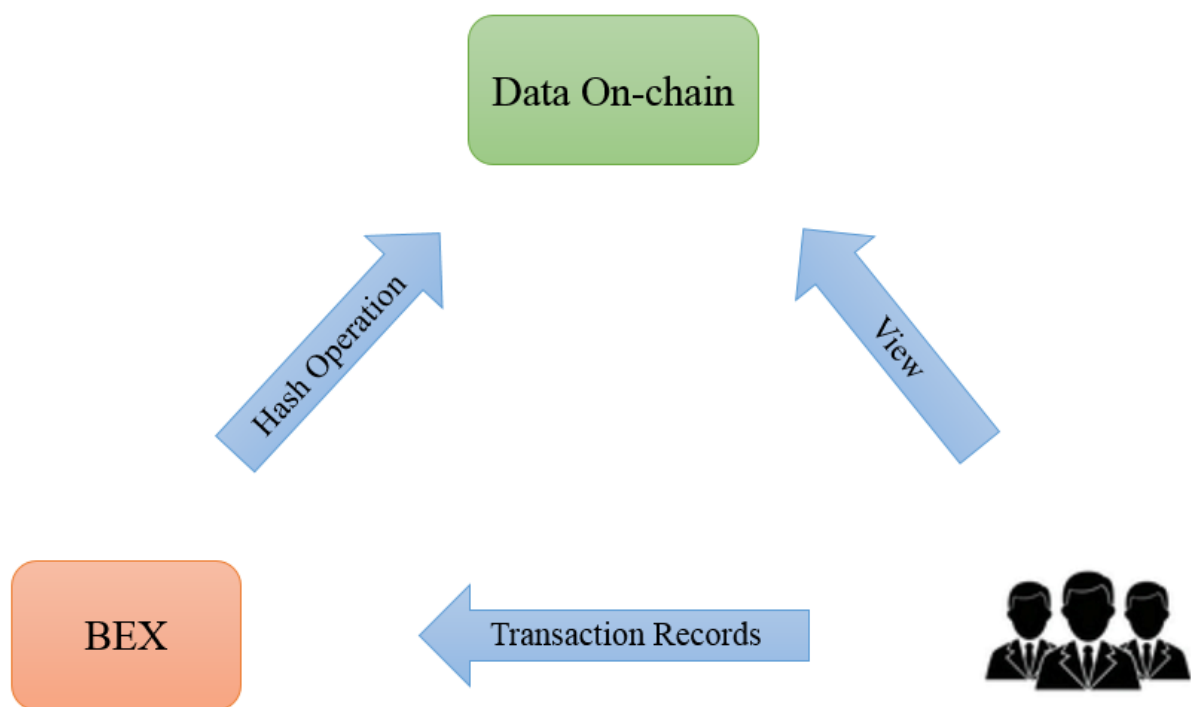


Figure: Traceable Transaction mechanism

6 Introduction of BEX Early Business

6.1 Platform Introduction

6.1.1 Trading System

BEX system architecture is based on the USPARD financial transaction system which is able to support billions of CNY daily trading volume. It applies the matching engine based on memory state machine replica technique, and supports matching of different kinds of trading by means of parallel matching device operation, which greatly improves system transaction throughput capacity and reduces trading order matching delay. After improvement and practical operation test, BEX trading matching engine can reduce the order matching delay to microsecond level, and trading speed of single asset can be up to 1.5 million per second. The BEX trading system can provide a firm foundation and protection.

6.1.2 Base Currencies

In early stage, BEX platform supports Bitcoin and Ether as base currencies. Legal tender is not supported.

6.1.3 Clients Support

BEX will support IOS and Android mobile clients at first, and will support web browser and Windows client later.

6.1.4 Profit Sources

BEX sticks to the platform principles. We do not access users' assets and influence trading price. Main income of BEX is commission charge.

6.1.5 Interface Preview

合约行情			
编辑	自选股	区块链	BEX 股票 期货 外汇
US 阿里巴巴 BABA/ETH	0.0827	+0.00%	
US 百度 BAIDU/ETH	0.1054	+0.00%	
US 特斯拉 TSLA/ETH	0.1820	+0.01%	
US 美光科技 MU/ETH	0.0175	+0.00%	
比特币 BTC/ETH	11.8947	+0.50%	
ZEC ZEC/ETH	0.9659	-5.90%	
量子链 QTUM/ETH	0.0247	-7.19%	
比特股 BTS/ETH	0.0005	-3.84%	
公信股 GXS/ETH	0.0120	-8.28%	
SC SC/ETH	0.00003	-8.78%	
DGD DGD/ETH	0.2726	-5.85%	
REP REP/ETH	0.0995	-5.41%	
ANS DGD/ETH	0.0310	-4.12%	



4:21 PM 100% 比特币买入

比特币(BTC) 07-07 20:00:01

11.8947

卖盘: 11.8948 (13.3679)
买盘: 11.8946 (10.9811)
盘后: 0.00 (0.00 0.00%)

+16.89 +7.89%

可用余额: 2.1526 ETH 充值 >

委托类型 市价交易

买入价格 - 市价委托 +

委托数量 请输入买入数量

最多可买: 2.1526ETH 最低买入: 0.0001ETH

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温馨提醒: 订单多次成交的, 只按订单收取一笔费用
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6.2 Trading Categories at early stage

BEX uses main blockchain assets (Bitcoin / Ether) as base trading currencies, and provides several trading services of blockchain assets futures including Global Blockchain Index (GBI) and global securities including stock, bulk commodity, and forex.

6.2.1 Blockchain Asset Futures

BEX will launch Bitcoin and Ether futures and margin trading services at early stage, and will keep extending platform business to provide more categories of blockchain assets futures trading services including Zcash, QTUM, and EOS to satisfy users' demands.

6.2.2 Global Blockchain Index (GBI)

BEX will launch GBI index contract trading service, which means the first blockchain assets index futures investment service in the world.

Global Blockchain Index (GBI) is an integrated related index to indicate prosperity of blockchain industry. This index chooses 15 main blockchain assets, and is calculated in method of weighted average.

The 15 main blockchain assets and corresponding weight factors in GBI are as follows. The base market capitalization is chosen from blockchain assets market capitalization on 1 Jan 2017 in US dollar. The data sources are www.coinmarketcap.com

Bitcoin	50%	\$15,641,622,845
Ethereum	24%	\$720,735,075
Litecoin	2%	\$228,478,985
Zcash	2%	\$16,994,517
Dash	2%	\$78,389,714
Monero	2%	\$187,365,475
NEM	2%	\$30,907,529
Augur	2%	\$42,194,900
DigixDAO	2%	\$18,160,040
Golem	2%	\$6,246,343
Factom	2%	\$25,441,581
MaidSafeCoin	2%	\$45,007,740
Siacoin	2%	\$5,118,964
BitShares	2%	\$10,154,715
Ethereum Classic	2%	\$130,727,252

GBI uses method of weighted average and the calculation formula is:

$$GBI = \frac{\sum_{i=1}^{15} V_i \times R_i}{V_0} \times 1000$$

V_i represents current market capitalization of a blockchain asset, R_i represents the weight factor of the blockchain asset, V_0 represents the weighted average market capitalization of the chosen blockchain assets on base date, and 1000 is base ratio. *

When future trading service of GBI is launched, BEX users can purchase it to reduce unsystematic risk in blockchain assets market in order to benefit from long-term development dividend of the blockchain market by means of diversified investment. Users can also invest some blockchain assets and short GBI meanwhile to hedge systematic risk in the market on condition that the blockchain assets are considered with great development prospect.

* *Global Blockchain Index (GBI)* — http://sxl.inblockchain.com/gbi_method

6.2.3 Global Securities

Besides blockchain asset futures, BEX will firstly provide business of global commodity and financial futures trading in the world with base currencies of main blockchain assets. Then BEX users can benefit from blockchain assets' global circulation and low exchange cost to conveniently trade commodity futures, exchange rate futures, stock index futures, and so on. The specific trading categories are as follows:

Stock: global main stock trading market including America and Hong Kong stock trading market; Global major stock indexes including DJIA, NASDAQ, S&P 500, and Hang Seng Index.

Bulk Commodity: bulk commodity futures in New York Mercantile Exchange including crude oil and gold.

Forex: U.S. dollar index and exchange rates of major currencies against U.S. dollar.

Based on this business, BEX will connect blockchain assets with global securities market, and greatly enrich global application scenarios of blockchain assets.

7 BEX Team

BEX Founder & Chief Executive Officer, Wang Zhizhen

Mr. Wang Zhizhen graduated from Information Security Specialty at Wuhan University. Studying with Zhang Huanguo, a leading authority of cryptography, Mr. Wang is one of the first information security and cryptography professionals in China.

Mr. Wang served for Huatai Securities and GF Securities (the top three securities company) successively. During his term in Huatai Securities, Mr. Wang was responsible for a securities exchange system which processed trading volume of 2 billion CNY daily average. During his term in GF Securities, he was responsible for Internet financial innovation and led several financial products like “OTC financial assets exchange”, “Credit Default Swap (CDS)”, “Yitaojin”, “Rongyitong”, and so on. He kept smooth communication with regulatory authorities in China

Mr. Wang founded USPARD in early 2015, which is a top three American stock trading platform with no commission in China. The business of USPARD covers American stock, HK stock, futures, and forex market with over 15 thousand tradable securities. USPARD has over 500 thousand trading users of American stock with trading volume of over 15 billion CNY monthly average

BEX Cofounder & Chief Technology Officer, Ma Biqiang

Mr. Ma Biqiang has ten-year experience for technique research, development and architecture. He masters underlying trading system and clearing & settlement system of American security market, and Financial Information Exchange (FIX) protocol.

Mr. Ma can independently write core underlying trading and clearing & settlement system. He developed the first forex and futures trading system based on FIX protocol in China, which was able to support peak trading volume of 10 billion CNY.

BEX Cofounder & Chief Strategy Officer, Xue Manzi

Mr. Xue Manzi is a famous angel investor and entrepreneur in China. He was one of the founders of UTStarcom, the Chairman of 8848 Electronic Commerce Network, and the Chairman of Prcedu. He invested many successful enterprises like USPARD, Autohome, Xueqiu, and PCPOP. Mr. Xue was hailed as “The first person of Chinese angel investment”.

8 BEX Crowdsale Plan

8.1 Introduction of bex token

BEX team will issue 200,000,000 bex tokens based on ERC20 Ethereum Token Standard which represents 40% dividend of trading commission.

Crowdsale amount: 40% (80,000,000 bex tokens)

Private placement amount: 10% (20,000,000 bex tokens)

BEX team hold amount: 50% (100,000,000 bex tokens)

In order to ensure continuous development of the project, BEX sets a strict limit for the release of team hold tokens. The release limit is 6% of total amount in first year, and then 5% per year. The released tokens are used for BEX subsequent development including platform promotion and talents recruitment.

8.2 Dividend Distribution

For the purposes of bex token's long-term growth, and its listing on multiple large-scale exchanges, BEX will set up token buyback dividend distributing system. BEX team will take out the corresponding trading commission charged from the current market circulation tokens to repurchase bex tokens. The tokens will be destroyed immediately. However, the remaining 40% dividend of trading commission from corresponding tokens is unchanged.

For example, if BEX team release 20 million bex tokens within two years and repurchase 10 million circulating tokens, then the total amount of bex tokens will be 190 million, and the market circulation amount will be 110 million. The circulating amount is 57.9% of the total amount. At this point, the corresponding trading commission of every one million bex tokens is increased to 21.06‰ from 20‰ initially, while the BEX team needs to use 23.16% of total trading commission for token repurchase.

8.3 Prospective Return

With continuous expansion of blockchain industry's influence, global blockchain asset's trading volume is not only increasing rapidly, but also has scalable growth potential. It is estimated optimistically that the total market capitalization of global blockchain assets will exceed 1 trillion U.S. dollars within two years, and daily trading volume will reach 50 billion U.S. dollars. We estimate that in 2020 the blockchain assets daily trading volume of BEX platform will reach 3 billion U.S. dollars, and daily income of commission charge will exceed 3 million U.S. dollars. If we assume that the trading volume is 130 million without taking in the factor of token repurchase during the process, BEX team will take out 780 thousand US dollars every day to repurchase bex tokens.

In addition, according to the estimation of 1.1 billion U.S. dollar of BEX commission charge income in 2020, each bex token will represent 2.2 U.S. dollar of annual dividend. The secondary market price of each bex token will be 220 U.S. dollar calculated by price-earnings ratio of 100.

With continuous repurchase, token dividend will continually increase. With rapid growth of global blockchain assets trading market and sustainable expansion of BEX global business, bex token holders will get long-term profit appreciation.

8.4 Crowdsale details

The BEX crowdsale will be launched on 22 July 2017 via website www.ico.info with 7-day-period. The crowdsale sets a minimal target of 5,000,000 U.S. dollars equivalent EOS tokens and maximum target of 20,000,000 U.S. dollars equivalent EOS tokens. There is a limit of 10,000 U.S. dollars for each participant. The crowdsale will be closed on 29 July 2017 or when the fund reaches the maximum target. If the crowdsale is lower than its minimal target when it is closed, the collected fund will be returned to the participants. The fund raised in this crowdsale will be spent on BEX research & development, underlying server capacity expansion, talents recruitment, market operation & promotion, and subsequent business expansion.