2BN WhitePaper

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1. Introduction

1.0 What is 2BN

2BN is a cryptocurrency aimed to create a platform built on blockchain for cryptocurrency traders.
Professional traders will be able to post their trending analysis in the blockchain which will ensure non-modifiability[1] and timestamping. Token Holders will have the ability to

see the posted trending analysis and eventually pay to get new insights from the best traders.

At first, both professional and unprofessional traders will be able to post their technical analysis for free and all token holders will be able to access such information for free. At this stage, holders will express their gratitude by voting the trader.
Most voted traders/delegates will have the privilege to forge 2BN and securing the network.

1.1 What problem is 2BN solving?

At the time of writing, there's no real marketplace for cryptocurrency traders and most platforms for traders are polluted by scammers which their only agenda is manipulating a coin price.
By using the blockchain and an, hopefully, healthy platform where people can vote/unvote both traders and single analysis we hope we could democratize and filter out bad behaving actors that are damaging, in our opinion, the whole ecosystem.

1.2 Technical Background

2BN is written in TypeScript[2] and runs on Node.js[3] on its core.

As database layer, 2BN uses PostGres[4] to allow the use and running of complex queries.

Code-base is derived from RISE a crypto-currency which was derived from LISK but uses TypeScript instead of JavaScript to run the core business logic.

1.3 2BN Components

- The 2BN core (server)
- 2BN API interface to interact with the underlying database
- Developer Tools to interact with the blockchain
- Frontend Tools: Explorer, wallet, ...

2. Consensus

2BN is based on the DPoS[5] (Delegated Proof of Stake) consensus mechanism. This method of consensus was originally created by the BitShares team.

DPoS is based on delegates creating blocks. Delegates are trusted accounts which are elected to be "*Active Delegates*". The **41 delegate** accounts with the most votes create the blocks. Other delegates are listed as "*Standby Delegates*", and can advance to the top 41 list by receiving votes from the other 2BN owners. All users have a total of **11 votes available** to elect their favorite delegates into the top 41 list. The weight of each of the 41 votes is proportional to the amount of 2BN the user has in the wallet the votes are cast from. This total amount is shown on the delegate list as an "*Approval*", and is listed as a percentage of the total circulating supply of 2BN available that is voted for that delegate.

Delegate promotion to the top 41 or demotion to the standby list happens at the completion of the 41 block generation cycle. Each cycle of 41 blocks is created by the top 41 delegates in verifiable random order. The **block time** is set to 15 seconds. Newly created blocks are broadcast to the network and added to the blockchain. After 6 to 10 confirmations (~2.5$_{min}$), a block, along with its transactions, can be considered as confirmed. A complete 41 block generation cycle, also called **round**, takes approximately 10 minutes. Having a round r , blocks that belong to such round are defined by the following math formula: $b_i \forall i \in r \cdot 41 \leq i < (r + 1) \cdot 41$

In DPoS, forks can occur, but the longest fork wins. Delegates must be online all of the time and have sufficient uptime. Uptime is used to catalog the reliability of a node by logging each time that it misses a block that was assigned to it. Users vote for the top 41 delegates based on several factors, uptime being one key factor used to make a determination. If a delegate drops below a certain rating, users may remove votes from the delegate in question due to poor performance.

2.1. Delegates

The function of delegates is covered above in the Consensus section.

To be a delegate, a user needs to register a delegate account. This is accomplished from the wallet interface. All 2BN accounts are eligible to become delegates.

New delegates start as "*standby delegates*". Standby delegates begin with an approval rating of 0% and will need to accrue votes from the 2BN community in order to advance to be one of the active delegates. Block generation is performed by the top 41 delegates only. If you are in standby status, you will not forge any blocks.

Approval for delegate x: $Approval(d) = \dfrac{circulating supply}{\sum\limits_{n=1}^{v} weight(v_n)}$. Where `v` is a *voter* of `d`.

2.2. Network Fees

All valid transactions in the network must be processed. Delegates process transactions and store them in new blocks. For this work, the delegates receive a fee. All transactions in the network must contain some type of fee as a spam countermeasure.

The default network fee for sending a 2BN transaction is 0.001 2BN. For example, a 100 2BN transaction includes an additional fee of 0.001 2BN for a total transaction cost of 100.001 2BN.

The following is a list of fees for different types of transactions:

2BN	Tx Description
0.001	send transaction
0.5	register second passphrase
5	register a delegate
0.01	vote for a delegate
1	post a technical analysis
0.0001*b	vote for a technical analysis/prediction
0	get funds from BNB faucet

Delegates receive the fees from all transactions of the last block cycle (41 blocks). Fees are split equally between all delegates who created a block in that cycle. Delegates who missed creating a block assigned to them during that cycle are not paid.

2.3. Peer-to-Peer

We are using a standard P2P network[6], which works on top of the HTTP protocol and uses JSON formatted data as a method of data interchange. The P2P module captures the following information about each peer:

- Core Version

- OS
- IP
- Port
- Nonce

Every peer needs to auto-assign a nonce that will be used as a unique identifier of such peer in the network.

3. Core Features

3.1. Delegate Usernames

2BN allows users to register delegates which will also include usernames.

The network fee for username registration is 5 2BN. Usernames may contain the following characters:

- Traditional Alphabet (Lower Case): a-z
- Numbers: 0-9
- Special Characters: !, @, $, &, and .

Each username is unique. The maximum length is currently limited to 20 characters. It will not be possible to remove or change the username from your account.

3.2 Voting

BullBearNetwork is based on DPoS. The voting/unvoting transaction will be available since genesis.

Account holders will be able to cast their votes through the wallet via a specific transaction.

Votes are collected and summed at the end of each round where the voting weight assigned to each delegate will change according to what happened during the round.

Each account has a total of **max 11 votes** at any time. Account holders can **change their votes** at any point in time.

3.3 Posting Analysis & Predictions

One of the core features will be posting analysis. The blockchain will timestamp the analysis which will become non-modifiable once it gets included in the *BullBearNetwork* blockchain.

Since it's one of the core features, the transaction price required by the corresponding transaction will be very affordable and it will be calculated over the number of bytes of such transaction.

Initially the prediction transaction type will have the following extra fields that matches the metadata required to create a formally valid prediction:

- **Pair**; Ex: BTC/2BN
- **Target Price**: Ex: 0.00007 BTC
- **Target Date**: Ex: "2019-01-01 00:00:00"
- **Text Note**: Ex: "Considering the fundamentals and the release of the new XXX, price will probably hit 7k sat"

Even if the price is calculated over the number of bytes of such tx. The `Text Note` field will be limited to up to 1024 bytes/characters

Current not-expired predictions and analysis will be available, initially, through API calls.

3.4 The BNB to 2BN faucet

As previously stated, we believe that a successful product requires adoption.

For this reason, we will create a blockchain-secured faucet that will allow BNB token holders to acquire some 2BN to use the network.

The 2BN team **really values security** and that's why the faucet will be designed and implemented within the blockchain itself and **users won't need to input their passphrase/privkey** in any of the 2BN related tools. Token holders will be able to collect their 2BN by signing a message using their preferred ethereum wallet (Ex: [MyEtherWallet](#)) and then use the non-sensitive signature to collect their 2BN.

Faucet users will receive 1 *2BN* every 10 *BNB* (1:10 ratio). Tools, both web and cli, will be created to ease the collection phase.

Not all BNB token holders will be eligible to collect some 2BN. Only accounts having more 10 BNB (at snapshot time) will be able to collect 2BN.

The faucet implementation will remain functional for 6 months. We believe that 6 months (in crypto) is more than enough to kickstart adoption. Uncollected funds will be reallocated for future activities.

3.5 Paid Predictions

In *"crypto-world"* there is a wide variety of toxic crypto traders wannabe that sell themselves as gurus.

The BullBear Blockchain will try to solve this issue by enabling traders to post their predictions upon paid basis. A regular user that buys the prediction will get access to the prediction. Funds are then locked until the prediction verifies or ends.

If the trader's prediction results in a positive outcome, the funds are then unlocked and sent to the trader as a reward for their work.
In the case of a negative outcome, all the buyers will receive their money back.
We think that this will be beneficial for both parties.

Predictions can expire any point in the future but due to the mechanisms above, we believe that the majority of predictions posted in the network will be set to expire in less than a week.

Predictions will be verified by using a **decentralized oracle** that will timestamp and save crypto market prices on a regular basis in the blockchain.

3.6 Crowd Predictions

Crowd predictions are similar to `Paid Predictions` but work slightly different. There will be a **prediction proposer** that will issue a transaction with its own prediction; the community will then be able to cast their up or downvote either depending on if they believe the price will be higher or lower than the target specified in the initiating transaction.

Every participant (proposer included) will need to lock a certain amount of 2BN funds when voting.

When the prediction time is due the total pot will be proportionally splitted among all the users that predicted correctly following the next formula:

$$\frac{lockedFunds(x)}{\sum_{n=1}^{v} lockedFunds(n)}$$

Where v is the total amount of all winning participants and x is a winning participant.

The winning will also be recorded in the blockchain and could be used as a mechanism for traders to gain respect in the BullBear network.

4. 2BN Network

2BN Team thinks that ICOs are a great way of acquiring funds. But, due to the recent speculations and scams in the crypto-universe, we believe that a healthy network should be measured with adoption first rather than collected funds.

Since 2BN is targeting crypto traders we will launch 2BN with a built-in faucet for BNB (Binance™ ERC20) token holders.

4.1 Token Supply and allocation

At Genesis, **supply** of 2BN will be 30,000,000 2BN.
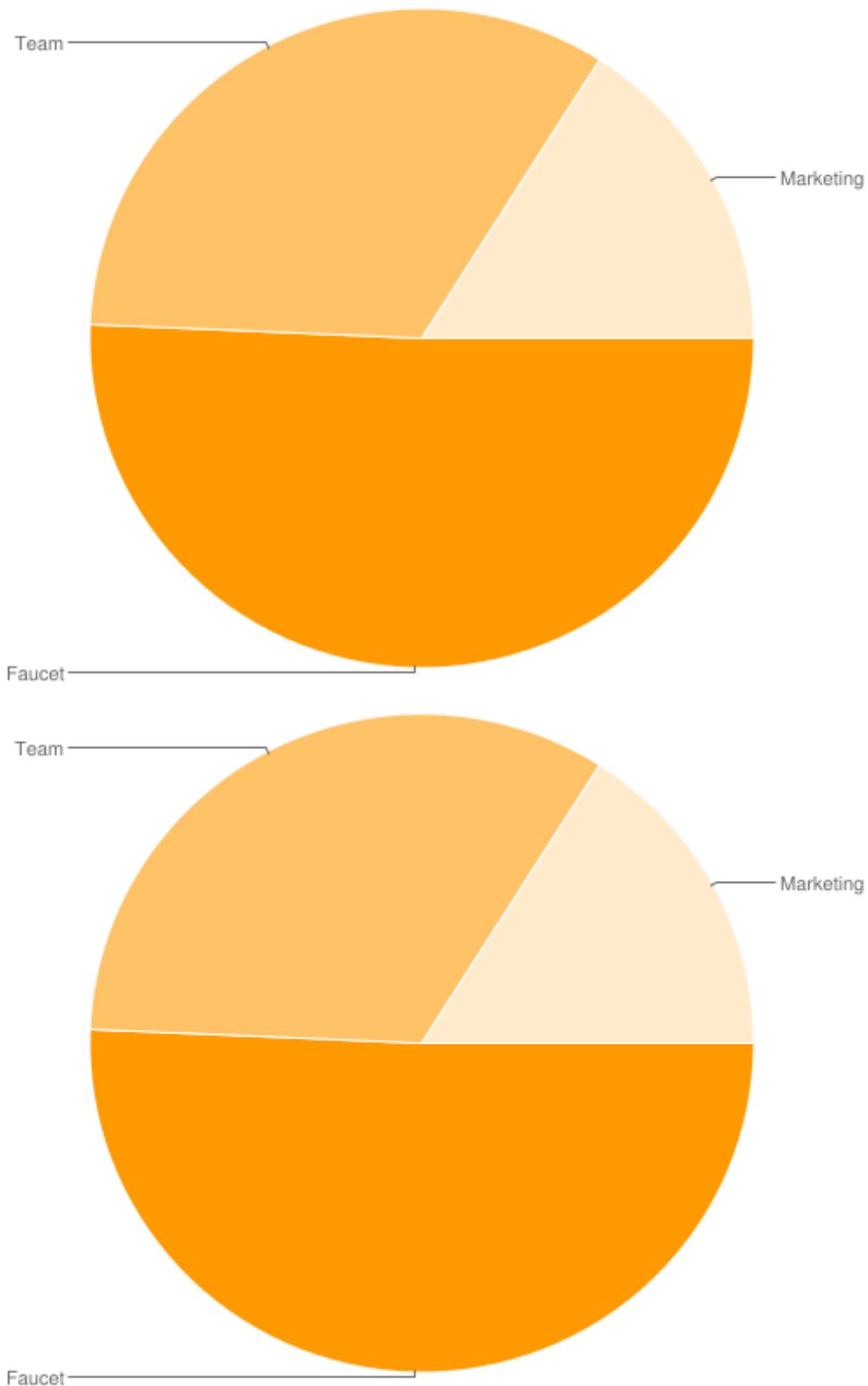
- **~15.2M** 2BN Will be allocated for the **faucet** for BNB token holders to withdraw.
- **~10M** 2BN will be created for the team to use. *Ex*: voting power, development, server costs …
- **~4.8M** 2BN will be created for marketing purposes and future activities such as bounties to drive adoption of the 2BN network.

4.2 Block Rewards reduction schedule

Each delegate earns rewards when a block is forged. The reward schedule is set as follows:

Period	Amount per block	Total 2BN	Inflation
1st year	2.1 2BN	30000000	14.72%
2nd year	1.6 2BN	34415040	9.77%
3rd year	1.1 2BN	37778880	6.12%
4th year	0.8 2BN	40091520	4.20%
5th year	0.7 2BN	41773440	3.52%
6th+ year	0.5 2BN	43245120	2.43%
...			
10th+ year	0.5 2BN	47449920	2.22%
...			

5. RoadMap

2018 Roadmap
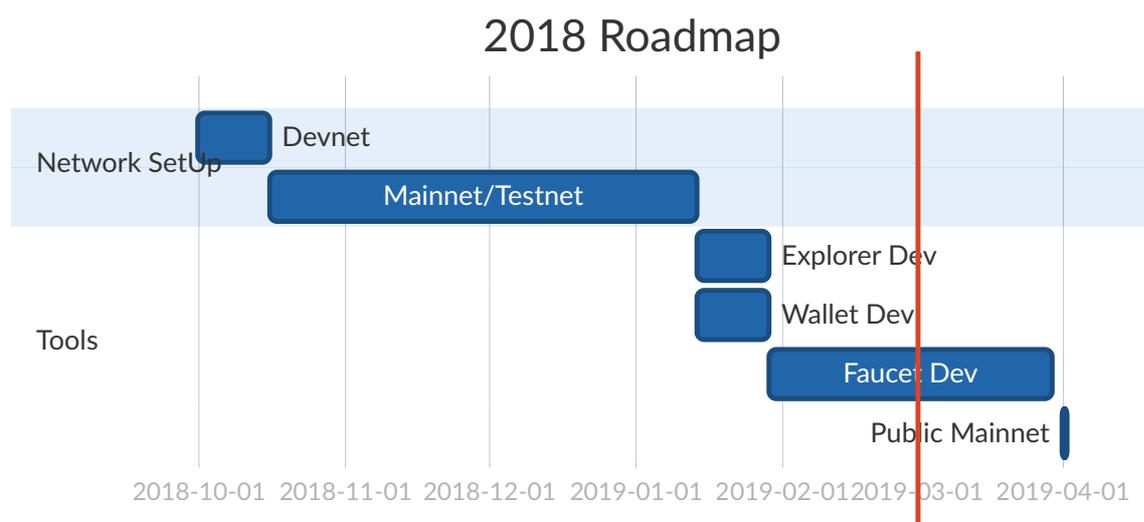
Public Mainnet is targeted to launch on the 1st of April. For late **2019** we'd like to:

- Enable Chart analysis in all tools
- Enable upvoting/downvoting of traders

- Enable upvoting/downvoting of analysis
- Enable paid predictions

6. Appendix

WhitePaper Releases

- October 18th, 2018 (v1.0)

- March 1st, 2019 (v1.1)

7. Sources

- [1] Probabilistic Immutability as defined in Nakamoto's Consensus.
- [2] TypeScript
- [3] node.js Organization.
- [4] PostGres
- [5] Bitshares DPoS.
- [6] Peer-to-Peer Wikipedia Article