Bitshares - Survey

Questionnaire filled out by the BitShares Blockchain Foundation October 10, 2018

Note: you can decline to answer certain questions (like marketing / go to market) which may be trade secrets and we will put in "declined to answer due to current trade secret".

a. General

    i. **Which blockchain / DLT are you building on top of?**

    The BitShares Blockchain

    ii. **ii. How does the stablecoin work?**

    There are multiple "stablecoins" on top of the BitShares Blockchain. The concept is also called smartcoin and they mimic the dynamics of collateralized loans.

    These loan contracts are implemented as smart contracts and strictly follow pre-defined and publicly known behavior. In the case of our collateralized loans, the smart contract becomes the lender and requires a security from the borrower in form of another digital token to protect against loan default. Given the nature of smart contracts on a public blockchain, all actions are transparent and auditable. Accountability is part of the protocol. Hence, anyone can borrow from the blockchain by providing sufficient collateral. The smart

contract autonomously and transparently ensure that each loaned unit in existence is backed by much more Than 100 % of its value by the collateral.

Examples of popular smartcoins are bitCNY and bitUSD which use BTS (the core native token of the BitShares Blockchain) as only option for collateral.

iii. **What is the purpose of your coin? What does it aim to achieve and which problems does it solve?**

The purpose of the StableCoin is to be pegged to some outside value (USD, CNY, EUR, GOLD, etc.). The purpose of the BTS, the core token of the BitShares Blockchain is among others explained here in Section 4

iv. **When we say something is stable what do you think it means? And when it comes to monetary policy specifically?**

Instead of using stable, we would rather use the term predictable, as we all know that no fiat currency so far has managed to keep purchasing power over time but instead has a more or less well predictable purchasing power. However, most people consider an exchange rate of 1:1 as stable and may only allow some small premium.

v. **What is your revenue model?**

The BitShares Blockchain collects a network fee from anyone who uses the Stable Coin, see here in Section 4.5

b. Launch & marketing

i. **What does the market need to be confident in the stability of your token?**

As long as the BTS core native token has value, the collateral backing of the stable coin will have value. The smart contract will ensure that the stable coins are collateralized sufficiently and penalize those that do not increase collateral in case of a bear move in valuation of BTS.

ii. **How are you bootstrapping to that level of confidence?**

Provided that anyone can make use of the collateralized loan, anyone that has BTS can borrow bitUSD from the smart contract. Incentive is provided by short-selling those newly borrowed bitUSD to the markets.

iii. **What are your go-to-market strategies?**

Increase supply, liquidity and adoption. In parallel, we are working on direct on- and off-ramps for bitUSD and bitEUR, they already exist for bitCNY.

c. Economics

i. **What is your coin stable with respect to?**

There are several stable coins within the BitShares platform. Most prominent are bitUSD pegged to USD, bitCNY pegged to CNY, and bitEUR pegged to EUR

ii. **How much volatility can this peg withstand? Is that the same for upwards and downwards pressure? How wide is the band of behavior it can support?**

bitCNY and bitUSD are listed on CoinMarketCap, see- https://coinmarketcap.com/currencies/bitcny/

https://coinmarketcap.com/currencies/bitusd/

As you can see, bitCNY and bitUSD have traded at different premiums. Due to the internal mechanics, a smartcoin only trades at positive premiums and hardly at negative premiums.

Just recently the internal mechanisms have changed a bit with respect to the price feed to allow a tighter peg. The last weeks the peg was within 1% (currently 1.01 CNY for a bitCNY)

iii. **How easy is it to analyze the band of behavior from which it can recover?**

Not straightforward, as several factors come into this, most important ones are:

1. Collateral requirements must be ensured to be more than (100+x)% (otherwise force liquidation happens, which influence the market)
2. Margin call mechanics have a few parameters that affect markets

    iv. **How expensive is it to maintain the peg/stability mechanism?**

Enough collateral must be provided to ensure all StableCoins are fully backed.

    v. **How transparently can traders observe the true market conditions?**

All trades and loans are public and auditable through the BitShares Blockchain.

    vi. **Which monetary theory (theoretical) assumptions do you think are not true and how does your protocol account for that?**

The "impossible trinity (trilemma)" may not be as strict with respect to the fixed exchange rate as it appears but allow for small premiums but still keep the other monetary policy and free capital flow.

    vii. **Does your stablecoin supply scale in response to demand? If so, how?**

The stablecoin can be loaned from the BitShares Blockchain by any user. A premium on internal or external markets due to high demand is a direct incentive to create stablecoins. No automatic scaling, but incentivized.

    viii. **Who provides the capital to maintain exchange rate peg? How are they compensated / Why do you think they would continue to lock up capital, given other investment opps?**

The users provide the capital (collateral) to loan the stablecoin. The compensation is either through arbitration, or simply by betting on a rising BTS/USD price:

1. user creates stablecoin, e.g. bitUSD
2. user sells on the bitUSD/BTS market and holds the BTS
3. when bitUSD/BTS price rises, user can buy back the bitUSD cheaper from the market and close his loan

Locked BTS as collateral can still participate in the governance system of the BitShares Blockchain and thus keep their utility property.

    ix. **An eventuality plan in case of a "black swan" event. 1 , 2.**

The 1% case will happen eventually.

A "black swan", or in BitShares terminology global settlement happens, if any of the loans has less than 100% collateral (normally occurs if BTS price drops too rapidly). At this point no more stablecoins can be loaned, but trading and settlement at the "black swan price" is still possible. When the BTS rises again the stablecoin is automatically reactivated in terms of allowing new loans.

d. Tech

    i. **Are any novel consensus mechanisms used, over and above the underlying blockchain?**

No, consensus is DPoS, see Section 2.4

    ii. **What transaction throughput can the blockchain currently handle and how does it plan to scale? Do its plans coincide with your plans for your estimated demand?**

The BitShares Blockchain did a stress test last summer and has shown to support easily 3,300 transactions per second, and even more with adjustments. The blockchain currently has an average usage of 1.7 million transactions per 24 hours with a peak activity of 6.1 million transactions per day roughly 2 months ago.

iii. **What tradeoffs does your protocol make and why did you make those trade-offs? (supply/demand, temporarily peg breaking) (censorship resistance) (privacy tradeoffs) (accuracy of present market data and ease of manipulation of the data feed protocol uses (responsiveness of market and ease of manipulation)**

1. Supply/Demand – Stablecoins are loaned by the user and fully collaterized (currently 175% of the value must be put as collateral). This limits liquidity as it is user generated but provides security as no fractional reserve is possible.[1]
2. Temporarily Peg Breaking – The market is incentivized to maintain the peg. A price feed is used to ensure proper collateralization at all times.
3. Censorship Resistance – The BitShares Blockchain is a global network and as hard to be censored as most blockchains.
4. Privacy Tradeoff – All orders, trades and loans of an account are publicly visible, whereas the real world identity is an account is not known. This is a similar pseudo-anonymity that comes with Bitcoin. Due to the blockchain being account-based (not UTXO), the scalability is significantly increased!
5. Accuracy of Present Market Data – With the internal decentralized exchange of the BitShares Blockchain the market data is always up to date and publicly visible. The blockchain internally performs every mathematical operation in integer math.
6. Responsiveness Of Market: This is directly correlated with supply and liquidity.

iv. **Are there any centralized components of your system? Would any of these be easy for govs to shut down?**

No, there are not.

v. **Does your protocol require information outside the blockchain such as a feed of price data? If so, how does this oracle work? Who manages it, what are the incentives for managing it, and what happens if the data they provide has a glitch?**

The block producers provide the price feed and do so in their own choosing. Most block producers use volume weighted averages over chosen external exchanges. The internal price feed is then calculated as the median of all block producer values, which is robust against glitches. Block producers that do not maintain their price feeds properly will be voted out and lose their paid position. The sole purpose of the price feed is to maintain the collateral level for the loans and potentially execute margin calls. Additionally, all stable coins can be used to redeem ac orresponding amount of collateral by means of a forced settlement at the price feed (minus fee).

vi. **Which participants can see which transactions? What is the data and metadata available, and to whom? How does this impact privacy?**

Everything is visible to everyone.

vii. **Are you doing anything with formal verification? Smart contracts used?**

The smart contract is written in C++ and tested by hundreds of unit tests.

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[1] https://en.wikipedia.org/wiki/Black_swan_theory 2

> **viii.   What is the rebase period? (Length of time between currency adjustments.)**
>
> Price feeds are invalid after an asset-specific period of time (usually 24hrs) which requires it to stay up-to-date with any adjustments on external markets. Internally its all about liquidity.
>
> **ix.   Can we make this automated?**
>
> Everything is already automated.
>
> **x.   Do we use a smart contract, or network rules of the blockchain operators?**
>
> Loaning a SmartCoin, trading it and obtaining its collateral through settlement are all operations (smart contracts) that are natively built-in the BitShares Blockchain.

e.   Regulation

> **i.   What are your perceptions of local and global regulation in supporting stable coin, asset backed token economies?**
>
> There are no global regulations available at present time.
>
> **ii.   What could be done to improve regulation in terms of speed, quality, value for your company ?**
>
> A opinion letter on the stablecoins will be crafted, funded by https://www.bitshares.foundation/workers/2018-02-legal-council-bts

f.   Testing

> **i.   What kind of simulations have you done and what have they helped you learn? (simulating broad array of market conditions)**
>
> Our stable coins are live since 2015 and the decentralized BitShares community has learned towards means for improving liquidity and spreads ever since. Simulations are merely implemented by means of unit tests for individual aspects of the smart contracts involved. Market reactions on the incentives provided by collateralized loans are difficult to simulate.