VTB COMMUNITY

VALIDUS · TUTIS · BENEFICIUM

WHITE PAPER

VTBCommunity Foundation

WHITE PAPER

VERSION 1.0

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VTBCommunity Foundation
6 Bayside Road, 1st Floor
Unit 1.02, Gibraltar,
Gibraltar, GX111AA
www.vtbcommunity.org

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INTRODUCTION

Digital technologies have propelled our every communication and transaction into a new era of interconnection where data is transmitted rapidly from one part of the globe to another. In that same manner, electronic transactions are gradually replacing the need for tangible bills. Indeed, money has become increasingly virtual and synonymous with mere data transmission, especially with the emergence and expansion of the digital economy.

Having become mainstream nearly around the world, these data transfer technologies now require an expansion of their availed infrastructures, enabling users to move value in a safer, more accessible and utmost convenient manner.

Globally, people are seeking improvements in the current financial system. According to a study conducted in 2015 by Accenture gathering 2000 senior decision-makers around 15 countries, their use of analytics and Cloud-based infrastructure had increased by 34% and 30%, respectively, and in doing so, their primary concerns were security and keeping pace with digital advancements. In another more recent study, because of the surge of digital network use during our global crisis, masses ask for easy access, fast delivery and increased security for everything from bill payments to sending money to loved ones without going to a financial institution.

These necessities have driven the development of online banking and other electronic payment systems; many will show up in web searches. Money, assets, and wealth have been changing, and the next generation of financial instruments and vehicles will likely be built using something like regulated blockchain technology that enforces laws and protects people from fraud.

Meanwhile, a simple internet search will show that banks are starting to adopt blockchain technology globally. Having already proven its effectiveness and given its global demand, the time has come to expand upon its initial design and avail it to the world. In that respect, we believe that our project, VTBCommunity (VTB), cannot only achieve this task but provide other innovative financial opportunities.

VTB is designed to advance the digital money infrastructure by offering a stable and predictable growth asset. It is more straightforward, user-friendly and renders a rich end-user experience while lessening the often-cumbersome cost burden otherwise charged by the current financial systems and some alternatives.

More specifically, the VTB system is based on methodically increasing the asset value, thus progressively increasing users' net worth while charging a fixed fee within the VTB system. This enables an expanded purchasing power to meet their goods and services requirements. Although its inherent vision may seem somewhat utopian, or as some may think, "too good to be true," the fact is that its design is meant to transform the financial system's past four to five decades of macroeconomics (since Simon Kuznets won the 1972 Nobel Prize in Economics) into something new. Take inflation, for instance, even with its annual fluctuations, the cost of living has continuously risen, and this year, 2021, has seen the highest yet (macrotrends.net). In terms of perspective, the CPI inflation calculator estimated that the purchasing power of US$1.00 in 2000 had decreased to 0.60 cents in 2021[1]. That being true, one could also say that similar assets to VTBC already exist, such as "Risk-free Bonds" typically seen as United States Treasury Bonds, but the ROI is far from sufficient to help anyone become financially comfortable let alone independent.

Let's face it, whatever increase in wages employees have received or sales generated by most Small to Medium Enterprises (SME), their bottom line has flattened due to an equal or sometimes higher inflation rate simultaneously applied on goods and services for at least the last 20 years. This decreased buying power dwindles most people's potential to live within their means. Home prices, for example, have become unaffordable to most, while the cost of food, another basic need, has substantially risen due to a high rate of inflation across many countries. Unfortunately, this never-ending cycle in a financial system serving its ends, not humankind's, can only lead to an increasing lack and poorer societies.

The question that begs an answer is, "Why is this happening?"—followed by perhaps an even more important one, "How is it remedied?". This project has considered these questions and found a way to transform them into remedies. Simply put, the refined and efficient solution is to take the rising cost of living and apply it to a system that works for the VTB users (community members) instead of against them. In this way, such community members can buy goods and services, food, housing, etc., in a safe, secure, and abundant manner using a new infrastructure built on blockchain.

Most debates about money are philosophical, but the real question is, "Are people willing to adopt positive changes?" or "What are they willing to accept in exchange for labor and or products?". Recently, people in prominent positions are now accepting Bitcoin for their wages. Realizing that fiat money is only backed by debt, would everyone be willing to continue using it, even at a loss? Or would they happily switch to a medium of exchange based on growth and abundance? A brilliant person once said about finance and banking, "These are man-made rules; they are not natural laws, such as gravity."

[1] https://www.in2013dollars.com/us/inflation/2000?amount=1

It means that humans can create any exchange system for their goods and services. VTB has created a system that will generate abundance for its users and holders.

In short, the VTB contribution to the digital money ecosystem is integrated into existing technologies utilizing a "layer-2" methodology using a sidechain pattern to ensure uncompromised security and stability. Moreover, this innovative system utilizes Ethereum and IPFS technologies to back up its data with transparency. In this manner, VTB provides a secure environment. For those already acquainted with cryptocurrencies, it is similar to an NFT where a token can be seen in a decentralized environment by accessing IPFS addresses through Etherscan. This transformation to the next level of digital money, assets and wealth was inspired by the now renowned giants, such as Bitcoin and Ethereum. Now is a time for the next generation of cryptocurrencies to meet the financial demand of the world with projects like VTBCommunity.

The Barriers

Bitcoin and Ethereum have accomplished their goal of creating a democratic and secure means of achieving peer-to-peer interactions. Undeniably, Bitcoin is ideal for transferring funds. Ethereum adds a unique spin onto this transfer system: smart contracts enforce specific parameters or criteria coded into them to enable peer-to-peer transactions. These idealistic properties and ideas have brought peer-to-peer transactions to the masses in their pure form. However, this type of system in its actual form has a few barriers to mass adoption.

Currently, associated fees are the first roadblock. Let us consider an average North American who can afford to live comfortably. A $10, $20, or $100 transaction fee is inconsequential when occasionally incurred. The problem begins with consumers below the poverty line, even in North America, let alone the rest of the underdeveloped world. To those, such fees are enormously high and may prevent them from eating or paying for their phone to perform the expensive transaction. The speed at which a transaction completes is also critical. Accustomed to almost immediate means of communications and transactions, a 10-minute delay or more for a simple transaction is impractical. Taking a taxi driver (Uber or other) rushed to drive to his next fare, for example, will unlikely accept waiting for a blockchain transaction to complete when cash or a credit card is immediate.

Compounded to the previous costs and efficiency barriers is the usability factor. Although some have adopted the Blockchain technology, most people have not mastered its use, not to mention the safety requirements of a private key (12 to 24 words in newer wallets).

Even the fear of losing access to the wallet can play a significant part. Imagine forgetting a private key or password, inhibiting access to digital funds without availed help to recuperate it! How can such a system be entirely trusted when, in case of a credit/debit card loss, all it takes is going to the nearest bank branch and showing an I.D. to receive a new card and have access to the funds therein?

Last but certainly not least is its value. Definitely, the volatility of its value contributes to these uncomfortable unknowns. What if the value of the asset held in a wallet suddenly crashes? Although the value may fluctuate up or down, the downside is devastating to most users who may not be speculators nor afford its fall. Unfortunately, this volatility is rampant in the crypto world, unexpectedly rising for enormous gains or decreasing as suddenly for significant losses. It simply renders it impractical for grocery shopping, for example, because of its unknown value from one moment to the next. The apparent price fluctuation of the cryptocurrency world is due to price discovery, likely combined with an attempt by some active players to reach their specified price goals or "pump and dump" manipulations by dubious actors. Certainly, these manipulations are easier to accomplish because of the reduced number of players in the digital asset space. Given the aforementioned, any average user must apply caution about the type of asset purchased and why the asset was purchased. These overall unknown factors impede most people and businesses from accepting current forms of digital assets.

In addition to the above, in smaller transactions, such as a taxi fare, the cost vs. payment ratio is simply unrealistic, especially when the fees are higher than the payment. These higher fees revolve around other technical concerns, namely, scaling. In a few words, it means that an insufficient number of transactions can be rendered in a one-second time frame, whilst banks, credit cards, and others can execute hundreds of thousands of transactions per second. Because Blockchain enables only a few transactions per second, people increase the bid of those transactions so that their transactions can complete more rapidly. Unfortunately, spending more money than others to ensure a quicker transaction approval excludes those without enough funds to do so, thus creating an unwelcome higher risk for businesses. Adding to this process, the rather cumbersome, user-unfriendly methods required to interact with a blockchain result in insurmountable entry barriers and mass adoption for everyday transactions. In conclusion, even if the crypto world is a vanguard innovation, it is unreasonable to expect average consumers, including businesses, to adopt it unless these barriers are addressed.

THE VTBCOMMUNITY PROJECT

The Foundation designed this project to bring stable value-added assets to people, businesses, and merchants alike at the lowest possible risk while reducing the impact of an increasing cost of living. Also, this project allows the individual to be intentional about the financial system they wish to use instead of using the default. Price predictability, stable low fees, and simplified access to blockchain assets are salient benefits that set it apart. To drive the use of the asset, VTB is working with a profit-driven entity, whose goal is to offer financial tools in a business ecosystem delivering unique features to the community, such as a cash advance program, a merchant platform that includes a fee-less payment system, a reward program for the merchants, and many others incentives for the users.

VTB is not only building the foundation for an ecosystem; it is also creating the associated network that follows. This is a complete project comprising an interactive movement between assets and users: assets need users, and users require these assets to work for them; it just makes sense.

Additionally, VTB welcomes businesses, for-profit, non-profit, even governments so that, thrust by their utilization, the fundamental asset will continue to grow accordingly.

Coherent with the blockchain space of tomorrow, VTB is honing its efforts to drive solutions for several of the barriers mentioned above. These solutions result in a blockchain-based architecture that not only people can use in an easy, low-risk manner, but businesses can as well by removing some of their overhead costs in an equally low-risk environment. The ease of use allows adopters to utilize their smartphones to perform these VTB interactions.

Note: Before listing the project's objectives, as shown below, let us define the names used therein to prevent confusion: VTB stands for the project itself, while VTBC and VTBT are the core assets of the project.

Key Benefits

- Transparent
- Efficient
- Scalable
- Available
- Secure
- Convenient
- Predictable
- Performant

Features

- The project does not belong to any one individual.
- It is managed by a legal Foundation “VTBCommunity Foundation” (Gibraltar).
- The algorithmic value of the asset makes it a reasonable buying opportunity at any given time.
- Cryptocurrencies of other blockchains can be deposited and used to purchase VTB assets.
- The initial VTB reserve does not belong to anyone, and all crypto currencies used to pay for VTB from this reserve are redistributed to VTB asset holders.
- VTB assets are protected from price manipulation, exit scams and pump-and-dump activities through a predictability approach.
- The project’s unique breakpoint would be triggered by a sudden, complete, and irremediable stop of the purchasing demand.
- An ecosystem is being developed around the VTBC asset to drive use and mass adoption.

Vision Statement

“Build a predictable, stable blockchain asset for all to use. The vision of the Foundations success is measured by how many people it uplifts.”

Goal Statement

The following goals define what the project strives for with its assets and operations:

1. Non-volatile

The stability of the VTBC asset value is due to its daily increase. Since its value does not decrease, it is considered to be non-volatile.

2. Predictable

Although it may be a less exciting goal to a speculator, to a household or business, holding assets worth the same value or increasing every day is very important. This allows community members to use VTBC or hold it as a savings account comfortably. Its value progressively increases, therefore, pervading a sense of security to its holder and allowing for the purchase of additional goods and services in the future.

3. Inflation-Exempt

It means that VTBC will likely increase in value over that of inflation; “likely” because future inflation rates cannot be predicted.

4. Inclusive

Everyone can use the product due to extremely low fees offset by daily asset value increases. As previously mentioned, the fees associated with Bitcoin and Ethereum, or most other blockchains, are too high for many people to afford, thereby excluding their accessibility. As part of the VTB vision, everyone must have access to the VTBC asset, regardless of their economic standing. Inclusive also relates to the ease of use, no matter what technological knowledge a person may behold. If someone can use a credit card and/or smartphone, they can use VTBC.

5. Scalable

In a few words, scalability is the ability to complete as many transactions per second as the users demand at any given time.

The current solution uses layer-2 methods and sidechain patterns with submissions to Ethereum or any chosen public blockchain. Since Ethereum is well known and works well with IPFS for chain transparency, the Foundation decided to use this method.

6. Stable

Cohesive with a goal of not only keeping the token price stable but predictably and continuously increasing. Enormous price fluctuations have affected cryptocurrencies since their inception, which can be more than welcome while growing, but detrimental at its fall. Traders make money using a zero-sum mechanism, but it does not serve the traditional daily means of exchange.

7. Secure

Elliptic curve encryption, typically seen as public and private keys, has been used since the onset of cryptocurrencies as we know them. This algorithmic calculation backing a public and private blockchain prevents the success of most hacking activities. Having proven itself, encryption, the VTB system is using the same methodology while evolving to meet the new capabilities of the expected Quantum computer. Users are fully responsible for their private keys as VTB does not maintain, produce, have knowledge of or retrieve them in any way.

8. Transparent

Transparency is achieved through several means including the use of a Foundation, independent legal entity, external publicly-accessible technologies. This Foundation has and maintains rules and has a public charter; governed by the law of Gibraltar (UK), it is required to report every activity. The legal guardian is put in place to ensure all activities are in the best interest of the community by ensuring all activities are done to further the white paper. The guardian cannot be replaced by the Council to ensure its objectivity it is also bound by the Gibraltar laws. The use of external technologies to be able to see balances of specific addresses is an attempt to provide some transparency and allow users to see these values without having to use the VTB DApp.

9. Low fixed costs

A strategic combination of performing technologies allows the VTB system to provide low costs to users.

Summary

The VTB system is designed to be stable and secure by performing back-ups of the blockchain data on IPFS and using the Ethereum public chain to hold the IPFS address that all can publicly view at any time. This pattern consists of a layer-2, combined with a sidechain, for a quick and flexible performance while delivering transparency and stability. This combined methodology allows the system to maintain a very low and fixed operational cost and maintain its users' private/public key pairs within their control.

The fees charged will cover the operational costs of the cloud and maintenance of the chain and APIs within the technology, along with the transactions onto the various elected chain interactions. Layer-2 interactions will be transacted on the Ethereum blockchain at least once per day. For clarification purposes, these transactions entail recording the current status of everyone's account on IPFS and rendering them immutable through the Ethereum public blockchain. This information is visible through third-party sites, such as Etherscan and IPFS. In this manner, members can verify their balances independently.

Protocol Assertions

1. Equitability

This system was designed to benefit all its users (VTBC purchasers) equitably. It would be senseless to build a community otherwise, whereby solely the first members and/or owners would receive benefits. According to its mission, no matter what holding position one VTB member holds in the community, they receive the same benefits, as long as VTBCs are in their possession.

2. Redistribution

The sale of the asset reserve is redistributed to all asset holders, as per VTB's distribution mechanism. The initially minted VTBC are sold to all community members, who then received the proceeds of future reserve sales on a reoccurring basis (thirty days). This distribution mechanism is done by sending Ethereum, or any other integrated cryptocurrency, to all members based on the percentage of VTBC value held, by the member, at the end of each 30 days, which is certainly an Anti-ICO mentality.

3. Growth

The VTBC value will always increase using an algorithm to that effect. This algorithm can be improved upon based on informal assessments and their interpretations by professionals. To that effect, the VTB team has been working with a professional mathematician (Ph.D.) to help refine this algorithm. Even if the algorithm may be altered occasionally, it will do so under strict guidelines, ensuring that it benefits the community and meeting applicable governing laws.

4. Primary Asset (VTBC)

The primary VTBC asset is not peer-to-peer transferred. This is meant to protect the enforcement of the algorithm within the protocol. If there was a means to transfer VTBC directly, attempts to circumvent the pricing algorithm would certainly be made.

5. Secondary Asset (VTBT)

a. Must be fully backed by the primary asset.
b. Can be peer-to-peer transferred.
c. Does not participate in the value increase algorithm.

The secondary asset is entirely backed by the primary asset in the protocol coding. This standard is meant to ensure that users can convert back to VTBC at any time to take advantage of its hourly value increase. Unlike the primary asset, the secondary VTBT can be transferred peer-to-peer. This is done using methods similar to ERC20 functions, such as “Transfer”.

It should be noted that VTBTs should be quickly converted back to VTBCs to take full advantage of its incremented value increase, not available to VTBTs.

6. Future Assertion

a. Governance token.
b. Governance incentives based on action.

Some others may be added only if they are in the community’s best interest. Out of those considered, two have been visited:

- To fully decentralize the project with democratic governance using governance tokens or some other mechanism. This type of democracy enables users to vote on changes to the white paper and, naturally, the runtime (smart contract).
- The incentivization of democracy.

These future assertions include creating a governance mechanism and related voting incentives. As it may, several projects have had to substantially change their overall protocol because they expected token holders to participate in the democracy; however, a meager turnout prevented changes from occurring initially. To remedy this potentiality, the VTB team will use incentivization along with the governance mechanism to encourage participation in the democracy from its onset. Careful consideration will be given to advancing the democratic and incentivization systems so that they may benefit the community.

Let it be known that the system operates under rules strictly followed by and binding to the VTB project. Any change to it must benefit the community.

How It Works

This section covers the VTBC behind-the-scenes mechanism and the details of its functions concretely, not only conceptually. To begin with, there are two tokens: one increases with time and use, while the other is a tradable token similar to an ERC20. The remainder of this section provides more information on these two tokens:

- VTBC
- VTBT

VTBC

VTBC uses fundamental mathematics to increase its value according to usage and time. As previously mentioned, this increase offers stability and predictable growth that can be relied upon for wealth-generating financial projects, including savings, cash advances, insurance, and utilities. The user accepts VTBC (through VTBT) as payment for goods or services and others. In other words, VTBC users and holders receive a continuous value increase while holding or using the asset. The transaction-based increase is calculated on the actual VTBC liquidity vs. injected value in the system. For example, the resulting price increase will be slight if the value of the VTBC sales (from the sell order book) is much higher than that of the current transaction purchase value. Conversely, the correlated increase will be more significant if the current purchase value exceeds the total sell order book. This offset serves to balance the injected liquidity in the system and the hourly value increase. This time-based increase has been set as a minimum to ensure that the asset's value increases based on the curve described below. If the transaction-based increase value is equal to or greater than the scheduled time-based increase, the latter's growth will not be triggered. The value increases calculation will be further explained in subsequent sections.

VTBT

VTBT is valued at par with the US dollar regarding VTBC. At this time, VTBT can only be converted into VTBC. Our team may add a full Ethereum-based ERC20; meanwhile, a substrate-based token with similar features to the ERC20 is used.

The distribution mechanism is unique in the industry. Most projects use the sale of the tokens in an ICO fashion. Even if funding projects is essential and ICOs typically provide funding for these projects, in some cases, they can be scams, whereby the project creators walk away with millions of dollars. Instead of asking for money upfront with an ICO, the Foundation has opted to operate by simply tying the project's success to its community. Consequently, as money is injected into the system as ETH, the project can sell some of the pre-allocated VTBC to fund any ongoing development. At the same time, the initial VTBC buyers are rewarded through a continuous redistribution of ETHs and VTBCs. Eventually, ETH will stop being redistributed in this manner because the initial token reserve will be depleted, but while the supply lasts, VTBC holders will gain in multiple ways.

This value control algorithm provides users with a predictable price, thus improving their financial plans and, in the meantime, allowing the VTBC assets to perhaps the member's economic standing.

Algorithm

Pricing theories and complex market models offer some explanation as to how world equity markets operate. Concepts such as closed markets, arbitrage pricing, and single-index models are possible but require a central authority to function. An example of a closed market is the bulk purchase of lumber. Wood can no longer be bought directly from a sawmill; it must now be done through a broker. Although this regulation may seem unfair to some, it does serve a purpose: keep the price of lumber equal to the price of the commodity contract. A system that is harder to manage can be enforced with strict guidelines. The application of blockchain makes these exact pricing and system models easier to implement. The guidelines are built into the code and the operation of the blockchain. This closed market concept is good because the sawmills can maintain the price set by the commodity market, ensuring fair value for the effort. Price discovery for the sawmills was localized, and if a mill were having a hard time selling wood, they would have been able to sell cheaper, hurting their bottom line in the long run.

Price discovery has been the dominant market model that has evolved over several decades, particularly around computers. As nearly all trading (equities, commodities, currencies, etc.) activities are done on computers, different market valuations and high-frequency trading can take advantage of various arbitrage situations, even fostering price manipulations that have become harder to track. Stock exchanges such as Dow, S&P, etc., also pay large-volume traders to ensure that liquidity remains in the markets; essentially, they are paid to trade with themselves.

The above lumber example resembles the VTB model, mainly controlling the price. However, the VTB price is controlled using a blockchain. A specific algorithm sets the value, ensuring the price during the transaction stage. With any risk-free asset, the price is determined by time and users' support, which keeps it liquid. These are the same characteristics seen in bond markets. Cryptocurrency exchanges behave similarly to the legacy lumber market, whereby the price of assets such as BTC or ETH fluctuates from one exchange to another. This fluctuation creates a pricing discrepancy that can potentially lead to problems, such as illiquidity, as seen during the localized flash crashes of BTC and ETH in the past couple of years.

The VTBC pricing method was conceived to prevent this potential predicament (local flash crashes) and others by having the price controlled by the blockchain. As a result of enforcing the algorithmic pricing of the digital VTBC asset, an equalized price is set for all users while removing the need for price discovery, arbitrage, and zero-sum complications. VTB has advantages for all, including traders, who can park assets in VTBC to wait for the next dip in integrated cryptocurrencies.

The value algorithm was built upon simple concepts: bank on a minimum increase following a 30-year curve and offer potential upside on top of the curve. Logically, increased usage of the asset produces a higher value. Since pricing is controlled, value fluctuations are drastically mitigated. The algorithm is also designed not to reduce the upside of the oscillations.

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
100%	90%	85%	82%	80%	78%	75%	72%	70%	68%
2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
65%	62%	60%	58%	55%	50%	48%	45%	42%	40%
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
38%	35%	30%	28%	25%	24%	23%	22%	21%	20%

The increase is in two parts, per hour and the completion of a purchase. As seen above, part of the algorithm has an annual decreasing curve starting at 100% and ending at 20% (at the end of 30 years). The ending value of 20 percent will continue each year afterward. These values are subject to change. The algorithm calculates the expected price increase and selects the larger hourly raise price or the transactional raise. This ensures the annual increase is met hourly but leaves room for unlimited user-based growth.

The usage part of the increase considers several project-specific factors, including order book value and transaction value. The calculation is performed on a sliding scale of > 0 to 0.0005 per base value ($50 to start) and time-based fluctuations on the VTBC value. Akin to a seesaw mechanism, as the VTBC increases from $1 to $2, the base value decreases to $25. Likewise, as the order book sales value increases, the scale of > 0 to 0.0005 decreases to maintain liquidity. The base value will continue to decrease as the price rises to maintain a consistent percentage increase over time compared to the current price, i.e., if the price is $4 or $400, the price increase per base amount in terms of percentage will remain the same.

Below, you can see the algorithm and its use of different variables.

$\boldsymbol{VTBC_{current\_price\_a}}$ = the price of VTBC for the current year a.

$\boldsymbol{VTBC_{start\_price\_a}}$ = the price of VTBC at the beginning of the current year.

$\boldsymbol{h_a}$ = the number of hours elapsed since the beginning of the year a.

u_a = the target rate of increase for the year a (100% for the year 2021, 90% for the year 2022, 80% for the year 2023, …, 20% for the **year a**)

H_a = the total number of hours in the **year a** (=8760 hours if it's a non-leap year, 8784 hours if it's a leap year)

Then, the equation for time can be written as follows:

$$VTBC_{current\_price\_a} = VTBC_{start\_price\_a} \times (1 + t_a)^{h_a} \quad \text{with } t_a = 10^{\frac{\log(1+u_a)}{H_a}} - 1$$

R_{sj} : is the total value of the sales journal (but not yet sold) entered in the register.

R_r : is the total value of the reserve.

R_r^1 : is the total value sell from the reserve.

R_{pj} : is the total value of the purchase journal entered in the register.

Let's consider $\alpha = \frac{VTBC_{current\_price}}{VTBC_{start\_price}}$ (As the price increases all the time $\alpha \geq 1$)

C: is the inserted value (**We assume that the transaction completed**)

If there is not a concluded transaction, this means that R_{sj}=0, R_r=0 and $\gamma = 0$.

Else If C $>$ $R_{sj} + R_r$ then (C-$R_{sj} + R_r$) must be in the sell order book C = $R_{sj} + R_r$
Else If C $>$ R_{sj} then R_r^1 = (C-R_{sj}) is the value sold from the reserve and C = $R_{sj} + R_r^1$
Else if C $\leq$ R_{sj} then R_r^1 = 0

$$\gamma = \frac{C}{R_{sj} + R_r^1} \quad (0 \leq \gamma \leq 1)$$

Bringing the two together:

The increase according to equation 2 during the period between hour h and the next hour h+1:

Assuming that the price increases 3 times by transaction:

1. Transaction 1: $0.0005 \times \gamma_1 \times \alpha_1 \times NT_1$
2. Transaction 2: $0.0005 \times \gamma_2 \times \alpha_2 \times NT_2$
3. Transaction 3: $0.0005 \times \gamma_3 \times \alpha_3 \times NT_3$

$A_{h+1} = 0.0005 \times \gamma_1 \times \alpha_1 \times NT_1 + 0.0005 \times \gamma_2 \times \alpha_2 \times NT_2 + 0.0005 \times \gamma_3 \times \alpha_3 \times NT_3 \times \ldots.$

$B_{h+1} = t_a \times VTBC_{price_h}$

$$\boldsymbol{VTBC_{price_{h+1}} = \max\left(VTBC_{price_h} + B_{h+1},\ VTBC_{price_h} + A_{h+1}\right)}$$

The equation for use increase is defined by the following:

M: is the price of a transaction at the beginning of the system and his value is $50.

NT: number of current transactions (C/M=1000/50=20 transactions)

We assume by:

a. Max $(0, C - R_{sj} - R_r)$: the value recorded in the purchase journal.
b. Min $(R_r,\ \max(0, C - R_{sj}))$: is the total VTBC purchased from the reserve.
c. The current price increase formula and given by:

$0.0005 \times \gamma \times \alpha \times NT$

Here are some examples of the formulas:

Example of the time-based equation:

If $u_a = 90\%$, a = 2021 and h_a = 20, then $t_a = 10^{\frac{\log(1+0.90)}{8760}} - 1 = 7.32737E\text{-}05$

If $VTBC_{start\_price\_a}$ = $4 then, $VTBC_{current\_price\_a}$ = 4*(1.000073274)^20 = 4*1.001466494

$VTBC_{current\_price\_a}$ = $4.005865976

The first example of the use-based formula:

If a community member buys $1000 of VTBC then NT = 1000/50=20
If R_{sj} = $1000 i.e., the total value of the sales journal is $1000 and $\boldsymbol{R_r^1 = 0}$

$$Suppose\ VTBC_{current\_price} = \$8 \quad And\ VTBC_{start\_price} = \$4$$

So, α = 8/4=2, γ = 1000/(1000+0)=1

and the price increase will be: 0.0005×1×2×20=0.02

The second example of the use-based formula:

If a community member buys for 1000$ then, NT = 1000/50=20
If R_{sj} = $2000 i.e., the total value of the sales journal is $2000 and $\boldsymbol{R_r^1 = 0}$

$$Suppose\ VTBC_{current\_price} = \$8 \quad And\ VTBC_{start\_price} = \$4$$

So, α = 8/4=2, γ = 1000/(2000+max(0, 1000-2000))=1/2
So, α = 8/4=2, γ = 1000/(2000+0)=1/2

and the price increase will be: 0.0005×1/2×2×20=0.01

The third example of the use-based formula:

If a community member buys for $1000 then NT = 1000/50=20
If R_{sj} = $2000 i.e., the total value of the sales journal is $2000

$$Suppose\ VTBC_{current\_price} = \$12 \quad And\ VTBC_{start\_price} = \$4$$

So, α = 12/4=3 And γ = 1000/ (2000+0) =1/2
And the price increase will be: 0.0005×1/2×3×20=0.015

Here is an example of the use and time-based formulas combined:

If a community member buys for 1000$ then NT = 1000/50=20

If R_{sj} = 1000$ i.e. total value of the sales journal is 1000$ and $\boldsymbol{R_r^1 = 0}$

$$Suppose\ VTBC_{current\_price} = 8\$\ \ And\ VTBC_{start\_price} = 4\$$$

So, α = 8/4=2, γ = 1000/ (1000+0)=1

and the price increase will be: 0.0005×1×2×20=0.02

If $u_a = 90\%$, a = 2021 and h_a =20, then $t_a = 10^{\frac{\log(1+0.90)}{8760}}$ -1 = 7.32737E-05

If $VTBC_{start_{price_a}}$ = 4$ then $VTBC_{current_{price_a}}$

= 4*(1.000073274)^20

= 4*1.001466494=4.005865976

B_{h+1} = $t_a \times VTBC_{current\_price\_a}$ = 7.32737E-05 x 4.005865976 = 0.0002935246

Max (4.005865976+0.02, 4.005865976+0.0002935246)

= 4.005865976+0.02

= 4.025865976

Therefore, the return generated by a VTBC holder over 30 years will be unprecedented; however, given the current cryptocurrency climate, similar or even higher results could be achieved through day-trading or other investment instruments.

This project should be perceived as a steady and predictable method to achieve expected value increases.

Orderbook

Reminder

VTBC is not a transferable asset, as is VTBT. This decision is meant to drive trade through the VTBC runtime that enforces the price algorithm. If users were able to trade directly with each other, the price control mechanisms would not be effective. The algorithm is a crucial element of these mechanisms and complements the order book.

The team has created a First-in First-out (FIFO) peer-to-peer order book. This FIFO method enables a proper exchange order; in other words, the first person to list their VTBC sale is the first person to sell.

Additionally, the selling price is set by the runtime at the price of VTBC at that time. Perhaps unorthodox, it is pretty different from price discovery markets where individuals set the sell or buy price. Because the price does not go down directly, this FIFO order book model can act as a discount on the VTBC price for the next buyer.

For example, if a seller lists their tokens when the price of VTBC is $4 and sellers have listed before them, the previous sellers will have their sales filled first. If there is a lag of several hours between when the seller lists and when a buyer buys, the buyer will get a discount because the price goes up each hour. This incentivizes buyers to buy at a lower rate and makes sellers not likely to remove their sell order because they don't want to lose their place in the line. This offers a unique model for getting VTBC lower than the current price.

This FIFO system is used to help maintain liquidity in the system, but more importantly, manage the price of VTBC.

Technology

The technology used in this project was selected based on its capabilities to control fees, scalability, and an "oracle" (data insertion) system. Similarly, the substrate technology offers several future configuration considerations that will be attractive to the Foundation and its democracy as it evolves.

This section covers the system in general and the technologies used to create our defined product. It is divided into three main parts:

- System Architecture
- Off-chain Workers
- Runtime

1. System Architecture

A "Layer-2" methodology is used, along with a sidechain pattern to maximize scalability and enable management and control of the overall project. To save on fees while remaining transparent, the VTB system does not report every transaction to an expensive chain, such as Ethereum. Instead, an IPFS address with the runtime state is submitted daily to the Ethereum chain, transparently capturing all transactions for a given period. Open-source software from Parity is used, specifically the substrate and APIs from respected companies, such as Infura and backend UI services, and others using cloud providers, such as Google, Amazon, and Azure.

The architecture consists of substrate nodes, which perform consensus using Aura and Grandpa. In the future, the node may be available to individuals wishing to participate in this blockchain (future option) consensus. A multi-source configuration is used for APIs, such as Infura for ETH and Block Producer snapshots and or APIs for EOS, to reduce risk and prevent any breaking changes. In conjunction, external smart contracts and accounts are used to accept deposits of their respective native currency. The Ethereum smart contract will also keep a stored IPFS address to allow users to constantly view the VTB blockchain and verify their VTBC balances through third-party applications. As previously mentioned, this state update happens on a set frequency of no more than 24 hours. This also serves as a backup to the VTB blockchain state. These (external to the blockchain) calls are done through an "oracle" system of substrate unique mechanisms called off-chain workers.

2. Off-chain Worker

This substrate construct creates a reasonably stable method for providing external data to the blockchain. This data can arrive from an API and/or be a sizeable mathematical equation result requiring several minutes or hours to run. The Off-chain worker acts as an interface to ETH/USD exchange values, for example, and provides access to the Ethereum blockchain through Infura. This protocol complements the substrate's overall operation and increases ease of use and security as it is an integral part of each substrate node. Moreover, these Off-chain workers facilitate more complex blockchain interactions, such as cross-chain transactions. In short, our team monitors the Ethereum, EOS, and other chains to ensure transaction occurrences are seen and, if relevant to VTB, are captured and used in the runtime. This simple system enhances our project by enabling the ability to perform interchain transactions.

3. Runtime

A substrate node has the unique capability of running any code within as a "smart contract" or even providing a smart contract platform inside the runtime for users to create their smart contracts much the same as the Ethereum blockchain. We have decided to run our code directly in the runtime rather than create a smart contract platform. This decision to operate now on the runtime was based on not requiring the capabilities to develop contracts or allow any other user to do so on the VTB blockchain. The extra code entailed in the chain would bloat it and slow down its development. This streamlined approach provides a faster turnaround on updates, upgrades, and maintenance. The good news is as the project grows and the community evolves, the VTB community could vote to add smart contract capabilities to the system. At this development phase, however, simple is better.

VTB Blockchain and Democratic Policy

The VTB project has chosen to employ blockchain technology for various reasons. The challenge was to deliver transparency and auditability, only delivered by public blockchains. Therefore, since none of the current public blockchains met the Foundations criteria, the Foundation built a custom blockchain for all the project's requirements that will come in stages. The custom blockchain is a layer-2 sidechain system, the information contained therein is neither auditable nor seen by anyone outside the community. Conflicting with the project's core values of being transparent and democratic, the team had to find a method to reasonably go from sidechain and non-transparent to fully transparent and democratic. After investigating several options, reading other white papers, and learning from some icons in the industry, it can be achieved in steps. Designing a blockchain and releasing it "into the wild" takes courage, time, and countless trials before success is completed. Several key questions were asked, such as "How to protect the community and keep the project operational?". Truth be known, most blockchains spend years in development. Finally, between an upgradable blockchain where nodes periodically report to public entities such as IPFS, the project's core values achieved the first step: it would deliver transparency, auditability, and accountability. Following these phases, a Foundation was founded in Gibraltar to legally enforce identification requirements and accountability to the blockchain's changes, upgrades, and operation during its infancy.

Ultimately, the Foundation is the technology owner and has a legal guardian who upholds and enforces this white paper's advancement. Meaning that the Council Members of the Foundation are required by law to follow the rules. In this manner, no one can change the blockchain without the transparent vote of the Council and the approval of the Guardian. This is the first step in becoming a true democracy, which requires time and careful planning. Until then, the Foundation Councilors use legal tools and frameworks to protect the community and add new features and pivots as needed. The blockchain will be upgraded in a multi-signature pattern, and its keys will be held and executed by the Council members.

As the project increasingly moves towards decentralized democratic operations, the vote will be handed over to the community in some voting token or directly through the VTBC asset. This vision is still in its early conceptual phase. A consensus will also be reached as to the future of the VTB blockchain, whether it should become public for anyone to run a node or possibly connect it into an already existing blockchain consensus system, such as Polkadot.

As we move towards these subsequent phases, interested parties may connect to our various channels:

- VTBCommunity – www.vtbcommunity.org
- VTBDex – www.vtbdex.com

Market Opportunity

The already proven cryptocurrency uptrend, especially the leading ten, has made the VTB project possible. From its first recorded transaction to date, a glance at the Bitcoin value reveals a parabolic growth, despite its initial stigma of being volatile. The following chart shows the rising Bitcoin value trend from 2013 to 2021, representing investors purchasing digital assets at low prices and calmly holding them, despite its turbulent fluctuations. In the long term, they are now the winners.[2]

The increase in cryptocurrency values continues to spark interest amongst prospective users globally, with at least 300 million people using cryptocurrencies as of 2021. This figure represents only 3.9 percent of the world's population, illustrating how far the world still is from mass adoption[3]. At the same time, over 18,000 businesses have set up systems and are already accepting cryptocurrencies as a mode of payment.

1. Leading Countries for Crypto Users[4]

India	100 million
USA	27 million
Russia	17 million
Nigeria	13 million
Vietnam	5.9 million
Kenya	4.4 million
South Africa	4.2 million

2. Demographics for Cryptocurrency Users[5]

Gender	Male 79% and Female 21%
Age	58% under the age of 34 years
Education	82% have a bachelor's degree or higher
Annual Income	36% have an annual income of at least $100K

[2] https://www.statista.com/statistics/377382/bitcoin-market-capitalization/

[3] https://triple-a.io/crypto-ownership/TwoTwoTwo

[4] https://triple-a.io/crypto-ownership/

[5] https://triple-a.io/crypto-ownership/

The cryptocurrency industry has growth potential but remains stifled by challenges, such as digital assets volatility, lack of appropriate education, poor UX/UI in crypto wallets, and liquidity issues. Even amidst these challenges, the industry is poised to grow with a CAGR of 12.8 percent from 2021 to 2030. This translates to a market size value of $4.94 Billion in 2030 from $1.49 Billion recorded in 2020[6]. In addition, the perception towards Bitcoin and other cryptocurrencies, especially amongst institutional investors, is rapidly changing. Unlike in the early days of Bitcoin, where investors ignored the crypto asset, this year alone, over $17 Billion in institutional capital has gone into Bitcoin and other cryptocurrencies[7].

3. VTBC Detailed Table

Token Type	Algorithmic
Symbol	VTBC
Name	VTB Community
Total Maximum Supply	40,000,000
Total Units	40,000,000,000,000,000,000,000,000
Pre-Mined	40,000,000,000,000,000,000,000,000
Decimals	18

3. VTBT Details

VTBT holds no initial amount, and each is minted as users convert from VTBC to VTBT, which can only be converted back to VTBC or transferred to a peer within the substrate network. In the future, this token will also be an ERC20, which will cost the user money to mint, transfer, and burn, whereas, within the current substrate system, fees are low and predictable.

[6] https://www.alliedmarketresearch.com/crypto-currency-market

[7] https://www.forbes.com/sites/lawrencewintermeyer/2021/08/12/institutional-money-is-pouring-into-the-crypto-market-and-its-only-going-to-grow/?sh=704941011459

Roadmap

Reaching a successful coherence with the project's vision and this white paper requires a plan. The Foundation has outlined a rough roadmap to provide some insight into the plan and marked this roadmap with milestones. Dynamic implementation of each of these milestones will trigger the start of subsequent steps. Milestones are dependent on resources and available technologies, and as such, timelines can be negatively impacted.

Technology

This pertains to asset integrations, including EOS in the system. Currently, there are two public crypto assets integrated into the system, EOS and ETH. Our short and long-term plan includes other assets such as BTC, DOT, Cardano, etc. These will be used to purchase VTBC from other users or the reserve.

The timeline of these additions depends on critical factors, resources, and development time. If other more requested assets are preferred, this delivery will change.

a. BTC 2022 Q2
b. DOT 2022 Q3
c. ADA 2022 Q4

Democratic Token

Voting on multiple options to create a separate democratic token or use VTBC or other methods is yet to be investigated.

a. Define options 2022 Q2
b. Option feasibility 2022 Q3
c. Council Decision 2022 Q4

VTB Foundation & Governance

The Foundation is already created and is in Gibraltar, as mentioned above. The Foundation will also undergo some changes as time goes on, including more council members. In time, new council members will replace the founding council members, ensuring the project lives on past the original team. C suite positions within the Foundation will be appointed as required. This included functions such as CEO, CTO, CFO, etc. These will be paid positions and have clear mandates to fulfill this white paper's mission.

Governance is a complex structure and requires extensive planning, as stated above. This will have a period of development and some trials until the best fit is fully fleshed out.

a. Foundation is already created
b. Onboard first new council members, ongoing
c. Release first democratic strategy draft 2022 Q3
d. Create runtime upgrade proposal system 2022 Q4

CONCLUSION

Although this white paper is technical, it embodies the prominent humanitarian ideal behind the VTBCommunity project. Perhaps a crisis was required to raise people's expectations of what a new normal could be like. Without a doubt, the VTB project seems utopian, but it is entirely viable because of the Foundation's vision.

The world is ready to welcome an improved financial system. By delivering efficiency, ease of use, scalability, and availability at an affordable cost, this project is a part of this new financial system. Moreover, its use of novel and existing technologies to forge a transparent path, not to mention the redistribution of its asset proceeds, ensures the vision is held consistent across all aspects of the project.

The VTB project is delighted to launch a piece of a new financial system built to provide an option to all users. Time will tell what the full scope of this new system will be, but the Foundation is taking steps, with its community, in a new direction.

APPENDIX

Term Definitions

This section defines words and concepts as they are interpreted in this document:

1. **Algorithmic token**: A type of token featuring dynamic algorithmic changes to either its supply or value.
2. **Altruistic tokenomics**: Intentional economic actions generated through the creation and use of tokens designed to enhance the welfare of others in the absence of reward.
3. **Asset Class**: All VTBCommunity assets share the same value comparator (e.g., gold). Asset family: All VTBCommunity assets share the same exchange medium (e.g., ETH).
4. **Cross-chain / ledger agnostic**: Like Meta-asset, cross-chain is not specific to any particular ledger.
5. **Dex**: Decentralized P2P exchange.
6. **Economic incentives**: The rules and mechanics to reward or penalize specific behaviors in a network.
7. **Fiat Currency**: Classical debt-based currency, such as US Dollars, Euros, or British Pounds.
8. **Game theory**: The study of mathematical models of strategic interaction among rational decision-makers.
9. **VTBCommunity Foundation**: The organization responsible for the maintenance, management, upgradability, and custodianship of non-issued assets.
10. **VTBCommunity Upgrade Proposals**: Proposal format used by the community to participate in the development and destiny of the project.
11. **Mass adoption**: The retail market's adoption of cryptocurrency or digital assets.
12. **Meta Asset**: Assets on multiple distributed ledgers sharing the same value and a standard shared maximum supply.
13. **On-chain governance**: A voting mechanism to manage the governance of the project. This will handle significant changes to the network, appoint directors, and other relevant activities that impact the community.
14. **Redistribution**: Process of redistributing the assets that served to buy from the reserve and the asset generated by the stable token.
15. **Rules**: Business logic is replicated throughout the different ledgers and represents a protocol.
16. **Stable Token**: Like a commodity-backed currency, its value can be tied to multiple assets. Some stable tokens are backed by gold, silver, or even the US dollar. Since the US dollar is not as volatile as any ordinary cryptocurrency, it offers some measure of stability.
17. **Token layers**: The interrelation between VTBCommunity assets families and classes.
18. **Tokenomics**: The study of how cryptocurrencies work within the broader ecosystem. This includes token distribution and incentivizing positive behavior in the network.
19. **Unique Asset**: A specific pair of value comparator and a native token (e.g., EUR-TRN). Each asset has its VTBDex tab. A fantastic asset is dual and will always be composed of an algorithmic token and a stable token.
20. **Universal Value Index**: The averaged value of all VTBCommunity assets.
21. **Value Comparator**: The value of a VTBCommunity asset is measured using a real-world value comparator, such as fiat currency (e.g., USD). A fiat (e.g., Euro) or commodity (e.g., gold) comparator evaluates the asset. The conversion rate is calculated using the value comparator vs. the native token (e.g., Ether) value.

VTBCommunity Foundation

6 Bayside Road,1st Floor

Unit 1.02, Gibraltar,

Gibraltar, GX111AA

www.vtbcommunity.org