A Price-Stable Cryptocurrency for Next-Generation Payments

Connor Lin, ConsenSys
Gavin Mai, Stanford
Miles Albert, Hashgraph
Samuel Trautwein, Stanford

Last Updated: April 3, 2018
Version: 1.0.0

Contents

1 Introduction **5**

2 Use Cases for Carbon **6**

3 How Carbon Implements Price Stability **8**

3.1 Measuring the Exchange Rate 8

3.2 Aztec Model 8

3.2.1 Contraction 9

3.2.2 Expansion 9

3.2.3 Carbon Credits 10

3.3 Market Dynamics 10

3.4 Benefits 11

3.5 Powered by Hedera Hashgraph 12

4 Payments Landscape: **13**

4.1 PayPal/Braintree: 13

4.2 AliPay: 13

4.3 SWIFT: 13

4.4 Ripple: 13

4.5 Western Union: 14

5 Why the Dollar? **14**

5.1 The Dollar as a Proxy: 15

5.2 Bootstrapping: 15

5.3 The Oracle Problem: 15

5.4 CPI as a Longer Term Solution: 16

6 Stablecoin Landscape **16**

6.1 Tether: 17

6.2 BitShares: 17

6.3 MakerDAO: 18

6.4 Basecoin: 18

6.5 Fragments: 19
6.6 Seigniorage Shares: 19

7 Team **20**

8 Disclosure **21**

Abstract

Cryptocurrencies with deterministic supply such as Bitcoin and Ethereum are extremely volatile. Changes in coin demand reflect on coin price, which discourages its use for basic economic needs like paying bills and buying coffee, not to mention more complex needs like loans and insurance contracts. The optimal stablecoin needs to be price-stable, programmable, highly efficient and decentralized.

Carbon presents a dynamic value transfer protocol for creating arbitrarily complex logic, which contextualizes value transfer while substantially reducing resolution costs (e.g. chargeback fees and refunds), increasing economic efficiency. We achieve these properties through an elastic supply engine that closely correlates Carbon to $1 using a decentralized oracle, a dual token model and optimal risk-to-reward incentives.

We present Carbon, a price-stable cryptocurrency for next-generation payments.

1 Introduction

Bitcoin is the world's first widely used peer-to-peer payment network without a central authority. However, it has since become more of a digital gold due to a fixed 21 million coin supply. This makes it extremely volatile as changes in coin demand cause price fluctuations. Furthermore, Bitcoin is also a poor medium of exchange because it has slow transaction speeds (around 3 tx/sec) compared to Visa (around 2000 tx/sec) and cannot handle the throughput required to be a competitive currency.

To address Bitcoin's limitations, hundreds of new cryptocurrencies have been developed since 2009, including Ethereum, Ripple, Litecoin, and Dash. Even though these cryptoassets have improved scalability, none have attained price-stability that is essential to money.

Assuming it is possible for a decentralized cryptocurrency to be trustless, price-stable and scalable, why would anyone use it? Opponents argue that a price-stable cryptocurrency does not functionally offer substantial improvements for the average user. After all, most people are content paying for their coffee using cash or credit.

While this is a true sentiment, the same could be said of Bitcoin and Ethereum. Why buy digital gold when one can buy physical gold? The reason why is due to the allure of decentralization. There has never been a time in history where strangers could trust each other, especially with regards to money.

A decentralized solution to money would entail transparency, immutability, high availability and security, in addition to being programmable. Furthermore, a globally-accessible price-stable cryptocurrency has tremendous value in countries with hyperinflation, such as Zimbabwe, Greece, and Venezuela.

Stablecoins are a class of cryptocurrencies that seek to maintain price stability with respect to a value indicator. The value indicator is typically the USD. There are many ways stablecoins achieve price stability. Some stablecoins rely on a 1:1 fiat backing (Tether). Other stablecoins rely on collateral in the form of gold, Bitcoin or other cryptocurrency assets to back their value (MakerDAO). One last form of stablecoin relies on a liquid market of bonds to expand and contract coin supply to create stability (Carbon and Basecoin). Each method has its merits and shortcomings, as we will discuss in a later section. Ultimately, Carbon's solution is more scalable than collateral-backed models and more robust than existing proposals for unbacked stablecoins.

2 Use Cases for Carbon

Programmable Money: Carbon has the unique property of being both trustless and fully programmable through smart contracts. All value transfer has context and enables a higher degree of information encoding into the transaction (e.g. escrow, chargeback fees, fund-release triggers, etc). Carbon expands the horizons of what money can be and the most powerful customizations are likely ones that we haven't even thought of yet.

Trading Pair: There is great demand for a stable trading pair for the cryptocurrency community. This is demonstrated by Tether's current $2B+ Market Cap and $2B+ average daily trading volume. Carbon will be partnering with cryptocurrency exchanges to implement CUSD as a trading pair.

Global Payment Network: We believe Carbon has the potential to be foundational for global payments, serving as a unit of account, a store of value, and a medium of exchange. The key characteristics required are price stability, liquidity, and scalability.

Carbon also allows arbitrarily complex logic to be encoded into transfers. This

contextualizes payments and reduces resolution cost; one can trustlessly create payrolls, subscription services, event-triggered payments and much more using Carbon's protocol. An example of an event-triggered payment would be if a user clicks an ad, the payment can be transferred per click rather than at the end of the month through a billing account. Payment disputes can easily be resolved through escrow contracts and programmable logic.

Fueling Future Decentralized Applications: Carbon stablecoins can be used as gas/payment for using decentralized applications, instead of those applications issuing their own native currency. A price-stable cryptocurrency may be used in decentralized applications involving time-sensitive smart contracts, such as betting, insurance, and lending markets. Carbon is in the process of securing partnerships with several dApps to adopt our stablecoin.

Hedge Against Fiat Inflation: Carbon's CUSD stablecoin will serve as a hedge against fiat inflation like the Venezuelan Bolivar. Holding Bolivars is much more inflationary than holding USD, which has 3% yearly inflation. By giving anyone with an internet connection access to CUSD, Carbon globalizes access to price-stability. Our long term vision is creating a stablecoin separate from national fiat currencies and instead pegged to a basket of goods, ultimately serving as a hedge against the dollar itself.

Fundraising Economy: Carbon will be organizing efforts to onboard new cryptocurrency companies to accept Carbon stablecoins as a form of fundraising through token sales. This will drive demand for Carbon and give new cryptocurrency companies stability in funds.

Lending Markets: We envision lending markets to be built on top of Carbons base infrastructure layer, enabling global access to secure and price-stable loans. This will enable people to effectively and efficiently obtain capital with minimal friction.

Financial Products: Carbon's price-stable cryptocurrency will support a network of trustless, decentralized credit/debt markets, options, futures and other derivative contracts. We envision Carbon as the foundation for the next generation of financial products that leverage distributed ledger technology.

3 How Carbon Implements Price Stability

The Carbon protocol incorporates an elastic supply policy to adjust the quantity supply of the coin in response to its market demand as a means of achieving price-stability around $1.

3.1 Measuring the Exchange Rate

Carbon utilizes a decentralized schelling point scheme to achieve distributed consensus on Carbon's exchange rate. Every 24 hours, also known as the rebasement period, a schelling point scheme is initiated where nodes submit bids for what they believe the true exchange rate of Carbon to be. Each bid is weighted by a collateral, denominated in Carbon. At the end of the 24 hours, bids are totaled and the protocol takes a weighted average of the bids. Anyone who bids outside the 25th and 75th percentiles will have their balances slashed. Anyone within the 25th and 75th percentiles receive a normal distribution of the loser's balances, with the highest reward distribution at 50% and normally diminishing on the right and left respectively.

3.2 Aztec Model

Carbon introduces a price-stability model called the Aztec model. Unlike most elastic supply stablecoin models, the Aztec gives 100% of the upside in expansionary cycles to users who helped the system contract through burning their tokens. In this way, there is strong incentive for users to assist in Carbon's price-stability mechanism.

In the Aztec model, there exist two tokens:

1. Carbon Stablecoin (CUSD)
2. Carbon Credit

We are introducing the Carbon stablecoin, which will be closely correlated with the price of $1. The volatile coin is called Carbon Credit and is a token that is used to absorb demand and price shocks to CUSD.

3.2.1 Contraction

When coins are trading for less than $1, Carbon Credits are auctioned off via a reverse dutch auction to market participants willing to burn their stablecoins, creating upward price pressure, appreciating the stablecoin price back up to $1.

When the oracle indicates that the exchange rate is below a dollar, the smart contract will initiate an auction for new carbon credits. The CUSD received will be burned, diminishing supply thus raising the price.

3.2.2 Expansion

When coins are trading for more than $1, coins are distributed to Carbon Credit holders pro rata, creating downward price pressure, bringing the stablecoin price back down to $1.

This system has several key benefits: It has a very simple ROI formula, making the Carbon Credits easy to price which will translate to a higher degree of price stability. As the token supply should gradually expand at a diminishing rate (volatility should go down as volume increases) so we anticipate over the longer term a pricing effect similar to that of other logarithmically diminishing coins such as Bitcoin and Ethereum. We expect this system to result in more efficient performance of the Carbon Credit distribution formula due to the simplicity of calculating ROI.

3.2.3 Carbon Credits

Carbon Credits represent perceived market demand for expected growth of Carbon's network, as well as serving the important utility for expanding Carbon's stablecoin supply. They are rewarded to market participants who burned their stablecoin during contractionary phases and have theoretically infinite upside potential.

3.3 Market Dynamics

Rebasement Periods:

Rebasement periods are currently set to 24 hours.

Fault Tolerance in Long Contractionary Cycles:

With any unbacked stablecoin, there is the potential problem of long periods of contraction or negative growth. These potential "winters" can reduce confidence in owning Carbon Credits. Supporters who believe the network will expand in the near future will help contract supply to maintain price parity. Fundamentally, there are two questions.

1. ***How viable are zero-growth economies in the context of stablecoins?***

   General economic opinion suggests that zero-growth economies are impossible as any amount of work to make a closed-energy system more efficient creates value and thus positive growth. Basecoin provides excellent analysis as to why[1].

   As far as stablecoins are concerned, it's possible to see zero-growth rate if competitor stablecoins gains larger market momentum and adoption. That's why it's imperative that the ideal stablecoin has the best risk/reward incentives as well as base infrastructure to support a truly scalable and minimal fee stablecoin. Since Carbon has 100% of the expansionary up-

[1] http://www.getbasecoin.com/basecoin_faq.pdf

side reserved for users who help contract the system, we believe this is inherently an extremely attractive option for early adopters and speculators to bootstrap Carbon.

2. ***How do Carbon Credits protect against long term contraction?*** Long term contractions hurt any elastic supply stablecoin as expansionary tokens are not distributed to the market for an extended period of time. Contraction fault tolerance ultimately comes down to the utility of the stablecoin itself and the market confidence that such a stablecoin will eventually succeed and expand again. Multiple market factors, such as utility in distributed applications and exchange demand will impact adoption.

   Some stablecoin models have a "FIFO" (First-In-First-Out) payout scheme, which optimizes short-term fault tolerance, but ultimately, the longer a queue becomes, the less attractive that price-stability mechanism. Bond-based models that default on the bond queue (i.e. erasing all bonds that have been bought), in our opinion, are not a great solution to fault-tolerance and further disincentives new market participants to buy bonds to help contract the supply.

   In Carbon's model, one can always sell their Credit tokens on the secondary markets at any time. Ultimately, it comes down to public market participation in the most profitable and most sensible elastic system.

3.4 Benefits

Naturally, people will wonder how the Carbon protocol compares to other elastic coin supply stablecoin approaches, such as Basecoin, in addition to current payment processing companies (e.g. PayPal, Braintree, Western Union, etc). Carbon's protocol has the following advantages:

1. **Uncapped Upside:**

An owner of Carbon Credit theoretically has uncapped upside in the network. If the auction and market decides to value the credit at $100 or $1000 a token, it will do so through the auction mechanism described above. Trading Credits for Carbon tokens to expand the base monetary supply becomes a good arbitrage opportunity given a high enough discount factor (Credits → Carbon tokens at discount → rebuy Credits on secondary market for cheaper price). This, along with the growth of the network, becomes an attractive investment strategy for adopters and actors who want to provide price-stability to Carbon.

2. **Maximized Risk/Reward Ratio:**
   Unlike other elastic supply models where expansionary tokens are distributed pro rata to either investors or stablecoin holders, Carbon expands its base monetary supply directly to those who own Carbon Credit tokens. Credit tokens are either purchased at market rates on secondary markets or generated by helping the system contract. Early investors, supporters and team members hold a small amount of Credits to properly reward risk as well. Ultimately, there is one avenue towards price stability and we believe this maximizes the reward for the amount of risk a participant takes to achieve price-stability.

3.5 Powered by Hedera Hashgraph

Solving volatility is just one piece of the puzzle in creating a globally-adopted medium of exchange. After investigating numerous smart contract platforms, we have decided that the Hashgraph public ledger provides the strongest foundation for the Carbon protocol. It will enable CarbonUSD to achieve unprecedented speed with fractional cost per transaction, all while maintaining bank-grade security.

Hashgraph is a blockchain-alternative that achieves hundreds of thousands of transactions per second in addition to asynchronous Byzantine Fault Tolerance,

the strongest form of security attainable for a distributed ledger.

4 Payments Landscape:

4.1 PayPal/Braintree:

Paypal is an online payments processor that uses a digital layer to allow for seamless automated clearing house (ACH) transfers. Paypal serves as a centralized intermediary that helps users or merchants pay each other without revealing secure details to either party. Paypal's technology stack leverages two simultaneous ACH transactions to get money from a customer's account and another to deliver to the merchant.

4.2 AliPay:

Alipay handles online payments by using a escrow. Buyers and sellers reach a consensus, wherein money is sent from one party to Alipay's escrow. Once the product has been shipped and received, money is released to the seller's Alipay account. Buyer protection and security is heavily valued.

4.3 SWIFT:

SWIFT is a messaging network that financial institutions use to securely transmit information and instructions through a standardized system of codes. SWIFT is only a messaging system SWIFT does not hold any funds or securities, nor does it manage client accounts. SWIFT currently has over 250+ members/partners around the world. Many financial services such as banks, brokerages, clearing houses, exchanges, forex and treasury markets utilize SWIFT in some fashion.

4.4 Ripple:

Ripple is a cryptocurrency and digital payment network for financial transactions. The Ripple Network uses the concept of a gateway to serve as link to connect different parties in a financial transaction. Ripple as a cryptocurrency serves as the bridge currency for transactions, so if party A wants to send $100 to

party B, they would need to send $100 worth of Ripple ($XRP). Multiple gateways can be chained together, allowing transactions to seemingly ripple through the network.

Ripple's native cryptocurrency is not price-stable, which makes it potentially vulnerable to market volatility. Ripple also has a largely untested consensus algorithm. It is neither proof-of-work nor proof-of-stake but rather depends on trusted validators (validating nodes vs tracking nodes) in the network to provide fast consensus on transactions.

In practice, this is essentially a leader-based consensus algorithm which is prone to a variety of attacks, including DDOS and botnet attacks. In addition, this type of consensus has unclear security properties, especially with regards to Byzantine fault tolerance (BFT) or even practical Byzantine fault tolerance (PBFT).

4.5 Western Union:

Western Union and a host of other similar money transfer services (Moneygram etc) function by having centralized office locations around the world. To initiate a transfer, a user has to walk into an authorized location, note the location and details of the person you are transferring to, give them your reference number and pay a nontrivial fee.

5 Why the Dollar?

In the future, Carbon intends to maintain a stable value against a basket of goods. This will be much more robust in a world with decentralized exchanges and tokenized assets. Liquid decentralized exchanges will offer a new set of options to the oracle problem as price data will be encoded in the network itself. Tokenization will hopefully allow the items traded to be more representative of the goods currently used to calculate CPI.

Carbon chose to start with the dollar for a variety of reasons:

5.1 The Dollar as a Proxy:

The government uses price indexes to calculate inflation[2] and attempts to maintain a target inflation rate. In a sense, Carbon outsources a part of our oracle problem to the government.

5.2 Bootstrapping:

Using a known asset that has already has a proxy solution to the oracle problem will simplify the adoption process by making it easier for our users to trust us. Having a fixed exchange rate with the dollar makes the asset class much more useful through what we like to call artificial fungibility which translates to higher liquidity. The dollar is the global reserve currency meaning that most nations view it as the most stable currency so pegging to it borrows from its credibility. In a sense the dollar peg can be viewed as a way of diminishing frictional cost for adoption of traditional players. It lets us bootstrap trust and volume.

An interesting way of looking at this problem is asking on a high level what is volatility? Ultimately it comes down is what is the common denominator that will be used for most value stored in our system. We believe, at least initially, that this will be dollars. Which means pegging to anything else will increase volatility making our stablecoin an inferior product.

5.3 The Oracle Problem:

The entire cryptosphere is still constrained by a lack of a clear solution to the oracle problem[3]. To put it in simple terms it is difficult to have a solution for assessing complex values that is decentralized, transparent, and not gameable. We are expecting the market to converge on a solution to this problem in the near future as it is something that impacts the vast majority of multi-party

[2] https://www.federalreserve.gov/faqs/money_12848.htm
[3] https://blog.ethereum.org/2014/07/22/ethereum-and-oracles/

smart contracts.

5.4 CPI as a Longer Term Solution:

Ultimately, it's possible to achieve a greater degree of optimality than what is currently offered by the U.S. dollar. Faith in the U.S. dollar is tied to faith in the U.S. federal reserve, which depends on faith in the U.S. government. One of Carbon's main value propositions is that code is more predictable and less arbitrary than humans, especially those with limited interest in the well being of your country.

As Carbon expands, the dollar will become more vulnerable, as it becomes a centralized point of failure in a decentralized solution. Carbon aims to eventually exceed the dollar in terms of perceived trust.

6 Stablecoin Landscape

There are currently three fundamentally different approaches to stablecoins.

1. Centralized IOU Issuance
2. Collateralized On-Chain
3. Elastic Coin Supply

Centralized IOU Issuance is centralized which makes it suboptimal as there is a central point of failure, i.e. the coin creator. Collateralized On-Chain is slightly better as it attempts to create stability using decentralized cryptocurrencies. This theoretically works as long as cryptocurrencies go up and to the right. However, it's risky to bet that this will always be true; sudden dips in demand and collateral value severely impact collateralized on-chain's ability to buy back and burn tokens to create price-stability. Elastic coin supply is essentially Keynesian monetary policy where the protocol expands and contracts coin supply proportionally to demand to keep prices as stable as possible. This is ultimately how most national currencies create stability.

Centralized IOU Issuance:

6.1 Tether:

Tether is based on the Bitcoin blockchain and backs every USDT with 1 USD in its reserves. This approach works well in theory, since every Tether is collateral-backed by what it's supposed to be worth, but there are several issues. Tether suffers from a lack of transparency as to whether its coins are actually backed 1:1 with US dollars. In 2018, Tether has received a subpoena[4] from the U.S. Commodity Futures Trading Commission, as well as dissolving their auditor's relationship[5]. Furthermore, there has been multiple reports of Tether running into issues with their unnamed banks throughout Asia.

Tether's model is susceptible to Tether, the company, having control over the amount of Tether circulating in the supply. There has been multiple reports showing how hundreds of millions of Tethers have been minted by the company with no fiat-backing, raising many questions about whether they actually have enough USD to back each Tether's value.

Collateralized On-Chain:

6.2 BitShares:

BitShares fundamentally has 2 different coins. One is BitShares and the other, the stablecoin, called BitUSD. Their system implements CFDs, contract-for-differences, where some users short BitShares (making money if it goes down) and some users long BitShares (making money if it goes up). BitShares is at risk to under-collateralization and black swan events.

[4] https://www.bloomberg.com/news/articles/2018-01-30/crypto-exchange-bitfinex-tether-said-to-get-subpoenaed-by-cftc

[5] https://www.coindesk.com/tether-confirms-relationship-auditor-dissolved/

6.3 MakerDAO:

MakerDAO is a great project and is very much in line with the crypto philosophy and mentality. On the most basic level, however, MakerDAO's system is incredibly expensive to operate and scale as they must have massive amounts of collateral locked up for it to scale. If the collateralization rate is 20%, then there is $5 locked up for every $1 in circulation, resulting in very inefficient asset utilization.

Elastic Coin Supply:

6.4 Basecoin:

Basecoin, like Carbon, implements elastic money supply through supply contractions and expansions. To achieve price stability, Basecoin has a three-token model (stablecoin, bond token, and shareholder token). To contract, Basecoin auctions off bonds (Base bonds) to take coins out of the supply. Users bid for these bonds on a secondary market which promise exactly 1 Basecoin at an unknown future date. Outstanding bond holders are the first to be paid back when the supply must expand. The rest is distributed to Basecoin shareholders/investors.

Basecoin is a simpler version of the current federal reserve with the addition of an investor token. The investor token (baseshares) operates under rent-seeking behavior and functionally serves no role in providing stability to Basecoin. Extracting value without providing additional stability is an economic inefficiency, which results in artificially limited rewards.

The true source of stability (bond-buyers i.e. the public) don't particularly have much incentive to "save" the system, especially in the early days, when volatility is at a high and demand at a low.

We see this evidenced in the fact Basecoin is raising a fund to artificially buy base-bonds and support its peg. Moreover, even $100 million may not be enough to keep Basecoin afloat long enough for the system to reach stability; Tether's daily trading volume during times of great volatility has reached upwards of $5 billion in 24 hours.

Vitalik Buterin on Basecoin[6]:

> "(Basecoin's) coins/bonds/shares model seems a bit iffy and unnecessarily complex. Particularly, there's the instability that if the basecoin price goes down, then the mechanism pushing the price back up is to get people to buy basebonds, but basebonds basically just lock you into holding basecoin, and it's not clear why people would want to do that; it seems too close to the old bitusd model ('we just say that the price of this token should be $1, and therefore people will buy if it's under $1 and sell if it's over $1 because they expect the self-fulfilling prophecy to be true') for comfort".

6.5 Fragments:

Fragments functions almost identical to Basecoin, except newly minted coins are distributed to token holders, not shareholders. In addition, bonds are paid out randomly.

6.6 Seigniorage Shares:

Seigniorage Shares[7] is the category-defining stablecoin model first proposed by Robert Sams in 2014 but never launched. Ultimately, it has inspired a generation of stablecoin projects in the cryptocurrency space. For full disclosure, Carbon is implementing some ideas of Seigniorage Shares as we believe it maximizes the risk to reward threshold for bootstrapping a stablecoin.

[6] https://ethresear.ch/t/collateralized-debt-obligations-for-issuer-backed-tokens/525/5

[7] https://github.com/rmsams/stablecoins/blob/master/paper.pdf

7 Team

Connor Lin: Connor studied Humanities and Psychology at Columbia University. He helps source early-stage blockchain investments for Turing Capital. Before Carbon, Connor worked at ConsenSys. Connor was on the Founding Team and led Operations at Riley, a startup automating sales lead qualification backed by Y-Combinator, Social Capital, and KPCB, among others. He worked at Noodle and co-founded Flutter, a GIF-sharing platform, part of Columbia's startup accelerator, Almaworks. In high school, Connor founded a digital marketing agency. Connor is interested in consciousness, philosophy, and exploring alternative societal governance models.

Gavin Mai: Gavin was a senior at Stanford University studying Symbolic Systems. Previously he worked at Uber's marketplace forecasting team, where he implemented machine learning models (over 30 million training points and applied to over 3 billion forecasts/day) to detect and forecast unknown events and their effect on Uber's global ride sharing economy. Gavin also worked on SalesforceIQ's Einstein Intelligence Team, where he helped productionize LDA and n-gram machine learning models to create a more intelligent CRM and email management system (pricing, threads, anonymization). Gavin enjoys practicing mindfulness, longevity research and exploring protocol layer projects.

Miles Albert: Miles is an early investor in Ethereum who has been evangelizing smart contract protocols for over two years. He joined the early team of Hedera Hashgraph after realizing the new consensus algorithm overcomes many of the difficulties blockchains face in terms of scalability, security, and performance. Miles studied Business Administration at the University of Southern California. In his free time, he likes to think about AI and systems for decentralized governance, creating a concept called Zeroland, self-improving objective blockchain governance.

Sam Trautwein: Sam was a senior at Stanford studying Computer Science with a concentration in AI. Sam grew up in the Dominican Republic and experienced first hand the consequences of high inflation during the Hipolito presidency. He was in first group of employees and a founding member of the CS team at Plenty, an AI hydroponics company backed by Softbank, Bezos Expeditions and Innovation Endeavors. He ran development of the data pipeline, helped design system architecture, participated in hiring decisions and engaged in market research. Sam has focused on the intersection of system design and tech, concentrating mainly on distributed systems and encryption.

Michael Karnjanaprakorn (Advisor): Michael is the founder of NYC-based Skillshare, which is an online learning community backed by USV. He is also the founder of Turing Capital, investing in blockchain protocols and tokens. Previously, he led the product team at Hot Potato (acquired by Facebook) and was an early employee at Behance (acquired by Adobe). He's also a TED Fellow and listed as one of Fast Company's Most Creative People in Business.

8 Disclosure

Carbon-12 Labs recognizes that cryptocurrency landscape moves fast and by the time this whitepaper is read in the future, new promising developments and solutions may be introduced by the community at large that may address aspects of this whitepaper. The company reserves the right to modify, update and upgrade sections of this whitepaper protocol that it feels optimizes Carbon's protocol solution.