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# Connecting Suppliers to Consumers in the Specialty Tea Trade Through a Peer-to- Peer Hub

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## SUMMARY

The blockchain software company TeaToken was formed with the explicit purpose of developing a peer-to-peer (P2P) marketplace. TeaToken is launching its platform Teabay, which is a peer-to-peer marketplace focused on connecting consumers directly to tea farmers all across the globe. TeaBay's planned successor will be a decentralised application based on the Ethereum blockchain's smart contract protocol.

Throughout history, tea has consistently played a major role as a commodity in nearly every culture. Developments in transportation have changed the way that tea is shipped all over the world with the introduction of major sea shipping, motor vehicles, and eventually aircraft reducing shipping times and costs of ordering tea. Although the procedure for shipping tea has changed over time, the relationship between the growers, suppliers, distributors, and consumers has not. Distributors today still have control over the price of tea.

Due to its P2P nature, TeaBay offers significant advantages over traditional, centralized marketplaces. With an increase in internet access increasing rapidly all over the world TeaBay will open up the opportunity for farmers to sell their product directly to consumers and evade all the costs imposed on them by the corporations and unnecessary middlemen.

TeaBay offers powerful tools to facilitate both the user experience and to protect customers and merchants. These tools include instant search, customisable filters to screen items, a reputation system. All third parties are removed from the trading process which allows for radically lower fees, a high degree of privacy, and zero censorship. This will improve the quality of life for the many tea farmers and their families, the majority of which earn crumbs compared to their corporate distributors.

All payments on TeaBay are made in crypto-currency, principally in TeaTokens, which can be held in any ERC20 compatible wallet. TeaTokens will be a highly liquid cryptocurrency that offers the functionality for fast peer-to-peer transactions on TeaBay. Payment processes will eventually include Shapeshift; in order to ensure user-friendliness.

TeaBay's decentralized application will be a fully decentralized peer-to-peer marketplace which uses TeaTokens, developed on the Ethereum blockchain to enable global real-time trade and financing. Thus, we plan on using this platform as the much-needed bridge to overcome infrastructure deficit and connect consumers directly with the people who produce their product.

All team members believe in the founding ideals of Bitcoin and blockchain technology and strive to redefine e-commerce as a free, efficient and fair in the globally connected 21<sup>st</sup> century.

## WHERE TEATOKEN FITS IN

As consumers quickly start to adopt P2P marketplaces, there will be a space for start-ups to create innovative platforms for more traditional markets. These marketplaces are efficient at bringing a broader array of goods at cheaper prices to a much larger number of potential consumers. The ability to share instant feedback on the goods purchased are significant advantages over traditional marketplaces. These marketplaces will be at the forefront of a huge revenue source, running traditional distributors out of business.

TeaToken is taking charge of disrupting the obsolete practices of the tea industry. A P2P Tea marketplace with the capability of cutting out the distributor, the middleman that can charge any fee schedule that he sees fit: TeaToken wants to place the power of the tea trade industry into the hands of the people.

By improving certain fundamentals of today's e-commerce consumers can pay less overall for their product and suppliers can take in more revenue. By essentially recreating the infrastructure of an online P2P marketplace and later implementing the Ethereum Network's smart contract protocol, TeaBay intends to bring life to the tea industry on a revolutionary level by eliminating the disadvantages of middlemen and making the market chain for tea more efficient.

## OPPORTUNITY

TeaBay plans to implement smart contracts to provide a marketplace infrastructure and the use of the cryptocurrency, TeaTokens, for customer purchases, advertising and merchant listing fees.

TeaBay provides opportunities to farming communities to improve product quality, community livelihoods and the consumer tea experience. This marketplace allows TeaToken to undercut corporations and middle-men by allowing farmers to sell directly to consumers, thus disrupting the traditional supply model. Farmers now would not need to pay someone to store, repack and re-label their products. The extra revenue that farmers will make will allow the financing of capital equipment necessary to increase the value of commodities in the country of origin, bringing more equity to local businesses and communities in emerging economies.

## WHAT GIVES TEATOKEN VALUE?

Unlike most cryptocurrencies, TeaToken is related to a market: the tea industry. Unfortunately, as many people have experienced, markets are susceptible to collapsing in times of economic hardship. However, tea is an exception to that rule. In the past 30 years, during a time of economic downtime, the tea market has had a reverse effect. Instead of the monthly price of tea decreasing along with other goods, it has risen- as it is a supplementary good. The demand for tea will create and potentially increase the value of the TeaToken itself because it serves as the distributed ledger token related to the TeaToken platform.

TeaToken does not only aim to change the way consumers buy and sell tea. Tea is considered a commodity, basing a cryptocurrency on it creates a stable growth during economic booms and a limited downfall during economic stagnation.

## HOW TEATOKEN ADDS VALUE

TeaToken works as a single currency for instantaneous transactions. TeaBay is more efficient in that it removes the middlemen that create issues among consumers and suppliers in the tea market. TeaToken is able to decrease the loss of value in the global specialty tea supply chain by decreasing the amount of currently used multiple currencies and exchange fees. It can be traded easily, and more importantly, freely, and it is supported on the Ethereum blockchain. This means, a producer in Sri Lanka can sell his or her tea directly to a buyer in America without going through the traditional system requiring banks, loans and middlemen.

The tea producer receives a better price for his or her tea causing the buyer to receive a direct-trade price and a higher quality of coffee. As a digital currency on the Ethereum blockchain, TeaToken is able to carry secure, indestructible, and verifiable data. This means it can be used for tea contracts, pricing quotes, selling location, origin details/verification, shipment tracking, etc. This can reduce and potentially eliminate the need for the multiple, inefficient communications via fax, phone, e-mail, messages that are unfortunately standard in the industry today.

Farmers, brewers, and steepers alike can use TeaTokens to fund crowd-sales and purchases of specialty tea lots - to not rely as heavily on loans, middle-men, and banks to keep their businesses and families afloat and thriving.

This raises the value and decreases the cost of producing the tea for farmers, keeps the farmers out of debt, and increases business for the importers and exporters as they are still needed to help with the shipping and customs synchronization. Brewers will now have access to micro-lots of specialty-grade shrubs more directly from those willing to offer them. This opens the door to thousands of boutique brewers and steepers who previously had limited access to smaller volumes of specialty-grade tea. It also offers farmers and cooperatives more opportunities to sell their best herbs and shrubs at a higher premium.

## HOW TEATOKEN WILL CHANGE THE TEA INDUSTRY

For the first time ever, the Ethereum blockchain will be used to connect suppliers and consumers through a P2P marketplace. No longer will consumers have to abide by the massive fees put out by the middleman. There will be a shorter, more direct connection from end-to-end in the supply chain.

TeaToken has a mission to disrupt the obsolete practices of the tea Industry, forever, through establishing a fully transparent ledger of ownership, cutting out unnecessary parts of the supply chain, and creating as direct connection from end-to-end on the supply chain as technologically possible through its P2P marketplace.

## TEABAY

TeaBay will be a peer-to-peer marketplace that offers the capability of connecting tea farmers to tea consumers. This will be available on the World Wide Web. Both parties will be able to meet eye to eye on pricing, shipping, and payments through the connected hub. This is the first time that tea farmers will independently have access to clientele in desire of their products.

## THE FUTURE DECENTRALIZED MARKETPLACE

### OVERVIEW OF THE TEABAY DAPP

TeaBay will not be funded by the ICO. It will be solely funded from the profits received by our operations on our first version of TeaBay. TeaBay will be a completely new kind of blockchain based e-commerce application with the advantages of a decentralized architecture. The two biggest competitors that exist are popular shopping sites and prevailing monetary systems and payment methods. The technical features will be crucial to maintain its advantages of privacy, freedom, low cost and user experience. In order to ensure broad appeal, a simple user-friendly interface will be implemented.

Ahead, we describe the features that the decentralized applications should contain, conceptually. The minimum viable product will be our initial TeaBay website and then later a decentralized version: if the Ethereum network permits such a technical application to be created. Decentralized applications have proven to be a great way to implement peer-to-peer network transactions, although all features and applications discussed are speculative and may not be executable on the Ethereum network as critical applications are not viable on the blockchain at the time of writing. Reading past this point, you must understand that the current limitations of the Ethereum network provide a barrier of entry for the viability of the application and its features, **which may not be executable** on the Ethereum blockchain.

TeaBay will be both a website and a downloadable blockchain application. This will allow access from every user's personal computer, and there is no single point of failure. No blockchain download is required. This is how we plan to deliver the market to tea farmers where access to the internet may be limited. TeaBay will be available for Windows, Mac OS and Linux.

All payments for goods and services are made in TeaTokens from your wallet, because the funds need to be withdrawn and sent to a smart contract at the time of purchase. Purchases can be made from an external Ether wallet or exchanged to TeaTokens in an external exchange or via ShapeShift from within TeaBays interface.

Funds are stored in an ERC20 compatible Ethereum wallet and can be sent to an exchange or external address. Any TeaTokens stored there remains in the users' control. The wallet is secured with a user-generated passphrase that must be created before the marketplace can be used. Support for multiple wallets within the marketplace is planned.

## RATING SYSTEM

Reputation systems play a crucial role in establishing trust in online communities and drive many modern online businesses, ranging from auction markets to transportation companies. A typical reputation system features a collection of actors executing a protocol that allows users to leave reviews for their interactions with each other. Feedback accumulates over time, and can be queried by others users in the system.

Users with low or negative reputation score may be filtered out in order to protect buyers and sellers from fraud and wasting time.

## PAYMENT SEQUENCE

The following sequence illustrates the arbitration on the TeaBay decentralized application.

- The seller creates a listing and chooses a “negotiator” who then sets a fee, to be charged only in the case of a dispute. At this point, the arbiter does not get paid and deposits a gas fee in case it needs to be called.
- The buyer purchases tea. Their money moves from the wallet to a smart contract
- The seller ships the tea to the buyer and indicates to the contract that they have fulfilled their part of the sale
- The buyer receives the tea.
- The buyer can finalize the sale or open a dispute. If the sale is finalized, the money moves from the smart contract to the seller. The transaction is settled, the negotiator does not get paid and the seller is refunded the fee.
- If the buyer opens a dispute, two things can happen:
  - The seller agrees with the dispute, and the money moves from the smart contract back to the buyer's wallet. The negotiator does not get paid.
  - The seller also wants to open a dispute. In order to do so, the seller pays \$5 in fee to a smart contract.
- At this point, the negotiator gains control of the tokens, and he can send the money only to the buyer, or to the seller, or to both in a ratio that he chooses.
- The negotiator only gets paid if both parties dispute the transaction. In that case he is fully paid by the seller, out of the escrowed funds. If there is no dispute, the negotiator does not get paid, and choosing a negotiator was free for the seller. For the buyer, opening a dispute and arbitration is always free of charge

## FILTERS

By the fundamental design of TeaBay, censorship is not possible since the entire Blockchain needs to be viewable to everybody. Listings and transactions are written directly into the Ethereum Blockchain, which is securely maintained by thousands of miners around the world. It is not possible to control the listings of the items; neither TeaToken nor any third party can remove the listings.

TeaBay will contain a filtering system. The system does not remove the listed items from the Blockchain, but it enables users to filter out results so that they are no longer displayed. TeaBay will include a basic filter for now, which will be



maintained by the TeaToken team and which is turned on by default. Only known tea farmers will be allowed to sign up to be a seller on the platform.

## INSTANT SEARCH

Many e-commerce sites provide powerful instant-search tools to help customers find what they are looking for quickly and to browse the site smoothly and easily. TeaBay will also offer the same tools. Buyers will be able to use a search engine-like functionality by entering the desired item, and as they type, they receive a list of matching products in real time. To conduct a search, no login is needed, making it possible for everyone to browse TeaBay without registering.

## TECHNICAL DESCRIPTION

TeaBay utilizes Ethereum smart contracts to list items for sale, to organize the buy and sell process, and to hold funds. Smart contracts enable a transparent and safe trading process. As all data on the Ethereum Blockchain are publicly visible, private communication requires encryption.

TeaBay does not use encryption to promote foster scams or to promote selling illegal items, but reflects lessons from violations of privacy that have occurred before. Using a decentralized Blockchain-based system makes personal information less prone to theft but this will require strong cryptography in order to protect data.

Advanced encryption standard (AES) is used for data encryption, and one-time private keys are generated for the buy session. One-time keys allow the buyer and seller to share their communication with a third party, without revealing their private keys.

The store itself is a smart contract holding a list of events. Each event is a new listing. Only registered tea farmers will be able to add new listings to the store by paying the listing fee. Using events is a cheaper way of utilizing the smart contracts' publicly visible storage.

A separate smart contract will be created for each new listing. Events in the store only reference those contracts by the contract address. Each listing contract also stores a list of events representing the trade history of the item. All the funds are held by the contracts functionality until the purchase process is completed.

The purchasing system is provided by the listing contract itself. Funds paid by the buyer stay inside the contract and await confirmation from the buyer. If the buyer says YES, the money is sent to the seller. If the buyer says NO, the money is locked up in a disputed state. At this point, the seller should choose YES or NO to either send the money to the buyer or to require arbitration. If both parties say NO, the money is locked and a third party negotiator will choose whether to unlock the money to the buyer, to the seller, or to both in some ratio. The negotiator takes a percentage fee or a set fee from the funds.

Each product for sale has a history of buys and sells, known as orders. All orders contain useful information about the action, timestamp, any attached encrypted message, and information about the message sender.

When the app loads the orders, they are grouped by the purchase order so each item may have multiple purchase orders and each purchase order may have multiple related orders. A purchase is a buying session and will have some related

fields attached, such as, a session key for encrypted communication, a buyer's public key, the total payment amount for purchasing and receiving any messages from the buyer with the required shipping info.

## BUSINESS MODEL

The TeaBay decentralized application revenue model differs from those of traditional e-commerce platforms. Traditional e-commerce platforms typically charge a commission on the sale price, sometimes in combination with a flat fee.

The merchants will not be charged a commission and the customer will not be charged any fees. The only costs are payments for the service of listing an item. This must be paid in TeaTokens (TEA). TEA will be a reusable ERC20 token that is freely transferable on the Ethereum Blockchain and can be held within an ERC20 wallet. The price of TEA will vary over time, based on a number of factors:

- Organic growth of user demand
- Speculative demand
- BTC/ETH exchange rates
- The cost of gas within the Ethereum network.

The listing fee will always be adjusted to track the fiat listing price as close as possible. Items and listing fees can only be purchased for in TEA.

TEA tokens may be purchased within the application through a link to an external exchange, or from other TEA holder. TeaToken is making these tokens available ahead of TeaBay's launch at a low initial price in an ICO. Early participants who purchase TEA during the token pre-sale will receive the tokens at a discount, and they will have the opportunity to participate from the start in TeaBay's traction and growth.

The price of TEA might grow through the market acceptance of the platform as an e-commerce solution. As TeaBay grows in popularity and more merchants join the platform, higher revenues will allow the completion and release of new features that are already in development. This will further increase the appeal of the platform and lead to higher transaction volumes on TeaBay.

TeaToken will receive all the listening fees and use these funds for marketing and continuous development. TeaToken will then redeploy TEA tokens into the market to raise their value while engaging the user community.

TeaToken tokens do not indicate ownership of a company, will not pay dividends, and TEA holders will not earn any interest. The token is an integral part of TeaBay's economy, and its value will reflect the degree of penetration and activity within the platform. The more merchants are listing items for sale TeaBay – and thus are driving customer adoption –, the greater the demand for TEA will be. Effectively, holders of TEA will act as sellers of listing power. As TeaBay's popularity grows and more merchants join the platform, new features will be released, which will further increase the interest among buyers and sellers.

## ICO

### GOALS

Our idea is to create a platform of immediate exchange of tea for TeaTokens, which is a “credit” that can further be used in trading between users and can be used in the conversion of the income received from selling tea on the platform. To do so, we need the working capital for executing obligations of sellers, buyers and farmers of tea, as well as the marketing and development capital which will allow operating the project at a global scale.

We expect our project to be appealing for the members of the crypto-community, who will be able to participate in the market growth with their TeaTokens, as well as members of the tea farming community, who will take part in building the new market infrastructure.

### PARAMETERS

#### STAGE 1: ICO

- The pre-sale period will last one week.
- One Ether can be traded into ten thousand (10,000) TeaTokens during this stage.
- Tokens sold in this stage will be the backbone of the platform and will incentivize both farmers and consumers to join on the global scale.

#### STAGE 2: ICO

- The second stage of the ICO will last one week and have a fund raising goal of 10,000 Ether.
- One Ether can be traded for five thousand (5,000) TeaTokens during this stage.
- The tokens sold here will be a fundamental part of changing the tea industry. Token holders will still be able to be a part of this movement, while further incentivizing increased participation on TeaBay.

#### STAGE 3: ICO

- The third stage of the TeaToken ICO will last until the contract is ended. We are aiming to raise 5,000 Ether in this stage.
- One Ether can be traded for two and a half thousand (2,500) TeaTokens during this stage.
- ICO token holders will be the final participants in the TeaToken movement. Although not getting the best value, participants will be early adopters for a revolutionary market.

## TEA TOKEN DISTRIBUTION

- Total Number Of Tea Tokens: Determined by ICO
- 1<sup>st</sup> stage conversion value: 1 Ether = 10,000 TeaTokens
- 2<sup>nd</sup> stage conversion value: 1 Ether = 5,000 TeaTokens
- 3<sup>rd</sup> stage conversion value: 1 Ether = 2,500 TeaTokens
- The founder token buyback will occur post-ICO and the percentage of buyback will vary.
- The whitepaper will be updated post-ICO to include TeaToken distribution.

## ROADMAP AND DEVELOPMENT PLAN

Our main product under this ICO is creating an exchange service to connect farmers and tea enthusiasts and vice versa with a peer-to-peer marketplace powered by the Ethereum blockchain. Farmers accept payments in TeaToken from anywhere in the world without having to worry about exchange rates. We simplify the whole process of trading tea from end-to-end, solve the problem of exchange speed as well as significantly expand the range of available speciality teas.

- August 2017: We are launching the first TeaToken cryptocurrency for buying and selling tea. TeaToken will solve the problem of the diversity of domestic currencies and the lack of real value of coins beyond their limits. We will also start to enlist farmers to test TeaBay before full release.
- In August 2017: We launch the platform, TeaBay.
- In Q1 2018: More details will be released on the development and viability of the decentralized TeaBay. The Decentralized Application (DAPP) will be in development, if viable, and the TeaBay website will be used as a testing ground for when the marketplace goes completely decentralized.
- Q3 2018: Permitting such a critical application on its network, the decentralized TeaBay application will be released onto the Ethereum blockchain.
- After the launch of the marketplace, additional features will be considered based off of community feedback. Some features which will be considered are:
  - o Internal reputation systems
  - o Tor integration
  - o Pricing in national currencies and the purchase of TeaTokens in fiat currencies

After the marketplace is running efficiently, we plan to focus on the farmers' base enlargement by highlighting our competitive advantages and our operable marketplace thus boosting our market dominance in order to raise the demand for both TeaToken and TeaBay.

## FOUNDER PROFILE

Alex Martins is an Electrical Engineer from Vancouver, Canada. Although formally educated in engineering, Alex took quite an interest in the digital currency markets. After success in trading digital currencies, he decided to learn how to program in Solidity, the Ethereum smart contract language. After mastering this language, he took it upon himself to create the project TeaToken, with the goal to completely revolutionize the tea industry from the ground up.

## DISCLAIMER

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