



Tokens Express Whitepaper

Social Network for Cryptocurrency HODLers

*A True ToKen Economy. Earn Your **TKE**.*

<https://www.tokens.express>

March 2018

Abstract

Tokens Express is a cryptocurrency focused social network that addresses the issues of [fraud](#) and misinformation plaguing the cryptocurrency community today.

Through verifiable [data](#), [identities](#) and [communication](#) members are empowered with the resources they need to make better decisions based on facts rather than outside influence or gut feelings.

[Safeguards](#) are put in place to prevent phishing attacks, the most used attack vector in the space¹ which were responsible for the loss of nearly \$400M² to scammers.

Our [token economics](#) disincentivize bad actors and incentivize the submission of valuable cryptocurrency metrics, information and analysis with an ERC20 token called [TKE](#).

Our suite of cryptocurrency management tools are designed to be a best in class offering, giving members a strong reason for returning to the platform and stimulate the token economy. These cover the essentials: [wallet](#), [historical portfolio tracker](#), and [e-commerce](#).

This whitepaper:

- Examines our [technical proposals](#), the [philosophy](#) behind our decentralized app (DApp) and system of shared [worker nodes](#) which aid in scaling the Tokens Express platform;
- Demonstrates our [Alpha](#), currently available on iOS and [Google Play](#) with roughly 10 - 50,000 downloads todate;
- Introduces the Tokens Express ERC20 token [TKE](#) and its vital role in the functioning of the Tokens Express platform.

For a comprehensive examination of the market need and product features of Tokens Express, please [continue reading](#).

¹<https://www.reuters.com/article/us-crypto-ico-attacks/ico-funded-projects-hit-by-100-cyber-attacks-a-month-report-idUSKBN1FD1H2>

² <https://www.cnn.com/2018/01/22/nearly-400-million-lost-stolen-from-sales-of-new-digital-coins.html>



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1. EXECUTIVE SUMMARY

This section briefly outlines what Tokens Express does.

1.1 In a nutshell: Tokens Express = E*TRADE + Wikipedia for crypto

Tokens Express is a social network that provides everything you need to manage your cryptocurrencies: multi-asset wallet, historical balance tracker, trading and a knowledge base built by the community through reviews and chats, incentivized by an ERC20 token called [TKE](#).

We aim to build the most comprehensive and reliable database of cryptocurrencies through incentivized crowdsourcing and moderation.

Members submit and moderate content about tokens and ICOs through our contributor platform. Trading insights are yielded through using our portfolio management tools. This is all incentivized by [TKE](#).

Core Goals

- Eliminate spam and fraud through education and technical safeguards
- Easy adoption for non technical users
- Comprehensive reliable database of cryptocurrency data
- Widespread trading insights

This document explains our proposal for the architecture of a fully decentralized Tokens Express. Its features [technical methods](#), the [philosophy](#) behind the ecosystem and our [roadmap](#).

The [TKE ICO](#), as explained more fully in section [Z](#), will offer approximately 30% of the total supply of [TKE](#). During that time users can purchase [TKE](#) for \$.05 USD. In sum, [TKE](#)'s market cap is \$25,000,000 USD.

2. MOTIVATION

Throughout human history, innovation and curiosity has lead to [new technology](#) which has the potential to change all the preconceived notions of that time. Blockchain is that innovation of our time, and as cryptocurrency is rapidly becoming mainstream we predict that it will likely be an integral part of our daily lives in the near future. It allows us to achieve complex and secure communication without the need for trust. This paradigm has lead to applications that were

previously impossible, the most notable being Bitcoin: a global decentralized system of value transfer. Such a system that doesn't rely on trusting any members for exchanging value is not possible today without a decentralized protocol and cryptocurrency like incentive.

2.1 Trustless Value Transfer

Trustless value transfer will enable many applications that were previously infeasible and improve existing systems. One example is [Sia](#), a decentralized storage platform built on blockchain technology. Sia provides the same utility as Dropbox, Google Drive and other centralized cloud storage platforms. The major difference is that users of Sia are not required to trust that their files will not be viewed or tampered with by employees or government agencies. Another major benefit is the potential for much greater redundancy than a centralized entity could reasonably afford while keeping prices low.

2.2 Tokens

Siacoin and Bitcoin are examples of cryptocurrencies that enable value transfer for a single use case. Other blockchains such as Ethereum, NEO, and Stellar enable another class of cryptocurrency called tokens (and soon Bitcoin too with [RSK](#)). Tokens are cryptocurrencies that represent a fungible asset or utility. These are created using smart contracts, which provide a general purpose way for developers to create applications with various use cases. Because of the general purpose nature of smart contracts, tokens are quickly becoming the dominant form of cryptocurrency.

2.3 Classification of Tokens

There are two types of tokens: Utility and Security. A utility token can be used to access goods or services within an application. A security token is an investment vehicle similar to stocks or equity. Both types of tokens have been used to raise funds for the development of new companies, usually related to digital products. These crowdfunding campaigns are referred to as ICOs or "Initial Coin Offerings".

Utility tokens sold in an ICO are being purchased to be used in the application that the funds are being raised to build. This is very similar to pre-purchasing products or services through Kickstarter or Indiegogo campaigns. Security tokens sold in an ICO are being purchased to share in the value of the company and in some cases gain various rights and privileges within the company.

ICOs are quickly becoming the preferred method for raising funds to develop software in the cryptocurrency space. They have raised 3.5 times³ the amount of money that has been raised by traditional Venture Capital since 2017. This has opened up more access to resources than ever before and presents great opportunities for innovation.

2.4 Fraud

As mentioned earlier, cryptocurrency is rapidly becoming mainstream but the tools available are still only accessible to technical early adopters. Because of this learning curve, nearly \$400M has been stolen by hackers through very simple phishing attacks in which the unsuspecting are instructed to send their “private keys” or funds directly to hackers in the guise of legitimate ICO companies. Millions have also been stolen by scammers who create websites that advertise investment opportunities in fake companies while impersonating real industry leaders.

Furthermore, the public is investing billions into seemingly promising companies without proper due diligence. In some cases, utility tokens are being purchased without any understanding of the underlying technology or use case. Other times security tokens that have clear markers of traditional financial fraud such as ponzi schemes, pyramid schemes and pump dump scams are being purchased and advertised widely. This all happens without any proper warnings or trusted sources of information.

3. PROBLEMS

Tokens Express aims to tackle the rampant fraud and financial harm that plagues the cryptocurrency industry today and is being exacerbated as mainstream adoption continues to accelerate. The major factors contributing to fraud are: lack of reliable information and technical complexity.

3.1.1 Reliable Information

Today, an aspiring token holder has few options for verifying the legitimacy of claims made by new cryptocurrency based projects. They may even have a hard time finding something as fundamental as the correct smart contract address. Attempts to seek information can be thwarted by scammers posing on social media and popular chat groups as founders or employees of the token’s parent company. Below are just a few examples of real world fraud that is occurring daily. One of which was discovered by us on January 21st before the target company was even aware and another on April 15th that we covered on [HackerNoon](#).

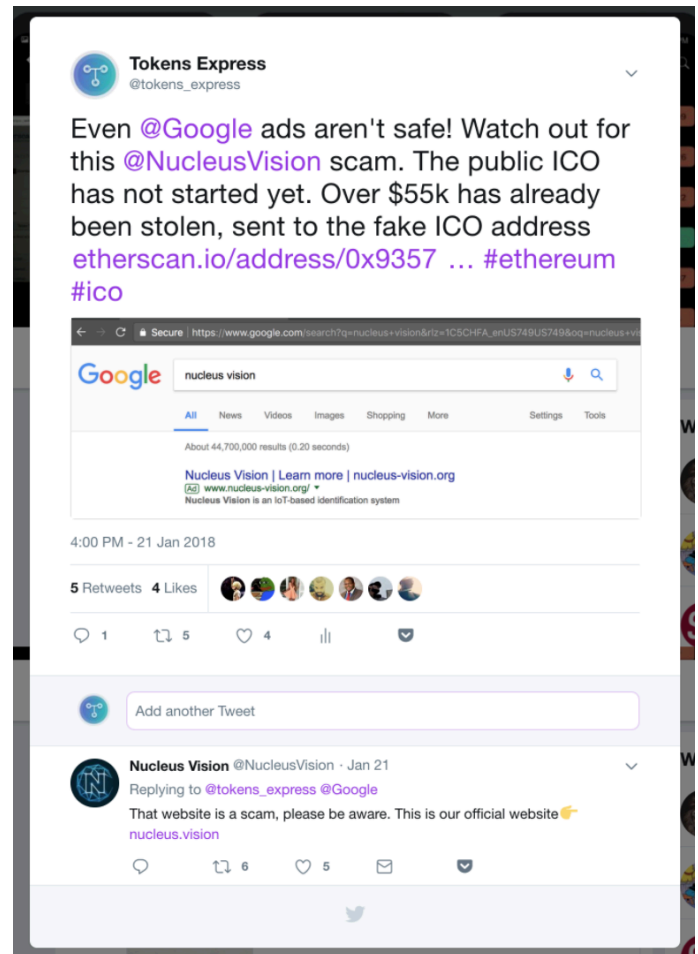
³ <https://techcrunch.com/2018/03/04/icos-delivered-at-least-3-5x-more-capital-to-blockchain-startups-than-vc-since-2017/>

3.1.1.1 Nucleus Vision

On January 21st 2018, we discovered a phishing website targeting those interested in the [Nucleus.Vision](#) project. It claimed that you could participate in their ICO that day by sending ethereum to their addresses. In reality the ICO had not yet started at the time.

To make matters worse, the phishing website was discovered as part of a google search for the company name "nucleus vision" listed as the very first promoted result. Scammers were buying ads to promote their fake website.

It's not likely that any newcomer would be able to detect this scam. The domain <http://nucleus-vision.org> looks legitimate and to the less savvy is even more familiar than the official <https://nucleus.vision> domain.



<https://twitter.com/NucleusVision/status/955314851068313601>

3.1.1.2 Vitalik Buterin

[Vitalik Buterin](#) is the founder of ethereum and is still very influential in the project. He is very active on twitter and scammers have taken note. Various twitter accounts are impersonating him using his profile picture and variations of his name. This [tweet](#) was sent out February 18th 2018 warning users of the ongoing scams.



In reply to the tweet, a scammer immediately posted a reply in the same thread posing as Vitalik asking for users to send ether to his address with the promise of increasing returns. For the next 5 days, some unsuspecting newcomers who saw the real Vitalik's original tweet also saw the scam tweet beneath it and sent over \$10k worth of ethereum to the scammer.

<https://etherscan.io/address/0x1d4c88ee2532d5f1039b5d66ab559cc708cbd9f3>

3.1.1.3 Government Twitter Account Hacked

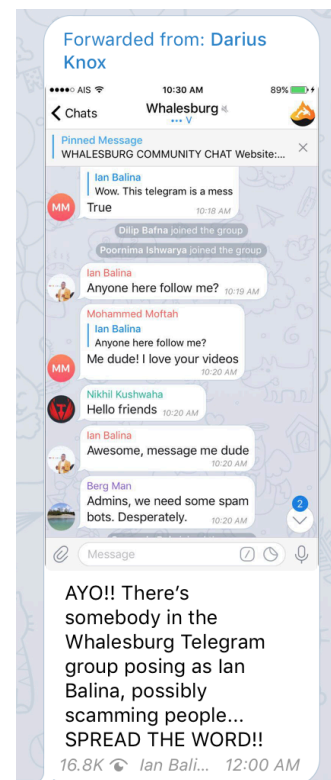
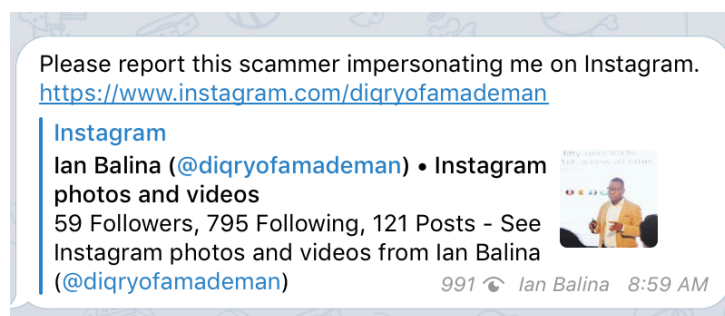
On April 14th, [APC Nigeria's government twitter account](#) was hacked. The hacker likely targeted the account because it was verified. Twitter allows changing the username of accounts that are verified. This dangerous policy allowed the hacker to impersonate big names in crypto such as TRON founder [Justin Sun](#) and one of the biggest cryptocurrency exchanges [Binance](#). Even those familiar with crypto scams would have a hard time noticing the scam account after seeing the blue verified badge. The hacker used these false personas to trick people into sending tokens, bitcoin and ether to them.

We covered the story on [Hacker Noon](#). Soon after publication, the hacker blocked our twitter account. A few hours after that, twitter suspended our account permanently without proving a reason or the possibility of appeal. As of writing our account is still suspended and the offending account is not, while the hacker remains in control of it. Twitter's severely lacking support has allowed a good actor who actively thwarts scams to be permanently removed from the system, while scammers thrive in the system with verified accounts. These are dangerous circumstances for the crypto community.



3.1.1.4 Ian Balina

[Ian Balina](#) is a popular cryptocurrency influencer that regularly and openly discusses his investments and opinions on upcoming ICOs. Scammers have created accounts on Instagram, telegram and twitter impersonating him to promote scam ICOs and steal user funds. He regularly has to update his community about the scams.



3.1.2 Wrong Tools For The Job

One thing that all of these scams have in common is the inability to verify that the account or address which funds are being sent to belong to legitimate parties. This problem naturally arises when the platforms being used to facilitate discussion about cryptocurrency were **not built to prevent** the new level of fraud possible with pseudonymous cryptocurrencies. Twitter verification is not readily accessible to new companies with upcoming ICOs as the verification process is subjective. In November 2017, Twitter completely suspended their verification program⁴, further exacerbating the issue. Instagram and Facebook also have verification programs, but it's currently not possible to request a verification badge directly, leaving the majority if not all new companies preparing to ICO without any options for trusted online identity verification.

3.1.3 Technical Complexity

Acquiring cryptocurrency and contributing to ICOs can be a fairly technical process for the average non-technical user. Unlike the traditional banking system, you are responsible for not only creating your account, but securing it too. You are tasked with finding a legitimate “wallet” application that can be used to create your account and then required to manage your private keys. There are many benefits to managing your own private keys, but the complexity of doing so should be hidden by software.

After creating your wallet, you are tasked with finding ways to send ethereum to the ICO smart contract address. Most newcomers flock to websites like myetherwallet.com which allow you to import your wallet and send funds. This is a fine tool to use, though many have been tricked into using phishing websites that have the similar urls and the same interface but instead it steals all of your funds after receiving your private key.

Finally the address you are sending funds to must be verified to avoid sending funds to the wrong party or scammer. Once funds are sent, it's impossible to have them refunded.

Cryptocurrency exchanges such as Coinbase or Poloniex greatly reduce the complexity of acquiring cryptocurrency, but are not options for contributing to ICOs due to technical limitations and many have lost funds trying to do so.

⁴ <https://www.theverge.com/2017/11/9/16628290/twitter-jason-kessler-charlottesville-verification>

3.2 SOLUTIONS

This section explains our method of correction for the issues plaguing cryptocurrency investor and influencers.

3.2.1 Token Economy

We are building a token economy in which users are incentivized to take certain actions in exchange for tokens. Through this community we're aiming to build the most comprehensive and reliable set of token data. The system is similar to Wikipedia where contributors and editors come from the general public. Data contributions and fact checking are a shared responsibility for the entire community and will be incentivized by an ERC20 token called TKE.

3.2.2 TKE ERC20 Token

[TKE](#) is designed to be an incentive for members to perform actions that help maintain and grow the same community they are benefiting from. This comes in the form of special privileges and access to services on the platform. The system is designed to greatly benefit those who provide the most value to the community.

3.2.2.1 Services

Service	Benefit
E-Commerce	Members can buy and sell cryptocurrency or dapps using TKE to pay for transaction fees.
API	Platform data such as tokens, price data, ICOs, reviews and ratings can be accessed via a JSON api for a fee paid in TKE.
Advertising	Members can purchase advertisements to be shown in the news feed. Each ad is reviewed by a random set of community members who earn TKE for approving ads before they are published. Ads can only be purchased with TKE, making it a potential source of demand helping keep the TKE economy running.
Polls	Members can purchase polls to be shown in the news feed. Each poll is reviewed by a random set of community members who earn TKE for approving polls before they are published. Polls can only be purchased

with TKE, making it a potential source of demand helping keep the TKE economy running.

Verification	Token founders can verify their token pages and accounts in the system by staking TKE from their token's smart contract. Only verified token pages can send messages to their followers. Once verified, the username cannot be changed.
Chat Groups	Each token can have its own chat group created for general discussion and support. Groups can be created for a fee paid in TKE.
Price Alerts	Each member is granted a limited amount of price alerts for watching the price changes of a cryptocurrency. Extra alerts can be enabled for a fee paid in TKE.

*All fees paid in TKE are sent to Tokens Express Inc's [Operational Expenses](#) token pool.

3.2.2.2 Privileges

Privilege	Benefit
Moderation Weight	Members show their commitment to the community by holding TKE. In exchange they receive higher voting power when it comes to flagging reviews and ratings or banning accounts from chat groups.
Chat Participation	Chat messages sent by members can only be seen by admins by default. Members can make all of their messages visible to the entire group by staking TKE. This helps reduce scams, spam and policy violations.

3.2.3 Earning TKE

The easiest way to acquire [TKE](#) is by purchasing it during the ICO or other third party platforms afterwards. Members can also earn [TKE](#) by taking certain actions that provide value to the community. The rate of rewards reduce exponentially over time, giving early adopters more incentive to seed the platform in order to reach critical mass. Those looking to earn [TKE](#) can perform any of the following incentivized actions broken down into three categories **Contributions**, **Moderation**, and **Insights**:

3.2.3.1 Contributions

Members can earn [TKE](#) by adding valuable content to the platform such as tokens, ICOs, ratings, reviews, useful chat messages and dedicated computing resources through worker nodes and more.

3.2.3.1.1 Tokens

In 2017 over 700 new tokens were created. This list is expected to grow at accelerating rates. Because of how new tokens are introduced, there is no central source to reliably find information on any token. Members can get rewarded for listing tokens on the platform and providing details such as: name, symbol, contract address, logo, description, external links, and video/image.

Members can also earn [TKE](#) by rating and reviewing tokens on the platform.

3.2.3.1.2 ICOs

There were over 913⁵ ICOs in 2017. The large majority of ICOs are conducted outside of structured platforms like KickICO and Republic.co. Instead, they create their own crowdfunding web page on their website and manage the entire process individually. Because of this, there is no central place to learn about ICOs. Members can get rewarded for listing ICOs (old and new) on the platform and providing details such as: name, symbol, smart contract address, logo, description, team, video/image and external links.

Members can also earn [TKE](#) by rating and reviewing ICOs on the platform.

3.2.3.1.3 Chat Participation

Tokens Express has a realtime chat platform that was specifically engineered to avoid the massive fraud happening on popular chat platforms today (Slack, Telegram..etc). Useful members of chat groups can receive tips from other members in [TKE](#).

3.2.3.1.4 Worker Nodes

As explained more fully [below](#), members can dedicate computing resources that help scale the platform by installing and running worker nodes. [Storage](#), [Balance](#) and [Ticker](#) nodes help the system remain fast as the community grows and contributes to the reliability of historical price and token balance data.

3.2.3.1.5 Portfolios

Members can choose to publicize their portfolios and provide valuable trading data to the community. Anyone can follow another member's portfolio. Members that have followers earn [TKE](#) proportional to their following.

⁵ <http://markets.businessinsider.com/currencies/news/how-much-raised-icos-2017-token-data-2017-2018-1-1014647330>

3.2.3.1.6 News Feed Consumption

The News Feed contains the latest cryptocurrency news, general announcements, advertisements, polls and boosted messages from other members. Members can earn [TKE](#) by swiping and viewing content in the news feed. [TKE](#) is only earned when the following types of cards are viewed: advertisements, polls, and boosted member messages.

Viewing cards is incentivized but **clicking on them will never be incentivized**. Viewing a card presents an opportunity for engagement if the viewer is interested in the content. Clicking or conversion will only happen if the card is relevant and interesting enough to the viewer.

Advertisements and boosted member messages are another potential source of demand for [TKE](#) because they can only be purchased with [TKE](#).

3.2.3.1.7 News Feed Curation

Members can earn [TKE](#) by suggesting articles to appear in the News Feed. Other members can upvote or downvote articles based on a variety of factors such as relevance to cryptocurrency, importance, and validity. Submissions with the highest upvotes will appear in the news feed. Members that submit articles which make it to the news feed are rewarded with [TKE](#).

3.2.3.1.8 Poll Participation

Members can earn [TKE](#) by participating in polls. This will help provide valuable research data. Polls can only be created by paying a fee in [TKE](#), making it another potential source of demand for [TKE](#).

3.2.3.2 Moderation

Since every member of the community shares the same roles and responsibilities, they all have the power to disincentivize bad behavior that violate community policies. Each action that adds content to the platform will require a certain number of peers to review it before being published.

Members can visit the “Earn Free Tokens” section of the app to be presented with a list of pending content to review. Members earn [TKE](#) by voting for bad actors to lose the [TKE](#) that was staked in order to add that content to the platform. Members holding more [TKE](#) have higher voting power. Below is a table of violations that can result in a member losing [TKE](#):

Submission	Violation
Token Pages	Adding fake tokens or misleading information about a token.

ICO List	Adding fake tokens or misleading information about an ICO.
Reviews	Spam reviews, misinformation, advertising.
Chat	Spam, advertising, chat specific policy violation.
Ads	Scams, misinformation, ad specific policy violation.
Polls	Scams, misinformation, poll specific policy violation.

Preventing Moderation Fraud

In a broken system, voting power can be amassed by one bad actor who can influence the majority decision in submission approvals. Bad actors are discouraged in the following ways:

Staking Requirement

Sybil attacks which involve creating many fake accounts and approving their own submissions are made harder by the staking requirement for moderation because an attacker can only make accounts for as much TKE they can acquire.

Random Assignment

Moderators are randomly assigned submissions for review. This prevents attackers from organizing a voting pool because they don't control what they get to vote on.

Reputation System

Moderators have a reputation score based on the success of their moderation history. Each time a moderator's vote matches the final majority vote, they get increased reputation. Each time there is a mismatch, their reputation decreases. Decreases in reputation are larger than increases. This discourages bad actors from voting randomly to get rewards. The votes are also hidden, preventing bad actors from chasing the current majority at the time of voting.

Contributors also have a reputation score that follows a similar model, increasing on approved submissions and decreasing on rejected ones. Their score affects how quickly their content gets reviewed and how often they can submit content.

Reputation scores can be positive or negative integers.

3.2.3.3 Insights

Tokens Express has a suite of portfolio management tools that aim to give members a strong reason for returning to the platform and stimulate the token economy. Members can choose to publicize the data produced from the usage of these tools. This data will help power financial prediction models and provide insights for the development of future services on the platform. Members are incentivized to publicize their data in exchange for [TKE](#). The following actions can be publicized:

- Store tokens in Tokens Express wallet
- Send transactions from Tokens Express wallet
- Link external exchange accounts to Tokens Express account
- Send orders to external exchanges through Tokens Express UI

3.2.3.4 Worker Nodes

In order to have a true self sustaining token economy, operation needs to be decentralized to the community. Peer moderation provides a way to decentralize content management. Worker nodes provide a way to decentralize operating and maintaining the technical resources that power Tokens Express.

Similar platforms such as Wikipedia rely on large donation campaigns in order to fund the resources needed to keep things running. Tokens Express provides stronger incentives by offering the chance to earn [TKE](#) for contributing computing resources through worker nodes instead of asking members directly for money. These can be compared to bitcoin miners who provide computing resources to verify transactions on the network and are rewarded with bitcoin.

3.2.3.4.1 Balance Checking via Blockchain Proxy Nodes

Blockchain nodes provide a way for clients to access blockchain data needed to fulfill certain queries through http(s) or websockets.

One of the advantages Tokens Express has over other cryptocurrency managers is the automated nature. Members aren't required to manually enter in a list of their holdings and every transaction. All of this information is automatically pulled from the relevant blockchain protocol. Smart contract based tokens (Ethereum, NEO, Stellar, RSK) were not designed for associating an address with the tokens they hold. Because of this, discovering tokens in an address is a very inefficient process that requires checking the address against every single token in existence.

Over 700 tokens were created in 2017 alone. If this growth continues, address balance scanning will become slower over time as the number of tokens increases. To address this scaling issue we've decentralized the responsibility of balance checking to the community. Each member can earn TKE by running a blockchain proxy node on their desktop or server that will scan all new addresses that come in for balance data.

In the long term we are working on maintaining a modified version of each blockchain that retains associations between addresses and tokens that would make token lookups perform in constant algorithmic time regardless of the number of tokens in existence.

3.2.3.4.2 Ticker Nodes

The amount of [TKE](#) earned and [TKE](#) staking requirements cannot be fixed. Doing so will disrupt the token economy as the value of a single [TKE](#) token changes over time. In order to have a stable economy, [TKE](#) units will be relative to the price of USD. This will require a reliable source of price data.

Additionally, in order to provide historical price data for tracking price movements and changes over time, we need to store all price information about every cryptocurrency as often as every 5 seconds. Price data will also be used for price change alerts. As the number of cryptocurrencies and exchanges grow, this will need to rely on a large computing resource. Members of the community can earn [TKE](#) by running ticker nodes that pull price data from various sources.

3.2.3.4.3 Storage Nodes

Members can earn [TKE](#) by offering their hard drive space to join the distributed data store for all of Tokens Express' data.

3.2.3.4.3 Gateway Nodes

Members can earn [TKE](#) by running gateway nodes which fulfill requests that requires coordination between multiple nodes or aggregation of data across nodes.

3.2.3.5 Token Pages (Reliable Data)

Token pages show useful information about a token such as current price, historical price charts, metrics, description, related links, videos, reviews and more. Token creators can verify their token pages through a [verification](#) process that involves sending TKE from the token's own smart contract. This provides a verifiable blockchain proof that the creators of the token endorse the existence of the page.

3.2.3.6 Reviews and Ratings

Members can review and rate tokens and ICOs based on the following factors: Product, Team, and Utility.

3.2.3.7 Token Chat (Reliable Communication)

Token founders can start a chat group on verified token pages. Once enabled, any member can join the chat from the Token Page. Token Chat was specifically designed to address [major security flaws](#) in today's popular choices for discussion about cryptocurrency (Telegram, Slack, Facebook, Twitter, etc).

3.2.3.7.1 Verification

Before a token chat group can become active, the owners must verify themselves by sending [TKE](#) from the token's smart contract. This is the only way to create the group's first admin. Subsequent admins can be created by other admins. Admins must use 2FA to create new admins or enter chats.

3.2.3.7.2 TKE Holding Requirement For Sending Messages

When policy violations occur, the chat group enters a temporary "staking period" in which newly joining chat participants must hold a certain amount of [TKE](#) to send messages that will be visible to all members of the chat group. Without [TKE](#), users can only send messages that are visible to admins. This disincentivizes scammers and spammers from flooding chat groups with misleading messages and further violations.

If existing chat participants start committing violations during the staking period, a temporary staking requirement for existing participants will be introduced.

In the worse case scenario, staking will always be required due to persistent spam attacks. In the best case, no staking is required when no violations occur.

3.2.3.7.3 Burning TKE of Policy Violators

Any user that violates the policy for message content will be banned. In traditional chat systems, violators can rejoin under new personas. This is disincentivized by burning the [TKE](#) that was staked in order to join the chat, making it costly for spammers to create many fake accounts. Ban decisions require consensus from the active chat group members.

3.2.3.7.4 Filtering Message Content

Most fraud in the crypto space is due to very simple phishing attacks in public places. Phishing can be greatly reduced by filtering out ethereum addresses and links from message content and only allowing admins to send them.

3.2.3.8 ICO List

Members can add new ICOs to be listed on the platform. Each submission is reviewed by a random set of peers before being submitted for verification to be published.

3.3 Technical Complexity

We're building a set of tools that make managing cryptocurrency easier for non-technical users. These are designed to educate newcomers about best practices and provide verified data on the platform. **These features serve as an additional incentive for members to regularly return to the platform and stimulate the token economy.**

3.3.1 Multi-Asset Wallet

Create multiple crypto wallets. Send and receive coins and tokens. Supports Ethereum (ERC20), NEO (NEP5), Stellar (Assets), and Bitcoin.

3.3.2 Portfolio Tracker

Aggregate crypto balances across many completely different accounts (3rd party exchanges, wallets, raw addresses) automatically into one dashboard. Changes in the total portfolio value are charted over time.

3.3.3 Dapp Store & Browser

Users can operate web based dapps powered by the tokens in their portfolio. Dapps run in an in-app browser that communicates with the [wallet](#) locally. Premium dapps and services can be purchased with TKE. Examples of Dapps that will be runnable on the platform are [Ethlance](#), [CryptoKitties](#) and [Cyrptobots](#).

3.3.4 Relayer

Users who've linked their 3rd party exchange accounts for tracking their balances can relay orders to the original exchange. This allows our users to make trades on multiple popular 3rd party exchanges through our single UI.

Decentralized trading through our integration of the [0x protocol](#) will allow any ERC20 token to be traded and exposes our users to the larger 0x liquidity pool. Funds will be secured locally and we never have access to them, even during the exchange of tokens. Tokens available for trading are subject to local laws and regulations.

4. TECHNOLOGY

This section provides an introduction and overview of the underlying technology powering Tokens Express.

4.1 Dashboard

The dashboard is the initial entry point into the user experience. From the image pictured, the user is immediately given a summarized view of their holdings across all accounts that are linked, as well as their watched cryptocurrencies. The total value of their holdings is displayed at the top and a price chart showing the historical price movements is shown below it. Above is a summary of the profile including avatar, number of followers, reviews, and followers.

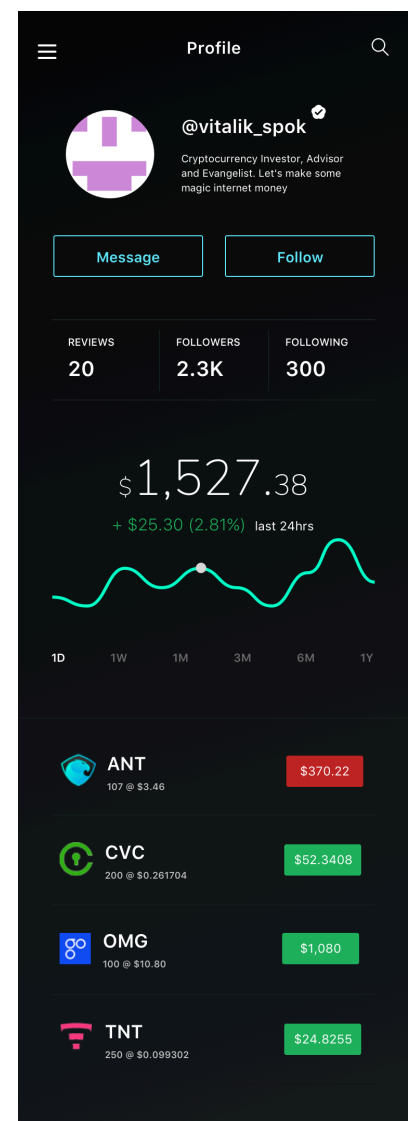
Below is a list of all cryptocurrencies in the linked accounts. Each displaying their total value. The value bubble can be clicked to show the total change since the last change interval.

Content on the dashboard is sourced from various components of the system. Profile data comes from the storage nodes. Price and balance data comes from the ticker and blockchain proxy nodes respectively.

4.2 News Feed

The Dashboard also features a News Feed which displays swipeable cards. The card content ranges from the latest cryptocurrency news and general app announcements to ads, polls and boosted messages.

Each card has a unique hash id that is used to validate a member's TKE earnings for viewing the card.

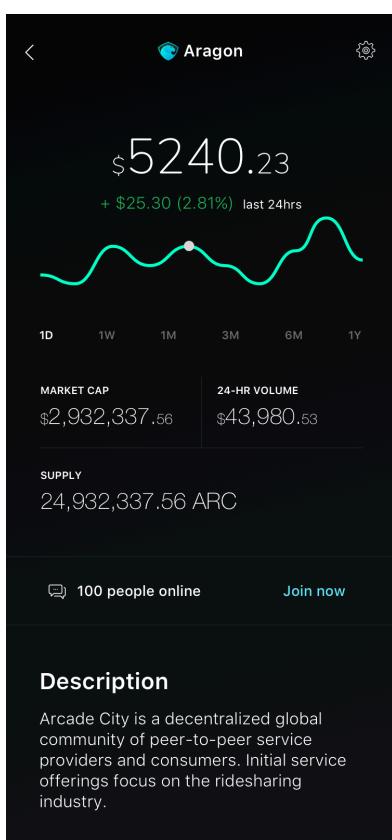


4.3 Search

Members can search the entire database of cryptocurrencies on the platform. Each search result contains a summary of token metrics. Clicking on a result brings the member to the Token Page.

4.4 Token Page

The Token Page is the entry point for all interactions a member could have with an individual token. From this page, a member can send, buy, or sell the token. They can also join a live group chat dedicated to the token.



The page is similar to the Dashboard except with details for just a single token. The upper half contains much of the same content. The latest token metrics such as price, supply, market cap..etc are present along with external links, videos and more.

This page is accessed by clicking on any token row including from search results and the Dashboard Page pictured in "Figure B".

4.5 Multi-Asset Wallet

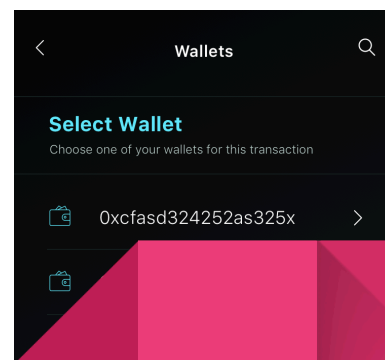
Members can store, send and receive Ethereum, ERC20 tokens, NEO, NEP-5 tokens, Stellar, Stellar assets and Bitcoin.

Wallet private keys are stored locally on the device and are never sent to an external server. iOS keychain and Android keystore technologies are integrated to prevent private key extraction if the phone is lost or stolen.

Existing wallets can be imported using the private keys.

4.6 Accounts

Tokens Express' first improvement over alternative managers is its ease of tracking holdings. Automation is preferred over manual input. Accounts automatically bring in all the portfolio data to be tracked on the



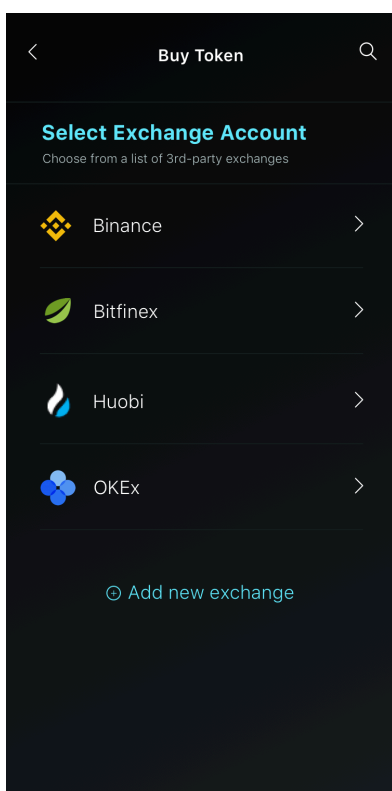
platform. Each account flow is unified through a UX that brings together all token interactions in one place.

4.6.1 Exchange Accounts

Members can link third party exchange accounts such as Poloniex, GDAX and more. These accounts can be used to track additional holdings stored on exchanges or to send orders from our simple UI.

4.6.2 Wallet Accounts

Each wallet created or imported into the app shares the same account management UX and gives the same visibility into holdings.



4.6.3 Raw Address

The quickest way to add your holdings to the platform is by entering or scanning a QR code of the public address. Token data will be pulled using the respective public blockchain protocols.

4.7 Price Alerts

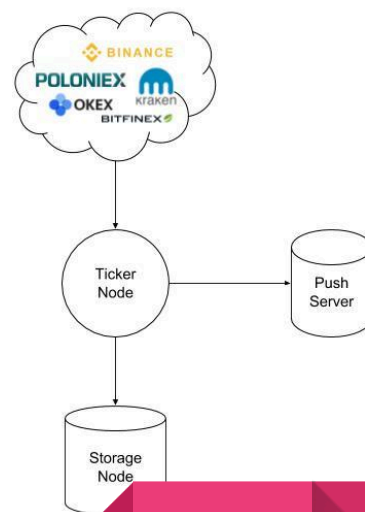
Members can set push notifications to fire when certain cryptocurrency values go below or above a specified threshold.

4.8 Worker Nodes

In order for Tokens Express to be fully decentralized⁶, storage, processing and data sourcing responsibilities need to be shared across a network of peers. [Storage](#), [Balance](#), [Ticker](#) and [Gateway](#) worker nodes provide a way for members to earn [TKE](#) and help maintain the platform.

Ticker nodes are responsible for sourcing and serving price data and triggering push notifications. They are configured with the owners own exchange api keys.

⁶ At the time of writing, there is no known method of decentralized iOS push nc

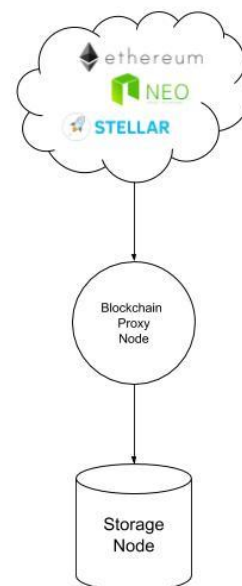


Price data is periodically fetched from 100+ exchange apis and pushed to the storage nodes.

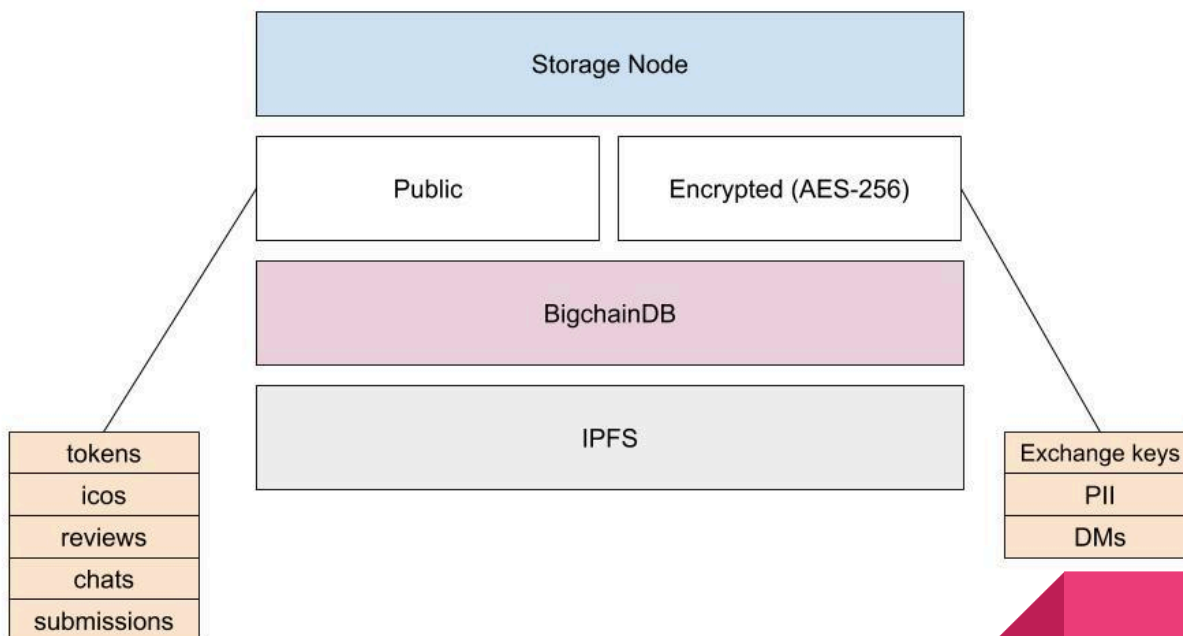
When new prices come in, relevant member price alert subscriptions are evaluated to see if any cross the thresholds set. All subscriptions that cross the threshold will send a push notification payload to a 3rd party push server.

Ticker nodes are bandwidth intensive and don't store much data.

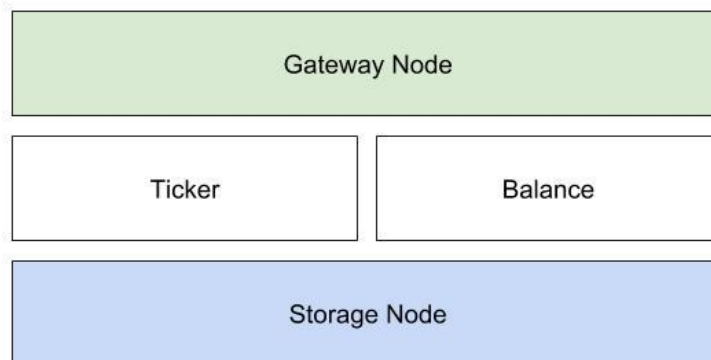
Blockchain proxy nodes provide a way for clients to access blockchain data needed to fulfill certain queries through http(s) or websockets. They are configured with either a local IPC connection or remote RPC connection to a blockchain node (ethereum, NEO, or Stellar..etc) on a completely different machine, network, even third party offering.



Storage nodes maintain the data layer of the platform. There are two types of storage: public and encrypted. Public storage contains information that is made publicly accessible through the app such as token, ico, review and group chat data. Encrypted storage contains any personally identifiable information such as email or sensitive information such as 3rd party exchange api keys, encrypted at rest with AES-256. Data is stored in [IPFS](#) and [BigChainDB](#).



Gateway nodes bring everything together. These are the only nodes that communicate directly with clients. They are responsible for fulfilling client requests by utilizing data sourced from other nodes.



4.9 Chat

[Token Chat](#) was specifically designed to thwart the spam and fraud that is rampant today on ill suited messaging platforms such as Telegram, Slack..etc.

4.10 E-commerce

Members can buy and sell cryptocurrency using decentralized trading protocols. The first decentralized trading protocol to be integrated is the [0x protocol](#). This will allow trading across any ERC-20 token pair. Additional decentralized trading protocols will be introduced including [NeonExchange](#) for NEO assets and the [Stellar Network](#) for Stellar assets.

5. ALPHA

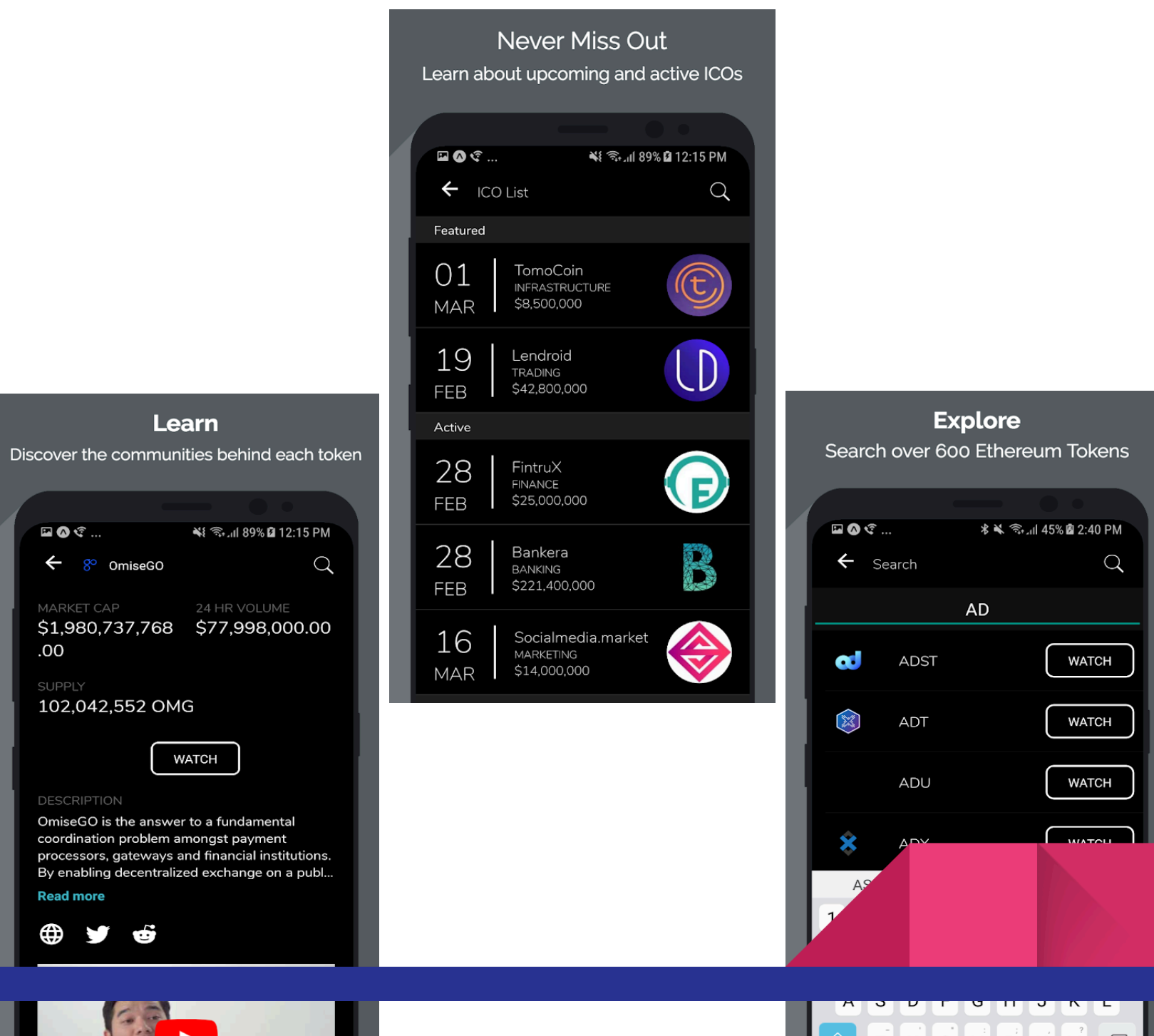
This section provides an introduction and overview of some of the features that presently make up the Tokens Express application in its alpha version for mobile available in the Android Play Store since November 2017 and iOS Q1 2018.

The initial offering is a fully functional mobile client that has the following functionality:

- cryptocurrency holdings across multiple accounts
- Store and send ethereum and ERC20 tokens
- Search over 500 different cryptocurrencies

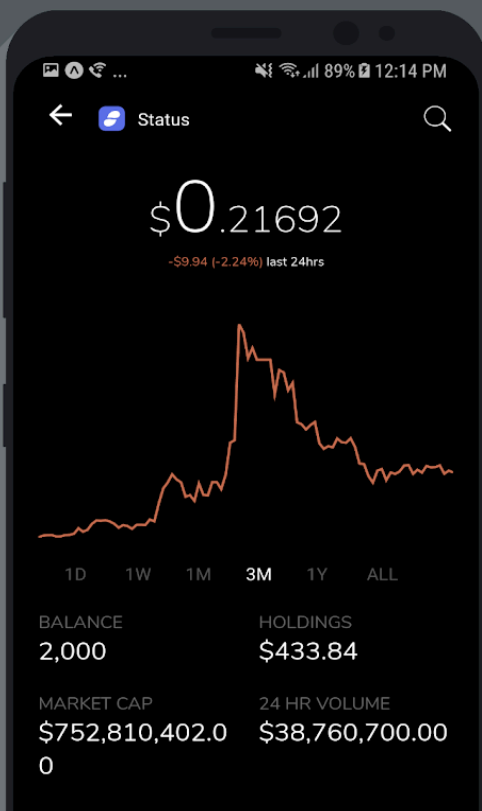
- View historical price charts of cryptocurrencies
- View a list of upcoming and active ICOs
- Set price alerts
- News feed with the latest cryptocurrency news

5.1 ALPHA Specifications



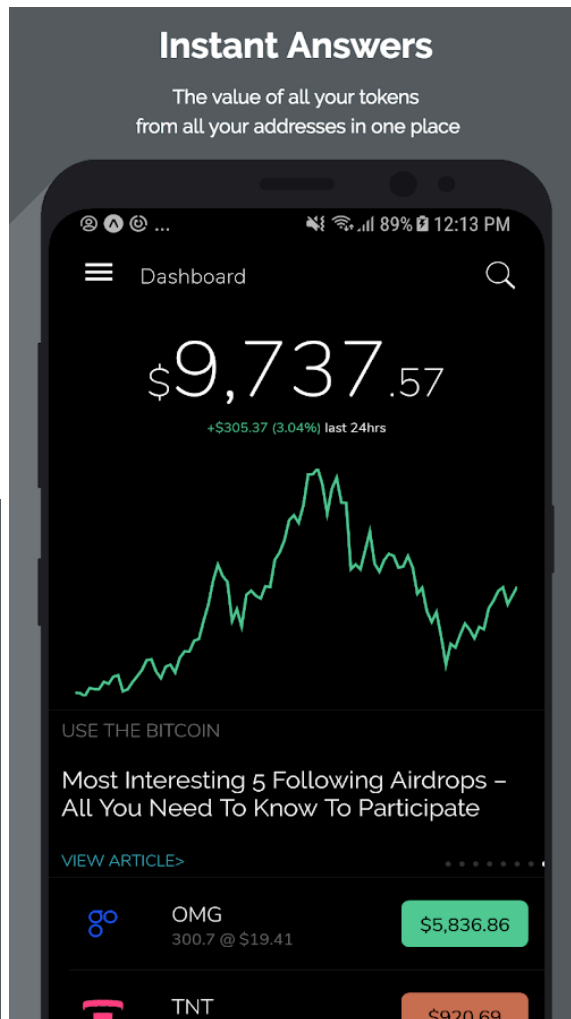
Learn

Find detailed information about every token



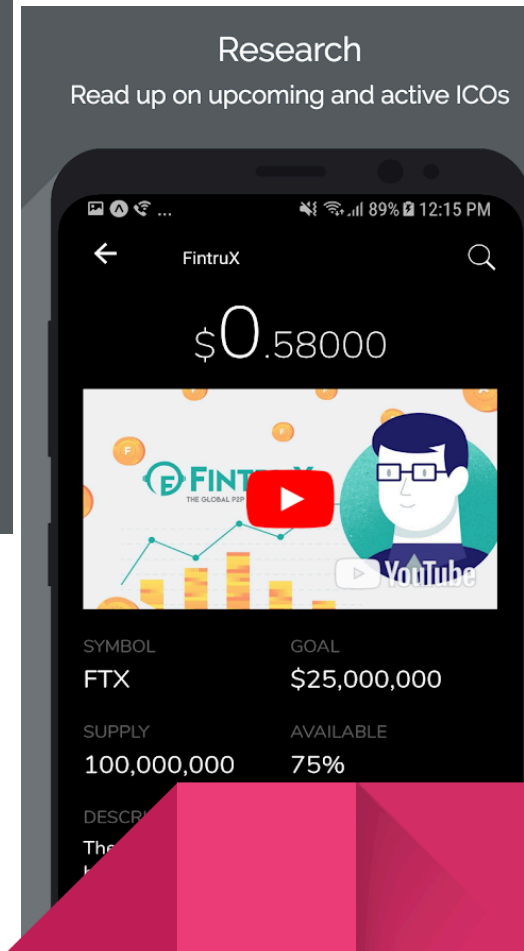
Instant Answers

The value of all your tokens
from all your addresses in one place



Research

Read up on upcoming and active ICOs



6. ROADMAP

This section explains the Tokens Express road map over the next two years.

6.1 Roadmap

Q3 2017

- ❑ Ideation and Prototype
- ❑ Team building

Q4 2017

- ❑ **Alpha**
 - ❑ Ethereum address management
 - ❑ Balance Tracking
 - ❑ Watchlist
 - ❑ News Feed
 - ❑ Token Pages

Q1 2018

- ❑ iOS Release
- ❑ **Alpha v2**
 - ❑ Price charts
 - ❑ Price alerts
 - ❑ Ethereum wallet
 - ❑ CMS for content submissions
 - ❑ Exchange account tracking

Q2 2018

- ❑ Profiles
- ❑ Community Moderation
- ❑ Third party exchange account trading

Q3 2018

- ❑ [Chat](#)
- ❑ Bitcoin Wallet integration

Q4 2018

- ❑ NEO wallet integration
- ❑ Stellar wallet integration

Q1 2019

- ❑ **Beta release**
- ❑ [Worker nodes](#)
 - ❑ [Storage](#)
 - ❑ [Ticker](#)
 - ❑ [Balance](#)
 - ❑ [Gateway](#)

Q3 2019

- ❑ [Worker Nodes Migration](#)

Q4 2019

- ❑ **Full Release**
- ❑ [Decentralized trading through 0x relayer and Stellar](#)⁷

Q1 2020

- ❑ [Dapp Store and Browser](#)

7. TOKEN SALE

7.1 ICO Summary

ICO Price	\$0.10 USD
Pre-ICO Discount	30%
Total Supply	500,000,000 TKE
Market Cap	\$50,000,000 USD
Soft Cap	\$5,000,000 USD
Hard Cap	\$15,000,000 USD
Available for Token Sale	30%

⁷ <https://0xproject.com/>

7.1.1 “TKE” an ERC20 Utility Token

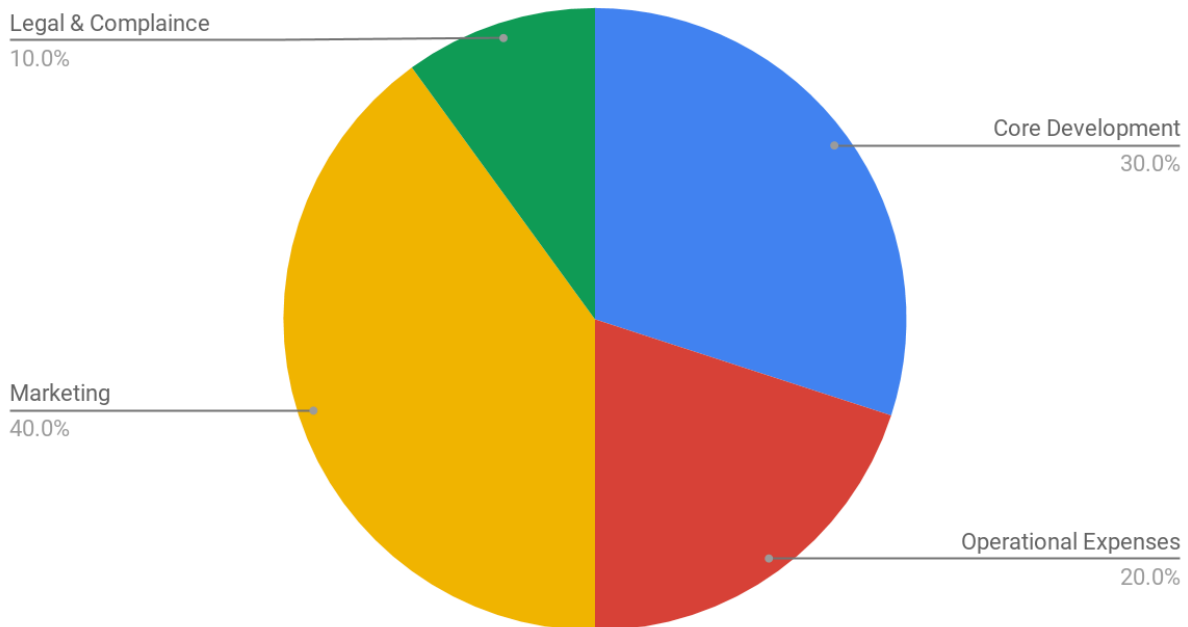
Tokens Express ICO will utilize an ERC20 Token called “[TKE](#)”. [TKE](#) is used to incentivize community contributions and maintenance as described in [TKE](#) ERC20 Token.

7.1.2 TKE Supply

There will be a maximum supply of 500,000,000 [TKE](#).

7.1.3 Funds Allocation and Purposes

Funds Allocation



7.1.3.1 Operational Expenses

One of the primary costs we'll have to deal with is our infrastructure. Currently most if not all of our services run on a centralized platform called AWS (Amazon Web Services) and third party providers such as [mutable.io](#). During the transition to a fully decentralized platform, the growing community will require significantly more resources to operate and maintain. Significant resources will also be required to migrate all data from centralized platforms to the decentralized immutable worker nodes in a verifiable way.

7.1.3.2 Core Development

Although the goal is full decentralization, Tokens Express will require a dedicated core development team to develop the initial platform and safely transition full moderation to the community. A stable population of active and reliable moderators is necessary for the platform to succeed. Initially functionality will be provided through a hybrid centralized and decentralized architecture. Moreover, we are training prediction models to aid in filtering out poor submissions before they reach moderators.

7.1.3.3 Marketing

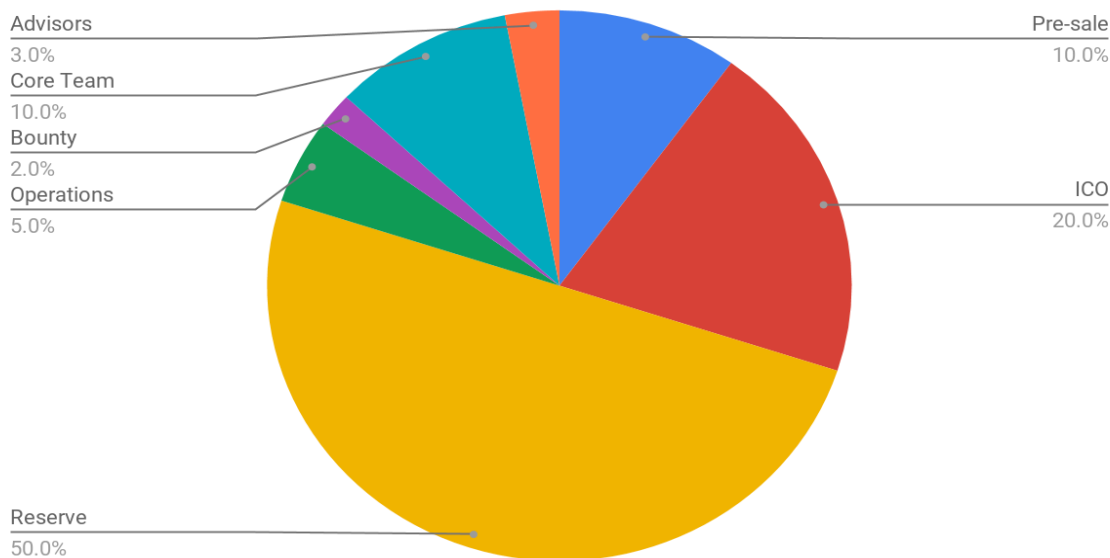
In order to promote a self sustaining token economy, the number of community members on the platform must reach a critical mass where the number of moderators can quickly and efficiently handle the volume of content submission. This will require large marketing efforts in the earlier stages of the platform.

7.1.3.4 Legal & Compliance

We need to ensure that Token Express complies with the various legislations in place governing the rights of our members, and in order to do so a portion of the crowdsale funding will go into legal.

7.2 Token Allocation and Purposes

Token Allocation



7.2.1 Pre-sale

The pre-sale will have a hard cap of \$1.07 million dollars, under [Regulation Crowdfunding \(RCF\)](#) this will allow unaccredited and unsophisticated investors, as well as accredited investors and foreign citizens residing in various countries the ability participate in our pre-sale.

7.2.2 ICO

Funds from the [pre-sale](#) will be used to register [TKE](#) and bring it into compliance with all United States, and Foreign Regulators. The form of the offering will vary depending on jurisdiction and compliance.

7.2.3 Reserve

The Reserve pool is where all rewards are granted from. In order to encourage a balanced token economy, 50% of all available tokens are kept in the reserve pool after the ICO. The bounty pool holds 2% of the total supply, making 52% of the tokens available to content contributors and moderators.

7.2.4 Operations

Continued operation of the platform will rely on a core team to implement the roadmap and maintain the code base. Funds in the operations pool will be used for new hire grants, employee retention, strategic partnerships or investments, promotions and events.

7.2.5 Bounty

The bounty program will help promote the ICO and also seed the platform with content. Rewards for bounty participation will be based on normal contribution and moderation rewards with a multiplier applied.

7.2.6 Core Team

This pool is for the founding team and early contributors. [TKE](#) Tokens granted from this pool follow a 3 year vesting schedule.

Year	Tokens Unlocked
Immediate	25%
1	25%
2	25%
3	25%

7.2.7 Advisors

This pools is for advisors and early contributors to the platform. Tokens granted from this pool follow a 3 year vesting schedule.

Year	Tokens Unlocked
Immediate	25%
1	25%
2	25%
3	25%

8. PERSONAL DATA INSURANCE

Portfolios have traditionally been seen as sensitive information as they could indicate your position in the market and give valuable information away to third parties. In the current hybrid alpha version, Tokens Express does not share portfolio data with third parties. This also applies to our wallet tracking feature, in which all wallet private keys are only stored locally.

In the fully decentralized version, raw addresses, exchange accounts and wallets will not be associated with user profiles unless the user opts in to earn [TKE](#) by publicizing their data.

9. PRIVACY & SECURITY

Your privacy is of utmost importance and priority on the Token Express platform and will be handled as such. We have employed the following security measures and guidelines to protect your data at rest or in transit.

Only data that is required by our server will be stored, we will not collect more information than necessary. We may choose to add features in the future that may collect additional data; however, this will be clearly communicated prior to the use of those features.

All sensitive data stored on our servers at rest is encrypted using standard AES-256.

10. WHY ICO?

A few factors lead to the decision for Tokens Express to conduct an ICO.

10.1 Capital Requirements

Development of a fully decentralized self sustaining system requires substantial capital to hire engineering, legal, and marketing resources. Security audits and regulatory licenses are an indefinite ongoing cost. Regular development maintenance and security updates will be ongoing. As the space matures ongoing development will be needed to migrate the system to more secure and efficient platforms.

This capital could be acquired through traditional seed or VC investment. Crowdfunding is much preferred in order to align incentives with the community as a whole. The ICO form of crowdfunding is a natural choice as members can purchase the very tokens they will be using on the platform.

10.2 Economic Equilibrium

The Tokens Express economy has safeguards to prevent the system from being overloaded with spam. For example, in order to submit content, you must first stake [TKE](#). This protects the platform from denial of service attacks that involve flooding the system with millions of new submissions that clog up the moderation queue. The [TKE](#) staked is returned and additional [TKE](#) is rewarded after the submission is approved.

This requirement introduces a chicken-and-egg problem:

In order to submit content, you need to **stake TKE**

In order to **stake TKE**, you need to earn TKE by **moderating submissions**

In order to **moderate submissions**, you need others to **submit content**

In order for others to **submit content** for moderation, they need to **stake TKE**

10.3 ICO

An Initial Coin Offering that allows members to purchase tokens or earn them through a bounty program offers many benefits and resolves the chicken-and-egg problem.

10.3.1 Token Sale

The ability to purchase tokens directly provides a way to acquire the tokens needed to submit content. This also helps set the value of [TKE](#) which increases the demand for moderation and bounty participation. Spam submissions are discentivized because they result in the loss of [TKE](#) that was purchased. A denial of service attack could cost bad actors millions of dollars.

10.3.2 Bounty

The ability to earn tokens through a bounty program provides a structured way to receive both content submissions and gain more [TKE](#) holders who are active community members. In the event of a denial of service attack on the bounty program there will be no material harm to the Tokens Express platform. Instead all verified submissions up to that point would be honored and the bounty program would be suspended. A denial of service attack from a bad actor who earned [TKE](#) from the bounty program would not be feasible given the amount of real world effort needed to acquire large amounts of [TKE](#) during the bounty.

11. TEAM

Our team has many decades of combined experience in technology and product development having built products used by billions of people around the world. Many members of the Tokens Express team have worked with each other on multiple projects over the past decade.

11.1 Executive Team

The Founders of Tokens Express are all veteran entrepreneurs with track records in technology.

Esco Obong - CTO, Co-Founder

Esco has worked on many products at the early stage that have since gained mainstream success including UberEats, Under30 Social Network, and Times Video.

Experience:



Alex Sergiyenko - CEO, Co-Founder

Alex is a serial entrepreneur that has been scaling teams since his early role at Zynga as head of people. Since then he's advised and founded multiple ventures and has built world class teams for funded startups.

Experience:



11.1.2 Advisors

We've partnered with leaders and innovators in the tech community who have helped to develop and shape Tokens Express. Our ecosystem includes industry experts in tech, media, retail and regulatory affairs.

Joel Poloney - Infrastructure

Serial entrepreneur having sold two companies before age 30 to Zynga and Google. Mastermind of the wildly successful Farmville.

Experience:



Robert Dunette - Data Science, Product

Robert has a powerful mix of technical and product backgrounds having been Head of Data Science and User Insights at Twitter's Vine and holding product roles at top tech companies Google and Uber.

Experience:



Aaron Vasquez - Blockchain, iOS

Blockchain engineer with a strong background in Computer Science and Finance.

Experience:



Jeff Hu - Android

Early employee of Sunrise acquired by Microsoft and founding member of the Uber Everything team.

Experience:



Faizan Sattar - Machine Learning, Distributed Systems

Faizan is the CTO of Reserve Inc. He pioneered the use of machine learning in the table management space.

Experience:



11.1.3 Product and Engineering

Experienced team of developers, designers and technical product managers formerly working under the CTO as part of Hefybyte Inc, a software development firm with clients including [Forbes](#), [Harley Davidson](#), [OkayAfrica](#), [Fullstack Academy](#), and [Reserve](#).

Together, the executive team has experience interviewing over 200 engineers for top tech companies. After the ICO, we will expand the team through a hiring process similar to those used at Google, Uber and Microsoft.

Ayeni Olusegun - Backend

Experience:

Olufunso Ekundayo - Product

Experience:



Seun LanLege - Frontend

Experience:



Ife King - Frontend

Experience:



Ebenezer Dare - Product

Experience:



Samuel Omidiora - Infrastructure, Backend

Experience:



Ugo Ifezue - Design

Experience:



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