THE TCC WHITEPAPER

TCC has been designed to meet the best standards in safety and privacy!

WHITEPAPER v. 0.1

Disclaimer: The information in this document is subject to change without notice and should not be construed as a commitment by TCC Foundation.

www.tccworld.org

DISCLAIMER

The whitepaper prepared by the company is for description and informational purposes only. This document is not composed in accordance with, and is not subject to, laws or regulations of any jurisdiction which are designed to protect investors. The company does not offer to buy or sell any securities or to invest in any financial instruments through its websites or applications. The company does not promote sale or purchase of the TCC in fiat or regular currencies or any similar assets. Required TCC can be sold or purchased or transferred or requested to and from the other members in the community dealing with the TCC as per their own terms and conditions at one's own risk. The registration on the TCCWORLD website permits access to its services as per the terms and conditions detailed herein. Registration is not intended to afford the holder any rights in, or claims to, any of the assets of the company or the TCC or to in any way share in any profits that the company or the platform may achieve. The white paper or content on this website is subject to change at any time without notification. The white paper and website describes the current plan and vision for the TCC platform and do not guarantee, represent or warrant any of the statements in the white paper or website, because they are based on our current expectations and assumptions.

Please know that we plan to work hard in seeking to achieve the vision laid out in the white paper and website, but we cannot guarantee that any of it will come true. The assumptions drawn in this document involve unknown risks and uncertainties, as it is impossible to predict anything outside of our immediate control including economic factors. Blockchain, crypto-currencies and other aspects of our technology may be subjected to many challenges, competition and a changing environment. We will try to update our community as things grow and change but there is no obligation to do so.

The white paper has been prepared to the best of our knowledge and research, however it should not be relied upon for any future actions including financial or investment related decisions. The company, founders, advisors or affiliates shall not be liable for any losses that arise in any way due to the use of this document or the contents contained herein. Individuals and investors are requested to carefully consider the costs, risks and benefits of acquiring the TCC through a third-party exchange or any other source.

Terms of Transaction or Transfer of the TCC

Any transaction or transfer of the TCC or any other currency or crypto-currency or kinds using the TCCWORLD website or linked portals of any kind is solely at the risk of the users or participants and our company and any of its affiliates or associates are in no way responsible for any transaction related failures or frauds caused by any person or group or company or any other entity which may be beyond the control of the company under the technical framework of the website and/or application for both the current version as well as future updates.

All transactions of the TCC through the TCCWORLD website are non-reversible. By executing any transaction on the TCCWORLD website, you acknowledge that you have carefully reviewed the Terms of transaction and fully understand the risks, and are permitted by law to perform transactions of the TCC in your current given jurisdiction. You further represent and warrant that you are of legal age to be bound by these terms and will not hold the company, its representatives, founders, affiliates or advisors, now or in the future liable for any losses or damages arising out of the transaction/transfers of the TCC. The user will take sole responsibility for any risks associated with the transactions or transfers of the TCC, that the user has done proper research on the company and its scope of work and has an understanding of the usage and complexities of the TCC, the blockchain technology, the TCC website and the smart contract concept and deployment.
While transferring the TCC, please verify your withdrawal address before executing the transfer. Any transaction executed is irreversible and beyond the control of the company.

Passphrase is a unique private key generated at the time of registration on TCCWORLD website. Please ensure to save your passphrase. Passphrase is a must to perform any transaction or transfer of the TCC through the TCCWORLD website. It is equally important and entirely the user's responsibility that the user ensures safe upkeep and use of the passphrase. The passphrase is generated only once and it is beyond the company's control to retrieve or regenerate a passphrase.

Legal, Regulatory and Compliance

Some of the elements of the TCC whitepaper shall be governed by international legal terms. The company extensively believes in best practice policies and procedures intended to ensure legal and regulatory compliance. Although, our platform is in no way responsible for risk management of users engaged on our platform, we desire to act with the highest standards of integrity, honesty, and accountability. Participating persons are independently responsible to determine such restrictions applicable to them directly and comply with them.

INDEX

Abstract

TCC is a decentralized cryptocurrency network based on Ethereum having its own blockchain platform where smart contracts can also be managed. TCC provides a transparent environment to those users who seek to access a genuine pool of potential clients, product and service providers, and reviewers.

TCC adds reliability and integrity to various industries, specifically but not limited to, the marketing and advertisement industry, which in fact, is in dire need of those two qualities. This tool combined with crypto-currency based incentive encourages customer, reviewer, service provider, and advertiser participation.

TCC is the first marketing and advertisement focused cryptocurrency that employs a decentralized review platform to reward the constituents whose contributions benefit the community, and to provide genuine customers and service providers with technological services that expand their capabilities while simultaneously eliminating possibility of fake and meritless contributors.

This platform allows users to create smart contracts from the scratch or from a template which work as an agreement between all involved users. An advertising user can set the reward or incentive all contributing users get for specific actions. The platform has its own currency, TCC, which can be used to generate T-Coins. These T-Coins are the token of all transactions that happen on the platform.

With this platform we hope to provide our users with a platform which they can rely on for their research and data analysis. While we do not supply anything to anybody, the community itself is the source and repository of data, open to all users.

This platform is a fruit of the rich imagination of the development team, which started off with just one idea, to create a platform which provides 100% correct insights and leads for an advertiser. With the additions the development team made time and again, the platform came up as a wholesome approach to the intended goal and much more.

Introduction

This whitepaper provides a concise explanation of a new conceptual framework to address the structural inefficiencies in the advertisement and marketing industry by enabling mass personalization of individual segmentation and intelligent advertisement recommendations. Company goal is to provide a mechanism to unify the highly fragmented advertisement industry consisting of services providers, product providers, consumer-tailored product producers and consumers. T-Coin together with the TCC platform will provide the impetus to create a community where all contributors are rewarded for value added contributions in the form of cryptocurrency incentives. The growth of high quality user generated content will create a virtuous cycle that encourages new users to participate in the community and share their experiences and earn rewards.

This is to assert that TCC platform is not industry specific and its capability to create smart contracts can be used for every possible use case.

For the first time, technological and socio-economic advancements have converged where it has become possible with the help of blockchain technology combined with peer to peer transactions to provide affordable and targeted advertisement options. By democratizing the marketing and advertisement industry, TCC will incentivize an interested group or advertisers and users to adopt the currency who previously had flawed or limited access to genuine market data. TCC advances the traditional marketing industry by providing individuals with the power to choose which advertisement they choose to watch in conjunction with trusted recommendations from other verified TCC users.

Powered by blockchain technology, the TCC platform will provide transparency for trusted advice and reviews within a secure ecosystem supported by an Ethereum based cryptocurrency. By incentivizing constituents to complete actions within the TCC ecosystem, the TCC network will see a critical mass of transactions which will bolster the use of TCC currency: TCC coins as T-Coins with in the community, as the community's default currency. T-Coins which are earned and accrued as loyalty incentives from purchases or redemptions will be redeemable through the user who created the T-Coins in the first place and may be traded for fiat or non-fiat currencies, invested or stored.

The Audience

The TCC team conducted extensive research in the target market and possible use cases, what we found out that there are no transparent mechanisms to ensure the integrity and veracity of campaigns held.

Following problem statements take into account the individual sectors under marketing and the issues they are facing currently.

1. **Advertisement: Problem Statement:**

   Advertisement is a USD 550 billion industry on the global scale. While North America leads the world in highest amount of investment in advertisement, Asia, and Western Europe follow right up. Generally, the ROI on advertisement campaigns is considered worth it, if it drives in just the twice of amount spent on advertisement. The amount of money being wasted and sub-optimally used in advertisement is colossal. Fake reviews, fake views, fake shares and likes, are just some of the reasons where the investor's money nosedives. If there was a system in place to make sure that every penny spent on advertisement has been put to good use and has reached a potential customer, the wastage would go down significantly, allowing us to achieve an unforeseen level of efficiency.

2. **Surveying and Mapping Market**

   The global surveying and mapping market is among the fastest emerging dynamic industries. This market deals with the changing dynamics of demography, subjective and objective interests and behaviours, the ever-changing trends and brand images; surveying is full of chaos. What complicates the matters further is the increasing presence of dummy survey bases, or fake survey groups. Generally, a group of bots which auto generate survey results are used to dupe the surveyor into thinking that their survey is genuine. Considering that companies base their marketing strategy, product features, prices, and almost every aspect of their selling strategy on these results, a fake survey can be the death of a grand enterprise. It is therefore, crucial to make sure that the surveys conducted involve genuine leads and genuine opinions.

3. **Product Forecasting**

Product forecasting deals with predicting, or more accurately estimating, the degree of success a product is likely to experience when it is launched to the market. This procedure is so imperative that you need to include a comprehensive product forecast in your business plan. This happens even before the product has gone into the development and manufacturing phase, and continues well into the post production and marketing phase.

It includes evaluating the market presence, reception, in context of requirement for a product. There is an increasing percentage of fraud in this field as well, which makes it harder for companies to conduct reliable research, and hence, more difficult to create an accurate product forecast.

4. **Open source software projects**

The great thing about open source software is that anybody can download, use, and upgrade them. The irony is that the same is also the biggest issue with open source software. While widely in use, open source software also puts you at risk of malware in form of an update from source you do not identify. It is hard to know a genuine update from an infective one, because there is no way to ascertain the developer's credentials or to trace the effects back to him.

From the developer's perspective as well, it will be far easier to work with the team on a safer platform where your code is safe from altercations.

5. **Ad network**

When programmatic ad-tech entered the scene, the marketing industry welcomed it with open arms. This new technology allowed marketers to place their ads at the most trending videos, posts, and pages automatically. Now, one would think that this would give a boost to efficiency and productivity. Programmatic ad-tech did that and more, it has resulted in many companies funding terrorism unknowingly by their ad-placement. A screenshot of a Mercedes Benz ad under an ISIS video was the first to make rounds of the internet, followed by multiple such disasters. As put perfectly by Joe Wade, director and co-founder of the ad agency, Don't Panic,

"[P]rogrammatic has become an arithmetical box ticking exercise, which leads a chief executive officer to the comforting conclusion that money was well spent. Ultimately, it's all smoke and mirrors, fake views and wasted budgets."

TCC will address these problems and present a novel solution which ensures efficiency and productivity, without compromising integrity of the campaign and the target group.

Key Market Insights:

- While 2017 was a year of trial **solutions for transparency issues in advertisement and marketing**. While some solutions showed promise, overall there has been no solid development to lessen the woes of marketers and reduce the wastage on marketing campaigns.
- With bigger and better mobile and tablet screens, and handheld devices becoming more common place than ever, **Mobile Marketing** is set to grow even further. Global spending on mobile marketing is estimated to be around USD 180 billion, a considerable growth from USD 143.54 billion in 2017. It will hence, be even more important to have access to the correct user base so that the rate of conversion from potential to materialized leads grows.
- The age old CPM model is set to be replaces by newer, more efficient models for calculating advertisement cost. Today's marketeer wants engagement and interaction with their clients to maximize the effect of their campaign. An interesting development is the **cost per second method**, which has been gaining traction throughout 2017, and is expected to lead to more innovative developments in 2018. This method allows the marketeer to pay for only the time a customer spends with the company ad. However, the loophole of fake customers is still quite real.
- **New tools and upgrades** in platforms are helping organizations know the real number of views their advertisements, content, and videos have been gaining. Facebook reported a plummet of 94% after implementing the Neilson recalibration; this is a perfect example of why the number of views an agency is reporting might not be true; but also gives hope that the new tools at the advertisers' disposal will help them monitor their campaigns better.
- Ads themselves will get more personalized, targeted, and will display to people who really are interested in them. Thanks to the advent of big data, machine learning, and data sciences, there is a colossal amount of data available for an advertiser to streamline his search.
- An interesting emergence would be self-serving platforms. While the traditional platforms will maintain their dominance, these new platforms have a fighting change, owing to their innovative and efficient solutions.

The Target Audience:

While the platform is open to anybody requiring a smart contract-based transaction service, our primary target audience will be:

- Marketeers who want quality leads and true ROI.
- Consumers who want to avail quality services from genuine providers
- Advertisers who want to advertise without wasting precious time and resources

Competitive Analysis:

Based on the following key features of TCC, there are no known direct competitors who offer an integrated and self-serving platform solution including:

- **Smart Contract Based Advertisement Solutions**: So far, there are no platforms in the market which provide block-chain powered smart contracts as the mode of advertisement. TCC makes use of these smart contracts to ensure that only genuine customers, who are willing to avail the provider's services, access the provider.
- **Authentic Leads**: Since no agency controls our platform, the possibility of fake leads goes down to nil. There is nothing a fake client can accomplish, unless he really buys something from the advertiser, because only the advertiser will buy back the tokens from the client which he has received by viewing the advertisement. No other agency is offering a service similar in nature and magnitude compared to ours.
- **AI enabled Data Segmentation**: Even though every contract is updated throughout the network, it is helpful to know how many potential buyers are using the platform. With help of our highly advanced AI enables data segmentation method, the provider can know this number. It helps him decide how many token he should release, hence streamlining the process. There are in-house systems for data segmentations which many organizations have developed, but these munch data only for their own products. Further, nobody so far has used block-chain network to ensure the level of transparency even in segmentation that TCC is offering.
- **E-commerce**: there are solutions which provide client leads but their authenticity and integrity is questionable. None other agency so far, offers a solution that guarantees genuine leads.
- **Community**: Multiple institutions claim a significant reach, but there is no solid data backing their claims. Whereas, our platform ensures automatically that you have comprehensive outreach.

TCC Technology

The Platform

The platform will be delivered to the market as a mobile and browser application on internet enabled devices. The application and registration on the application would be free for all users. The user will have the option to select his end goals of being at the platform, effectively segregating users on the base of what they are looking for. This information will be added to the block-chain and will be there to be accessed by the community.

Currently, we have a strong community already using our platform. While the number of TCCs is limited and dependent on supply of TCC, users of the platform can mine and release new TCCs.

The prime objective of this system is to provide a platform for users to create smart contracts, which suit their needs well and ensure efficient advertising, crowdsourcing, open source software contributions and all that imagination allows.

How does it work?

Joining: To use services of the platform, you'll need to register and buy a starting value of TCCs.

Getting T-Coins: You next step is acquiring T-Coins. You will get a fixed number of T-Coins against the TCC you are willing to 'lock'. The locked TCC are still in your wallet but can't be used for any transaction. These TCCs are unlocked only when you buy back the respective amount of T-Coins that you released into the system.

Advertising: Let's say you want to advertise on the platform. You will first create a smart contract which lays down the conditionality, prerequisites, and what you are willing to do in turn. It could be a smart contract implying that if viewers watch a certain product video, the respective viewers will be awarded, say with N number of T-Coins. These T-Coins that the viewer has gained from obeying your smart contract can be sold back, only to you. You could add other conditions like the T-Coins can be used only to buy a certain product. This way, while a part of the cost is paid from the T-Coins, a potential client has been converted. Hence, there was no wastage of money.

In other words, the T-Coins that you have given to people for taking part your advertisement campaign, can be redeemed from you. As soon as you buy back the T-Coins (or they are

redeemed), your locked TCC are released and the T-Coins returning to your account are burned instantly (are disposed of).

Open Source Software, Crowd funding, Surveying, Decentralized finance and fund management; these are just some of the many uses that a user can achieve by using the TCC platform. The basic process would involve creating a fixed number of T-Coins (which can be increased or decreased as required), setting up a smart contract and rewarding the user with a token in lieu of their opinion, support, help, any sort of favour. There is defined price control mechanism in place, which will be discussed in the following sections.

T-Coins

T-Coins are the mode of every transaction at the platform. To gain T-Coins, you have to spend an equal value of TCC (ether adapted for the platform) from your account. Those who attended our ICO, own TCC and you can trade with them to gain TCCs if you are new user.

For example, if the conversion rate was 'x' from TCC to T-Coins, you will get TCC/x number of T-Coins, equal in value to TCC locked.

The Price Mechanism:

The user can choose whether to base T-Coins in terms of TCC or fiat currency. If the latter option is chosen, the conversion rate from the currency to TCC will be employed to equate the fiat currency before conversion into T-Coins. If the user decides to define the value of T-Coins himself, it can be in terms of fiat currency or TCC.

The difference between these two is, if a user defines the value of T-Coins himself, he set a conversion rate himself. Such T-Coins will be redeemed according to the conversion rate and value bestowed upon it by the user.

On the other hand, if the user chooses an option between pre-existing, community-driven rate, the T-Coins will vary in value accordingly.

In a nut shell, the value of T-Coins based on TCC, is directly proportional to the value of TCCs in the community.

If T-Coins are based on fiat currency, their value is directly proportional to the conversion rate of the fiat currency to TCC:

$$Q \alpha R(fc)$$

If we take the members of community as M, the value of T-Coins in the system is directly proportional to M.

$$Q \alpha M$$

If the members of community increase, the demand of T-Coins will be more, e.g. if there are more viewers of a video, more T-Coins need to be delivered, as a viewing reward.

Now, in case T-Coins are based upon TCC, the equation defining the price mechanism will be:

$$Q = k.L.M$$

Here, k is the conversion rate constant which varies according to the community dynamics. The community dynamics in this case refer to the number of members in the community, the most preferred base currency, conversion rates for different currencies at a given point of time, availability of TCCs, and so on. At any point, value of k is easily retrievable from the community stats.

Similarly, when T-Coins are based on the fiat currency, their price is regulated by the equation that follows:

$$Q = k.R(fc).M$$

Here, k is the conversion rate constant which varies according to the community dynamics. At any point, value of k is easily retrievable from the community stats.

Once created at a value, T-Coins continue to hold that value irrespective of variables. When a new batch of T-Coins is created, it will be created at the standards and variables applicable at the time of creation. While the number can be altered, value of a T-Coin cannot be altered after it has been created. This way, a T-Coin, produced at a given point of time, will have a stable value. While a T-Coin produced by a different vendor, at the same time or other, may have a different value due to different basis, none of these will change depending on whatever happens in the economic sphere. This ensures stability and reliability in the system, hence protecting interests of all users.

Smart Contracts

Conceptualised as the instrument of collaboration among two or more entities or parties on the internet, where knowing the true identity of the other party is not always possible, smart contracts have more applications than they initially were intended for.

In the proposed system, we use smart contracts as the primary mode of transaction between users on TCC.

- **No Technical Knowledge or Other Tools Needed**: A user would not need any technical knowledge or other technical tools like Geth, Meteor, or Mist to run the smart contracts.
- **Smart Contract Templates**: There are readily available smart contract templates at the user's dashboard. These are always available and ready to execute. All you need to do is, log in and deploy the contracts.
- **No Sync Delays**: since TCC works directly with Ethereum, no third party software which is needed to sync smart contracts with the platform. This reduced the procedure delay, and the contracts get executed instantly.
- **Customized Contracts**: Users can create their own contracts from scratch using TCC.
- **Legally Binding Contracts**: User can edit the contract and add conditionality including laws. Laws mentioned in the contract will be legally binding to all involved in the contract. For example, if you want to include a non-disclosure clause in your smart agreement and bring it in the ambit of law, all you need to do is include the corresponding law by stating that this law applies to the contract to ensure non-disclosure.
- **Enterprise Grade**: We understand that several enterprises will use TCC, hence enterprises can upload their documents and turn them into a smart contract. No adaptations whatsoever will be needed in their system.

The Wallet Interface

Our platform follows the standard Ethereum Wallet Interface. This wallet holds your TCC coins, your T-Coins, any gift cards/rewards that you may have received on the platforms, and the coins that you mine or earn otherwise.

Your wallet will be stored on your device hardware. You will need to use the same device to log-in and transact when you want value changing hands.

Your wallet is password protected and to conduct any transaction, you will need to authenticate the value exchange using your credentials, every time.

This ensures that even when someone gains access to your account somehow, they can't transfer funds.

Costs to deploy smart contracts:

While the TCC platform application is free and open, availaing services provided by the network costs money. To use this, One should hold the platform's cryptocurrency, called TCC. TCC can be bought using fiat currency from the community or can be earned through being the part of the network as a miner.

For example, You will need TCCs to not only to lock them for smart contracts but they are also needed to pay for the transaction costs, i.e. to pay for the gas, and for releasing T-Coins. When you buy back the T-Coins, your account will be charged the corresponding amount in TCC and the T-Coins will are disposed as soon as bought back. Also there are other endless use cases where the platform is going to help the community in different sectors.

- **Smart Contracts Subscription**: While every user can deploy as many smart contracts as they will, they can deploy the contracts only till they have the requisite amount of TCCs. One should also pay attention to the fact that users will also be paying an account fee, as running a platform on top of Ethereum incurs charges. However, we intend to keep these charges as nominal as possible.
- **Gift Cards and Rewards**: Advertisers can use a smart contract as a gift card or reward. They could set the conditionality to completion of an action like watching a video, liking a page, visiting a website, and on completion, the user on the other end of contract will receive some T-Coins, as assigned by the advertiser. The client can gather up T-Coins and sell them

back to the advertiser to get a product or fiat currency or ethers. The user may also use these T-Coins to create smart-contracts with other users on the platform. Thus, a robust ecosystem would flourish within the community.

- **Security**: While we keep our systems updated and abreast with all the threats that can compromise the platform; if a certain user wants an extra layer of protection, in form of another layer of encryption or such, we also allow that. However, every transaction will get recorded on the block-chain platform anyway, and the user's identity can be tracked back, with due diligence.

Platform Security

Apart from the log in credentials, user's wallet is also protected with encrypted passwords. The wallet is stored on user's hardware and hence, to counterfeit, a dupe would need not only the log-in credentials, but also the user machine, encrypted password as well.

For your security, we recommend not sharing your credentials with anyone else and choosing a machine which you are in full control of to manage your account.

Also, you should use strong and uncommon passphrases for your credentials. This will makes it harder for the infiltrator to guess or figure out your passphrases if someone does get a hold of your device.

Please remember your passphrase or write it down at a secure place. If you do not remember your passphrase, you will be locked out of your account; there is no mode of retrieving it.

TCC and T-Coins

TCC

The currency of the proposed platform is TCC. It is a crypto-currency and an independent coin. New users can buy TCC from existing users or gain it through mining. The price of TCC is community controlled. As the number of users increases, value of TCC will increase proportionally.

Difficulty level and rewards of TCC mining:

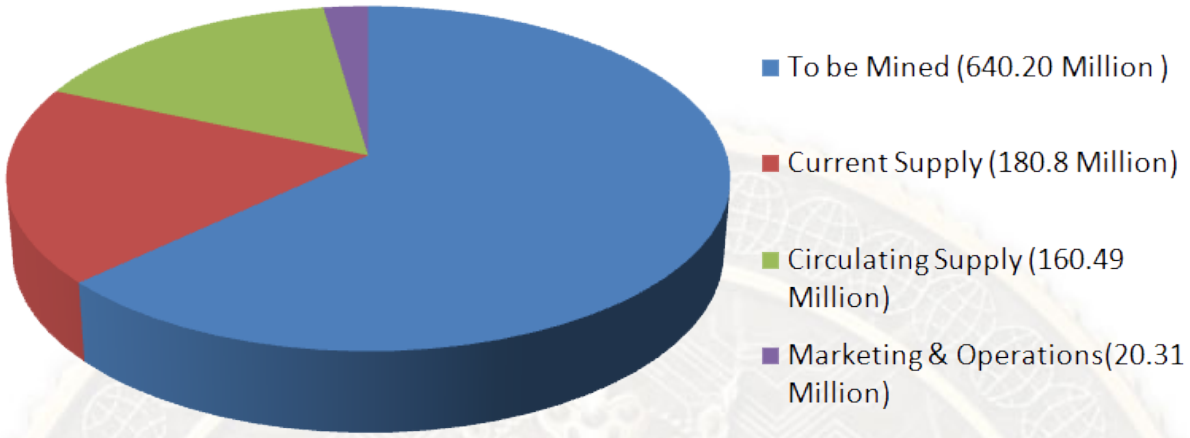
TCC network's difficulty adjusts automatically as more miners join the network. It also depends upon the hash rate of the miner. At a constant rate of approximately 15 seconds per block, we will be hitting the ceiling of 4.8 million blocks in approximately 833 days. By this time, the total rewards would equal approximately 23,990,400 TCCs. However, before we move to proof of stake, only approximately 24 million TCCs will be mined. Also, this is amount is not a hard line, we will be moving to PoS at the earliest. After the PoS consensus algorithms (Casper on PoS) is implemented, approximately 640 million TCCs (Out of total supply of 830 Million TCC's, Rest of the TCC's will be mined after we have switched to PoS) would be mined, among users based on their wealth.

Uncle Rewards

At an assumed uncle rate of 15%, and rewards for uncles being 3 TCC per block, the approximate amount of uncle rewards would be approximately 3*15/100*24 million (approximately 10.8 million). This would be added to the platform net and hence, the total approximate rewards by the time 4.8 million blocks are mined would be approximately 34.7 million.

Rewards: For every successfully mined block, 5 TCC are rewarded. If two miners happen to mine a block simultaneously, i.e. if an uncle is generated, 3 TCC are given to the uncle miner.

Distribution of TCC:



As TCC uses a concept of gas instead of blocksize which is a cap on both processing and storage/bandwidth because the cost of a transaction/function is fixed in units of gas for each type of instruction. For example if a transaction uses an amount of 21000 gas, the number of transactions can be found by dividing the gas limit by gas per transaction. The gas limit of genesis block is 2000000. So in terms of scalability, according to the benchmarks during testing, It can confirm nearly a thousand transactions in just a couple of minutes.

The T-Coins

- **The Purpose of T-Coin**

  T-Coin is the token which is to be the used for all transactions on the platform TCC. It is there to ensure reward flexibility and ease of transaction for all interested parties at the platform. A user can decide the value and number of T-Coins he is going to offer, and offer as many as he decides as long he has the requisite amount of TCC coins in his/her wallet.

- **Will T-Coin will be an ERC20 token?**

  Yes, T-Coin will be an ERC-20 token to ensure reliability and quality. This also makes it easier for T-Coins to develop and transition in future.

- **Rewards Model**

  The platform implements a rewards model. Users contribute their time, talent, and efforts for other users hence receiving something in return. Using well audited smart contracts fortifies the platform against any kind of fraudulent users or scams. All the T-Coins earned through a particular task will be redeemable from the issuer, who can issue those T-Coins only if he has the requisite amount of TCC currency or fiat substitutes.

- **Consumers will use or earn T-Coin for**

  Consumers can use the earned T-Coins to buy products from the issuer, trade them for TCC coins or fiat currency from the issuer, and loan them to other users, allowing them to gain interest on their T-Coins. They can choose when to liquidate their coins or to keep them in their wallet. With time, as TCC releases app wallet, users will be able to store and access their T-Coins across software platforms and devices.

- **Professionals will use or earn T-Coin for**

  Professionals including but not limited to marketing managers, brand managers, publicity managers, advertisers, surveyors etc. will use smart contracts to further their goal. For example, a surveyor may set a certain reward for anyone who takes part in a survey. This way, the user gains T-Coins. As these T-Coins can be bought back by only the issuer, the issuer also has created a potential client. When the client redeems the coins, they get a quality product, at a discounted rate. Also, as the smart contract ensures all the terms, conditions, and proposed benefits beforehand, the transaction is devoid of any disputes, whatsoever.

- **Publishers will use or earn T-Coins for**

  TCC as a platform provides a set of applications for displaying videos, images, content, or such, whichever a user decides to put in his advertisement. Also, users have the opportunity to work as both an advertiser and a publisher. The platforms usefulness is particularly interesting for a publisher, as a publisher may use the existing set of applications provided by the platform or develop his own. Publishers will earn T-Coins as they develop advertisement content and publish it for stakeholders. The transaction would be using a smart contract, hence ascertaining T-Coins for the provider.

  There are generally two kinds of channels that publishers use, direct and indirect. TCC as a platform support direct publishing, whether using platform's tool kit or using that of the

publisher. In this mode, an advertiser works as publisher also, who streams advertisement from their own profile across various channels like social media platforms, email marketing, and other options on the same course. The community directly benefits from the publisher's offers by earning T-Coins and by being able to use these as deemed fine.

- **Value of T-Coin**

  Value of T-Coins, may be decided in three way (as mentioned in the Technology module), manual valuation (when the offering party sets the value of its T-Coins manually, in terms of TCC coins or fiat currency), TCC based valuation, and fiat currency based valuation.
  As the community grows, the value of T-Coins will also go up.

Legal Status of TCCs and T-Coins:

Pretext:

Under the Howey Test, a transaction is a security if:

1. It is an investment of money (or assets)
2. There is an expectation of profits from the investment
3. The investment of money (or assets) is in a common enterprise
4. Any profit comes from the efforts of a promoter or third party

Is TCC a security then?

Even though TCC coins involve investment, there is no imminent or expected profit from investing in TCC coins themselves. Further, they are not a common enterprise investment. Instead, they are a mutually agreeable mode of transaction which is convertible into smaller token for ease of exchange. Also, there are no third parties on TCC platform. Users themselves offer smart reward programmes to interested patrons. It could be understood more like an agreement between two individuals, the latter agreeing to do something in return of a favour by the former.

To answer the question in one word, No, TCC is NOT a security.

If TCC moves to proof of stake, will it be considered a security?

When TCC moves to Casper on PoS as a consensus protocol eventually, users will have to mine their blocks themselves to earn TCCs. This is not countable under third party profits. Hence, even after TCC moves to PoS, it will NOT be considered a security.

Third Party Development Support

Peer to peer to protocol based on Kademlia

Kademlia is a hash table for a third party peer-to-peer file sharing network. It ensures that not even a denial-of-service attack, which floods the network with just too many service requests- far more than the network could possibly handle, can cause an interruption. If such an attack is launched at a network which employs Kademlia, only a few nodes will be down and other networks will quickly weave a network around these.

As we look forward to adding a file transfer feature to the TCC platform, Kademlia is our first choice. We will integrate the model on a top-layer level or as in overlay, so that it doesn't interfere or have access to the base code of the platform. We are also exploring plug-in options, and to make using the algorithms entirely optional. This network too, will come in the purview of the block-chain backbone (quite obviously).

Consensus Algorithm

While a block-chain backbone naturally rules out corruption and regulation from a central or ruling figure, it does pose a significant challenge, *how to get anything done on the network? How should one ensure that enough number of people agree to the proposed entity? How many should these people be?*

An algorithm which seeks to establish consensus on a network is called a consensus algorithm. For a block-chain network, we have two possible consensus algorithms: Proof of Work (POW), and Proof of Stake (POS).

While POW was written by Satashi Nakamoto, POS is a newer development. While the POW system requires you to commit expensive resources to the system and 'mine' (solve mathematical puzzles) blocks, and rewards the first team to solve the puzzle; POS selects a block creator in a deterministic fashion based on its wealth, miner here get transaction fee. POS is several times more cost-effective than POW. However, a malicious user may create duplicate blocks and force a hard-fork by mining on the duplicates. To solve this, Casper on POS was put in place.

Casper on POS uses a simple methodology, it asks users to stake a bet on every new block they find. If the block is appended to the block-chain after network approval, the user is paid a reward. If the user says ‘nothing at stake’, they are reprimanded right away and all their stakes are slashed.

Ethereum is planning to move from POW to Casper on POS. Currently, we are using POW, but we will soon move to the Casper on POS algorithm, in step with Ethereum.

Roadmap

Registration in exchanges

Along with Ethereum, we will be registering at various leading cryptocurrency exchanges, so that our user can transact, trade and mine across various currencies. While this will bring diversity to the ecosystem, making the currency stronger, the users will also have a diverse investment portfolio.

T-Coin Contracts through TCC Wallet

Currently, the TCC wallet stores T-Coins but doesn't generate T-Coin contracts directly. Efforts are underway to add functionality that supports accessing and generating T-Coins embedding a smart contract directly from the wallet for ease-of0usage for the user. Hence, users will be able to convert the smart contract code to ABI and deploy it to contract address directly from TCC Wallet.

Wallets Apps for iOS,AndroidDesktop Wallets for Linux, Mac and Windows

Currently, we support a hardware wallet, accessible through our platform on an internet-enabled computing device.

In future, we seek to develop and make available wallet applications across various mobile platforms including but not limited to Android, iOS, and others as we go on. For desktop access, we will develop wallets for Linux, MacOS, and Window OS.

These will be rolled out as soon as the development process gets over. A limited section of our users will get the beta version for performance and interface testing and once cleared by all channels, the wallet apps will be released all over.

Move to a hybrid PoW/PoS system.

In step with Ethereum, we are aiming to adapting to the latest standard of the industry. While we follow the PoW consensus protocol, we aim to move to Hybrid PoW/PoS system, until we gain in foothold on the Casper on PoS consensus algorithms development.

Research and Development

Memory hardness of ETHASH

ETHash is the algorithm Ethereum uses to generate the nonces (hexadecimal numbers) for the system.

This algorithm uses the pseudorandom dataset, initialized by the current block-chain length. This hashing algorithm carries out six steps of extensive hash mixing to generate a 'mix digest'. This mix digest is compared against the target hash. If the mix digest is less than or equal to the targest hash, the node is considered successful, and is then broadcast to the entire network as the latest addition. Howeverm ETHash is called memory hard. Every read from DAG is 128byte long. Every nonce production requires 64 mixes, hence at least 8kb of data is read from the DAG. The reads are random so putting a small chunk of DAG in L1 or L2 cache is not going to be very useful. Here, the performance of the algorithm is limited by the time it takes to communicate with the hardware. This is why ETHash is considered memory hard.

To improve performance of our system, hence, we will need to find out a more efficient and faster hardware information communication system. Our research and development department, in combination with the platform development team will be exploring and testing methods of bringing in the desired improvements.

Conclusion

TCC will be the first platform of its kind to empower the advertisement and marketing industry. While it makes advertising efficient and streamlined, reducing resource wastage to the bare minimum, it also empowers users and encourages them to share their expectation from manufacturers and services providers. Through the smart contract system, when an advertiser gains survey input, reviews, and client inquiries, rest assured all these would be genuine.

TCC will provide a platform for the launch of decentralized block-chain applications which will improve access to advertisement endeavours, marketing projects and data. Collaborators will be seamlessly matched based on their interests. Contributors will be rewarded with Q coins for making valuable contributions to the ecosystem. Through block-chain technology a genuine global marketing and advertisement pool will be enabled.

There is no outside agency controlling the system, hence all the prices within the platform will be community driven. This helps in growing an accountable ecosystem where the community drives growth from within. TCC intends to play the role of an unbiased moderator, monitoring and transparently reporting back verified data to consumers and service providers alike.