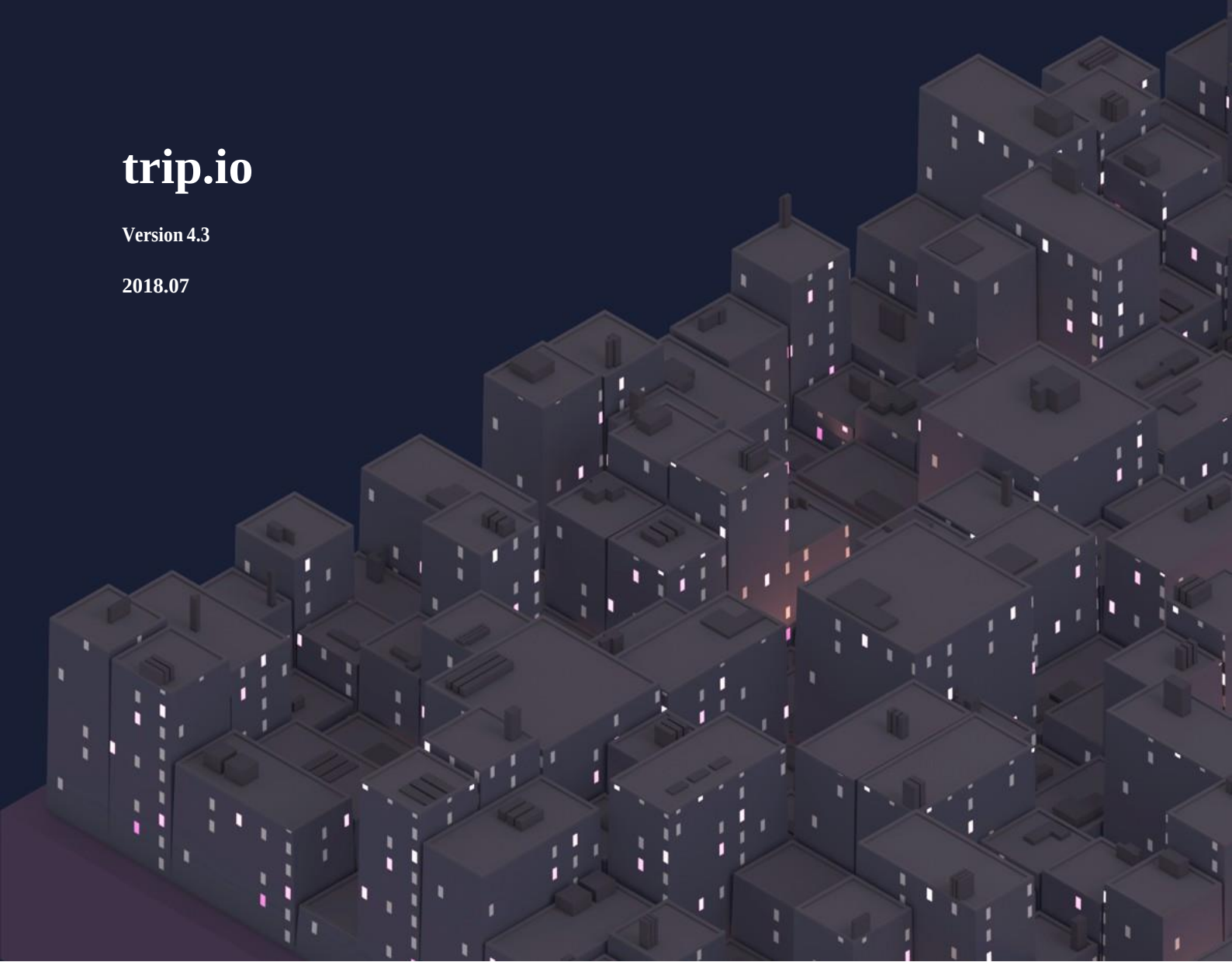
Tripio

The Travel Blockchain

Decentralized Travel Marketplace and Protocols

White Paper



trip.io

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1. Abstract

1.1. About Tripio

Tripio is the first travel marketplace based on the blockchain. It leverages the decentralized network provided by blockchain technologies to directly connect global customers and service providers. Moreover, it builds a service ecosystem based on transparent, tamper-resistant trust and incentives.

The blockchain technologies Tripio leverages help reduce transactional and operational costs in travel industries, as well as improve customer experience in their respective products and services. On the Tripio platform, a service provider can publish her unique service terms and conditions using smart contracts. From the moment a purchase initiates to the end of the travel, every step along the way can be enforced and monitored by smart contracts. Should disputes arise, Tripio provides dispute resolution by means of community self- government mechanisms.

Tripio comprises of its dApps and a set of Tripio Protocols that forms the basis of the new ecosystem. The Tripio dApp and the Tripio Protocals are powered by the ERC-20 utility token called the TRIO token. Customers may use Tripio dApps directly. At the same, any third-party may build its own dApp by leveraging the open Ethereum protocols.

The Tripio platform is consisted of the following four systems.

• Service and Identity Registration System

Service providers use this system to register services and create listings. They need to pass a KYC (Know Your Customer) authentication. User data are
strictly encrypted, so only authorized service providers may access user data based on smart contracts and legitimate reasons.

• Payment and Transaction System

Customer may use any legal fiat currency or digital currency (e.g. USD, EUR, ETH, LTC, XRP and TRIO) to purchase service in the marketplace. Tripio’s transaction system will perform transactional processing based on the needs of both customers and service providers. For example, a specific smart

contract may hold the payment until service is rendered and confirmed by both parties, and subsequently make payment in a particular currency.

• Reputation System

Upon completion of a transaction, participating parties may rate each other, optionally with supporting reviews. Rating and review information is stored on the blockchain. These ratings and reviews form the basis of reputation for all participants in the Tripio ecosystem.

• Dispute Resolution System

When disputes arise during service, such as damaged furniture or broken WiFi service, an automated process kicks in to form an arbitration committee in order to settle the dispute. An arbiters' voting power is determined by her reputation and number of TRIOs held (reflecting her shared interest in the healthiness of the Tripio ecosystem).

This whitepaper will describe in more details the application scenarios of the Tripio platform, as well as the working mechanisms of its subsystems. In addition, it will lay out how the TRIO token plays a vital role in the ecosystems. One fundamental benefit of the blockchain is that it can help construct a more dependable and robust economic system. Tripio aims to fundamentally solve the problems of fraud and unjust gain that still exist extensively in the industries. With increasing participation in Tripio, network effect will help bring more transparency and efficiency into the travel market.

1.2. Our Targets

1.2.1. Restructuring Incentive Mechanism

Values brought by current sharing economy to community participants did not increase along with the increase of market, thereby, **Tripio** will restructure incentive mechanism to unceasingly stimulate participants in community by adjusting the value distribution of optimization market with the help of **TRIO Token**.

1.2.2. Restructuring Credit Mechanism

With the help of the public distribution account book of Ethereum, **Tripio** established a credit system

to provide ecological participants with user experience based on trust and security.

1.2.3. Reducing Economic Cost

Using **TRIO Token** to make hotel booking on the basis of the intelligent protocols of **TRIO Token**, service providers have no need to pay any commission and operating cost will be reduced for the most part, meanwhile, users will get better services with lower prices.

1.3. Our Advantages

Baihuichang.com first came online at the beginning of 2015 and we are called by media as the real pioneer in the field of sharing space. Moreover, we are the real practitioner of sharing economy with a team of more than one hundred members. Until January in 2018, there are millions of users and 128 thousand sharing spaces on Baihuichang.com, an already operating platform for booking sharing space with 110 million RMB raised.

What's different from many other block chain start-ups is that we've already had a verified business model, a clear vision and a well-planned roadmap to implement rapid global expansion.

Date of Establishment

2015

Shared Space

128,000+

Completed Financing

¥1.1亿

Opening City

8+

Team

100+

User Growth

89% m/m

Locations

Beijing
Shanghai
Singapore

Investment Institutes

Blueridge Capital
Caixin Capital
FreeS Capital
Rongdao Capital
CVTE

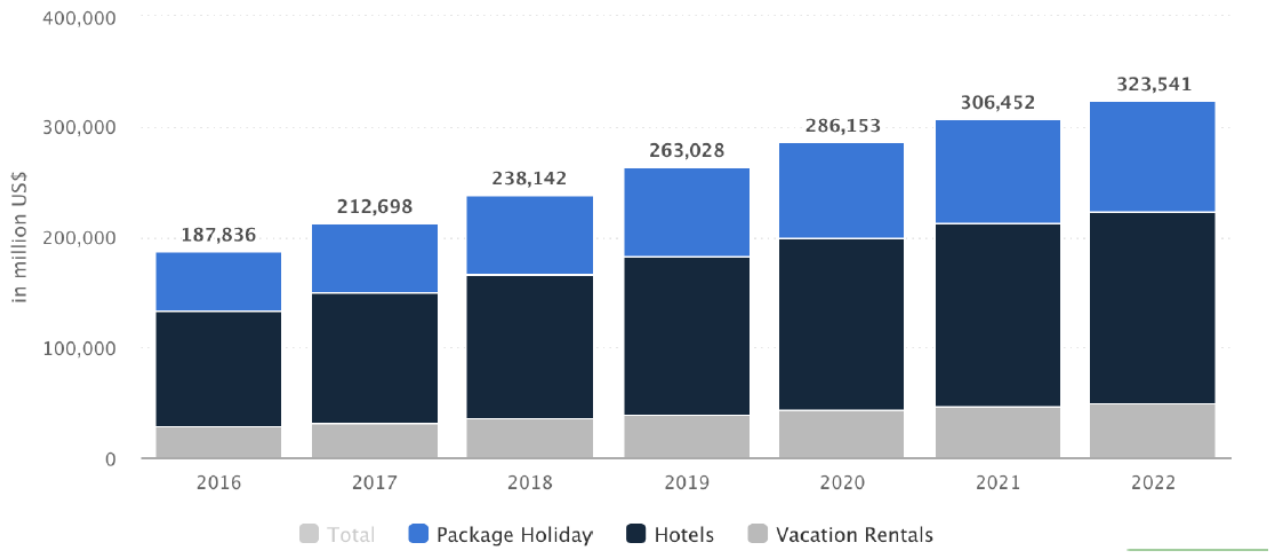
2. Analysis of Tourism Market

2.1. The Scale of Tourism Market

Travel & Tourism generated 7.6 trillion USD (10.2% of global GDP) last year. This sector accounted for 6.6% of total global exports and almost 30% of total global service exports. 76% of the income was generated through online travel agencies. The World Travel & Tourism Council concluded, according to data from 185 countries and 25 regions, this market grew at a pace of 3.8% during 2017.

"For the sixth successive year, growth in Travel & Tourism outpaced that of the global economy (2.5%)... As nations seem to be looking increasingly inward, putting in place barriers to trade and movement of people, the role of Travel & Tourism becomes even more significant, as an engine of economic development and as a vehicle for sharing cultures, creating peace, and building mutual understanding."

-- David · Skosl, the President and CEO of **WTTC**



Forecast of Global Tourism Market

This industry created 292 million jobs in 2016, equivalent to 1 in 10 jobs in the global economy. It accounted for 6.6% of total global exports and almost 30% of total global service exports. It is forecasted to grow an average of 3.6% until 2022.

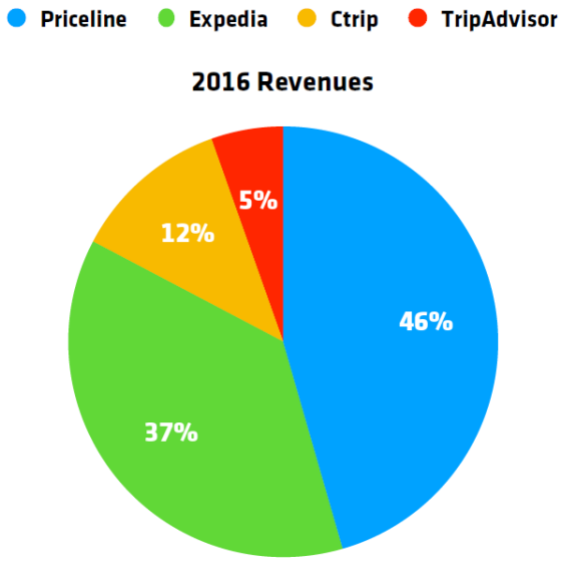
2.2. The Scale of Accommodation Reservation

Accommodation market will still be the highest proportion in the future process of industry growth. The proportion of accommodation market in the overall tourism market was 68 percent in the year of 2017. The proportion of hotel market was 53 percent while the proportion of non-standard accommodation such as home-stay and short-term accommodation was 15 percent. In the past, the basic product forms of tourism are "scenery and wine" --- scenery provided allopatric links and wine provided local-life links. Nevertheless, the rise of home-stay, inns, short-rented apartment and long-rented apartment recent years breaks the single- pattern that traditional hotels occupy "wine" filed. Under the circumstance that the number of tourists is persistently increasing, it is difficult for traditional hotels to satisfy the personalized demands of customers, however, the development of "non-standard accommodation" fills the gap in market. In a word, accommodation market has shaped a pattern of considering hotels as the major part and non-standard accommodation such as home-stay and short-rented apartment as important supplements.

Nowadays, a larger number of tourists choose the short-rented accommodation of sharing economy style, the longer they live, the more likely for them to choose short-rented accommodation. The reasons of this situation are that short-rented industry better combines internet technologies with lower cost and it digs deeper than traditional hotels in the aspects of customers' localization experience and supervision services.

2.3. Competition Analysis of Tourism Platforms

76 percent of customers will use online tourism platforms when they are making choice about purchasing tourism services.



Global online tourism application has formed a stable pattern after the development for many years. And global online tourism application is in main monopoly of four groups of **Priceline, Expedia, Ctrip and TripAdvisor**[1].Under the market environment whose competition pattern was basically fixed, the channel pricing right is mastered by **OTAs**. Nevertheless, OTA's commission that up to 20% percent caused that the profits of hotels are greatly compressed, hotels have become the offline "service party" of **OTA** and failed to share the dividend brought by the flourishing development of **OTA.** One of the iconic events can be concluded as follow: In July of 2017, one of the biggest domestic online tourism application declared that "reducing the traffic of Marriott International Hotels from now on and ranking them to the bottom". This event triggered extensive discussion in this industry and was deemed as the inevitable result of the long-time bitterness between hotels, and the focus of the public opinion vortex OTA was the high commission fee of **OTA**.

1 Travel Tech Media

2.4. The Pain Point of Tourism

Accommodation Market

2.4.1. Bilateral Credit Problems

Along with people's ceaselessly increasing tourism demand, the trust between hotels and customers, landlord and tenant has been totally entrusted to third party intermediaries based on centralized operation such as applications like OTA, Airbnb. Nevertheless, centralized intermediary applications cannot be completely sure about the credit verification of suppliers, landlord and tenants in the process of pursuing high commission and the credit data will not be shared to lower credit risk, thereby, a large number of situation deviating from credit rules constantly happened.

Scenario One:

A user reserved a standard room of X hotel on X tourism website when this website presented there still were many rooms and withheld. However, this user was told that there was no standard room when arriving at hotel. The competition and distrust with intermediary applications caused that hotels are unwilling to provide real storage and then lead to the interruption of the whole reservation credit chain.

Scenario Two:

A user reserved three rooms of X hotel and has prepaid the room charge on reservation website. However, this user was told the rise in price and that he/she could check in only after paying extra fee.

Scenario Three:

A landlord issues house resources on sharing short-rented applications and installs cameras at several places in the room to carry on uninterrupted privacy monitoring on tenants.

Scenario Four:

A tenant reserved a room on a sharing short-rented application, but he/she took away the precious calligraphy and painting hanging in the room by the landlord when check out room and then brought great loss to the landlord.

2.4.2. Counterfeiting Comments

When customers are purchasing services through online tourism applications, score and comment are the most important factors influencing decision except price. The meaning of comment relies on reflecting the situation of merchants' products and services in a more real way through users' sharing of personal experience. Comments with high quality are helpful for customers to make optimal purchase choice. Along with the increase of the competition intensity between merchants, manipulating comment has become one kind of tool and method of attacking opponents and increasing sales.

An extreme role appeared under this background – full-time negative comment maker. On account of the much importance attached to public praise and score, some hotels stipulated that relative employee **KPI** would be influenced if any negative comment appeared. What more important is that negative comments will also influence the ranking of hotel on e-commerce applications (centralized applications). For the sake of dealing with negative comments, many hotels try to improve their rankings on applications through methods of counterfeiting comments and counterfeiting order forms. A vicious circle of negative comments and counterfeiting order forms has been formed on online reservation applications.

The UK Competition and Market Authority has investigated some of the fake comments existing on some English websites which including Amazon and **Trip Advisor**. According to reports, some really excellent hotels and restaurants may not get a corresponding amount of access and feedback whereas some merchants using unfair competition methods are at the top four of the positive comment list[2].

2.4.3. Commission Staying at an All-time High Level

In the centralized tourism accommodation reservation market, the charge proportion of commission is staying at an all-time high level.

Commission of **OTA** application：**15% - 20%**

Commission of sharing short-rented application：**10% - 30%**

2 The Competition and Markets Authority (CMA) has launched an investigation into third-party hotel booking sites amid st concerns over the clarity, accuracy and presentation of their company information – including how they make money. https://www.morningadvertiser.co.uk

2.4.4. High Transaction Fee

In the process of current centralized service transaction, the cost of transaction fee mounts to 6 percent. For instance:

- Fee of financial institutes (3％)- the fixed fees of managing transaction charged by **Visa**, **MasterCard** and some other financial institutes.
- Fee of foreign exchange transactions (3%)- handling charge for foreign exchange transaction should be paid for each transaction in the cases of cross-border transactions.

2.4.5. High Operating Cost

In centralized transaction market, the operating cost of intermediary application occupies a large proportion of the total capital expenditure. Considering **OTA** industry as an example, one of the domestic OTAs established an operating center with more than ten thousand employees to ensure operating ability.[3]

3 ctrip.com: https://pages.ctrip.com/public/aboutctrip/ac5_corStre.html

3. Product Plan

Tripio is developed based on Ethereum smart contracts. Ethereum is a consensus-based, expandable, standardized, developer-friendly and collaboration-friendly blockchain. By leveraging the full-fledged and Turing- complete programming language built into the Ethereum Blockchain, Tripio redefines transaction models and state transition function rules, and hence construct various smart contracts to power travel services in new and innovative ways.

As a redundant distributed system, Ethereum, as well as other blockchains including Bitcoin, has intrinsic constraints such as high computational workload and high storage cost. Tripio will use both on-chain and off-chain solutions to build a complete and usable system. For example, we will store pictures and comments off-chain using Inter Planetary File System (IPFS) , and generate hash values on top of them to be used as conjunction pointers on the chain. Ethereum Oracle is the bridge between smart contracts and external environment (URL Access, Information on other blockchains such Bitcoin). Tripio abstracts the various smart contracts and off-chain services into Tripio Protocols through Oracle, and provides standardized support to Internet applications, as well as dAPPs. Meanwhile, Tripio's own applications are also developed on top of the Tripio Protocols.

3.1. Service and Identity Registration System

3.1.1. Service Registration

A service provider uses Tripio's smart contract template to publish a service. For example, a hotel manager can create a new room type, with supporting information such as pictures, service descriptions, room dimensions, Wi-Fi availability, breakfast options, and terms and conditions, for a set listing fee, payable by TRIO tokens.

Tripio automatically stores these data into IPFS files and generate corresponding hash values as service identification codes used in smart contracts. The charge of TRIO Token's main purpose is to prevent service abuses. These tokens will be redistributed into an incentive pool upon the first completion of a purchase and related smart contract executions.

Tripio uses machine learning technologies to perform safety and other necessary filtering on uploaded pictures and texts, in order to prevent harmful information from entering to the Tripio ecosystem.

Should the aforementioned filtering mechanism fail, a safety committee forms by the delegated Proof of Stake (dPOS) mechanism, and the committed may vote on whether to purge harmful content. Factors considered in forming the safety committee include number of TRIO tokens held, timespan of token ownership, reputation rating, and diligence in duties performed.

3.1.2. Identity Registration

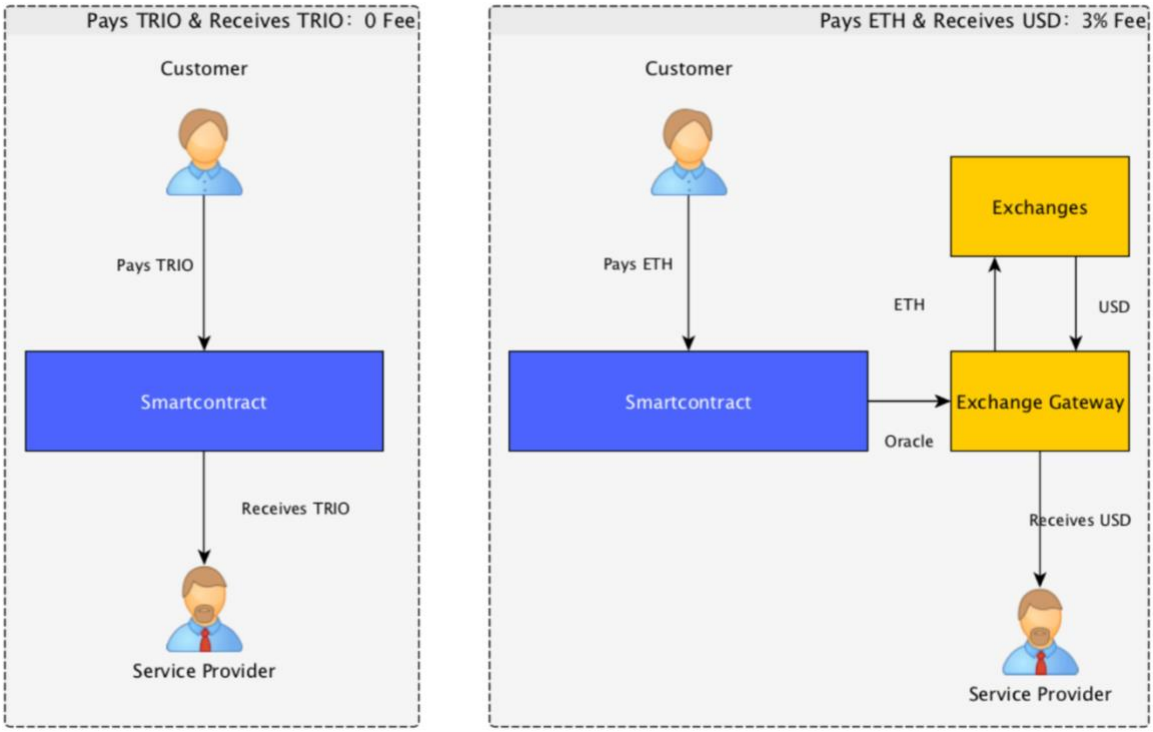
Both service providers and customers need to go through a Know Your Customer (KYC) process. KYC is a standard business practices for many companies. However, for any companies with global operations, the KYC is a complicated task. Even today, many service providers still handwrite customer and transaction information, which means sensitive information is at risk of being leaked or stolen on a daily basis.

Tripio uses asymmetrical cryptography to encrypt identity information and store them in IPFS. Only under specified business scenarios, an authorized party may access identity information through smart contracts. For instance, upon signage of service contract between service provider and customer, one party may access the other's identity information. Service provider may grant access to part or all of its company information to all visitors.

3.2. Payment and Transaction System

Due to the many layers of middlemen in the travel industry, approximately 20% of the transactional value is consumed by these layers, in the forms of listings fees, settlement fees, currency conversion feeds, etc. When a customer pays $100 for a service, the actual service provider only receives around $80. This inefficiency hurts both the customer and the service provider.

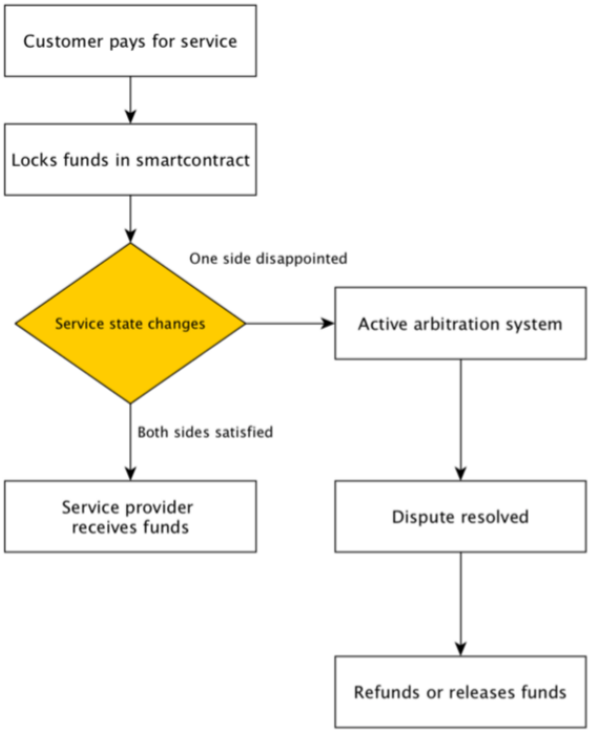
On the Tripio platform, there is no middleman cost when the transaction is done through TRIO tokens. Even in the event of other payments methods, Tripio only charges a 1% to 3% currency conversation fee. By eliminating the middleman layers, transactional overhead is greatly reduced.



Trading and settlement methods: the left picture shows the transaction using TRIO, the right picture shows the transaction using different currencies.

3.2.1. Payment Initiation

A customer finds services by leveraging search, browse, filter, and related utilities provided by Tripio. She learns the service terms and conditions and confirms her purchasing intent. Tripio generates a smart contract for this transaction, based on service registration information. The customer then makes payment, in fiat or digital currency, to the smart contract. For some services, such as room sharing, service provider may request additional TRIOs as a security deposit. At the same time, service provider may be required to provide a set number of TRIOs as good faith collateral. These rules are spelled out in the initial service registration process. Upon confirmation by both sides, Tripio generate a proof of purchase, stores it in IPFS and provides it to the parties involved.



3.2.2. Transaction Confirmation

While service is process, funds from both parties are locked up in the smart contract. Only after the service is rendered and confirmed through the bidirectional smart contract by two sides, funds and related deposits are disbursed to the appropriate accounts, e.g. digital wallets or bank accounts.

After transaction is completed, parties may review each other. Should disputes arise, the smart contract locks up the funds in questions and imitates a dispute resolution system. It only releases the funds until a final arbitration status is reached.

3.2.3. About Fiat Currency

We firmly believe that digital currency will be extensively accepted in the future, however, most transactions all need fiat currency as a method of payment for the current business environment, especially for most of the service providing enterprises, fiat currency is the only currency that can be used as assets. For the sake of making the various advantages of block chain technology apply as fast as possible in tourism industry, Tripio will help both parties of transactions automatically finish the

exchange between digital currency and fiat currency. In other words, customers can pay in digital currency and service providers will get fiat currencies of equal value. Furthermore, **Tripio** will finish the automatic exchange of fiat currency with the help of the services from third party institutes.

For service providers:

1. Making maximized compatibility with existing business processes and IT systems.
2. Reducing the profit uncertainty brought by the fluctuation of digital currency.
3. Extending the customer group to digital currency users.

For Customers:

1. More flexible options of payment.
2. Enjoying better services brought by reducing transaction cost
3. A greater speaking right towards service quality under the circumstance that intelligent contracts provide transaction guarantee.

3.3. Credit System

3.3.1. Problems of Centralized Evaluation System

When a customer chooses a travel service provides, ratings and reviews often play a major role. As such, merchants and platforms have a strong incentive to manipulate these ratings and reviews for monetary gain. A large commercial industry has grown out of this incentive, and customers' trust in the integrity of ratings and reviews, as well as their financial interests are being jeopardized because of this. The unfair practices are erecting barriers in the development of the global travel market.

With the expanding sharing economy, more individuals are becoming service providers. Compared with traditional hotels chains, these individual providers lack professional risk management capabilities. For example, when people evaluate whether to list their homes on Airbnb for unfamiliar travelers, their topmost concern is usually safety. A creditable and accurate reputation system will play a vital role in risk assessment, and also the long-term health of any sharing economy ecosystem.

3.3.2. Decentralized Solutions

Tripio leverages the Ethereum distributed ledger to construct the credit system. It lets all participants in the system accrue credit based on good behavior. Everyone can view a person’s public records and determine whether she is credible. Tripio’s credit system is global, transparent, automatic and decentralized. It works in tandem with Tripio’s other decentralized systems.

In the Tripio ecosystem, a participant takes one or more of the following three roles: Customer (C), Service Provider (SP), and Arbiter (A). These three roles perform scores are calculated independently, and their input together generate a comprehensive reputation score. The arbiter’s role will be described in more detail later.

E.g. George’s comprehensive reputation score is 872 (1,000 being the maximum score)

His C reputation score is 920

His SP provide reputation score is 530

His A reputation score is 823

This set of scores demonstrates that as a customer and an arbiter, George has high credit rating. However, he may not be a good service provider. All these scores are calculated based on the

participant's behavior in different roles based on smart contracts. Her credit ratings are assigned to a specified wallet address.

Every time a transaction, compensation request, dispute or audit happens, smart contracts updates the credit ratings for all participants involved. These updates on based on participants' behaviors. The SP reputation score is also updated based on the SP's service levels and results.

For example: Does the SP react quickly to C's requests? Does the SP provide services according to her promise to C? Is its timeliness and quality the same as advertised? Does the SP have good C reviews?

The C reputation score is updated by smart contracts based on her behavior as well. Different actions are weighted differently in credit score rating. For example: What is the C's reimbursement record? What is the total reimbursement amount? Are these reimbursements resolved? Does the C reach agreement with SPs regarding her reimbursements? Her purchase history characteristics, such as frequency, prices, etc.

The A reputation score is updated based on her actions in arbitration cases. For example: Does she participate when selected by the system to be an arbiter? Does she perform arbitration duties within the designated timeline?

Does she provide quality arbitration?
Service Provider and Customer may review each other. Transactions with written feedback impact reputation scores more than silent ones (transactions that happen without feedback entered). A Service Provider's renews are displayed to customers when they browse or search for products. A Service Provider may also view all comments written by a Customer. Whether positive or negative, these reviews help all participants operate in a transparent ecosystem.

Tripio provides incentives to encourage both parties to participate in reviews. After a transaction is completed, the ratings and reviews are not made public immediately. Only after both parties finishes reviews, or after one party fails to provide review within a timeframe, do the reviews become public records. This mechanism encourages the reviews to be independent and trustworthy.

3.3.3. Global and Transparent Credit System

The credit system of different centralized transaction market cannot be mutually opened up to each other. For example, merchants of **Ctrip** need to accumulate credit on **Agoda** and customers' credit obtained on **Airbnb** cannot be recognized on **Xiaozhu Rental.**

Through the global transparent credit established by blockchain, **Tripio**'s credit is open to the public to stimulate all parties and increase its own credit ranking so as to jointly create a better decision and a safer travel service ecosystem. In addition, people with a high credit score and credit history will be provided with accounts of reducing cash deposit and cutting service prices. The occurrence of fraud behaviors can be sharply reduced by this kind of transparent or at least becomes more difficult. For users with low credit score, we can increase cash deposit or even refuse to serve them.

3.3.4. Anti-cheating Facility Based on Artificial Intelligence

The behavior of counterfeiting comments (including false reviews and making false reviews) will not only mislead customers or harm the interest of customers, a malignant ecosystem of that bad coin expels good coin will be formed in a long term. Along with the development of artificial intelligence based on machine learning, it has been verified that context classification model represented by **Bag Of Words (BOW)** can effectively recognize false comments. But the major reason of that artificial intelligence anti-cheating cannot achieve the maximum effect in centralized system is that it is impossible for each centralized system to share data due to business profits, that is why trusted model training data cannot be formed through a complete users' behavior chain.

In the ecosystem of **TRIO**, **Tripio** will analyze and establish artificial intelligence anti-cheating model through **Intact Footprint Records** and the founded cheating will be punished with reducing credit integral. Comments and ratings from users with lower credit scores will also be downgraded in systems that reflecting service providers' credits.

3.4. Dispute Resolution System

Dispute may will occur between service providers and customers in the process of transaction. For example, consumers feel that the sanitation conditions of the hotel are not up to the standard level, or that the renter thinks the renter has damaged the sofa. Once these cases happened, platform always

works as the coordinator and arbitrator in centralized platforms. On the one side, platforms need to pay high operating cost and on the other side, both parties of transaction may will believe that unfair arbitration has been made by platform.

3.4.1. Delegated Proof of Stake

The above problems had been perfectly resolved by the dispute resolution system designed by **Tripio** on the basis of Delegated Proof of Stake (**dPOS**) with the help of blockchain. Firstly, the service provider can clearly indicate the amount of the guarantee that they are willing to pay and the amount of the guarantee that the consumer is required to pay in the service registration period. After starting transactions, both transaction capital and guarantee will be locked in the specified blockchain. Any party can make an arbitration request if dispute occurs in the process of service.

3.4.2. Procedures of Dispute Resolution

The working procedures of dispute resolution system can be concluded as follows：

I. The party making disputes can start the dispute resolution system through intelligent contracts, and people making the dispute needs to pay settlement fee (such as 50 **TRIO**).

II. Both party of the dispute should upload evidence to the IPFS file system and the hash value of evidence will be recorded in the blockchain.

III. System will automatically organize the arbitration committee with a certain number of members (the least number is five) according the money involved in this dispute.

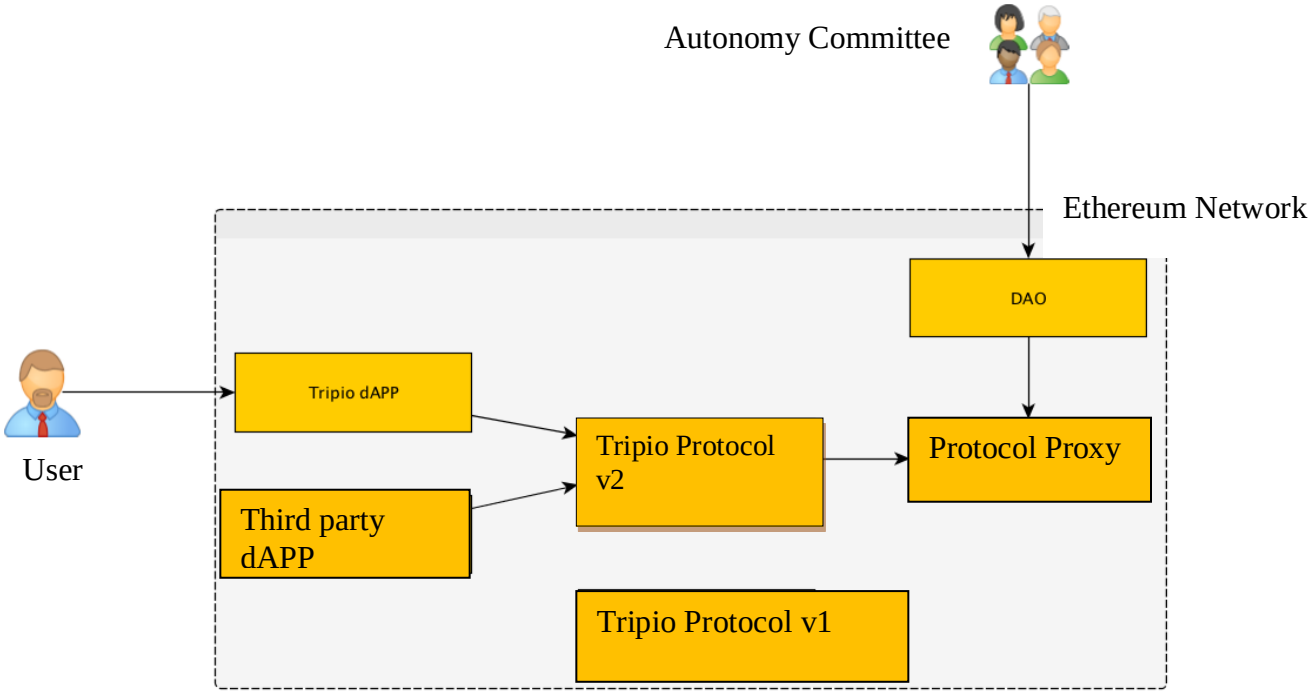
IV. The choice of arbitration committee will be made according to arbitrator's activity and credit score.

V. Appeal can be applied if any party of the dispute is not satisfied with arbitration result. Nevertheless, the dispute service fee of each appeal will be double and the number of the members in arbitration committee will also be double, and the appeal cannot be made until the dispute service fee exceeds the compensation amount of the appeal.

Tripio designs dispute resolution system according to the idea of **dPOS** equity distrust certification mechanism because **dPOS** is the fastest, most efficient, most distributed and flexible consensus model at present. All of the network parameters, including rate plan, block interval and transaction size, can be adjusted by voted representatives. What the most important is that the purpose of consensus protocol is to prevent all the participants from the interference of unnecessary supervision.

3.5. Community Autonomy

The major component of **Tripio** system is providing the intelligent contracts of various services. Nevertheless, intelligent contracts cannot be updated once they are deployed on account of the irreversible modification of the blockchain. New intelligent contract must be deployed if **Tripio** need a system upgrade, every single participant in ecosystem must will be influenced by this kind of system upgrade. For example, the algorithm of credit scoring system may will be changed by the upgrade of **Tripio**, different participants in ecosystem will hold different positions towards this kind of influence. **Tripio** ecosystem is one kind of decentralized and digital autonomous management organization controlled by **TRIO Token**.



Upgrading Tripio application in the way of Community autonomy

In the case of that two versions running in parallel produced by **Tripio** protocol, although we can make all the **dAPP**s automatically use the newest version of protocol through design specification, this kind of specification may will bring systematic risk to the platform (in the worst case, attackers can gain access to user funds.) The community can decide which version to use together. This not only achieves the continuous updating of the platform, but also maximizes the benefits of the relevant members.

Tripio will be deployed into Ethereum blockchain and will provide the rights of access and usage for future **dAPP**s and users. The uses of **TRIO Token** can be concluded as the following two aspects:

providing for market participants to use payment transactions and related fees as well as implementing decentralized community autonomous organization (DAO) to the protocols. Distributed community autonomy will be gradually and safely integrated into **Tripio** protocols according to development speed. At first, we will manage platform development through a multiple-signed contract and we will simultaneously develop the management system based on **DAO**.

For example, when the development team of Tripio hopes to upgrade the system by releasing a new version of the intelligent contract, positive or negative impacts will be produced by the new calculation method of credit score towards part of service providers. At this point, all community members can participate in deciding whether the new version will be online.

4. Values of TRIO Token

4.1. Economic Patterns of TRIO Token

4.1.1. Definitions

We have a multiple-party role assignment in the ecosystem of Tripio:

- Service parties: Hotel and Landlord.
- Customer: Tenant.
- Third party: Third parties providing personalized services on the basis of Tripio protocols such as chain hotel group, accommodation alliance
- Arbiter: Users providing arbitration when disputes occurring in the process of service.

4.1.2. TRIO Token Circulation Mechanism

4.1.2.1. Releasing Services

Service providers can release the contents of registered services by paying **TRIO Token**.

4.1.2.2. Payment

Customers pay **TRIO Token** to service providers for services, the service providers set the reward of **TRIO Token**, which is awarded to consumers who actively participate in the review and sharing after the service is finished.

4.1.2.3. Credit Behaviors

Customers can obtain the rewards of **TRIO Token** through real comments and obtain extra rewards of **TRIO Token** by self-publishing services and make some sharing to invite others to join in.

4.1.2.4. Dispute Arbitration

Customers should pay certain **TRIO Token** for dispute arbitration and the members of the Arbitration Commission involved in arbitration will get the rewards of **TRIO Token**.

4.1.2.5. Credit Score Compensation

Low-credit service providers can attract more customers by providing more **TRIO Token** as cash deposit in the process of service.

4.1.2.6. Third-party Developer

On the basis of the intelligent contracts of **Tripio**, third-party provides customers with personalized services or provide traffic import to the service providers through self- characteristics services and the operation of its own community, and third-party will obtain the rewards of **TRIO Token** when customers finish transactions.

4.1.2.7. Community Sponsorship

Service providers can provide sponsorship to communities through **TRIO Token** and then to obtain relatively high credit score.

4.1.3. The Eco value of TRIO Token

Economic values of **TRIO token** mainly reflect in circulation value and ecological value. In the ecological design of **Tripio**, service providers use **TRIO token** as cash deposit and then purchase advertising space. The main scenes of customers using **TRIO token** including using as a payment method in which the exchange rate conversion fee is waived, using as the cash deposit for the purchase of the sharing service and using as the arbitration fee.

4.2. Incentive Mechanism

4.2.1. Behavior Incentive Mechanism

Detailed reward rules of service party:

Service party can get reward of **TRIO Token** through the "total equity of hotel room × positive comment" in the unit cycle. The number of comments can motivate service party provide customers with better services.

Detailed reward rules of customers:

Getting rewards of **TRIO Token** by writing comments.

Getting rewards of **TRIO Token** by sharing and forwarding.

Detailed reward rules of Third Party:

Earning rewards of **TRIO Token** by providing more personalized services.

Earning rewards of **TRIO Token** by conducting traffic for the servers through its own traffic.

4.3. Integral Mechanism

People who travel frequently all will accumulate travel points, including flights, accommodation and car rentals. In most cases, we receive their points when we are using some credit cards providing travel shopping points. Nevertheless, the question is whether the points provided by these various plans are useful? Comparing with the discount plans of other industries, travel points program have the property of more complex, less transparency, more troublesome to be used. Thereby, for most of common tourists, points are not important because they have a hard time accumulating points that can be used, so many points are not used.

In fact, clients believe that the purpose of the opacity of rules is to prevent their using of these points, however, complexity always brought negative effects to these points. Meanwhile, company has also increased operating cost because of this reason, they were required to take part of the responsibility of points by accounting regulations and only after the points are redeemed can the company clarify the relevant situation of profit and loss.

TRIO Token will play the integral role in Tripio ecosystem and then everyone can clearly understand the rules of integral program in its intelligent contracts, simultaneously, they can also clearly find whether these points are truly used in the public accountant books.

4.4. Metcalfe Network Effect

Tripio is a travel service marketplace, as well as a set of open protocols. All travel agencies, include Booking, Ctrip, Agoda and Airbnb may leverage Tripio open protocols in order to reduce cost and increase service quality. For instance, Airbnb may use Tripio's credit system to boost the accuracies of its own review system.

5. Roadmap

5.1. Q1-Q2 2018

- Integrating digital currency payment gateway
- Developing the prototype of registration system
- Developing payment systems for automatic currency conversion
- Finishing the test of registration system and payment system on **Testnet**

5.2. Q3-Q4 2018

- Accessing existing space reservation platform into payment system to access more inventory
- Developing credit system and dispute resolution model
- Finishing the test of credit system and dispute resolution system on **Testnet**
- Establishing more partnerships

5.3. 2019

- Expanding other tourism services except short-rented accommodation
- Providing blockchain support for more than three tourism service applications
- Developing more applications and products based on intelligent contracts and intelligent hardware

5.4. 2020+

- Reaching partnerships with sharing economy platforms such as five **OTA**s and **Airbnb** and providing blockchain infrastructure support.

6. Team and Advisors

We have a team of hundreds of members with senior background in online tourism industry. Our core members are all from Agoda, Expedia, Hotels, Tripadvisor, Elong, Ctrip, Qunar, Alibaba, Amazon and Microsoft.

6.1. Team

Wesley Shen - Founder & CEO

Mr. Wesley Shen had worked as Senior Vice President of Wireless Business at Elong, which is one of the subcompanies of Expedia, and he is the founder of the mobile internet business of Elong who built the ecosystem of 200 million users.

George Zhu - Founder & CTO

Mr. George Zhu had worked at Elong as Senior Vice President and at Amazon as Senior Manager of Global Inventory. He has 16 years' experience of software development and product management in the US and China. He also has Master's degree of Computer Science from University of Virginia and Bachelor's degree of Computer Science from Zhejiang University.

Mosa Huang - Vice President of Business

Ms. Huang Chao had worked at Agoda and Elong. Her responsibility of working as a PCG director was the cooperation of hotel merchants in north China and her responsibility of working as a PSG director was the expansion and development of home accommodation suppliers.

He Qicai - Vice President of User Growth

Mr. He Qicai had worked in companies such as Tripadvisor, Microsoft and Elong with the position of Senior Director of Online Travel Marketing and was mainly responsible the users' growth. He holds a Master's degree in Applied Mathematics from Peking University.

Sun Changsong - Specialist in Payment System

Mr. Sun Changsong had worked at Qunar and was responsible for the design and development of the framework of Payment gateway system and real-time settlement system. He graduated from Xidian University of Electronic Technology.

Yin Meichao - Specialist in Network Security

Ms. Yin Meichao has worked at Renren Company and was responsible for the network security and the design of the secure storage framework for users' sensitive information. She graduated from Communication University of China and majored in Network Security.

Wang Shuguang - Specialist in Recommended Algorithm

Mr. Wang Shuguang majored in mathematics and has the five-year-longer experience of development. He had worked as an architect of wireless department in Elong. And he is proficient in front-end, back-end and Native full-stack development and has an in-depth understanding of the overall iOS framework and ecosystem.

Li Jia - Front-end architect

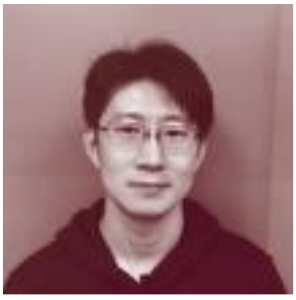
Li Jia is a front-end architect and graduated from Nanjing Aerospace University. During the five-year-long work in Elong, he always believed the positive impacts of cutting-edge technologies on the team and established the basic framework system and the engineering system of the Elong wireless front-end and accumulated a large number of open source experiences of big-scale projects. Now, he is focusing on the research on mobile front-end framework and dynamic solutions.

Wang Zehua - Blockchain Technology Specialist

Mr. Wang Zehua graduated from Northwestern Poly-technical University and has twelve-year-long experience of software development. He leads and is responsible for the design, research and development of blockchain technology in the fields of Taobao lottery, instant lottery and the full range of SDKs. He is also the early practitioner of the implementation of blockchain technology and the preacher of decentralized thoughts.

6.2. Advisors

The following rankings are in no particular order：



Yu Wei - A Doctor, Global Partner of Microsoft Company, Associate Dean of Microsoft Asia-Pacific Research and Development Engineering Institute

Doctor Yu Wei has professional experience of fifteen years long in artificial intelligence filed such as machine learning and pattern recognition. Now he is the global partner of Microsoft and is mainly responsible for the research, development and business development of Microsoft commercial artificial intelligence China team and expanding the extensive cooperation with Chinese local enterprises in the field of Artificial intelligence business application. Doctor Yu Wei first worked at Microsoft Windows and then worked at the search department of Being Company.

He graduated from the Department of Electrical and Computer Engineering at University of Maryland in USA and his main researching directions during Doctor's study including pattern recognition, signal processing, network security, and game theory. And he has published more than twenty papers in international journals and conferences during Doctor's study.

Tian Jiangsen - A Doctor, Associate Dean of Microsoft Asia-Pacific Research and Development Engineering Institute

Doctor Tian Jiangsen is currently the Associate Dean of Microsoft Asia-Pacific Research and Development Engineering Institute and he is responsible for leading teams to quickly transform cutting-edge research results into products to realize the value of research. Doctor Tian Jiangsen joined Microsoft in the year of 2004 and worked at the Redmond Headquarters of Microsoft. Doctor Tian Jiangsen graduated from University of Science and Technology of China with a bachelor's degree in mathematics and he continued to further study at American New York City University and successively obtained the Master degree and Doctor of Computer Science.

Zhang Zhiyu - Architect of Alibaba Company, Blockchain Technology Specialist

Mr.Zhang Zhiyu graduated from Cornell University and worked at Seattle Headquarters of Amazon Company. He was responsible for the research and development of Website platform, supply chain system, commercial-opening platform and settlement system. He is currently the architect of Alibaba

Company and makes practice and research on the implementation of blockchain technology in the new retail field.

Tang Yue - Founder of Blueridge Capital and founder of Elong

The founder of Elong Tourism Network and jointly founded a Private equity fund of Blue Mountain China Capital with the cooperation of Blue Mountain Capital which is a worldwide famous hedge fund, and worked as the founding partner of Blue Mountain China Capital in the year from 2006 to 2014. Mr. Tang Yue studied Business Administration at Nanjing University and obtained a degree of Business Administration at Kendaldia University.

Xie Zheng - Founder of Mai Tao Family Tour, the former Chief Operating Officer of Elong Tourism Network

Graduated from China-Europe International Business College, founder and CEO of Mai Tao Family Tour, Worked at companies such as Citibank, Procter & Gamble, etc.

Li Feng - Founder of FreeS Capital, former partner of IDG Capital

Bachelor of Chemical Science, Peking University; Master of Chemical Science, University of Rochester, USA. He is one of the former partners of IDG Capital and currently is the founder of FreeS Capital and a famous investor in the field of TMT. He pays much attention to the investment in the fields of educational consumption, TMT, high-technology and some other relevant fields. Moreover, he led the investments in companies such as Ripple and Coinbase.

Liu Hao - Former CEO of Zhaopin.com

He is the former CEO of Zhaopin.com which is one of the New York Stock and an Angel investor. He has graduated from Department of Physics at Beijing r of Physics at University of Washington in the USA and Doctor of Law at Yale University, passed the Lawyer Qualification Test in New York and California of the USA and worked in a American law office --- Davis Polk & Wardwell. From the year of 2000 to now, the investment projects he was responsible for of Orchid Asia Holdings Company including Zhaopin.com, Cradle Group, Ctrip, eBay, etc.

Feng Bo - Founding Partner of Ceyuan Ventures

Mr. Feng Bo joined Lianchuang Source in the year of 2004 and is currently one of the founding partners of Lianchuang Source, and he also is an Angel investor. In the year of 1999, Mr. Feng has joined in the creation of Chengwei Ventures and was a founding partner. Before that, Mr. Feng joined China Venture Capital Corporation in December of 1997 and worked as a chief representative. And in the year of 1994, he also joined Robertson Stevens Company, one of the US high-technology investment banks, and worked as vice president, he has helped Sitong Lifang Company and Asia Info Company successfully financed during his incumbency. Mr. Feng Bo first studied at Marin College in the united states and then studied at San Francisco State University and majored in Film Director.

7. Investment Institutions

Tripio (Listed on OKEx) is the first travel marketplace based on blockchain. It leverages the decentralized network provided by blockchain technologies to directly connect global customers and service providers. Moreover, it builds a service ecosystem based on transparent, tamper-resistant trust and incentives. Tripio's technologies reduce transactional and operational costs in travel industries, as well as improve customer experience in their respective products and services. Tripio's investors include OK Blockchain Capital, BlockVC, INBlockchain, FreeS Fund, Blue Ridge Capital (China), Ceyuan Ventures, Node Capital, GENESIS Capital, TRON, F2Pool and others.

8. Token Distribution

Total available supply: 5,000,000,000TRIO

Tokens in circulation: 1,750,000,000 TRIO (70% Vesting, releases 10% every 15 days, starting from 2018/3/3)

Pre-sale start date: 2018/1/25

Pre-sale amount: 1,750,000,000($19,210,367)

Pre-sale price:

1 ETH : 97,222 TRIO($0.008)

1 ETH : 72,916 TRIO($0.011)

1 ETH : 58,333 TRIO($0.014)

Public sale: N/A

Cornerstone & Private 35%

Founding Team 25%

Company Reserve 25%

Early Contributors & Advisors 5%

External Development 10%

9. Appendix

9.1. Risk Warning

The purpose of writing this white paper relies on providing the potential holder of Token issued by **Tripio** project with necessary information related to this project.

The following contents may not cover all the information required and it does not contain the meaning that this white paper constitutes any contractual relationship between anyone.

The only purpose of this white paper relies on getting the potential investors obtain necessary information so as to help investors to make decision of whether it is necessary to make a deep analysis of this project and then purchase project Token.

Nothing in this white paper constitutes any form of prospectus or fund-raising invitations, nor does it belong to any form of security-purchasing invitation or fund-raising invitation within the jurisdiction of any laws. The white paper is not written in accordance with any relevant laws and regulations within the jurisdiction of laws and is not administered and constrained by any relevant laws and regulations used to protect investors within the jurisdiction of laws.

All the statements, estimations and other financial information belong to the property of estimation. There are known, and unknown risks and uncertainties of report or information belong to this kind of estimation property, consequently, situations of that the practical situation and result are greatly different from those in the above estimation, property description and suggestion will occur at a high frequency.

Ethereum Foundation makes the route map of the development and improvement of Ethereum. Although the hope of resolving known problems has been predicted by some pre-arranged planning, it is still not yet sure that when these new improvements will be introduced and whether they will success. Especially "fragmentation" blockchain one of the prearranged planning aiming at substantially increase the speed of block chain, nevertheless, there is still a long distance from implementation when this white paper was issued. Another prearranged planning is that replacing the current workload

verification algorithm during the mining process with rights and interests verification algorithm, the influence of this prearranged planning towards Ethereum network still is unknown.

Excessive Transaction Gas Price

All of the transactions including the transfer of **TRIO Token** on Ethereum block chain need the cost of real world with the unit of **Gas**. **Gas** price of basic transactions on Ethereum network is symbolic, so it is not sure whether **Gas** price will be increased that caused the situation that **TRIO Token** transactions became commercially unfeasible.

Risk of the theft and misuse of private keys

Tripio Foundation will conserve Tokens through cold wallet. Although behaviors of using private keys without authorization can be avoided be adapting all reasonable measures, it is hard to guarantee that the private key will not be stolen, defrauded or misused. The behavior of digital Token distribution system aiming at mainstream enterprises to use private keys without authorization may will seriously disturb **TRIO Token** and make **TRIO Token** get unavailable and worthless.

Ethereum may will be replaced

At present, although Ethereum blockchain technology is the most promising advancement in blockchain technology in our view, it cannot be guaranteed that Ethereum will not be replaced by competition protocols improved on the basis of Ethereum technology. Ethereum technology is one kind of open sources, and anyone can copy, modify, and distribute the code. Currently, it is not known that whether Ethereum application will become the main agreement adopted by the global industry, the fact that Ethereum being overtaken may affect the TRIO Token program and lead to the reduction of its usage and adoption.

Business Execution Risk

The implementation of the **Tripio** system road map and the deployment of related technology components are highly demanding for professional business and software engineering experience. The implementation of **Tripio** system route map and the deployment of relative technology components are highly demanding professional business and software engineering experience. Although reliable performance has been achieved by development companies in software engineering and commercial development, it is not yet sure whether they will fully realize the technology nodes specified in the route map.

9.2. Disclaimer

This document does not constitute an offer, request, recommendation or invitation related to any corporation security mentioned here. This white paper is not an offer document or a prospectus and has no intention to provide basis for investment decisions and declaration.
Information provided in this white paper only belongs to technical engineering property which has never accepted the audit, check and analysis of any professional law, accountant, engineering and finance consultant.

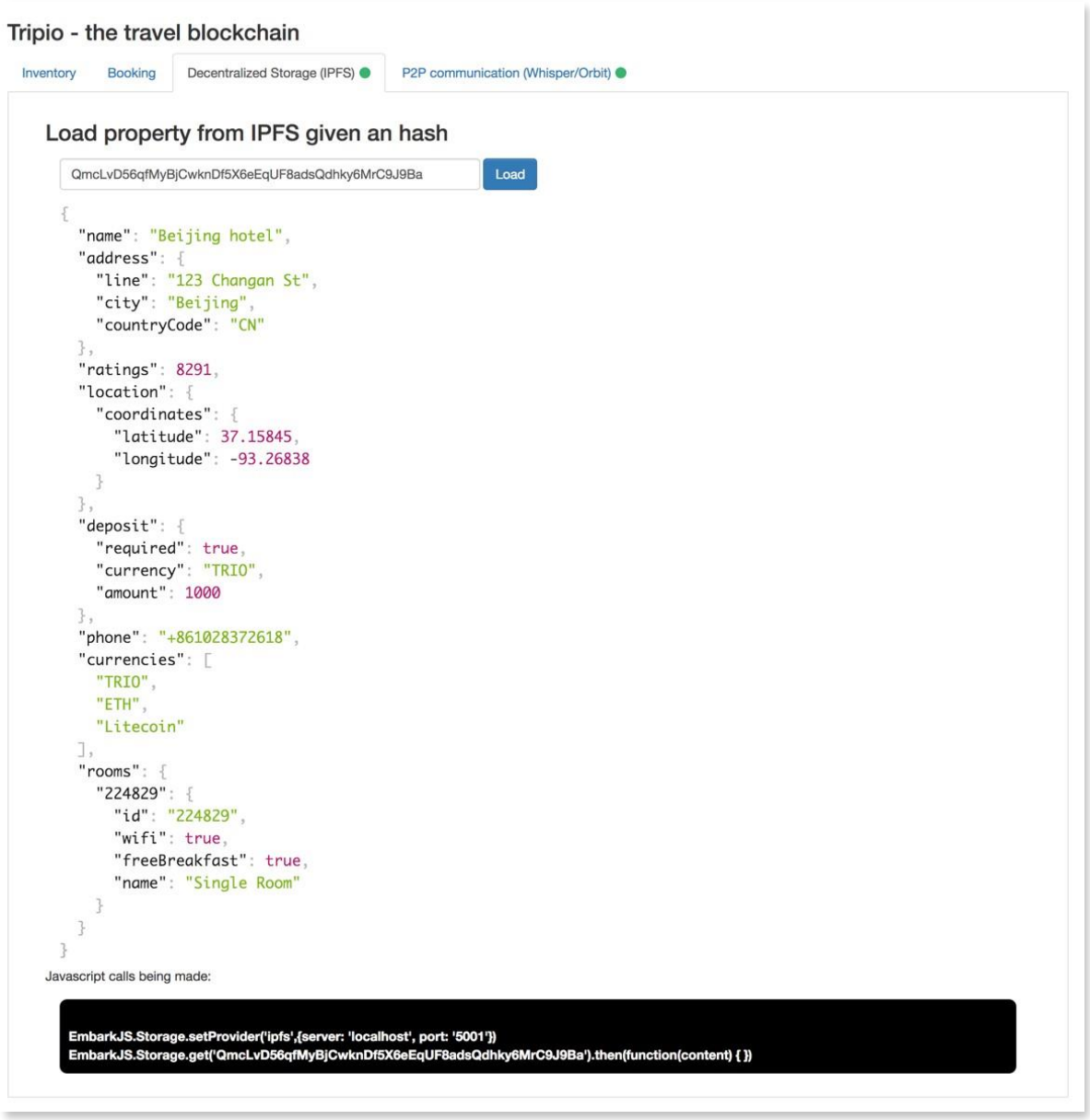
The white paper does not claim certain information for **TRIO Token**'s purchasers to make investment decisions, nor does it fully describe the risks of **TRIO Token**. The risks of **TRIO Token** are numerous and significant. **Tripio** (including its directors, executives and employees) will not take responsibility for the accuracy and integrity of information provided in this white paper or any mistakes in this white paper.

If you choose to participate in the first-phase replacement of **TRIO Token**, **Tripio** will not take any responsibility for the loss of market values.

The contents of this white paper is high technical, being familiar with distributed general ledger technique is the indispensable condition of understanding TRIO **Token** and the risk of its related engineering.

We encourage the recipient of this document to seek external recommendations. Recipient should take the total responsibility of the external assessment towards items stated in this document including the assessment of risk and the consultation of its techniques as well as the professional consultant.

9.3. Demonstration of Off-chain Distributed Storage



Registered information of services conserved in distributed storage IPFS

Service contents and items will be stored off-chain through JSON format. Considering the above picture as an example, the information, prices and items of rooms will be conserved in distributed storage IPFS and then generate a unique uniform resource locator in the world: **QmcLvD56qfMyBjCwknDf5X6eEqUF8adsQdhky6MrC9J9Ba**

9.4. Code Sample of Intelligent Contract

```
pragma solidity ^0.4.7;
contract Booking {
  uint public serviceProviderHash;
  uint public customerHash;
  uint public inventoryHash;
  string public currency;

  function Booking(uint _serviceProviderHash,uint _customerHash, uint _inventoryHash) public {
    //initialize the contract by providing off-chain hashes
  }

  function pay(address _customerAddress, uint256 _serviceProviderAddress, string currency) public returns (bool) {
    //customer pay with specified currency
    //funds will be locked during service
  }

  function cancelPayment (address paymentAddress) public returns (bool) {
   //customer and service providor can cancel the paynment
   //only if both aggreed
  }

  function settlePayment (address paymentAddress) public returns (bool) {
   //service provider will recevie the payment
   //once confirmed by the customer
  }

  function raiseDispute(address arbitrationAddress) public returns (bool) {
   //customer can raise a dispute if not happy with the service
   //service provider can raise a dispute if customer bad behavior happened
  }
}
```

Pseudo Code

9.5. Useful Links

- Twitter: https://twitter.com/thetripio
- Website: https://trip.io/
- Youtube: https://www.youtube.com/channel/UCcSWmNP8uQFLhx0YGtev_Sw
- Reddit: https://www.reddit.com/r/Tripio
- Medium: https://medium.com/@thetripio
- Email: hi@trip.io