Intelligent Travel Ecosystem Chain

Smart travel ecological chain ,

link travel new life !

ITEC White Paper

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1. Abstract

1.1 Background

From 1519 to 1521, Columbus sailed his fleet around the world and completed the first round-the-world voyage.In 1608, the 22-year-old Xu Xiake started a trip that he said was walking away. He also provided a "The travels of xu xiake" book for the literary youth who loves the great rivers and mountains of the motherland.410 years later, a frog from Japan used a form of electronic information to travel alone in the virtual world.

Regardless of the changes of the times or geographical differences, whether Western or Eastern, from the Aegean Sea on the Greek Peninsula to the Andean Mountains of South America, from the Baikal Lake on the mainland of Russia to the National Theatre in Australia, people's yearning for travel and its realization have never changed. It is true that Columbus was exploring the New World. In the process of sailing, it was a process of exploring the unknown world from zero to one. Xu Xiake can not book tickets in advance and no one plans product lines, carry a backpack and go to the end of the sword; The frogs in the mobile phone can also take rations and cover to go to all major attractions in Japan. In the real world of this era, we cannot complete such a trip so wisely that we must rely on offline travel agencies or online travel platforms to form a complete trip.

The problems of opaque prices, single products, limited service capabilities and opaque consumption have become the most common problems encountered by people when they travel, and consumers cannot balance the relationship between good prices and travel services.

Internet access has changed many of the shortcomings of the traditional travel industry. Online travel platforms such as Xiecheng website, qunaer website, etc. have sprung up all the time, and the quality of products, prices, and customized services has improved. But long-standing industry problems remain. At its root, a large number of "middlemen make a difference" makes people unable to enjoy the greatest benefits while spending a lot of money.

Because in the travel market, 99% of transactions come from centralized third-party brokerage platforms. Third parties provide information aggregation, reservation guarantees, credit rating, and other services, and use their high commission of 40% or more of the transaction amount as their own revenue. Taking

a middleman platform of Priceline as an example, the profit for a year is as high as more than 2 billion US dollars.

For the first time, Bitcoin, the first generation of blockchain technology, provided a financial digital currency cross-border payment solution to the global financial intermediary.

The second generation of block chain technology, Ethereum, put forward the concept of intelligent contract. Through code, namely the form of law, it ensured that the contract and business logic previously concluded by the parties involved could not be overturned. In the past, after-the-scene arbitration that was legally regulated may become a pre-agreed code. Business logic such as supply chain finance and letters of credit can be partially or even fully supported by intelligent contracts, thus ensuring that no one can break the contract.

Further, Tokens based on distributed technologies can microscopically measure the trading behavior of each stakeholder and its contribution. And provide incentives or penalties through Token. Thus transforming the entire group of people into an autonomous community. All those who hold Token will protect Token's value through their own actions while protecting their own interests. Token promotes the behavior of all participants by binding the interests of each participant with the interests of the entire community. The makers of community rules can inspire and change the behavior of existing international trade participants by formulating rules to change the entire production relationship.

ITEC is called Intelligent Travel Ecosystem Chain. The Chinese name is Zhihui Lvxing ShengTai Lian. It is a smart travel ecosystem based on cutting-edge technologies such as blockchain, big data, and cloud computing. Through the integration of global travel destinations, governments, travel agencies, local business services, tourists and other resources, the use of blockchain technology decentralization, information traceability, smart contracts, can not be tampered with and fairness and other characteristics，let the data be chained and information is chained, and the travel destination local service ecosystem based on trust, evaluation, motivation, community autonomy, and system intelligence will be rebuilt.

ITEC is composed of front-end applications, back-end technical support, and a series of intelligent contract protocols (ITEC Protocols). This ecosystem will be supported by ERC20 Token, code-named ITEC, and consists of seven core systems:
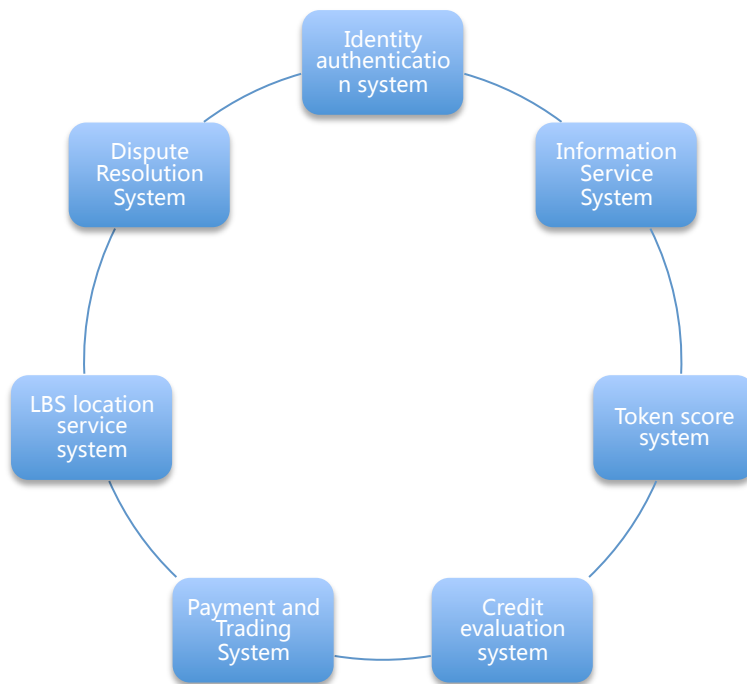
1.1.1 Identity authentication system

The user service performs identity registration through the system, completes identity authentication, and the information is encrypted and saved, and is the only

valid authentication information. Only through authorization, service providers can access user personal information based on service and compliance requirements.

1.1.2 Information Service System

The service provider publishes all travel-related activities, services or product pre-sale activities, and information disclosure services through the ISS (Information Service System).

1.1.3 Payment and exchange system

Consumers can use any legal currency or digital currency (such as ETH, ITEC, etc.) to purchase services. ITEC provides payment and settlement of legal currency or digital currency through the payment and transaction system, and according to the needs of the service or user, the payment and transaction system will lock the funds until the service is completed and the loan is confirmed by both parties.

1.1.4 Credit evaluation system

Based on the ETH blockchain technology Credit evaluation system, when the transaction or service is completed, both parties of the transaction can score and comment each other. Ratings and comments are saved to the blockchain. The scores and comments made by each participant in the ITEC ecosystem form the basis of the entire eco-credit system. The credit impact of participants will be reflected in the economic behavior of the ecosystem.

1.1.5 Blockchain asset ITEC：Token score system

Benefit-driven behaviors, in order to allow the data exchange to achieve a positive cycle, ITEC introduces a blockchain asset in the blockchain network, called the ITEC Token. ITEC Token is the value-driven element of the entire decentralized ecosystem. All parties exchange data values through ITEC Token:

• Consumers receive ITEC Token rewards by authorizing their own data to be used for compensation by third parties.
• Merchants get ITEC Token rewards by sharing their own consumer data. Merchants can also use ITEC Token to repay consumers' purchase behavior and increase customer loyalty.
• All the consumer's contribution to the ITEC ecosystem, including but not limited to evaluation, consumption, etc., will increase the user's score. With different

points systems for different VIP status levels, consumers can enjoy better and more advanced services and redeem more travel-related coupons.

1.1.6 LBS location service system

Through mobile phone positioning such as Wifi and GPS, users can locate and track user locations in real time to prevent visitors from getting lost. At the same time, they can combine with intelligent software and hardware products to provide more secure service guarantees.

Users can share social travel by using LBS to share travel footprints and ratings on the chain. Travel destination service providers can use their footprints and evaluations to conduct business activities such as promotion, and give users incentives.

1.1.7 Dispute Resolution System

When there is a dispute in the service process (such as the scenic area does not provide promised services, the hotel does not provide the promised WiFi service, etc.), the system will use the automatic formation of the dispute resolution committee to conduct the referee. The party that proposed the dispute needs to provide a certain ITEC Token as a reward for dispute resolution services.

This white paper will actually describe the usage scenario of the ITEC platform and the operation of each subsystem. At the same time, we will elaborate on the role of the ITEC Token in the entire ecosystem.

The significance of the blockchain is to build a more reliable economic system, credit evaluation system, scoring system, and decentralized big data center system. Fundamentally improve the quality of travel services, reduce multi-party operating costs, solve payment efficiency problems, and optimize the distribution of travel benefits. Effectively form a localized smart travel system with multiple benefits such as government, scenic spots, tourists, local service providers, OTA platforms, and resource sharing.

1.2 ITEC's vision

1.2.1 Build a Systematic Wisdom Travel Destination Ecosystem Service

Travel covers almost all areas such as clothing, food, housing, and cultural consumption. The travel-centered industry chain is very long, and the links between each chain are loose. Resources cannot be shared, data is not interoperable, and quality controls cannot be grasped, resulting in valuable information being distributed in all segments. Utilizing ITEC can build a smart travel destination ecosystem service, bringing together scenic spots, tourists, local service providers, and OTA platforms. Fundamentally improve the quality of travel services, reduce multi-party operating costs, and optimize the distribution of travel benefits.

1.2.2 Build Big Data Ecosystem Based on Blockchain

All data is chained and ensured that all data is valid and authentic under the mechanism of blockchain tamperability.

Travel big data refers to the data generated by the travel industry's practitioners and consumers，including management or business data generated by scenic spots, hotels, travel agencies, tour guides, tourists, travel companies, etc., basic resource information database of travel industry, Internet data, travel macroeconomic data, travel meteorological environmental protection data, traffic data, network public opinion data, etc. The data of tourists are the most important and the most valuable.

Based on the entire travel big data, provide different big data solutions for scenic spots, government, and third party service providers.

1.2.3 Create a new UGC system and build a sound credit evaluation ecosystem

The concept of UGC (User Generated Content) originated in the Internet field. That is, users display their own original content through the Internet platform or provide it to other users. However, the digital contents have problems such as being easily copied and hard to trace, resulting in that the contents produced by ordinary users have not been paid accordingly, so the content produced by the users is mixed. At the same time, due to some human interventions in user evaluation content on many third-party platforms, the authenticity of many UGC contents has been questioned.

ITEC aims to establish a decentralized UGC content ecology in the field of transaction credits. Through the ETH blockchain public distributed ledger, build credit system technology construction. All trading activities will be automatically

transferred directly to ITEC records in smart contracts that cannot be tampered with, deliberately modified, and open and transparent. Human interference is ruled out and ecological participants are provided with a trust-based and safe user experience.

ITEC will restructure incentives to encourage users to produce UGC content through ITEC Token incentives. The use of UGC content by other third-party platforms will provide certain incentives for UGC producers. Two-way to stimulate users to produce UGC content, optimize the entire ecological value.

1.2.4 Reduce economic costs

Blockchain technology has long been a hot topic of FinTech's research. This is because the traditional payment process needs to be audited by various organizations. Each organization has its own accounting system, which leads to slow and inefficient transactions. Based on ITEC's smart contracts, use ITEC Token to enjoy all services. Service providers do not have to pay any commissions and greatly reduce operating costs. Users will use lower prices for better service.

1.3 The advantages of ITEC

The ITEC operator will guide the ITEC Token's economic model and business plan of the Intelligent Travel Ecosystem Chain through the following recognition.

The principle of mutual benefit

The principle of seeking truth from facts

Sustainability principle

Safety principle

International pattern and vision
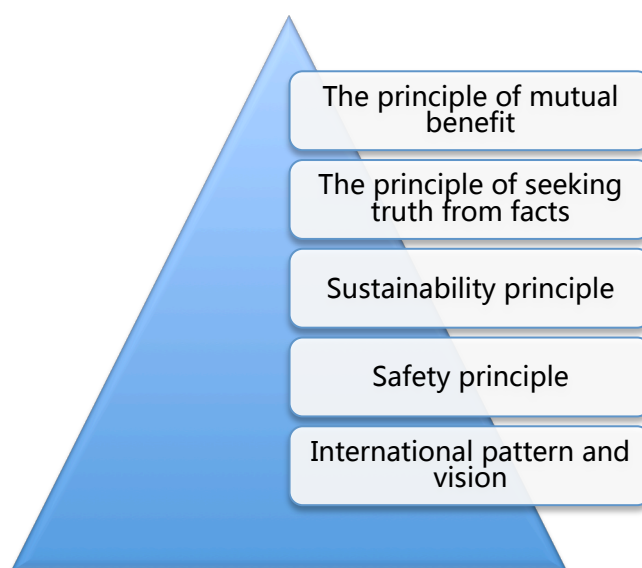
（1）The principle of mutual benefit: Focus on the application scene to land, quickly realize the core value of the project, return investors and users;

（2）The principle of seeking truth from facts：According to its own resources and business elements, landing applications, technologies for application projects;

（3）Sustainability principle：Step-by-step planning of project cycle, sustainable dismantling and verification, rapid iteration.

（4）Safety principle：Using stable and mature technology, gradually landing and winding, careful testing, and steadily progress;

（5）International pattern and vision：Stimulating the power of the community, building an open ecology, and developing international business, from domestic to foreign countries, From Southeast Asia to Europe, Japan, South Korea, the United States, Australia, Canada and other internationally-renowned travel destinations, radioactivity is extended and rapid global expansion takes place.

The ITEC team has more than 20 years of experience in the travel industry and founders of travel resources in over 20 countries and regions. ITEC team also has many technical experts and product experts from well-known Internet companies at home and abroad (such as Ali, Baidu, Tencent, Meituan, etc.).

It is expected that there will be multiple ITC solutions for international strategic cooperation in the second half and next year. The current team is also preparing for the ITEC Travel Foundation in Singapore to rapidly expand and advance globalization.

2. Background analysis

2.1 Travel Market Analysis

2.1.1 Abstract

In general, the travel industry is a collective term for a series of related industries that serve travelers as a target for tourists. It is a comprehensive industry that creates convenience for travelers' travel activities and provides the services and goods they need. The travel activities of travelers mainly include food, accommodation, transportation, travel, shopping and entertainment. The related industries involved include restaurants, hotels, transportation, tourism, retail and entertainment services. From the beginning, the travel industry only provides basic travel services for the end consumer customers of travelers. The demand for C-end users has become increasingly complex and diverse. Traditional travel services that meet basic needs are gradually being eliminated by the industry. The travel industry is facing a wave of new intelligent and blockchain industrial revolutions.

2.1.2 Travel Industry Development Status

The travel industry is an indispensable strategic, pillar, and comprehensive industry in which the world economy can continue to grow at a high speed. With the continuous deepening of economic globalization and world economic integration, the world travel industry has thus entered a golden era of rapid development.

1） The travel industry is already one of the most robust and largest industries in the world economy

In 2017, the total number of global travelers reached 11.88 billion. It is 1.6 times the size of the global population. It is estimated that the total number of global travelers will reach 12.67 billion in 2018. It is 1.7 times the size of the global population

TIME	Actual	Actual	Estimation	Prediction
	2015	2016	2017	2018
Total global travel (100 million)	104.4	111.2	118.8	126.7
Global travel as a proportion of the population	1.4	1.5	1.6	1.7

Table 2.1.2(1) Global Travel Economy: Total Travel Times (2015-2018)

From 2017 to 2018, the total global travel revenue and total travel growth rate continued to exceed the GDP growth rate. The IMF and the World Bank's forecast of the real GDP growth rate in 2018 are 3.6% and 2.9% respectively. Global travel revenues grew by 2.3 percentage points and 3.0 percentage points, respectively.

TIME	Actual	Actual	Estimation	Prediction
	2015	2016	2017	2018
Global GDP growth rate (%)	2.7	2.4	2.7	2.9
Global travel revenue growth rate (%)	-4.2	2.6	4.3	5.9

Table 2.1.2 (2) global travel economy: comparison with GDP growth

2） The world travel market begin to gradually differentiate and the Asia Pacific region grew rapidly

With the process of economic globalization and regional economic integration, the impact on the world travel industry has gradually deepened. The original travel market pattern is broken. International travellers have diversified their choice of travel destinations. The Asia Pacific region has developed into the world's second-best destination. This will create a new pattern of "three pillars" in Europe, North America, East Asia and the Pacific.

Total tourists in 2018

- Asia Pacific
- America
- Europe
- Middle East
- Africa

Total tourism revenue in 2018

- Asia Pacific
- America
- Europe
- Middle East
- Africa
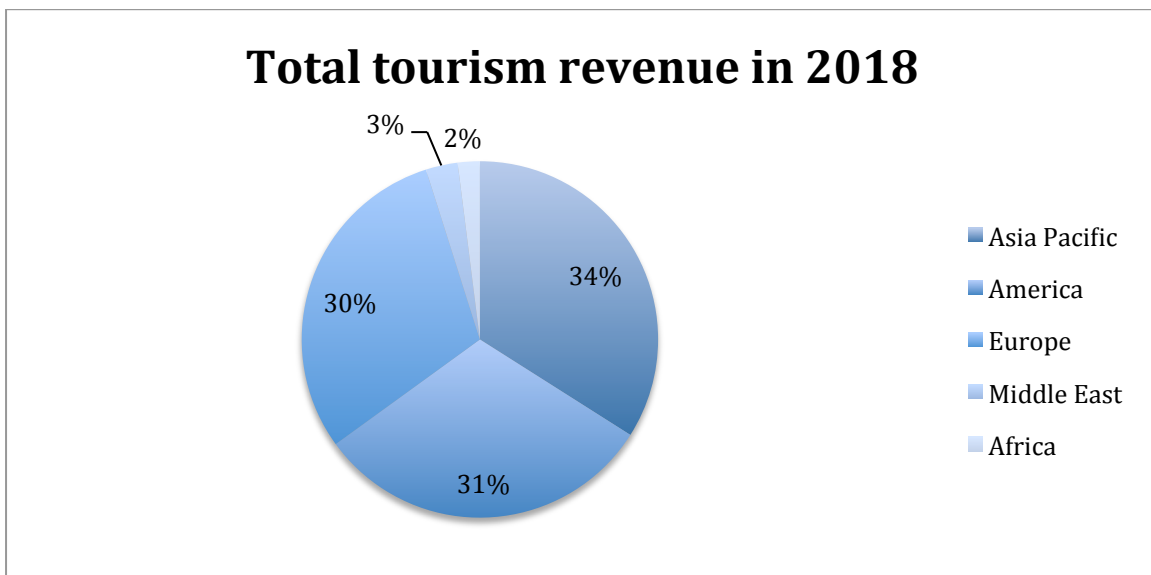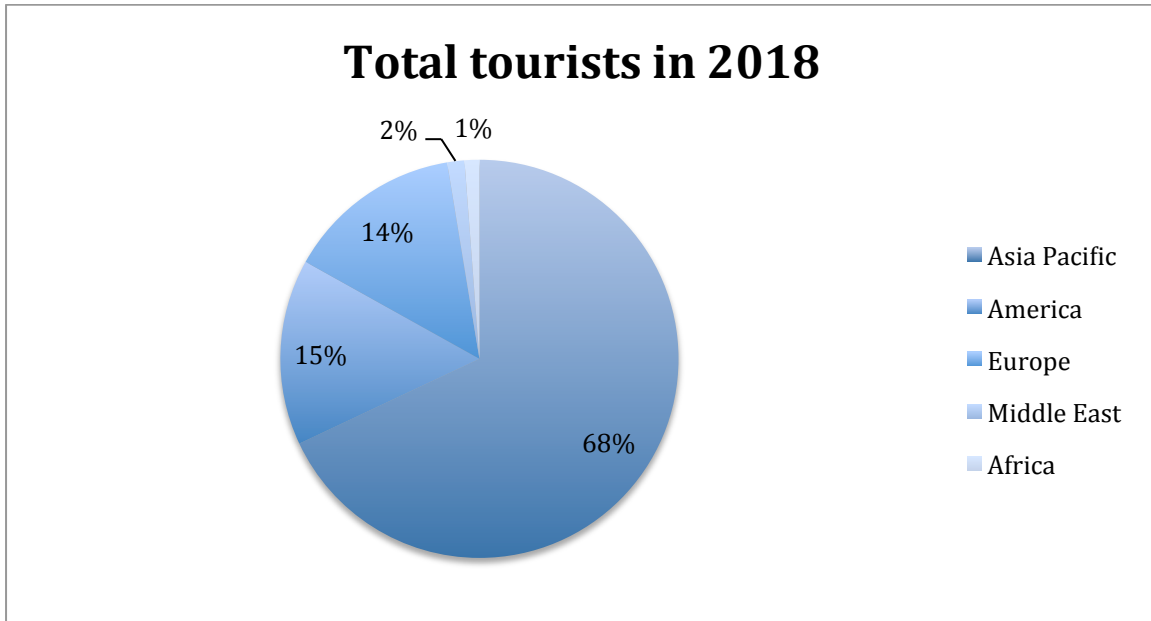
3） Travel is developing in a leisure, popular and social way, and the world has entered the "travel era".

With the development of science and technology and economy, people's leisure time and time increase, and engel's coefficient decrease with time. Driven by the two factors of "increased disposable income" and "increased leisure time," travelers are no longer satisfied with traditional sightseeing travel products. They begin to choose leisure travel products with distinctive geographical features, time characteristics and personality characteristics. Leisure vacation travel has become an important part of modern life. In some travel-rich countries such as Bermuda, the Bahamas and the Cayman Islands, travel economy has become a pillar industry of the national

economy. Its travel industry revenue accounts for more than 50% of its national income. The world has entered the "travel era."

4） Travel industry closely linked with surrounding industries

First, technological progress and technological innovation have become the main driving force for the development of the world travel industry. Online travel bookings, e-travel information, e-visa, and e-commerce are changing the travel market environment. The widespread use of social networks is also changing the face of the travel industry.

Second, the combination of the travel industry and the cultural and sports industry has become a bright spot. Culture is the soul of travel products, such as major cultural and sports events such as the Olympic Games and the World Expo. It can not only bring strong traveler source and travel revenue growth to the host country, but also spread the country's culture, demonstrate the achievements of civilization, and enhance the national image.

Third, the travel industry directly promotes the hotel industry, catering industry, service industry and the consumption of department stores and luxury goods that are closely related to it.

2.1.3 The development trend of the travel industry

Tourism development trend

In the next few decades, global tourism will continue to grow rapidly

China is rich in tourism resources and tourism conditions, and hopes to become the world's largest tourism market

The structure of the tourism market has been upgraded, and the transition from tourism to leisure and holiday tourism has been gradually made.
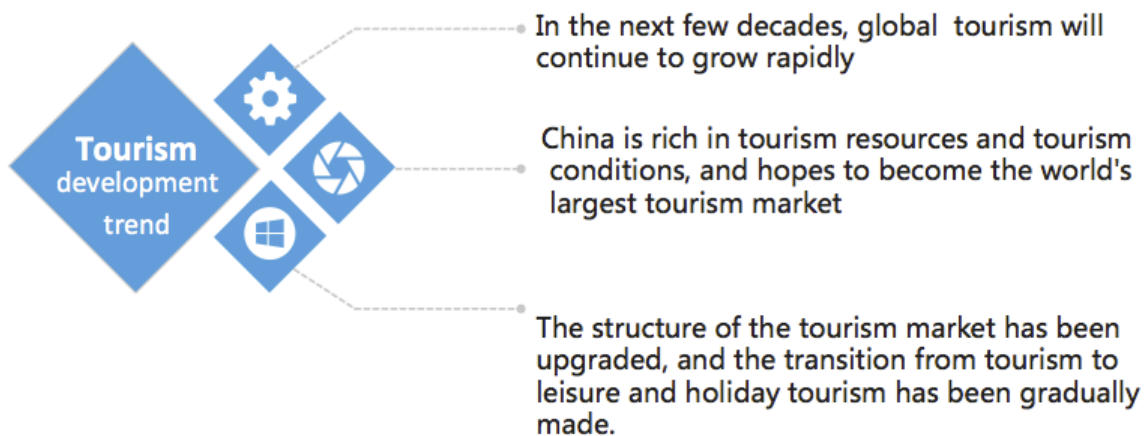
2.2 Block chain and travel market analysis

2.2.1 Abstract

Since the beginning of 2018, there has been a blockchain boom in the financial world. By sorting out the application scenarios of block chain and relevant travel entrepreneurship projects, the research institute finds that block chain is still in the early stage of incremental development in the industrial application level, and most of them are conceptual projects.

The "2017 China Travel Development Forum" first proposed the concept of China's travel chain. Based on the blockchain technology, the China Travel Chain leverages its advantages of multi-participation, openness and transparency, consensus trust, traceability of stored credentials, impossibility of falsification, and privacy protection. It builds the travel ecology on the chain and combines the different application scenarios of different travel participants. It provides standardized, intelligent, big data support services. It provides support for real-time monitoring, day-to-day management, and key decisions for travel management. It has improved the business efficiency of travel service providers such as efficient management, intelligent services, and precision marketing. It brings convenient, efficient, credible, and favorable travel experience to travel consumers.
Based on the important characteristics of the blockchain, future applications in the travel industry will mainly focus on decentralization and security trust. For tourists, the application of blockchain technology makes tourists and service providers "zero-distance contact", thus eliminating dependence on middlemen and greatly improving their service quality.

In addition, blockchains can provide a good solution for building travel trust communities, purchasing travel insurance, identification, travel reviews, hotels, and flight bookings. In the future, with the maturity of blockchain technology and more and more applications in the travel industry, the Chinese cultural and tourism industry will be empowered to transform and upgrade.

2.2.2 Challenges in travel blockchain

Based on the theory of blockchain decentralization, direct connection between travel providers and downstream travelers can be realized. But for now, blockchain wants to subvert or impact on middlemen such as online travel platforms and travel agencies. Landing also needs to overcome several layers:

1）Security level

One of the core features of the blockchain is that it cannot be tampered with. If the records in the blockchain are incorrect or there are loopholes in the original protocol, subsequent problems will be difficult to solve. When all data blocks are connected through a node, there will be no so-called "higher authority" once a problem arises.

One of the hard points in the travel blockchain is the accuracy and authenticity of the information. When there is a lot of information, how to dig out effective and accurate information from noise information needs to be supported by a large number of technical levels such as big data mining, processing, and cleaning，This affects the timeliness of the application area. Another important point is how to ensure the security of information, that is, it is difficult for the relevant travel user to judge whether the information itself is valuable or not.

2）Legal regulatory level

The current blockchain market is mostly hyped. We must guard against the emergence of "bad money drives out good money," resulting in the withdrawal of travel agencies that really want to do business, Influencing the application of blockchain technology in the travel industry. With the healthy development of the blockchain industry, the government must intensify the introduction of relevant laws, scientific supervision, and accelerate the blockchain compliance.

2.2.3 Blockchain solves pain points in the travel industry

➢ Overbooking

The strategy of overbooking has been a means of many airlines to increase company profits and optimize resources. But to a great extent, it harmed the rights of consumers. Blockchain technology has the property of preventing double expenses and can effectively eliminate the problem of overbooking.

➢ Authentication

Each person's identity information is stored through blockchain technology, which can prove their identity at any time. At the same time, in the face of different service providers, consumers do not need to create a new user account. They just

need to grant these files access rights to different vendors.

➢ Settlement

The anonymity and decentralization of the blockchain can quickly realize real-time transfer and settlement operations and reduce handling fees. At the same time, the blockchain cannot be tampered with, and it can also guarantee the security of funds.

➢ Risk Management

Through blockchain technology, risk management can be more easily navigated. Travel managers can know their location in real time through the blockchain system, whenever a new appointment is created, modified or cancelled, the passenger logs in to the aircraft, the hotel is registered, the car is being rented, etc.

➢ Smart contract

A smart contract is a set of software code that autonomously executes trading operations. When certain conditions meet the regulations in the contract, the system will make the corresponding trading operations, which is similar to the if-then statement series in code. The advantage of smart contracts is that they eliminate the existence of intermediaries, saving time and money.

➢ Compliance with policies and regulations

Because the blockchain technology has the characteristics of transparency, security and privacy, no matter where the traveler is, as long as his booking data is collected by one of the network nodes, the order for this reservation will notify all relevant units participating in the network.

The essence of blockchain is that it is more open, more public and more nodes join to form a more secure and fast network. It aims to connect different blockchain networks to form an internet network based on blockchain technology. On the other hand, private blockchain or conglomerate blockchains are more inclined to a closed ecosystem. It is easier to supervise and maintain, but fewer users can share the network data. Whether it is an open or private blockchain, we believe that both are conducive to the development of the travel industry.

Although blockchain technology is a new field, we can draw the commercial potential of blockchain from the above advantages.

3. ITEC product solutions

3.1 Product model design

The ITEC project is based on Ethereum's smart contract development. Ethereum is a consensus-based, scalable, standardized, feature-complete, easy-to-develop, and collaborative basic blockchain. Through the built-in Turing-complete virtual machine technology of Ethereum, ITEC redefines the transaction method and state transfer function rules, and builds smart contracts in travel services.
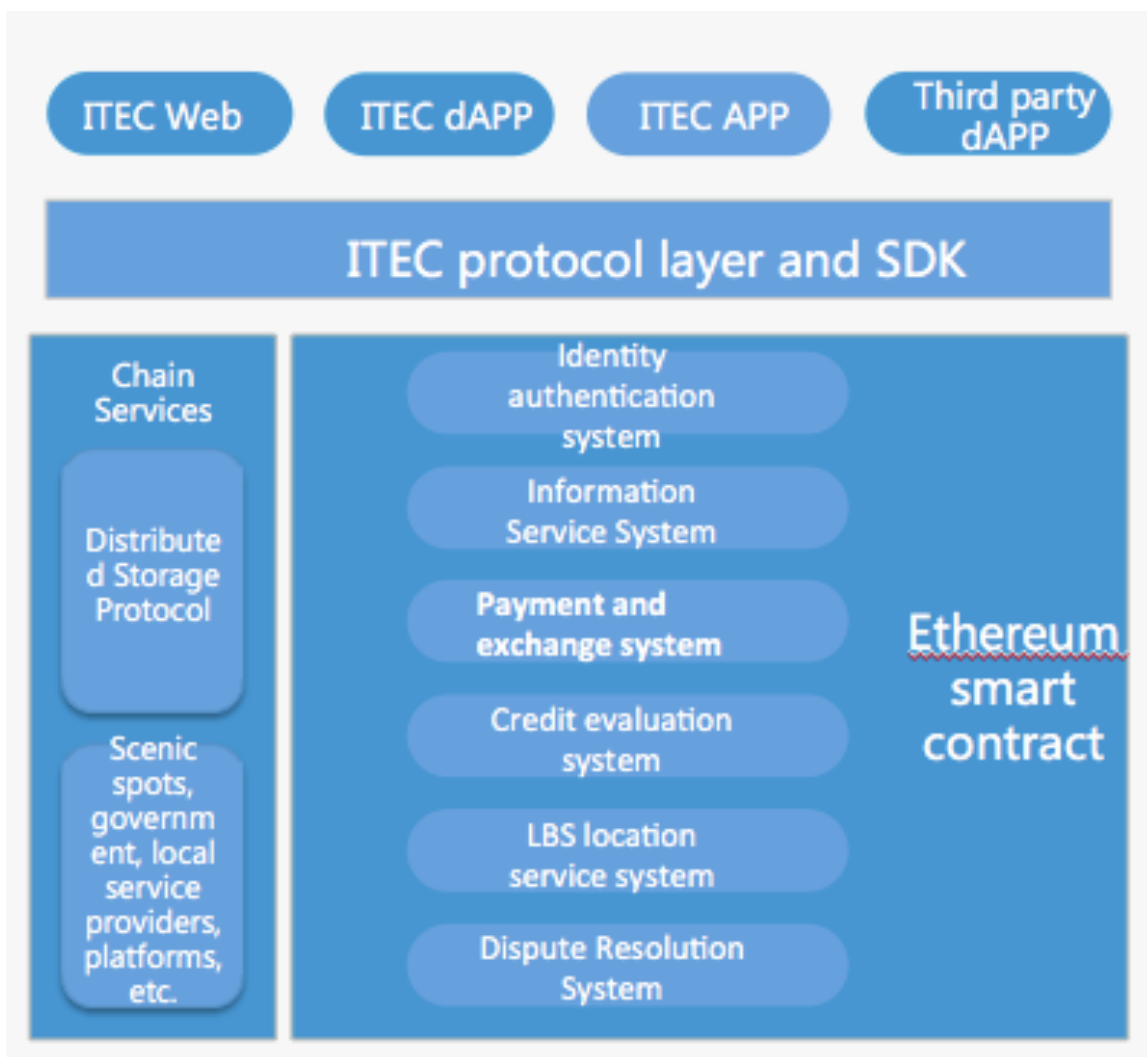
Figure 3.1(1)　ITEC Platform Subsystem and Composition

As a fully redundant distributed system, Ethereum (including other blockchains such as Bitcoin) has inherent limitations such as high computational costs and the inability to store large amounts of data. ITEC will build a complete and available system through a combination of On-chain and Off-chain. For example, we will store the contents of the files that display pictures and comments through the IPFS

distributed system, and generate a hash string for them to connect to the smart contract.

Oracle is a bridge between an intelligent contract and the outside world (access to urls, other blockchains, such as information from the bitcoin network). ITEC will use Oracle to encapsulate the various smart contracts and sub-services of the subsystems to form ITEC Protocols, providing standardized support for the development of Internet applications and the development of decentralized applications (dAPP). At the same time, the application of ITEC will also be developed through ITEC Protocols.

ITEC is a smart travel ecosystem based on a combination of blockchain technology and big data. Through the integration of travel resources, government, travel agencies, local business services, tourists and other resources, the use of blockchain technology, the data chain, information chain, rebuild the system based on trust, evaluation, incentive, community autonomy, the purpose of travel Local service ecosystem.
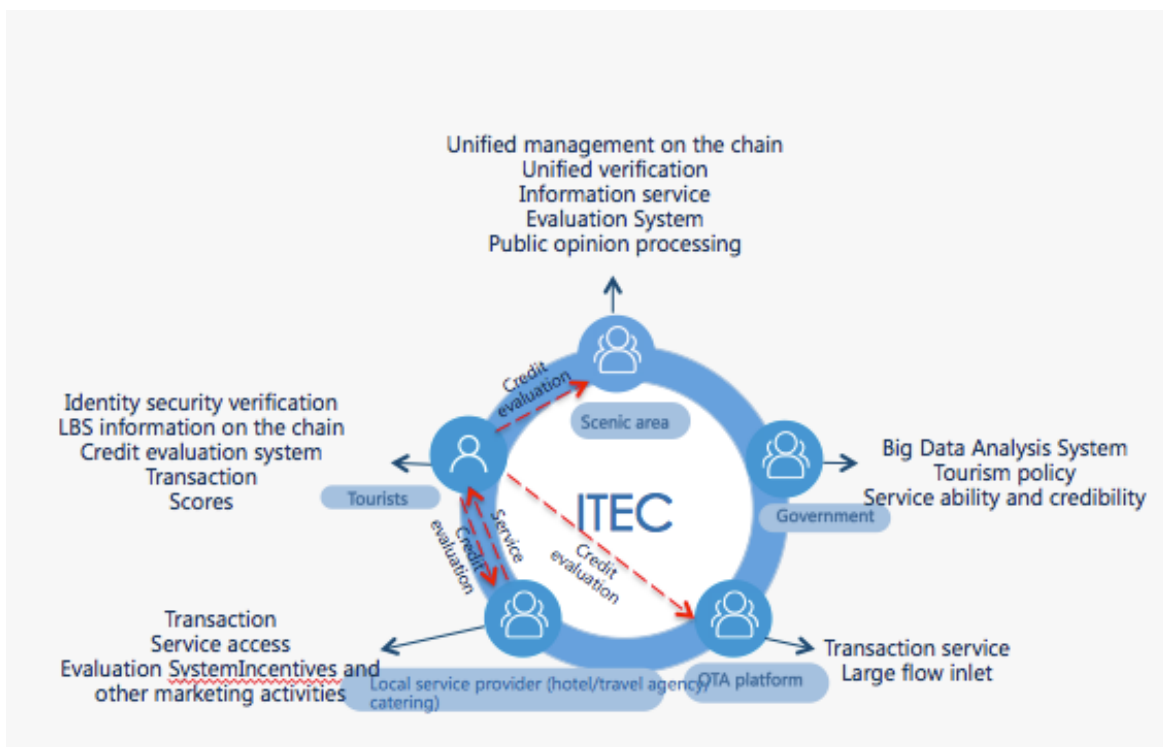
Figure 3.1(2) ITEC Application Service Object Relationship

The specific application in the local service ecosystem is as follows:
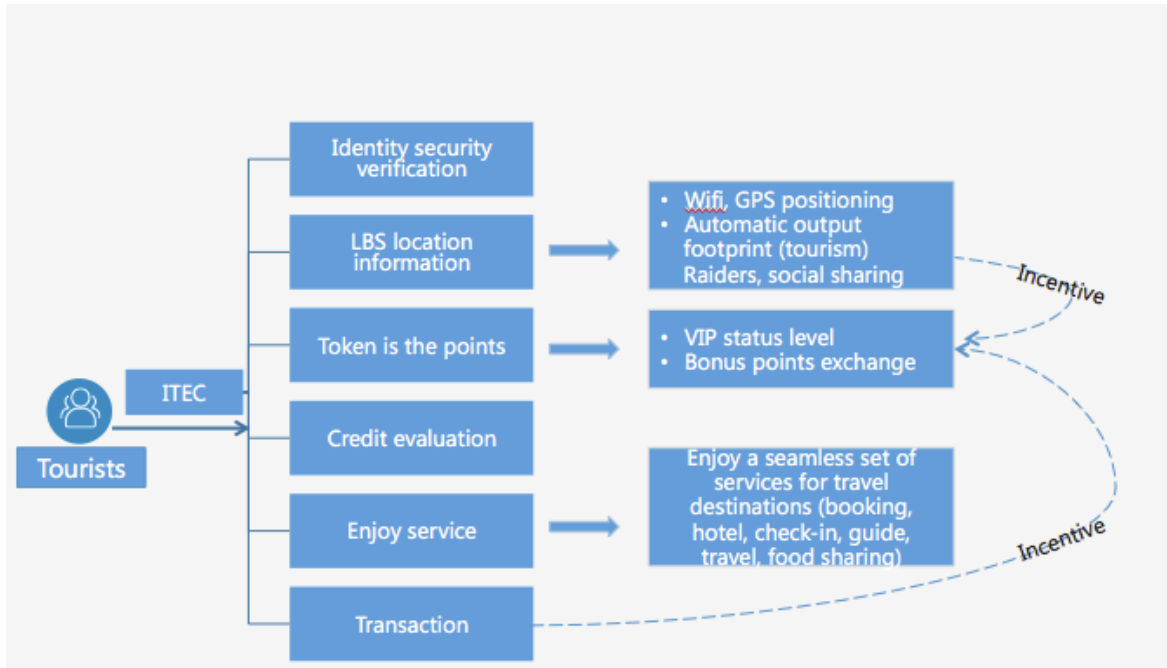
Figure 3.1(3) ITEC Application Service Object--Tourist
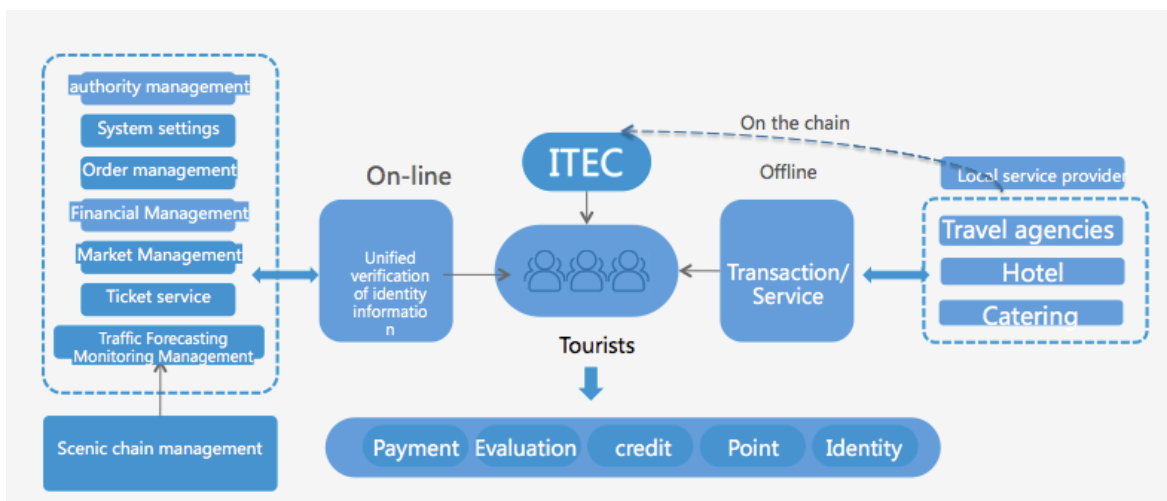
Figure 3.1(4) ITEC application service target—scenery, local service provider

Follow all the principles of information and transaction chaining, unify the links, and realize the integration of blockchain technology and big data technology.

3.2 Identity authentication system

Service provider or consumer must be authenticated before using ITEC. After the service is completed, the service provider still manually records information. This

means that sensitive personal data is at risk every day and dangerous individuals can be avoided and eliminated.

ITEC will encrypt and save identity information to the IPFS system through asymmetric encryption technology. Only in a specific business process, authorized parties can access the corresponding identity information through smart contracts. At the same time, the identity information is used as the consumer's unique authentication information and is valid and shared at any place in the scenic spot.

For example: When the consumer and the service provider complete the smart contract to purchase the service, both parties can access the other party's identity information. The service provider can also authorize all people to access all or part of their business or personal information when the service is registered.

3.3 Information Service System

Service providers publish services through smart contract templates provided by ITEC. All services will be presented in the ISS (Information Service System). All travel-related activities, services or product pre-sale activities, information announcements, etc. can be published.

Take a scenic activity as an example:

Scenic spots can publish services on ITEC and create promotional materials such as theme, content, time, and pictures.

ITEC will automatically save this data to the distributed file system supported by the IPFS blockchain and generate the corresponding hash string as the service identification code of the smart contract.

ITEC will use the artificial intelligence technology to filter the pictures and text content of service registration. Avoid harmful content such as spam and child pornography entering the ITEC ecology.

3.4 Payment and exchange system

Consumers can use any legal currency or digital currency (such as ETH, ITEC, etc.) to purchase services. ITEC provides payment and settlement of legal currency or digital currency through the payment and transaction system and according to the needs of the service or user. The payment and trading system locks the funds until the service is completed and the parties confirm the loan.
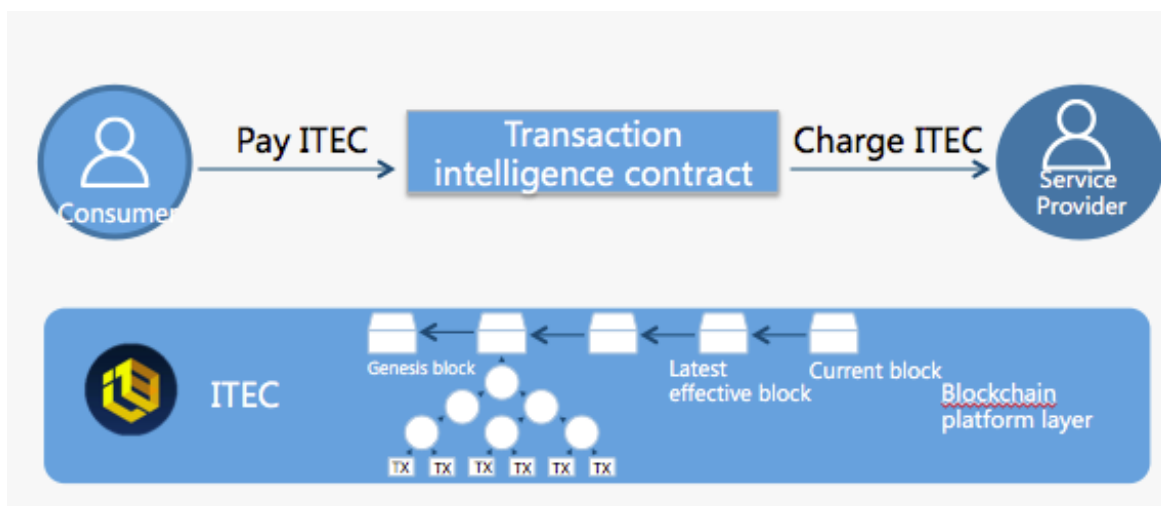
Figure 3.4(1) Transaction and settlement methods

On the ITEC platform, if both the service provider and the consumer trade with the ITEC Token, the ITEC will not have any intermediate fees. Even if both parties use other digital currency or legal currency for trading, ITEC will only charge a normal 1% - 3% currency conversion fee.

3.5 Credit evaluation system

3.5.1 Centralized evaluation system

Comments and ratings are important decision-making factors when users choose services. At present, businesses and platforms will, to a certain extent, achieve greater commercial interest by manipulating comments and ratings.

Consumers can't get full-fledged reviews and it's harder to get a service experience of the same value.

At the same time, an unfair competitive environment will also become an obstacle to the development of the travel industry.

With the development of the sharing economy, more and more individuals have become service providers in the travel industry. Compared with traditional service providers, participants in the sharing economy lack risk management and anti-risk capabilities. When people provide their homes to strangers on Airbnb, the most important concern is security. In such an application scenario, the consumer's credit will be the most important risk assessment method for the service provider.

3.5.2 Decentralized solution

ITEC builds credit systems through Ethereum's publicly distributed books. When the transaction or service is completed, both parties of the transaction can score and

comment on each other, and the score and comment content will be saved in the blockchain. This system allows all participants in the ecosystem to accumulate credit scores through good behavior.

Anyone can browse the members' public records to determine if they are reliable. ITEC's credit system will be a decentralized system that is global, transparent, automated, shared, and works seamlessly with payment solutions.
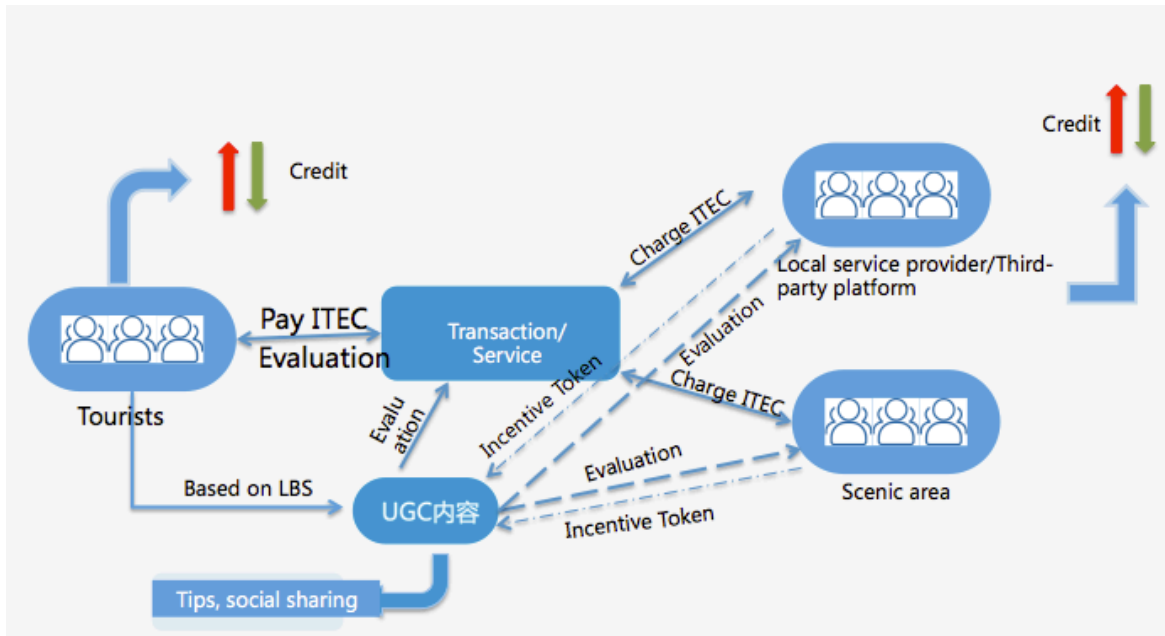
Figure 3.5.2 Credit System

Based on the brand-new UGC system produced by LBS, users can not only produce UGC content, but also socially share it to various platforms.

At the same time, merchants / scenic spots and other service providers can also obtain the required UGC content through the user's authorization and a certain ITEC Token at the same time.

3.5.3 Global and open credit records

The credit systems of different centralized trading markets are formed independently and cannot be opened to each other. Consumers' credit earned on Airbnb cannot be recognized on any short-term rental platform.

ITEC establishes a global transparent credit through blockchain，Credit is open to everyone so as to motivate parties to increase their credit ratings. In order to jointly create a better decision-making and safer travel service ecosystem.

In addition, for people with high credit scores and historical records. The ITEC platform will also provide equivalent high-quality services and various preferential measures under the corresponding high-point system.

This transparency can reduce the occurrence of fraud or at least make fraud more difficult. For users with low credit scores, the ITEC platform can alert businesses and even deny service.

3.5.4 Anti-cheat strategy based on AI

The behavior of false comments (including false comments, large number of comments, etc.) will not only mislead consumers and harm consumers' interests, but also form a vicious ecology of bad money driving out good ones.

With the development of AI based on machine learning and deep learning, it is possible to effectively recognize false comments by using AI technology.

However, due to the lack of commercial interests for data sharing between centralized systems, there is no complete user behavior chain to form trusted model training data, resulting in AI technology can not be maximized for anti-cheating.

In the ecosystem supported by ITEC, ITEC will build an artificial intelligence anti-cheating model through the user's complete blockchain behavior trajectory analysis. Cheating for discovery is used to reduce credit score penalties. Comments and ratings made by users with lower credit scores will also be decentralized in the system that reflects service provider credits.

The credit system of the entire blockchain platform has helped consumers identify the credit of merchants to a large extent. Reduce the emergence of undesirable phenomenon of merchant overlord clause and avoid businesses running away，Reduce customer loss risk through reasonable compensation mechanism. The transaction data is guaranteed to be irrevocable and traceable through blockchain technology. It also helps consumers provide strong evidence for dispute resolution during dispute resolution.

3.6 Blockchain asset LAB: Token is the points

ITEC will build the entire user growth system, that is, the corresponding membership system for points. The membership level is determined by the

cumulative score obtained by users using ITEC Token and the service of ITEC platform within a certain period of time. Users can upgrade after reaching the corresponding level threshold.

Users can earn Token points through ITEC Token transactions, purchase services, ratings, community activity, awards and more.

The higher the score, the greater the user's rights and interests, the more benefits and services enjoyed, and the cultivation of users' sense of identity and belonging to ITEC. The positive scoring system can stimulate the dynamic circulation and ecological health cycle of ITEC Token.

Points - Membership System
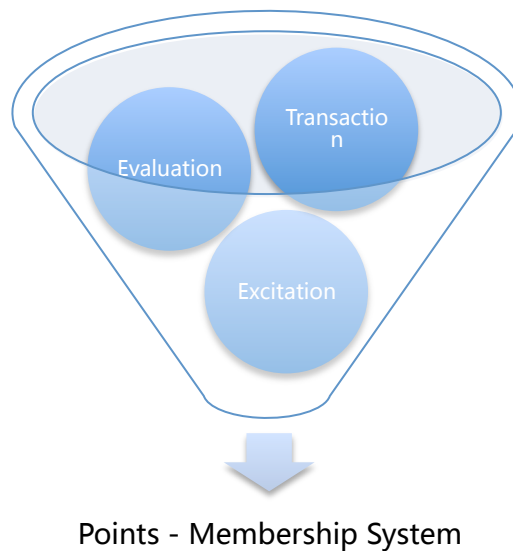
3.7 LBS location service system

Through mobile phone positioning such as Wifi and GPS, users can locate and track user locations in real time to prevent visitors from getting lost. At the same time, they combine with intelligent software and hardware products to provide more secure service guarantees and interesting play experiences.

Users can use the LBS to share travel footprints and ratings on the chain, produce UGC content, and conduct social communication.

ravel destination service providers can use their footprints and evaluations to advertise and other business activities through the authorization of user smart contracts, while giving users incentives.

Blockchain technology combined with mobile and biometrics technology can end inefficiencies and travelers' frustration due to the use of disconnected and outdated systems.

All information is completely secure because it is encrypted and scanning a QR code at each checkpoint will only show the user's identity. In this way, the entire process is simplified, and the control of the data is still safely in the hands of the user.

Traditional baggage tracking involves many participants in highly fragmented and non-integrated systems that do not interact with each other to locate the luggage. In fact, according to the steering committee of the AMADUS joint venture, the airline's annual cost of baggage is 2.3 billion euros.

3.8 Dispute Resolution System

There may be disputes between service providers and consumers during the transaction. For example: because of the large number of queues, the promised play items in the purchased service are automatically ignored. In a centralized platform, the platform is often used as a coordinator and arbitrator. On the one hand, the platform needs to pay high operating costs for this purpose. On the other hand, both parties to the transaction may think that the platform has made an unfair arbitration, and the user's rights and interests are difficult to be protected to the maximum degree.

ITEC's dispute resolution system, based on the dPOS, has solved these problems through the blockchain.

All service information provided by local service providers and third parties, as well as the user's purchase records, are in the chain and cannot be tampered with. When the user's rights and interests are compromised, they only need to take a picture upload, leave a message explaining the situation, and submit a request for arbitration. The person who proposed the dispute needs to pay the dispute resolution service fee.

Both sides of the dispute upload evidence to the IPFS file system, and the hash value of the evidence is recorded in the blockchain;

27

The system automatically creates a corresponding number of arbitration committees (at least 5) based on the amount of money involved in the dispute;

The selection of the Arbitration Commission will be based on the arbitrator's activity and credit score, and at the same time freezes the deposit paid by the service provider on the platform.；

Finally, according to the situation, the service provider is required to pay compensation and deduct certain credit points or deduct certain credit points for the users of false arbitration.

If either party in dispute is not satisfied with the result of the arbitration, it may appeal. The disputed service fee for each appeal will be doubled, and the number of arbitration committees will be doubled until the disputed service fee exceeds the compensation amount for the appeal.

3.9 Community autonomy

The main components of the ITEC system are smart contracts that provide various services. Because the blockchain cannot be modified, smart contracts cannot be updated once deployed.

If ITEC requires a system upgrade, new smart contracts must be deployed. Such an upgrade will inevitably affect every participant in the ecological environment. For example, an upgrade of the ITEC may change the algorithm of the credit scoring system, and different participants in the ecosystem will have different positions on this effect.

ITEC Ecology will be a decentralized, digital autonomous management organization controlled by ITEC Token. The ITEC platform is upgraded through community autonomy. If the ITEC protocol produces two parallel running versions, the community can jointly decide which version to use as the production version. This not only achieves the continuous updating of the platform, but also maximises the interests of the relevant members.

ITEC will be deployed to the Ethereum blockchain and will provide access and use rights for future dAPPS and users through the issuance of ITEC Tokens. TEC Token has two uses: for market participants to use payment transactions and related fees, and for distributed community self-management of agreements.

Distributed community autonomy will be gradually and safely integrated into the ITEC protocol according to the development schedule. nitially, we will manage platform development through a multi-signature contract, and we will develop autonomous management based on distributed communities.

For example: When the ITEC development team wants to upgrade the system by issuing new versions of smart contracts, the new credit scoring method will have a positive or negative impact on some service providers. At this point, all community members can participate in deciding whether the new version can be online.

$$\frac{\alpha x_m^{\alpha}}{x^{\alpha+1}}$$

The Italian economist Vilfredo Pareto originally used this distribution to describe the allocation of wealth among individuals, since it seemed to show rather well the way in which a larger portion of the wealth of any society is owned by a smaller percentage of the people that are part of that society. He also used it to describe income distribution.This idea is sometimes called simply the Pareto principle or the "80-20 rule" which states that 20% of the population controls 80% of the wealth. Inspired by the Pareto wealth distribution, our protocol uses the same formula to reward content creators based on their rating. Speaking in the same terms as above, this means that the best reviews will be rewarded with the biggest amount of tokens.

The Pareto distribution is characterized by the following probability density function:

where xm and alpha are parameters, determining the scale and slope of the distribution. Figure 2 shows the illustration of such distribution.

Example of a Pareto distribution (α = 5) where $20,000 are distributed among 5000 reviews:

• reviews between places 1 - 100 will receive from $95 (first place) to $11 (100th place)

• reviews between places 100 - 1000 will receive from $11 to $5.56

• reviews between places 1000 - 4000 will receive from $5.56 to $3.45

• reviews between places 4000 - 5000 will receive from $3.45 to $3.20

The Pareto chart curve and the example of the Pareto distribution clearly point out the Long tail (most of the users) rewards for all users involved in a contest. Not only does the Pareto distribution solve fairness in wealth distribution,but by nature it allows for a long-tail reward distribution - since the curve slowly drops towards the x-axis, butnever touches it..

The general challenge is that there are many ways to 'game' most systems, and, if unconstrained, this 'gaming' mayonly be limited by the abusers' imaginations and the computational power they wield (e.g. the use of botnets etc.).Recognising this, ITEC accept that this is a 'cat-and-mouse' game, and effective solutions involve making sure ITEC maintains the upper hand, to ensure that it is not profitable to abuse the system.

A core feature of ITEC protocol mitigates the effect of abuse. This feature is the indexed Pareto distribution model whereby the amount of funds distributed is allocated according to the index position in a sorted list of most influential reviews, and this index position maps into a 'bucket' in a Pareto distribution which determines the reward.

This creates two effects that mitigate abuse:

1. There is a hard cap on the maximum proportion of funds distributed. If compared to a more direct distribution model, e.g. funds distributed according to % influence, there is no way a single abusive user account can take the vast majority of funds, which reduces maximum potential profits from abuse.

2. The distribution can be divided into two parts, a set of a few 'big winners', followed by a long tail of 'also rans'.For the big winners, because of the indexing model, to raise their winnings, they have to move up a step, and this incurs significant cost at this part of the distribution. For the 'also rans', the difference in rewards is comparatively much less on each step up the index, so the cost of abusive practices outweigh the expected minor difference in rewards, therefore it is more profitable for them to simply improve their reviews.

As an example, consider the case where the most influential reviewer A has an impact, of say, 1000 points, with a second reviewer, B, has 150 points. At index position 1 and 2, perhaps A is in line to receive $2000 and B gets $1000. (This ratio disparity might initially seem unfair or inefficient but when taking into account the network effects, whereby more popular reviews propagate exponentially, and the fact that all participants understand and accept the rules, we can say it is a fair allocation). For B to move to position 1 within a given amount of time, takes really significant effort, with no guarantee of success, as:

• network effects will also tend to move A's influence up in the same amount of time,

• it is difficult for B to gauge A's actual impact points value if B can only see their position.

To support this, ITEC will implement APIs within the OpenHours system to transfer data to in-house or external backend systems. This provides a highly flexible way to allow any kind of analysis, including the application of whatever standard or cutting-edge algorithms as necessary, including the possibility of outsourcing work to external companies with proprietary algorithms or access to additional data sources.

4. ITEC adopts the underlying block chain technology and implementation scheme

4.1 ITEC 1.0 Application Service Version

The ITEC 1.0 application service release will be based on Ethereum's issuance of ITEC Tokens and provision of basic services. The ITEC Token of the Intelligent Travel Ecosystem Chain will use Ethereum ERC 20 standard distribution and circulation. Local services and transaction matching services such as identity authentication system, information service system, payment and transaction system, credit evaluation system, and credit system in the Intelligent Travel Ecosystem Chain will be based on Ethereum to realize the circulation of Token and the storage of information.

At the same time, the Intelligent Travel Ecosystem Chain 's R&D team will conduct in-depth evaluation and research on the existing mainstream blockchain underlying technologies, including Ethereum 3.0, EOS, Superbooks, MOAC, and other well-known blockchains. The R&D team will comprehensively consider selecting one of the bottom blockchain technologies that is most suitable for the Intelligent Travel Ecosystem Chain scenario or conduct comprehensive induction, and complete the establishment of the bottom-level alliance chain of the intellectual travel chain through secondary development.

After completing the development of basic services based on Ethereum and the development of the underlying alliance chain of the Intelligent Travel Ecosystem Chain, the R&D team will also develop middleware across the underlying platform of the blockchain to facilitate more developers and business partners to join. The Intelligent Travel Ecosystem Chain follows business and development ecology.

4.2 ITEC 2.0 Underlying architecture version

I 2.0 underlying architecture version will adopt the latest generation of smart contract alliance chain. ITEC 2.0 will be an alliance chain that can integrate the ecology of the global travel industry and will support cross-border payment services and financial services. The protection and support of data security for financial and transactional payments will be the primary consideration for the selection of technical alliances for R&D teams. Upon completion of the development of ITEC 2.0, the basic services based on Ethereum will be gradually migrated to the self-developed ITEC 2.0 blockchain platform.

Based on the issues that may arise between smart travel and the entire industry's ecological scene and blockchain, ITEC will redesign the basic chain architecture. efer to Ethereum 3.0, EOS, Superbooks, MOAC, and other well-known blockchains that have already been architected and integrated with actual scenarios to incorporate a series of new features to complete the 2.0 version of ITEC.
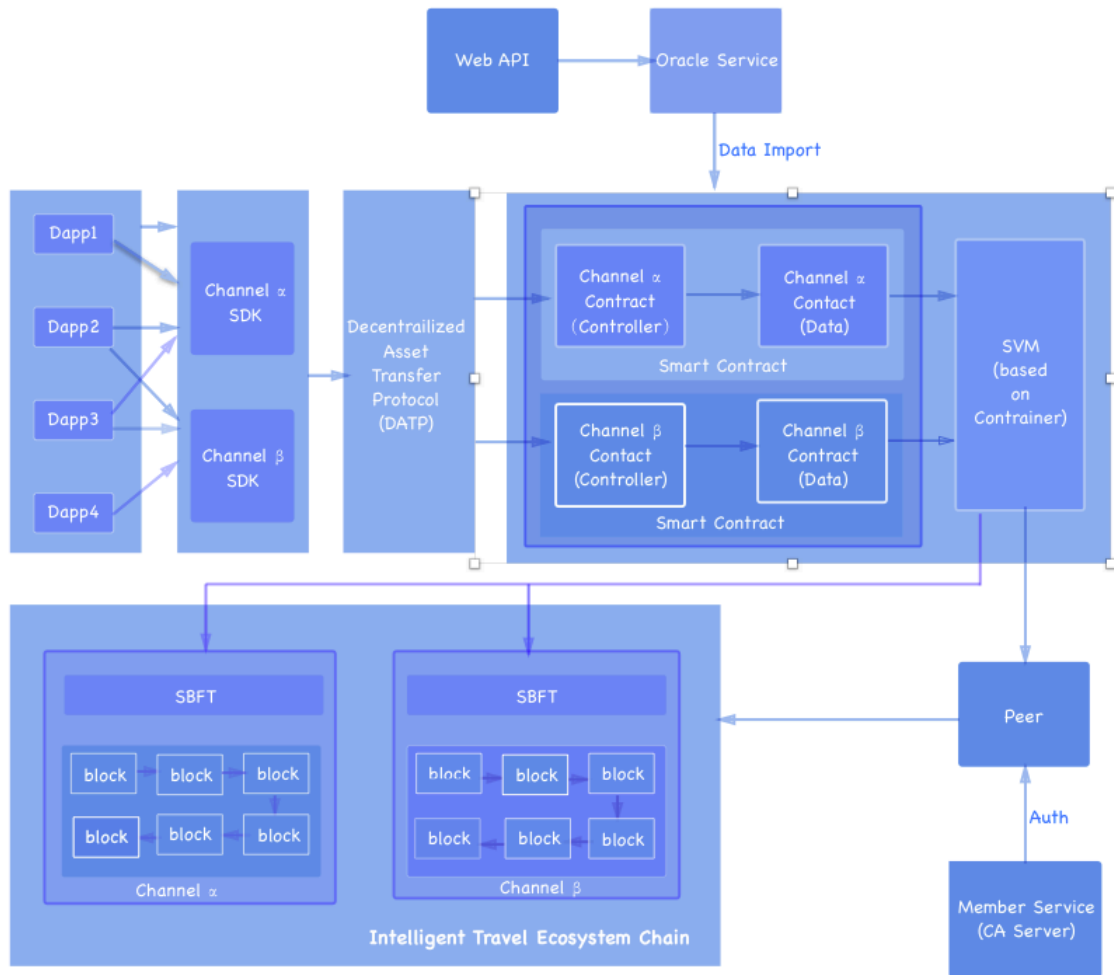
As shown in the blockchain architecture design above, these features are as follows:

Consensus mechanism:

In order to solve the problem of PoW energy consumption and PoS/dPoS tending to be centralized for a long time, the improved speculative Byzantine algorithm Zyzzyva (sBFT) will be used as the main consensus mechanism.

Virtual machine：

Build IVM (ITECVM) to replace relatively awkward and network-congested EVM virtual machines with more sophisticated container technology.

Operating environment：

Introduce LLVM and WebAssembly runtime, and support smart contracts such

as Go, Node.js, Java, PHP, Python, Wren and other mainstream languages, covering developers in the largest scope, facilitating the formation of technology and business ecology, and accelerating the development of the industry . After optimization, it is expected to improve performance by 10 to 100 times over Ethereum Solidity runtime.

Channel link：

The introduction of the Channel link mechanism can be compared with the concept of Multi-Tenancy in the Internet open platform. Allow different members/organizations to complete transactions through isolated private block links. The nodes in different links do consensus on their own, without the need for consensus on the entire network, and the consensus performance is significantly improved.

DATP：

Introduced (Cross-linked Digital Asset Exchange Protocol) consensus for asset transfer between different Channels.

A contract layering mechanism is established to divide the original fuzzy and confusing smart contract system into three layers: control layer, data layer, and business logic layer. The control layer and the data layer run on the chain. The former is equivalent to the business process, and the latter is combined. The business logic layer should be run out of the chain, equivalent to the Internet SaaS cloud service

Witness node：

Introduce member services of the class-affiliate chain mechanism to manage node identities. The accuracy of the information on the chain is endorsed by the witness node.

Off-chain encryption program：

The CryptoApps, an extra-chain encryption applet mechanism, is introduced to replace the Oracle mechanism so that smart contracts on the chain can interact with the out-of-chain business logic safely and efficiently.

Editor：

Introduced smart contract BPMN (Business Process Model and Notation) editor that automatically compiles smart contracts in the chain. Dapps developers can build their own business processes without writing contract code.

ITEC 2.0 is committed to creating the latest generation of smart contract platforms. By improving the virtual machine container, contract runtime, consensus mechanism, and contract layering, the expected performance after optimization can reach approximately 8000tps, which can meet the application

deployment requirements of the travel industry in the coming decades.

# 4.3 ITEC 3.0 Development Eco Version

ITEC 3.0 development eco-version will create a seamless middleware system. ITEC proposes a blockchain middleware system to promote the rapid development of blockchain technology in the global travel industry. It is used to bond the underlying blockchain chain technology and currently existing Internet cloud services. The middleware architecture includes three main components: cross-chain access middle tier, out-of-chain collaboration mechanism, and smart contract editor.

 The goals achieved by the middleware system are:

1）Blocking the technical details of the bottom of the blockchain for Dapps developers and reducing the threshold for developing Dapps

2）Able to provide uniform access interfaces to all of the infrastructure chains that meet the conditions and provide the infrastructure services to the maximum extent

3）Existing internet cloud services only need to invoke interfaces to interact with smart contracts

4）Business developers can implement and deploy smart contracts through a visual interface, reducing development costs and time

4.3.1 Cross-chain access to the middle layer

4.3.1.1 Cross-chain access API —ITECSDK
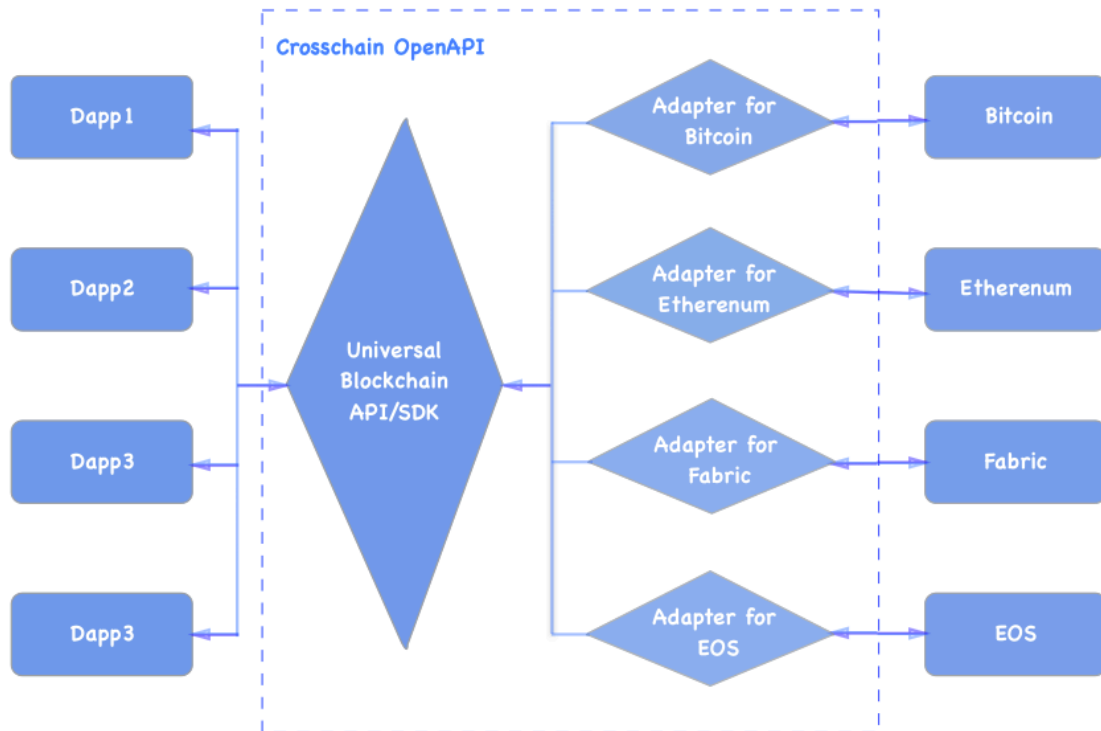
We provide Dapps with a unified blockchain underlying access API that provides basic link adapters such as Bitcoin, Ethereum, Fabric, and EOS to facilitate developers' use.

4.3.1.2 DATP cross-chain digital asset exchange protocol

The DATP protocol is called the Decentralized Asset Transfer Protocol and is used to realize the consensus of digital assets exchange among different channels within ITEC.

ITEC's Channel currently adopts a unified sBFT consensus mechanism，The exchange of assets between Channels can be achieved through the Unspented Receipt mechanism, similar to the transfer mechanism between different segments of Ethereum. As shown below:
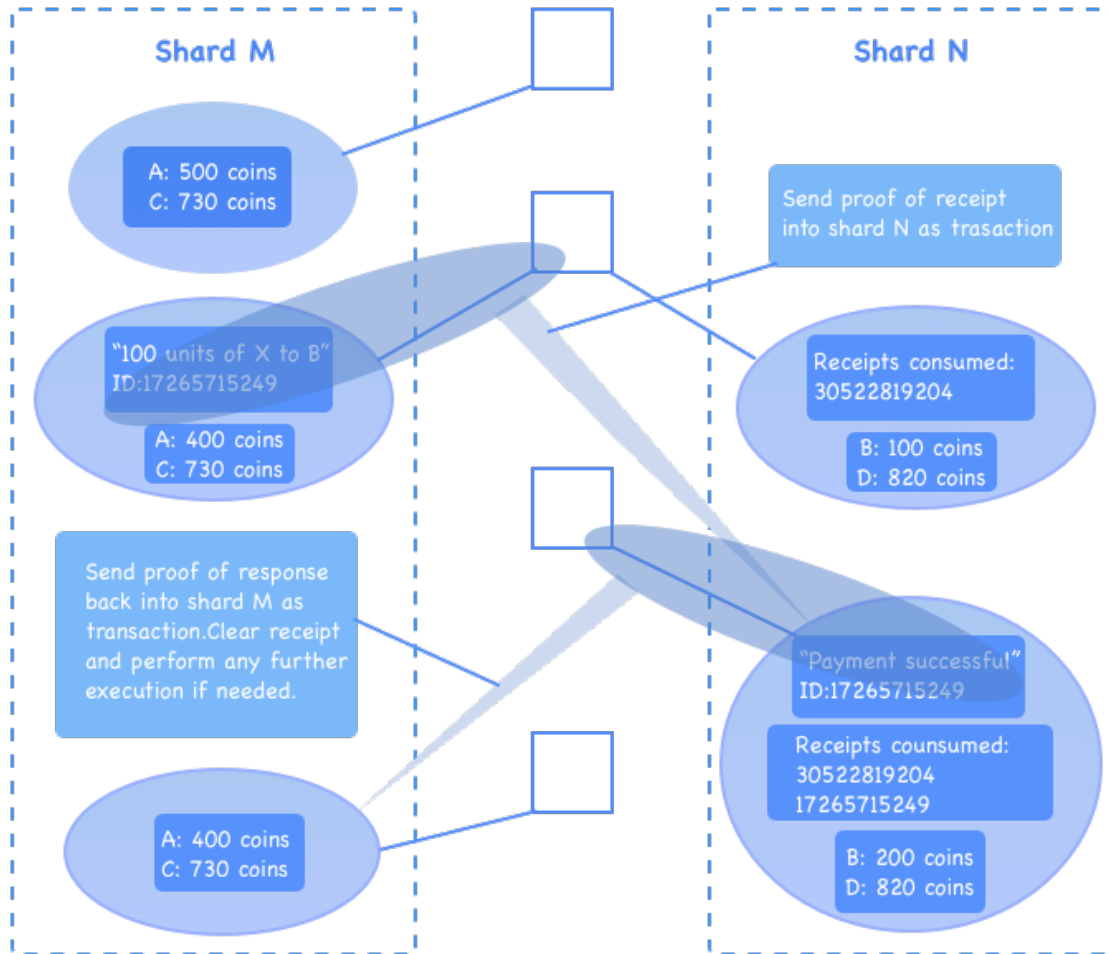
In the ITEC 3.0 system, the DATP will be upgraded to digital asset exchanges between links that can support different consensus mechanisms.

4.3.2 Smart Contract Visual Editor ITEC_BPMN

Introduced smart contract BPMN (Business Process Model and Notation) editor that automatically compiles smart contracts in the chain. Dapps developers can build their own business processes without writing contract code.

First, it provides a BPMN-style smart contract web page editor, and an IDE integrated development tool will be provided. When the contract is saved in the editor, the contract code is automatically generated and compiled into the blockchain. It will support the compilation and deployment of Ethereum Solidity contracts.

Introduce LLVM and WebAssembly runtimes, and support smart contracts written in many mainstream languages such as Go, Node.js, Java, PHP, Python, Wren, etc. This is conducive to covering the largest range of developers, is conducive to the formation of technology and business ecosystem, and accelerate the industry to land. After optimization, it is expected to improve performance by 10 to 100 times over Ethereum Solidity runtime.

4.3.3 Out-of-chain cooperation mechanism

Due to the inherent flaws in the blockchain, bitcoin systems have become more and more centralized and increasingly inefficient. In order to solve this problem, a large number of alternative solutions have been proposed. The Off-chain solution allows small and frequent transactions to occur in parallel with the main chain and endorsed by the main chain.

4.3.3. 1　CryptoApps encryption applet

After a reasonable layering of the functionality of the smart contract, the specific business logic layer should be executed out of the chain. ITEC Middleware redefines the mechanism of out-of-chain and on-chain smart contracts to replace the original Oracle mechanism. The functionality of CryptoApps is limited to providing verification only to Fact, and the functionality that generates Fact is provided by the Internet cloud service.

For example, the weather forecast cloud service provides daily London humidity, and the humidity CryptoApp verifies that the highest humidity in London on the 10th of March is the value displayed by the cloud service.

Features that CryptoApps needs to implement include:：

Encrypted message transmission channel: Ensuring that CryptoApps interact with the messages on the contract in the encrypted environment.

➢ Trusted Signer: Ensure that CryptoApps are signed by a trusted node in the chain and that the result is the same as the result of the execution of the transaction on the chain.

➢ Message-driven mechanism: two-way message communication with the contract on the chain, the contract to CryptoApps

➢ Immutable execution result: Ensure that the returned result (message sent) does not change if the input conditions are not changed.

➢ Privacy protection: as described in the next section.

4.3.3. 2 Privacy protection and zero-knowledge proof

ITEC uses a combination of asymmetric encryption and decryption and symmetric encryption and decryption to better protect user privacy，The basic logic of the entire interaction is shown below.。
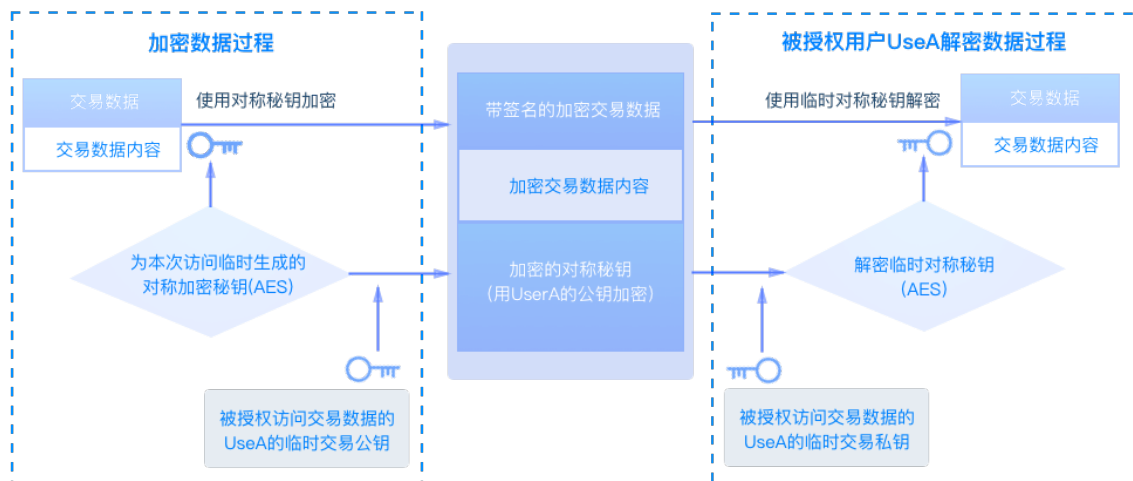
ITEC will provide an embedded homomorphic encryption algorithm at the bottom layer so that the untrusted end can directly manipulate and calculate the ciphertext without knowing the plaintext to ensure the privacy of the plaintext information. For this reason, ITEC initially introduced a zero-knowledge proof algorithm similar to zkSNARK as one of the basic capabilities of ITEC.

zkSNARK is an acronym for zero-knowledge succint non-interactive arguments of knowledge, where each word has a specific meaning:

Zero knowledge：Zero knowledge proof.

Succinctness：Evidence information is short for easy verification

Non-interactivity：Almost no interaction, the certifier basically just provides a string of volunteer verification. For the blockchain, this is crucial, meaning that the message can be put on the chain for public verification.

Arguments：The proof process is computationally soundness, and the prover fails to produce perjury in a reasonable amount of time. Corresponding to the well-calculated perfect soundness, cryptography is generally required to be calculated well.

of knowledge：For a certifier, it is impossible to construct an effective zero-knowledge proof without knowing the specific witness.

One of zkSNARK's core algorithms is called Homomorphic Hidden HH, and a Homomorphic Additive Hidden function E(X). It needs to satisfy the following conditions:

➢ For most x, given E(x), it is usually difficult to reverse solve x.

➢ Different inputs will have different outputs, so if $x \neq y$ then $E(x) \neq E(y)$.

➢ If someone knows E(x) and E(y), he can generate x and y in an arithmetic expression. For example, they can use E(x) and E(y) to calculate E(x+y).

Further, the properties of homomorphic additive hiding can be extended to

polynomial blind verification. Assume that A knows a polynomial P with the highest d times, and B wants to know E(P(s)) corresponding to a certain s.

$$P(X) = a_0 + a_1 \cdot X + a_2 \cdot X^2 + \ldots + a_d \cdot X^d$$

We hope that during the verification process, A only knows P, does not know s, B only knows s, does not know P. Can be achieved by：

a) For each index of s, B calculates E(1), E(s),..., E(sd) and sends it to A;

b) A knows all the coefficients of the polynomial and can use the homomorphic property to calculate P(s) and send it back to B.

 KCA and complete polynomial blind verification

We first define a concept: an α pair is a pair of values (a, b) that satisfy b=α* a. Note that the multiplication here is actually a multiplication on the elliptic curve (ECC). The operation on the elliptic curve satisfies two characteristics: First, when the value of α is large, it is difficult to push α out by a and b. The second is that the addition and multiplication satisfy the characteristics of the exchangeable group. That is, the addition and multiplication reciprocity laws are also true on the elliptic curve. The operation of the elliptic curve is very complicated. As long as you remember that the multiplication of elliptic functions satisfies the characteristics of homomorphic hiding, you can complete the following proof.

We use the characteristics of α pair to construct a process called KCA (Knowledge of Coefficient Test and Assumption):

➢ B randomly selects an α to generate α pairs (a, b), α saves itself, and (a, b)

sends it to A

➢ A chooses γ, generates (a′, b′) = (γ·a, γ·b), and passes (a′, b′) back to B. Using the commutative law, it can be proved that (a′,b′) is also an α pair, b′=γ·b=γα·a=α(γ·a)=α·a′

➢ Ø B check (a′, b′), verifying that it is an α pair, can assert that A knows γ

This proof can be generalized to multiple alpha pairs of scenes called d-KCA

➢ B sends a series of alpha pairs to A

➢ A uses (a′, b′) = (c1·a1+c2·a2, c1·b1+c2·b2) (a′,b′) = (c1·a1+c2·a2,c1·b1+c2·b2) Generate new α pairs

➢ B verification passes, you can assert that A knows the array of c

This KCA does not seem to be useful at first glance, but it can be used to complement the defects of previous polynomial blind verification. A complete polynomial blind verification process is as follows

➢ Because the multiplication of the elliptic curve conforms to the homomorphic property, A and B can jointly choose x·g as E(x)

➢ B calculates g,s·g,...,sd·g and α·g,αs·g,...,αsd·g and sends it to A，The actual process is the same as the first step in the previous chapter, except that E(x) is replaced by multiplication, and the corresponding polynomial result of αs is increased.

➢ A calculates a=P(s)·g, b=αP(s)·g and returns

➢ The value of a is the E(P(s)) result of the required check of B. At the same time, KCA guarantees that the value of a must be generated through a polynomial.

In addition, while homomorphic hiding hides ontological data, it can be

used to crack out raw data to some extent. Therefore, in the real implementation, we will add a random perturbation factor to the formula to prevent the occurrence of brute force attacks. Since the random number cannot be inferred, the original data cannot be obtained, and the secure interaction between the polynomial algorithm and the data invisible to each other can be ensured.

5. The value of Token

5.1 ITEC Token's Economic Model

5.1.1 Participate in defining the role of the ITEC ecosystem

Local service provider：Mainly referring to businesses that provide travel destination services, such as hotels, landlords, drivers, etc. Especially in today's sharing economy, the average user can be either a travel service provider or a consumer. The trust between traditional hotels and guests, landlords, and tenants is completely transferred to third-party intermediary organizations based on centralized operations. It has problems such as high trust costs, opaque information, and unreliable credit systems. The blockchain technology can perfectly solve the problem of bilateral trust and significantly reduce costs.

Third-party services：Third parties that provide customized services based on the ITEC protocol, such as travel agencies, online marketing platforms, etc. These platforms realize the integration of resources, but there are problems such as uneven quality of service and high transaction costs. The point-to-point transaction characteristics of blockchain technology can enhance the convenience of transactions and at the same time ensure the creditworthiness of both parties.

Consumer：It mainly refers to tourists and tourists who have created core values in the travel industry chain, but are in a disadvantaged position in the travel industry. Their core interests cannot be guaranteed. At the same time, the holiday travel area is full and the travel experience is poor. Some tourists have

low quality problems, leading to difficult management of scenic spots.

Collaboration platform：ITEC will use blockchain technology to implement a DAO platform for travel industry organizations （a new generation of smart contract platform）. Rely on real travel scenes to practice landing. The platform will uphold the principle of decentralization, openness and win-win, and promote the sound development of the travel industry through the establishment of businesses and individual credit and value systems. On this basis, it supports various applications such as information storage, payment and clearing, transparency of the travel industry chain, UGC traceability, and smart big data analysis, thereby establishing a new ecosystem of smart travel.

5.1.2 ITEC Token's Distribution Ecosystem
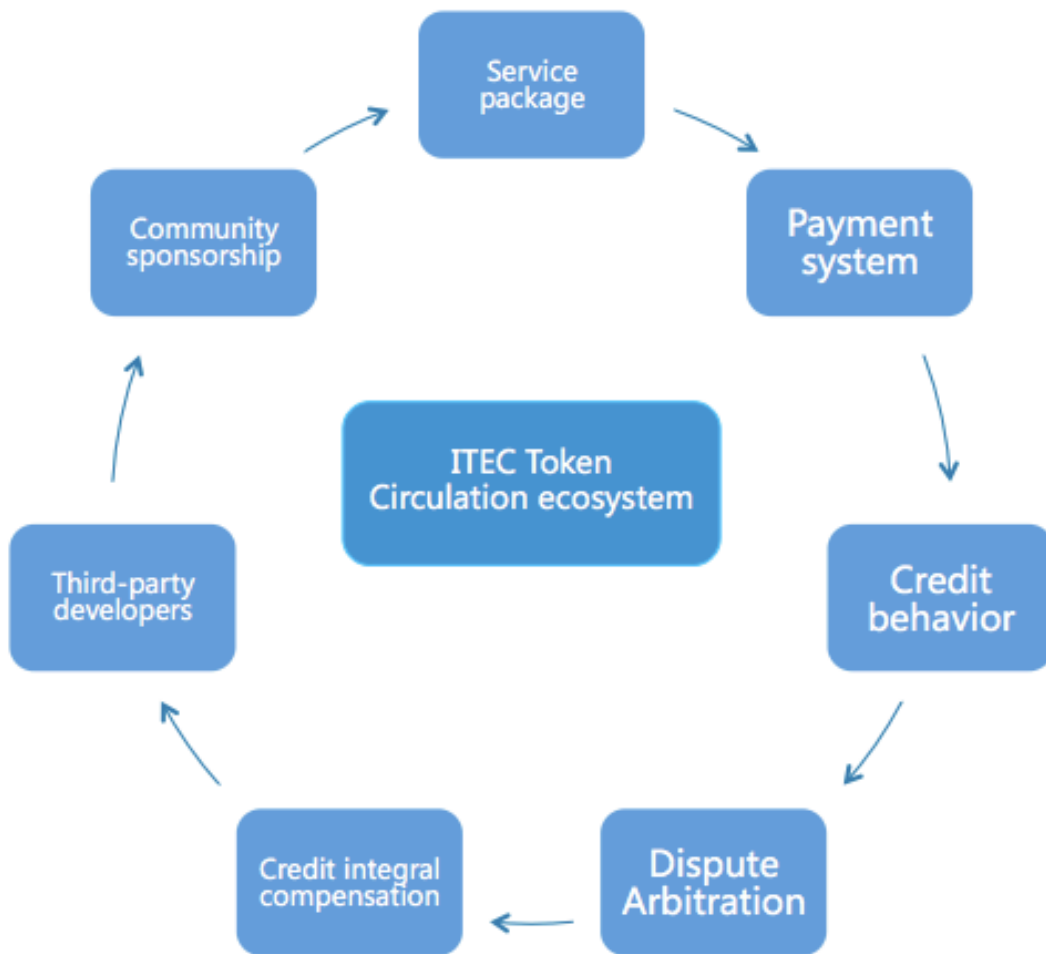
5.1.2.1 Service package

The local service provider publishes the service content by paying a certain ITEC Token, such as the 3rd day of the scenic tour of the mountain and accommodation and catering services.

5.1.2.2 Payment system

Consumers pay ITEC Token or universal digital currency exchange services to service providers, and service providers set ITEC Token rewards. After the service is completed, they are rewarded to consumers who actively participate in reviews and sharing.。

5.1.2.3 Credit behavior

Consumers receive ITEC Token rewards through real reviews and earn extra ITEC Token rewards by self-publishing services and sharing invitation members to join. In order to increase user participation to encourage UGC behavior, consumers can publish their own travel footprint online, generate travel guides for other travelers to refer to, and the system will provide incentives for users' contributions based on the usage of the user's published content.

5.1.2.4 Dispute Arbitration

After the transaction is completed, a dispute arbitration procedure can be initiated if there is a conflict between the visitor and the service provider. Initiating the arbitration procedure requires the initiator to pledge the corresponding ITEC Token, and the ITEC Token pledged by both parties before the transaction will be frozen. The arbitrator made his own decision on time according to the upload evidence, and decided the majority of the dispute results according to the majority. If the losing party loses the pledged ITEC Token or decides to appeal, the system will select more arbitrators to arbitrate.

5.1.2.5 Credit integral compensation

The credit score reflects the trustworthiness of each participant in the community. By using transaction records of trading participants, relevant transaction data can be collected accurately and continuously, and a credit score of the transaction party can be formed. The credit score will be divided into three types: buyer, seller and arbitrator. Each user (wallet address) will have these three credit ratings simultaneously.

The credit scoring model itself is implemented through smart contracts. Any

party to the operator cannot be tampered with, and the transaction record is also based on the blockchain's credit record cannot be tampered with, both of which together ensure the authenticity and reliability of the credit score. The credit score is adjusted through the outcome of each transaction. Once the transaction is completed and praised, the credit score can be increased. In the event of a default, the credit score will be lowered. Further, the community may consider giving high-priority participants more privilege, including enjoying VIP services in the scenic spot, participating in community management, and voting in rules, etc.；On the other hand, participants who score too low will be restricted or removed from the community to ensure that the average value of the entire community's credit status remains at an acceptable level.

5.1.2.6 Third-party developers

The third party uses its unique services and the operation of its own community, based on ITEC's smart contracts, to provide consumers with personalized services directly or provide traffic to the service provider. When consumers complete transactions, third parties can obtain ITEC Token rewards.

5.1.2.7 Community sponsorship

The service provider can use ITEC Token to provide sponsorship for the community and obtain a higher credit score.

5.1.3 ITEC Token Ecological Value

The economic value of ITEC Token is mainly reflected in the value of circulation and ecological value. In the ecological design of ITEC, service providers use ITEC Token as a security deposit and can purchase advertising

space；The main scenarios in which consumers use ITEC token include exemption of exchange rate conversion fee as payment method, deposit for purchasing Shared service, arbitration fee and incentive.

5.2 Incentive mechanism

5.2.1 Behavioral incentives

Service providers incentives::

The ITEC Token award is obtained by "inter-night volume x number of favorable comments" in the cell cycle.

Favorable comments make service providers provide better service.

Consumer incentives:：

Write a review for ITEC Token rewards.

Receive ITEC Token rewards by sharing and forwarding.

Third Party incentives:

Earn ITEC Token rewards by providing more personalized services.

Earn the ITEC Token award for guiding the flow of the service through its own traffic.

5.3 Score mechanism

Frequent travelers accumulate travel points, including flights, accommodation and car rentals. In a number of cases we get these points using a credit card that provides travel shopping points. The question is whether various plans really provide useful points?

The Travel Points program is more complex, less transparent, and more cumbersome to use than other industry discount programs. Customers do not understand why the points for various products are completely uncommon. Therefore, for most ordinary visitors, the points become unimportant, because it is difficult for them to accumulate points that can be used, and many points are not used.

In fact, customers think that the opacity of rules is to make them not use these points, and complexity often causes a reversal of points. At the same time, the company also encountered increased operating costs, accounting regulations required them to bear the corresponding responsibility for the points, and only after the points are honored can the company clarify the relevant earnings.

ITEC Token will play an integral role in the ITEC ecosystem. Everyone can clearly understand the rules of the points program in the smart contract, and clearly see whether the points are actually used in the open book.

The whole point mechanism that ITEC will construct is actually the ITEC user growth system, that is, the member system corresponding to the points.

The higher the point, the greater the user's rights and interests, the more benefits and services enjoyed, and the cultivation of users' sense of identity and belonging to ITEC. The positive scoring system can stimulate the dynamic circulation and ecological health cycle of ITEC Token.

5.4 International network effect

ITEC is both a travel service trading market and an open protocol service provider. Any country, any travel platform, can use all or part of the agreement provided by ITEC to reduce cost costs or improve service quality. For example,

Airbnb can upgrade its evaluation system by exchanging data with ITEC's credit scoring system. Cambodia can also optimize its own travel ecology and improve service quality through ITEC's smart travel project planning.

As the number of ITEC access nodes, the number of users on the platform, and the activity of users continue to increase, the network effects of the platform will gradually appear and continue to increase. The value of ITEC Token will also be improved because it is widely used.

6. Development plan

6.1 Important node

➤ Ø July and August， 2018

  Publish ITEC white paper, wallet

➤ September， 2018

  Enter the global mainstream exchanges

➤ November ，2018

  Cooperate with domestic and foreign travel agencies and scenic spots to develop commercial applications

➤ January 2019

  Release ITEC landing application, support service chain
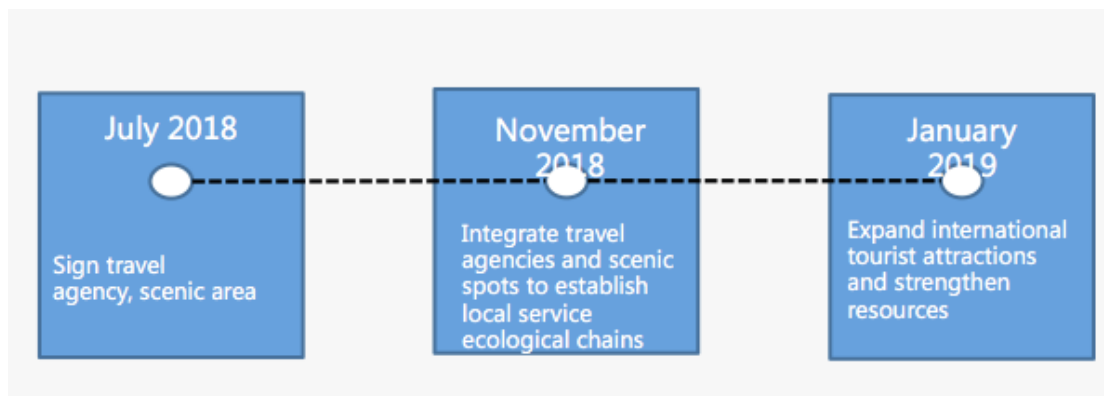
6.2 Product research and development

➤ ITEC 1.0

  ● ITEC is issued Based on Ethereum in July 2018

  ● Wallets will be released in August 2018

➤ ITEC 2.0

  ● In November 2018, the application of the scenic spot will be combined

to support the service chain of the scenic spot

● In December 2018, the Management background Development will be Completed

6.3 Application landing

The team is speeding up the development of all applications. It is expected that there will be several ITEC product solutions for the international strategic cooperation area in the second half of the year and next year. At present, the team is also preparing for the ITEC Travel Foundation in Singapore to rapidly expand and promote globalization.

With the gradual expansion of the ITEC community, ITEC will continue to develop new solutions based on the existing community resources and create more practical landing application scenarios for ITEC Token. Possible application scenarios include brand incubation, secondary Token distribution and so on.

7. Team and consultant

The core team has more than 20 years of experience in the travel industry, and has more than 20 countries and regions' travel resources at home and abroad. The product R&D and technical team are all from 985, 211 colleges and universities and serve top domestic and foreign Internet companies, such as Ali, Baidu, Meituan, Tencent, and other technical experts and product experts The project operations team has very strong channel development and operating experience, and there are no shortage of marketing experts and traders who have worked on multiple national brand planning activities.

7.1 Project Operation Team

➢ Bruce Allen

 ● Cornerstone Investors

➢ Wadely Jeter

 ● Operational expert

 ● Top 500 domestic companies, 10 years of channel, operating experience

 ● Through five years, channel performance from 100,000 to 10 billion

➢ Otis Doyle

 ● Marketing expert

 ● 3 years of consulting, 8 years of brand planning and promotion experience

 ● Organized 6 national brand planning, from the creation of ideas to

implementation

7.2 Project Development Team

➢ Kaeden Fairchild

  ● Chief Architect

  ● Served in Ali, Baidu, technical experts, more than 7 years of development experience. Graduated from the Computer School of Peking University.

➢ Taber Hillman

  ● Blockchain Technology Expert

  ● Member of the well-known blockchain research association, graduated from Xi'an Jiaotong University, School of Communication.

➢ Rafael Summer

  ● Product experts

  ● Served in Meituan, Tencent senior product manager. Graduated from the Computer College of Wuhan University.

➢ Packard Marsh

  ● Algorithm expert

  ● Returnees served Baidu and Ali. Graduated from Tsinghua University.

➢ Rainer Kresh

  ● Technical experts

  ● Served Baidu, Qunaer, more than 5 years of development experience.

7.3 Project Consultant

➢ Zengxing Chen

- China Construction Yinling Group Jiangxi Corporation Tourism Group Leader

- 30 years of experience in tourism real estate and project management, senior engineer, rich political and business relations

➢ Qunfeng Jiang

- Senior tourism industry expert

- 16 years of experience in the industry, once served in the CYTS, Spring and Autumn Tourism, Kang Hui travel a number of first-line tourism brand agencies

➢ Fugen Li

- Wei Shi Group Vice President of Operations, Operations Expert

- Rich frontline operations management experience

➢ Rongjie Zhou

- Block chain industry council President, faith capital holding chairman

8. Interchange details

8.1 Token issued

ITEC Token is an irreplaceable part of the value exchange method within the platform. Its ownership gives the holder the right to receive value based on its activities. When a user interacts with content by entering contention and using other features on the platform, they receive tokens. These transactions can be traded not only between buyers and sellers, but also for other purposes in the future. Therefore, the token will also be used as a reward (by monetization) to create something meaningful for other users and thus generate additional value.

Future travel platform ecosystem. As already mentioned, the ITEC Token token will provide many unobtrusive transactions within the platform and will provide simple monetization and value interactions between the platform, customers and users. There are other opportunities to use platforms other than ITEC Token tokens. One of them is the product or service of partners and customers who can purchase future products from the ITEC Token token, as already described in the previous section.

To make the ITEC Token run economically, it is necessary to properly stimulate the demand and supply of the token economy. The original Intelligent Travel Ecosystem Chain team defined competition to attract users to generate content and compete for rewards from the reserve pool. However, in the medium and long term, the future traveler wants to position itself as a platform maintenance provider and leave the content generation requirements to the market. We believe that the key users of the other side of the market are

companies or investors who will mainly drive the demand for contests, offers and other features. These companies will have to buy ITEC Tokens on the open market or platform. Once the contest is set up, the distribution of the token to the winner will take place at the protocol level without interference from any third party.

We believe that every iconic economy needs to start to drive the rotation of wheels at the beginning and before the network effect enters life. Therefore, a token reserve is set aside and will be issued to the economy (rather than the open market!) by creating quality reviews for users who bring added value to the network.

But these are not just content generators, but companies that drive these content needs. We hope that those "content generators" that have long attracted users on the platform should attract the platform by providing them with a limited number of free tokens. We believe that even if a limited number of tokens are distributed to users for free, they can carry greater utilization.

One of our main goals is to find the most active and long-term participating users on the market demand side (businesses) who will ask for content. Initially, they will be given the token "play" (set the contest) and the token economy will take effect, and they may realize that this type of business model rewards content in terms of content generation and brand awareness by providing better results.

ITEC will be initially sold as an ERC 20Token on the Ethereum platform with a total Token total of X=10 billion.

fter the official launch of ITEChain, users of Ethereum ERC20 Token can

exchange certificates for the same amount of ITEC on the ITEChain network, and Ethereum's ERC20Token will be destroyed.

8.2 Token allocation

● Cornerstones and Fundraising (20%)

20%X is funded for strategic partners and cornerstone investors, and is unlocked in batches of 3-12 months based on the stage of fundraising.

● Core Team (20%)

The founding and development team of ITEChain will continue to make contributions to human and material resources from the aspects of project organization structure, technology research and development, and ecological operations in the development of Intelligent Travel Ecosystem Chain.

In the Token allocation mechanism, 20%X is reserved as a team incentive. This part of the ITEC is initially locked, the lock period is 36 months, unlocked in batches.

● Business and community incentives (25%)

In order to quickly expand ITEC's global eco partners, such as large-scale scenic spots and businesses across the country and even the world, as well as credit guarantee, payment, finance, insurance and other service providers, as well as community developers, etc., the foundation will join partners for cooperation. Incentives under conditions of agreement.

● Foundation Reserve (10%)

10%X is retained as a foundation development fund for

➢ The foundation continues to grow and serves the entire ecosystem

➢ Daily operation of the foundation

➢ Academic Research

➢ Investment incubation

● Ecological Construction Fund (25%)

➢ Support the upstream and downstream industries

➢ As a cooperative scenic spot to explore the application of ecological green business applications

Allocation of tokens
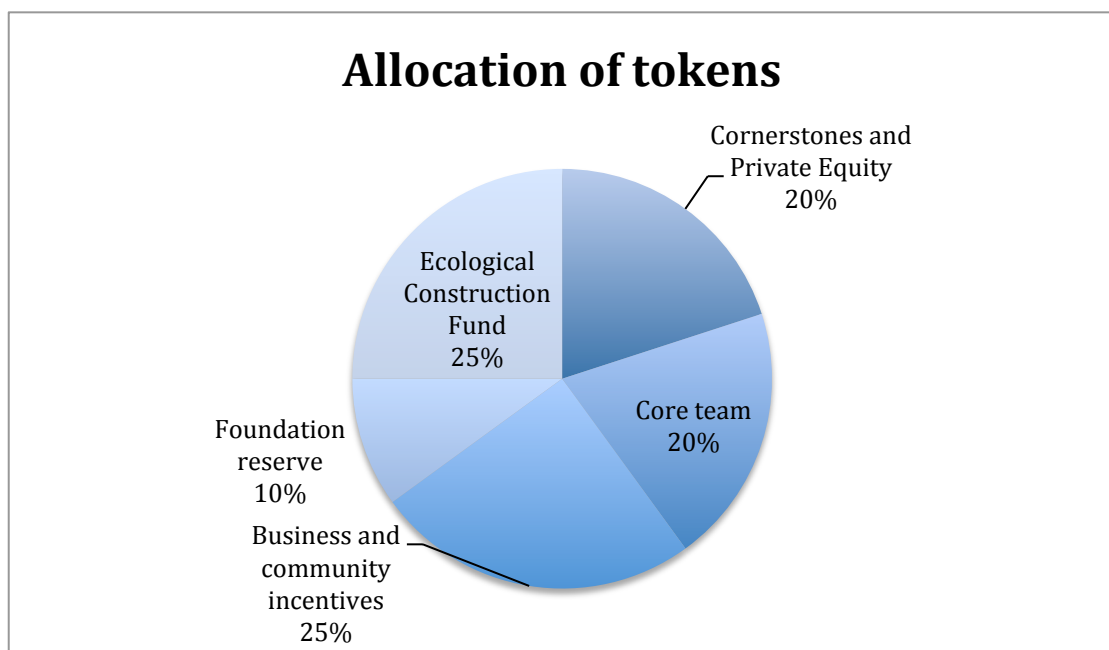
8.3 Fundraising purposes

➢ Infrastructure and middleware development 25%

➢ Application development 25%

➢ Safety investment 10%

➢ Community operations 10%

➢ Marketing 25%

> ➢ Legal Compliance and Others 5%

9. Appendix

9.1 Risk warning

The purpose of this white paper is to provide potential holders of the Intelligent Travel Ecosystem Chain project issue tokens with necessary information about the project.

The following content may not be able to exhaust all the information required, nor does it contain any meaning that this white paper constitutes a contractual relationship with anyone.

The sole purpose of this white paper is to allow potential investors to obtain the necessary information so that investors can decide whether or not to conduct an in-depth analysis of the project in order to purchase project tokens.

Nothing in this White Paper constitutes any form of prospectus or fundraising offer, nor is it any form of solicitation or invitation to solicit any securities within the scope of any jurisdiction. The writing of this white paper is not governed by the laws and regulations that are governed by any law, nor is it governed by or subject to the laws and regulations that protect investment in any jurisdiction.

The statements, estimates, and other financial information in this white paper are estimates. There are known and unknown risks and uncertainties in such projected reports or information, and there may be situations where the

actual situation or results are significantly different from the situations described or implied by the nature of the above projections.

1）Ethereum technology is immature

The Ethereum Foundation has developed the Ethereum Development and Improvement Roadmap. Although some proposals herald the hope of known technical problems, it is not certain when these new improvements will be introduced and whether they will be successful. In particular, the proposal to use the "fragmented" blockchain to significantly increase the blockchain speed. At the time of this paper's release, there is still a long way to go. Another proposal is to change the mining process from the current workload proof algorithm to the equity proof algorithm. The impact on the Ethereum network is not known.

2）Excessive Trading Gas Prices

All transactions on the Ethereum blockchain, including the transfer of ITEC Tokens, require real world costs in terms of Gas. The price of Gas on Ethereum's basic transaction is symbolic, so it is uncertain whether Gas's price will rise, resulting in Ethereum Online's ITEC Token transaction becoming commercially infeasible.

3）The risk of theft or misuse of private keys

The Intelligent Travel Ecosystem Chain Foundation saves tokens through a cold wallet. Although all reasonable measures can be taken to avoid unauthorized use of private keys, there is no guarantee that private keys will not be stolen, defrauded or abused. 针 Unauthorized use of private keys in digital token distribution systems for mainstream companies may result in serious

interference with ITEC Tokens and, in the worst case, result in ITEC Tokens becoming unavailable or worthless.

4）Ethereum may be replaced

Although currently, in our view, Ethereum blockchain technology is the most promising advancement in blockchain technology, but it does not guarantee that Ethereum will not be replaced by a competitive agreement based on improved Ethereum technology. Ethereum technology is open source, and anyone can copy, modify, and publish code. It is not known whether the Ethereum platform will become the main agreement adopted by the global industry. Ethereum's transcendence may affect the ITEC Token program, leading to a decline in its use and adoption.

5）Business execution risk

I The implementation of the Intelligent Travel Ecosystem Chain System Roadmap and the deployment of related technology components are very demanding for professional business and software engineering experience. Although the development companies have achieved reliable performance in software engineering and commercial development, it is not certain whether they can fully realize the technical nodes specified in the roadmap.

9.2 Disclaimer

This document does not constitute an offer, request, recommendation or invitation related to any of the company securities described herein. This white paper is not an offer document or prospectus, nor is it intended to provide a

basis for investment decisions or contracting.

This white paper is for your technical and engineering purposes only and has not been audited, examined or analyzed by any professional legal, accounting, engineering or financial advisor.

This white paper does not claim that information for ITEC Toke buyers making investment decisions, nor does it fully describe the risks of ITEC Token. ITEC Token's risks are numerous and significant. Intelligent Travel Ecosystem Chain (and its directors, officers, and employees) is not responsible for the accuracy or completeness of the information contained in this White Paper or for any errors in the White Paper.

This white paper is for information purposes only. The contents of the document are for reference only and do not constitute any sale, offer or invitation for sale of stocks or securities in the Intelligent Travel Ecosystem Chain and related companies. The non-composition of this article is not to be construed as providing any buying or selling behavior nor is it any form of contract or commitment.

Due to unpredictable circumstances, the goals outlined in this white paper may change. Although the team will do its best to achieve all the goals of this white paper, all individuals and teams purchasing ITEC Tokens will be at their own risk. Some of the contents of the document may be adjusted in the new white paper as the project progresses. The team will publish the updated content by posting an announcement or a new white paper on the website.

If you choose to participate in the initial replacement of ITEC Token, Intelligent Travel Ecosystem Chain will not bear any responsibility for the loss of market value of ITEC Token.

ITEC Token is an efficient tool for the Intelligent Travel Ecosystem Chain platform and is not an investment product. ITEC Token is not a kind of ownership or control. Controlling the ITEC Token does not represent ownership of the Intelligent Travel Ecosystem Chain or Intelligent Travel Ecosystem Chain application. ITEC Token does not grant any individuals the right to participate, control, or make any decision regarding the use of the Intelligent Travel Ecosystem Chain.

The content of this white paper is highly technical and requires familiarity with distributed general ledger technology in order to understand the ITEC Token and related engineering risks.

We encourage recipients of this document to seek outside advice. The recipient's assessment of the external issues described in this document, including the assessment of risks, and the full responsibility for consulting with his technical and professional consultants.

9.3 Chained distributed storage demo

Tripio - the travel blockchain

Inventory   Booking   Decentralized Storage (IPFS) ●   P2P communication (Whisper/Orbit) ●

Load property from IPFS given an hash

QmcLvD56qfMyBjCwknDf5X6eEqUF8adsQdhky6MrC9J9Ba   [Load]

```
{
    "name": "Beijing hotel",
    "address": {
        "line": "123 Changan St",
        "city": "Beijing",
        "countryCode": "CN"
    },
    "ratings": 8291,
    "location": {
        "coordinates": {
            "latitude": 37.15845,
            "longitude": -93.26838
        }
    },
    "deposit": {
        "required": true,
        "currency": "TRIO",
        "amount": 1000
    },
    "phone": "+861028372618",
    "currencies": [
        "TRIO",
        "ETH",
        "Litecoin"
    ],
    "rooms": {
        "224829": {
            "id": "224829",
            "wifi": true,
            "freeBreakfast": true,
            "name": "Single Room"
        }
    }
}
```

Javascript calls being made:

```
EmbarkJS.Storage.setProvider('ipfs',{server: 'localhost', port: '5001'})
EmbarkJS.Storage.get('QmcLvD56qfMyBjCwknDf5X6eEqUF8adsQdhky6MrC9J9Ba').then(function(content) { })
```

9.4 Smart contract code example

Ethereum's "smart contract" is complete with Turing. In the Intelligent Travel Ecosystem Chain ecosystem, many constraints will be written in smart contracts.

```
1  pragma solidity ^0.4.7;
2  contract Booking {
3    uint public serviceProviderHash;
4    uint public customerHash;
5    uint public inventoryHash;
6    string public currency;
7
8    function Booking(uint _serviceProviderHash,uint _customerHash, uint _inventoryHash) public {
9      //initialize the contract by providing off-chain hashes
10   }
11
12   function pay(address _customerAddress, uint256 _serviceProviderAddress, string currency) public returns (bool) {
13     //customer pay with specified currency
14     //funds will be locked during service
15   }
16
17   function cancelPayment (address paymentAddress) public returns (bool) {
18     //customer and service providor can cancel the paynment
19     //only if both aggreed
20   }
21
22   function settlePayment (address paymentAddress) public returns (bool) {
23     //service provider will recevie the payment
24     //once confirmed by the customer
25   }
26
27   function raiseDispute(address arbitrationAddress) public returns (bool) {
28     //customer can raise a dispute if not happy with the service
29     //service provider can raise a dispute if customer bad behavior happened
30   }
31 }
```

9.5 Contact information

Official website：https://itechain.io

E-mail：hello@itechain.io