

RealChain: Appraising High-end Consumer Good and Collection with Blockchain

Project white paper v3.1

December 2017

In collaboration with TaoDangPu Co. Limited

Glossary

RC: abbreviation of RealChain.

RCT: RealChain Token, the token used in RealChain ecosystem.

High-end Consumer Goods: including but not limited to jewelry, Luxury, and high-level artworks.

Consumption Scene of high-end consumer goods: including but not limited to shopping malls, e-commerce platforms, exclusive shops, auctions, and second-hand market.

TaoDangPu LLC: is a general reference of KEEN TREAD LIMITED and its connecting companies. KEEN TREAD LIMITED is the owner of TaoDangPu LLC.

SHA256: Secure Hash Algorithm (SHA) is a series of encrypted hash function designed by NSA and published by NIST, including SHA-1, SHA-224, SHA-256. SHA-384 and SHA-512. It is designed to apply the Digital Signature Algorithm (DSA) in the Digital Signature Standard (DSS). The hash number in SHA256 contains 256 digits.

C2C Business: a decentralized business model between two persons, including but not limited to consuming goods and financial services.

TDP: abbreviation of TaoDangPu LLC and its connecting companies.

Authorized institutions: institutions that are authorized by RealChain Foundation to conduct business such as uploading assessment content, logistics information, commodity information, or financial service information.

Disclaimers

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You must take all necessary professional advice, including in

relation to tax and accounting treatment. We hope the RealChain project will be highly successful. However, success is not guaranteed and digital assets and platforms involve risk. You must assess the risks and your ability to bear them.

1. Background Introduction

In the future, idealized global luxury, jewelry and artwork trading system should be based on fair, open and transparent product information as well as highly efficient trading environment. The combination of block's decentralized system and AI (Artificial intelligence) image recognition technology can fully meet the above requirements. We have developed the RC product based on the above two aspects. The full name is RealChain.

The RealChain foundation is the R & D and operator of RealChain products. It will work closely with TaoDangPu holdings to develop a new generation of high-end consumer goods trading system. RealChain product aims to improve transaction transparency and reduce fraud risk and transaction cost by block chain technology and AI technology in the trading scene of luxury goods, jewelry and art.

In the whole operation system of foundation, we hope that all members of the entire ecosystem will be able to participate in the management. Our vision for the future is to build RealChain into

a public product based on high-end consumption, so as to provide secure and reliable business services for system members.

1.1 About TaoDangPu

The TaoDangPu was established in 2013, which attracted three rounds of financing for over more than \$50 million. The company is currently valued for over \$300 million. Its investors include seven global well-known enterprises and large funds, such as JD Finance, 360 Finance, Blue-Run Ventures, Trust Bridge Partners and Northern Light Ventures etc. It is one of the world's largest high-end consumer goods finance and service platforms.



Figure 1. TDP's investors

In 2014, TaoDangPu introduced the high-end consumer goods pledge loan service platform.

In 2015, the total business trading volume of TaoDangPu was over 200 million dollars.

In 2016, TaoDangPu introduced the trading platform of second-hand luxury goods; the total business trading volume exceeded

\$400 million.

In 2017, TaoDangPu introduced the global purchase of consumer finance products for high-end consumer goods: YOUPIN instalment. The total volume of business transactions is expected to exceed \$650 million.

1.2 Honors of TaoDangPu

In 2014: Top 100 enterprise of the annual innovation and growth

In 2015: China's top ten business innovation platform

Annual model enterprise of Internet financial

In 2016: Top 40 enterprise of China Maker in the world Internet Conference

In 2017: HUAZUN award-Top ten customer satisfaction award in China's financial industry Top ten Internet financial innovation enterprise in China.

2. Market and Opportunity

The latest report released by Bain & Company and Italy Luxury Industry Association shows that the global luxury consumption scale will reach 249 billion euros in 2016, in which Chinese account for 32% and is the largest consumer group.

Latest release information by Euro Monitor International: Global sales of global jewelry are \$316 billion for 2016.

In 2016, global art auctions totaled \$12.45 billion, with China holding the world's largest share for \$4.8 billion.

In addition, the volume of the global used high-end consumer goods is also quite huge. According to statistics, second-hand transactions will reach more than 20% of the new trade volume.

2.1 Huge pain buried under the hundreds of billions of dollars in the trading market

At present, the opaqueness of high-end luxury goods trading is very serious and information is quite opaque. There are three pain points in the whole field of circulation: high risk of transaction fraud; information opaqueness; Low efficiency and high cost of appraisal and evaluation.

2.2 High Risk of Trade Fraud

At present, forgery and counterfeit sales are serious due to the advanced fraud technology and the consumer's lack of knowledge on luxury goods, jewelry, and art.

The cost of some high-end imitation is about 10% of the real goods price. For example, the genuine Hermes leather bag costs 10 thousand dollars, while the cost of high imitation goods is

even more than 1000 dollars. Imitation technology become more sophisticated due to the increased costs, which is impossible for consumers to defend effectively.

As what has been showed as follows, it's basic Cartier "blue balloon" series of men. The pseudo control chart is generated based on the amplification results in 3-10 times. For the inexperienced consumers, it is too difficult to identify the real goods.



Figure 2. Authentic and pseudo luxury goods comparison chart

2.3 Information Opacity

At present, no matter new or second-hand goods, the opacity of high-end luxury goods transaction is quite serious, including: the opaque transaction price, the opaque source of goods and the opaque transaction records.

The price of luxury goods or jewelry can be different due to

different colors or materials. As consumers have little knowledge and lack of experience about these goods, the sales prices are sometimes determined by man.

For example, Hermes crocodile skin "Birkin bag" is potentially designed with grade mark in the bag opening:

Grade "Λ" represents that materials come from wild crocodile. Thus, the price can be the highest.

The logo "。 。 " represents that materials come from the domestically reared crocodile.

If "S" is marked under Made in France, the bag is a discounted item.

The seemingly same crocodile skin bag may have different materials, technical qualities or prices. However, not all consumers know about this.

2.4 Low Efficiency and High Cost of Appraisal and Evaluation

At present, luxury jewelry appraisal is mainly concentrated with a few appraisal institutions. Except for a few jewels that can be queried for appraisal reports, there is no inquiry record for luxury goods. It is impossible for consumers to obtain an identification

report for a short time in an impulsive consumption scene.

At the same time, repeated evaluation and appraisal in the transaction may increase the cost of circulation.

The Traditional Appraisal System has high appraisal deviation, high cost and low efficiency since it mainly depends on human judgment. At the same time, the mobility of appraiser is large, which may cause poor result traceability. Moreover, the moral hazard and responsibility traceability can be high.

2.5 New Opportunities Brought by Blockchain

2.5.1 Fully Trusted Authentication Service

RealChain achieves full de-trust through block chains: there is no need to trust other participants and there is no centralization of single point failures. The combination of identification mechanism and artificial intelligence image recognition will greatly improve the accuracy of identification. RealChain can solve the consumer's most important concern: the authenticity of high-end consumer goods. In the future the financial institutions that will be connected to RealChain, which can reduce the risk through RealChain services.

2.5.2 Distributed Identification Ecology

There may be high infrastructure and maintenance costs may occur in forming an identification data cloud through building a

centralized server. The mobile terminals provided by RealChain will make each institution and appraiser form an independent node, thereby greatly reducing the connection cost. In addition, the involvement of TaoDangPu can also make RealChain have a natural advantage. The partner institutions will directly be removed from the RealChain network if they are caught for illegal operations or fraud.

The services provided by RealChain will enable high-end commodity transactions to realize the following aspects:

- (1) Information exchange between appraisers and authenticators without trust;
- (2) Low cost of identification and appraisal of goods;
- (3) The creation a mobile and transparent market for high-end consumer goods;

In addition to the access of database and cooperative agencies of TaoDangPu, RealChain will set up a distributed identification ecology in the world: Any RealChain foundation accreditation agency may choose to connect the database to the RealChain and obtain the user's consumption RCT token returns without worrying about data leakage and tampering. In the first stage of RealChain, RealChain will integrate the identification agencies across various luxury sectors, so that more data providers can participate in this platform.

2.5.3 Incentive Mechanism Realized by Encrypted Tokens

The RealChain based on the Ethereum blockchain will ensure that the data providers share the value directly through the Smart Contract. Once the user's uploaded data is used, it will automatically get RealChain's tokens RCT.

2.5.4 Information Desensitization

Users of high-end consumer goods are particularly interested in the pursuit of privacy and personal information security. At present, centralization requires a trusted third-party solution that can be used to collect and analyze user data without user authorization. However, the user data of RealChain is determined by the user's own open permissions.

2.5.5 Greatly Improve Transaction Efficiency

It's hard for users to sell or mortgage high-end consumer goods quickly due to lack of authoritative endorsement of the current high-end goods market. Most of the users who can't find the right price have to bear the loss. The characteristics of blockchain technology fully meet the needs of real scene tracking and inspection of real information, such as multiple party confirmation, transparent accounts and non-modified historical records. The high-end items are identified by the TaoDangPu and other institutions that have access to the RealChain, that is, a "block", which can realize the following contents:

(1) Fast transaction verification: Fast transaction verification of second level can be realized key trading links, such as signature algorithm, consensus mechanism, book storage, etc. provided by the Ethereum public block chain.

(2) Transaction intelligence contract: An intelligent contract is a set of commitments defined in a digital form. RealChain can generate intelligent contracts based on different scenarios, such as auction, second-hand luxury goods, and more. The blockchain, as a participant in the contract, is responsible for maintaining and saving the contract and executing it automatically.

According to the above needs and pains, RealChain' s team firmly believes that the combination of the technology of blockchain and the AI image recognition system can solve the above problems in the future.

3. The Cooperation Between RealChain and TDP

There are currently hundreds of appraisers working for TDP worldwide. Every article appraised will be kept in archives in videos, pictures and word descriptions. More than 200,000 of high-end consumer goods have been valued and recorded since the beginning. Records include data to validate against the counterfeits, circulating information of second-hand goods, and

price changes over the years.

TDP has more than 5,000 cooperating partners all over the world, including but not limited to financial institutions, luxury brands, large e-commerce platforms, auction houses, and luxury MDs.

TDP is three core business includes authenticating, appraising and analyzing the appraisal. We believe that the blockchain technology together with AI pattern recognition will greatly lower the artificial error and moral hazard, improve the transaction transparency, reduce transaction cost and enhance effectiveness.

TDP is planning to migrate its operations of dealing second-hand luxury, luxury hypothecated loan, luxury and consumer finance entire on RealChain, becoming the first migrants of the RealChain ecosystem. Meanwhile, TDP is bringing its archives and transaction details onto the RealChain as database.

Namely, TDP's involvement will be the first step of RealChain expanding its business territory. Once the system is matured enough, it will forge a scale effect to bring in other platforms and systems in accordance with economic stimulating effect of tokens and its industrial ecology.

4. RealChain Blockchain Protocol and RCT Token

RealChain is a new blockchain protocol being developed and specifically designed and optimized for transactions of high-end consumer good and financial service applications. The protocol will consist of a blockchain based “virtual machine” and defined modules of middleware software stacks, which operate outside the chain to support decentralized processes governed by smart contracts implemented on the network.

RCT is the native crypto token currency being created to be integrated with and used on the RealChain network, and on decentralized applications on the network.

Initially, RCT is proposed to be issued and implemented on the public Ethereum blockchain as an ERC-20 compliant token.

RCT is designed to use in the following scenes:

1. To reward and incentivize community members to contribute computing power and maintain the integrity of the network. When e-commerce market participants (sellers, buyers, and marketplace makers) utilize the network services, they would provide RCTs to network maintainers.
2. To be consumed by authorized institutions when uploading files to generate digital anti-fake labels.

3. To be consumed by users when searching for information. Info providers will acquire RCT as rewards automatically.

In order to create the RealChain ecosystem, substantive research and development into blockchain technology itself is needed. TDP has already developed a novel blockchain protocol to support complex business transactions, known as “smart business contracts” in blockchain networks, with RCT to be the native token for this new blockchain protocol.

5. Application Case Analysis of RealChain in Various Scenes

TaoDangPu will be the first commercial application of RealChain products.

The blockchain technology in the RealChain product will make the transaction process, appraisal and evaluation process, and the whole process of fund transfer distributed in each node. All parties in the business chain will have a fair and open information process. At the same time, it is convenient for the downstream agencies of the business chain or two traders to inquire at any time.

Secondly, image recognition system based on the artificial intelligence in RealChain products can greatly save appraisers' labor cost, reduce human errors and moral risks and improve the

cost of artificial fraud and appraisal efficiency.

TaoDangPu will introduce the RealChain on its whole business line.

5.1 A Case of RealChain in Luxury Trading Scene of TDP

In TaoDangPu system, RealChain will access the high-end consumer goods pledge, second-hand transaction, consumer finance and other fields. We will then introduce the business process after the RealChain product is connected to the second-hand luxury transaction module of TaoDangPu.

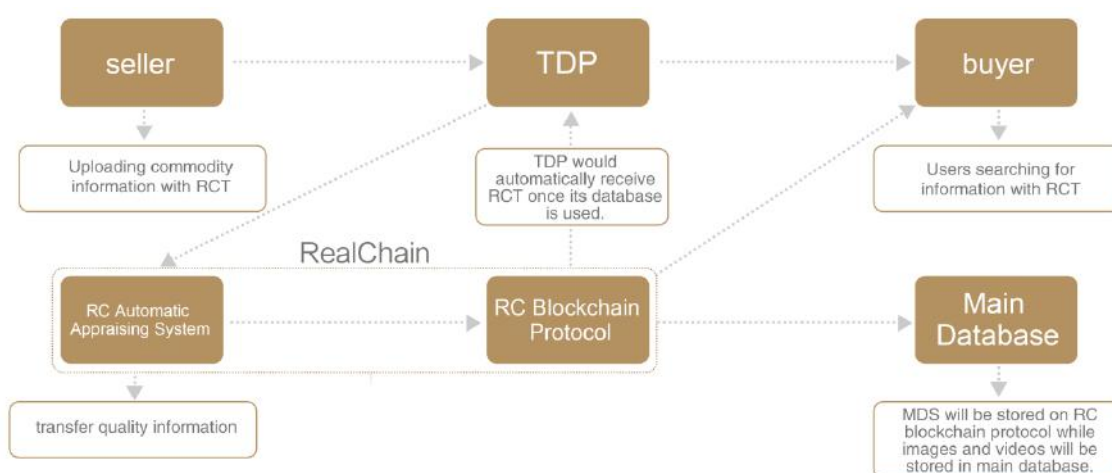


Figure 3. Luxury Trading Module of TDP

In process of luxury transaction, TaoDangPu is an intermediary mediator. The commodity information will be uploaded to the RealChain network, and the articles are classified and stored by artificial intelligence image recognition system. The image and video content is encrypted to the central server. The SHA256 information of the file is stored in each node of the RC and pays

RCT to the RealChain network.

Both buyers and sellers can ask the RealChain system to query commodity information and pay RCT when querying. Only authorized institutions have the authority to upload information. RCT shall be paid when uploading information. The RCT reward can be rewarded to those who have uploaded.

After TaoDangPu is linked to the RealChain system, a large number of luxury goods are released through the blockchain platform. It has become a reference for other accreditation institutions and reduces the professional moral hazard of the TaoDangPu appraisers. For buyers and sellers, the trading behavior of both sides is also uploaded to the block chain platform, bringing the transaction reliability security a great deal of improvement. In the future, the second-hand goods will be tracked in the two circulations and the three circulations. This will facilitate the next buyer's purchase judgement, and facilitate the evaluation and pricing of other intermediary organizations.

5.2 A Case of RealChain in the Scene Mortgage Loans of Second-hand Good in TDP

The borrower may apply to other financial institutions or individuals to apply for secondhand luxuries, jewels and other pledge loans via TaoDangPu, as the intermediary and appraisal institution. In this process, the access of the RealChain system will

increase efficiency and reduce costs.

- TaoDangPu compares the borrower's pledge information with the same RealChain items; verifies the authenticity and liquidity of the goods based on historical transaction data and identification results on RealChain.
- The borrower can give an appraisal report on the TaoDangPu based on RealChain' s historical transactions and identification records. There will not be a lot of objection to the borrower's assessment of the price and authenticity of the pledge.
- Financial institutions will also go to the RealChain block chain platform to query the pawnshop to give an identification report, determine the assessment level of risk given by TaoDangPu, so as to reduce the rate of bad debts and improve the efficiency of the disposal of non-performing assets.

5.3 Authorize Co-vendor Agency for RealChain Program

In the future, RealChain will be connected to a network of businesses and institutions. As the commodity information needs to be authenticated by authority, the access agencies will be approved by the RealChain foundation. Then they can have the permission to upload information to RC.

It is expected that the access institutions include brand

manufacturers, partner manufacturers, auction houses, high-end consumer goods trading intermediaries, jewelry and art research institutions, etc., while appraisers or evaluators shall be bounded. Everyone who can upload information is also certified by the RealChain foundation.

Ordinary personal or non-certified organizations can only query commodity information through RealChain' s public version of APP. If you want to upload the goods in your own hand to RealChain, you can upload information through a certified certification body. The APP of RealChain provides the address and contact mode of the nearest certification vendor organization.

5.4 Upload RC Information

The uploaded information includes but not limited to:

Commodity photos: Submit high definition picture information with different magnification and different angles on the basis of different commodities.

Commodity Video: High definition video of the whole process.

Commodity basic information (including but not limited to): origin, price, owner, material, service life, description of circulation, etc.

Identification process and operator: identification method shall be uploaded, appraiser commodity anti-counterfeiting information: anti-counterfeiting logo or unique technology for unique commodity.

The information must be uploaded in accordance with the RealChain format. The RealChain foundation also provides video, photo collection hard devices and related systems to access agencies.



5.5 Good Content Inquiry

Any user can download the RC public version of APP. The information in the RC library is queried through the code identification of the goods, such as the core code of the watch, and the unique information of the luxury goods that uniquely identifies the goods. Moreover, RCT fee is paid by the user as part of the inquiry.

The RC Public Edition APP also supports intelligent query of image recognition, uploading different photos based on query contents, intelligently judging commodity attributes, querying content, primary information query, authenticity identification and price evaluation for goods.

However, there will be a deviation from the query result for the public version due to mobile camera performance constraints. We will also sell the certified hardware to the public to improve the detection rate.

5.6 On Protection of Privacy Information

As high-end goods have the need for privacy protection, RealChain will hide a lot of personal information when it is designed or sensitization of key information will be done.

Information disclosure authorization: what circumstances should be labeled when uploading, or what time limitation, what kind of guest group can authorize to open what information content.

5.7 Preservation and Security of Data

Due to a large number of high-definition pictures and high definition video content, the RC system will not keep this information in a single centralized node.

The commodity information will be stored on multiple servers, and the nodes are used only to keep SHA256 information of the archived data, so that the content uploaded to the server is

secure and impartial information.

In the future, an increasing number of luxury goods related transactions as well as financial services will greatly improve their credibility after integration with RealChain. RealChain will help them significantly improve its work efficiency and risk reduction, including auction, C2C transaction, high-end consumer goods storage management, logistics and so on.

The incentive mechanism of RCT can enormously improve activity and enthusiasm of every link in the RealChain ecosystem. It helps to connect more related scenes to RealChain, thus making RealChain a necessary link in the world's high-end consumer goods circulation.

5.8 AI Image Recognition System

In the future, the core process of RealChain is the appraiser. With the reduction of human input, there will be a corresponding decrease in the subjective bias and thus an increase in objectivity of the overall process

With RealChain team, in the future, the identification service which is judged by human vision and human experience can be realized by artificial intelligent image recognition system.

The principle is such that similar to the traditional image

recognition system which is applied to many aspects, such as traffic, finance and so on. For example, traffic safety: the image recognition system is used to determine whether a vehicle runs a red light.

The image recognition system of RealChain is closer to the face recognition system. We will take the original product as a sample of the comparison. For example, select the core point of multiple comparisons, such as the hand, chain, appearance and other core components of the watch. There are dozens or hundreds of detection points for each type. The evaluation results are compared with the differences between the detected objects and the original products.

The automatic learning of artificial intelligence is to take many true and false samples and learn constantly to improve the accuracy of judgment.

It is just as the cultivation of a junior appraiser into a senior appraiser. It requires a lot of practical operation, a lot of practical experience, so as to judge the authenticity and value of the goods by their own memory and experience.

Compared with the face recognition, RealChain, the image recognition system will be simpler and more efficient from the technical perspective. Human faces are too similar. More collection points are used to judge the authenticity, and the data

points collected are generally greater than 500 points. There are too few samples of the wrong single body, and the learning space is limited due to its difficulties



真偽對比圖
— Comparison chart —

Furthermore, RealChain image recognition system has a fixed and correct basis for image judgment, and there are more individual samples: a package, a piece of watch shipments is very large. The accuracy of the judgment is theoretically higher than the face recognition system.

The one of the challenges that RealChain faces, is to collect data samples of the correct items. The larger the sample, the higher rate of accuracy, including subtle differences in each new and old version, the usage under different circumstances.

The large database of TaoDangPu plays a critical role in RealChain. Since 2013, the TaoDangPu has begun to accumulate its own database. All the items that have been identified, whether new or old, genuine or fake, have a complete picture and video

record. The total amount is over 200,000. These data can help fully train and test RealChain's image recognition system.

The application of artificial intelligence image recognition system can greatly lower the user's threshold and improve the user's usage frequency. RealChain can be promoted faster to the high-end consumer goods industry.

6. RealChain Technical Solution

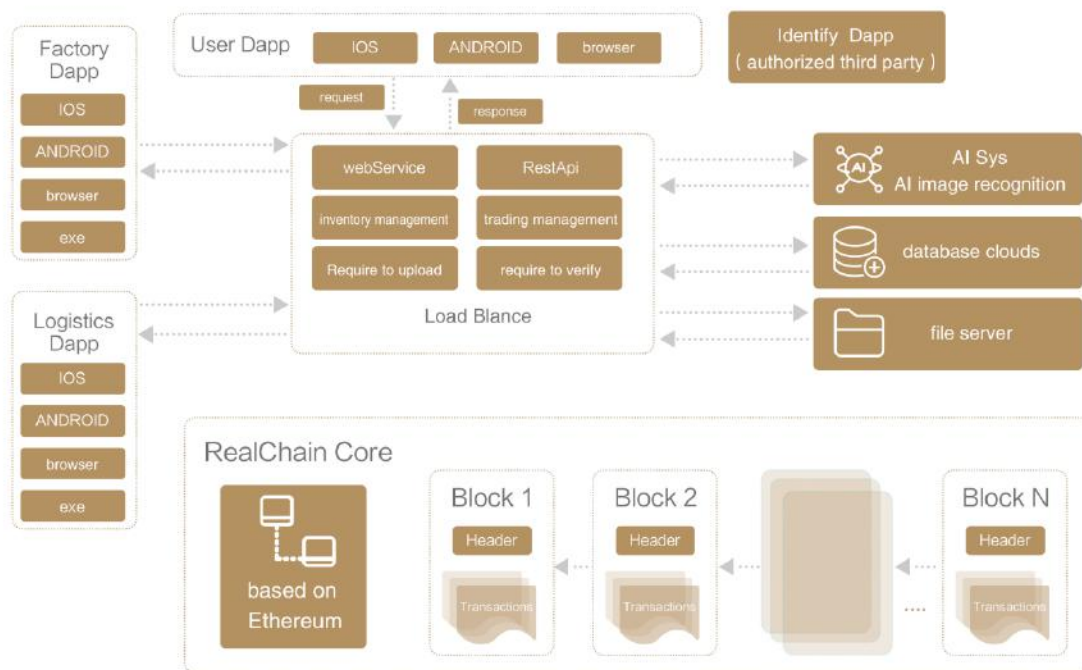
6.1 General Description

RealChain is based on the Ethereum blockchain and could credit authenticity and ownership of commodity (general consumer items, luxury goods, jewelry, etc.) along with AI image recognition. The whole distribution process including delivery, logistics, transaction and even destroy. We have advantages in:

- Automatically processing structured or non-structured data
- Encrypted messaging
- Encrypted sharing without HTTP, SMTP, or FTP protocol
- Encrypted and dynamic storage
- Allowing users to log sign in/off anonymously
- Resisting intermediary attacks and IP tracing

- Processing without manual intervention
- Automatically allocate data according to user's profile without prior construction
- Providing easy and free API, allowing users to set up decentralized applications
- Using cryptocurrency RCT as stimulus in ecosystem

6. 2 Technical Structure

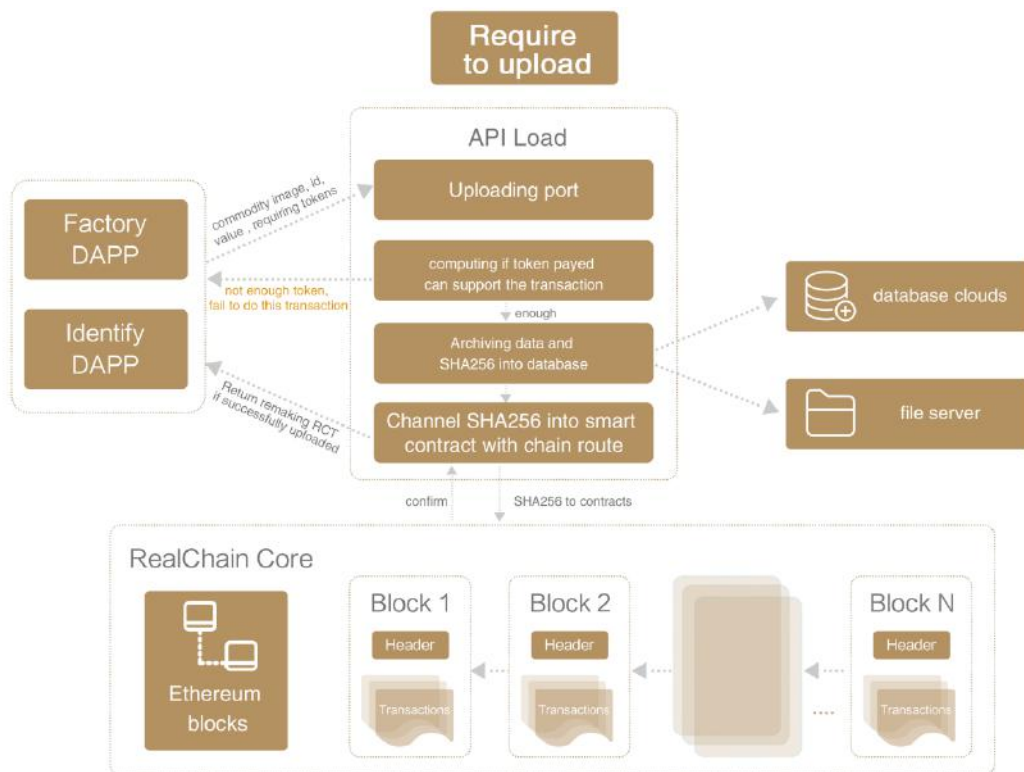


Correction: Load Blance -> Load Balance in the above figure.

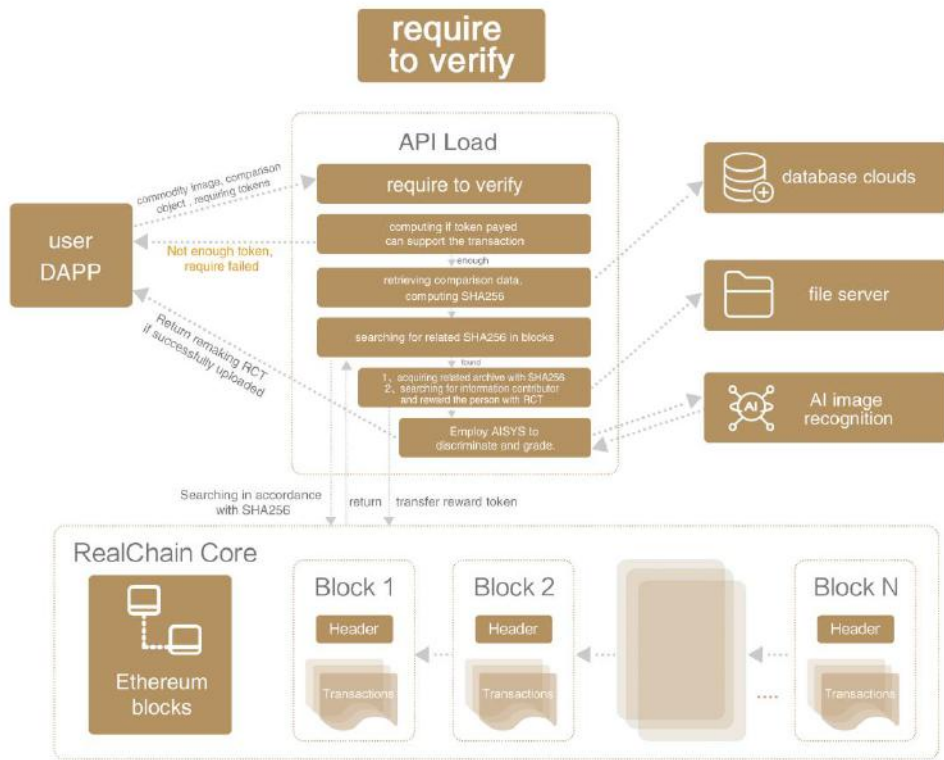
The entrance portal of RealChain will be DApp built in manufacturers or other institutions similar to TDP. Authorized institutions can upload requests to Load Balance. Required data includes identification codes, subjects, appraisal results, images of main part, initiators, and tokens to be consumed.

Users of RealChain include buyers, sellers and merchants. Users can require database to provide information such as identification codes, references, subjects, images, fees etc. Inquiry will be sent to Load Balance and returned with matching index.

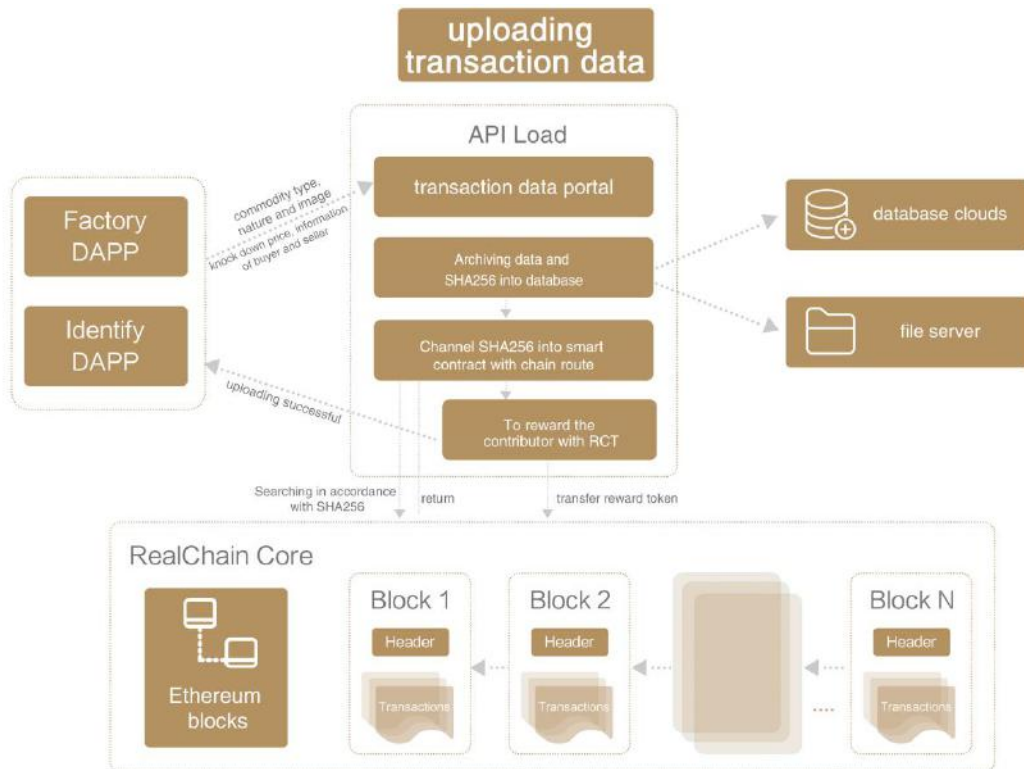
6.3 Uploading Commodity Information



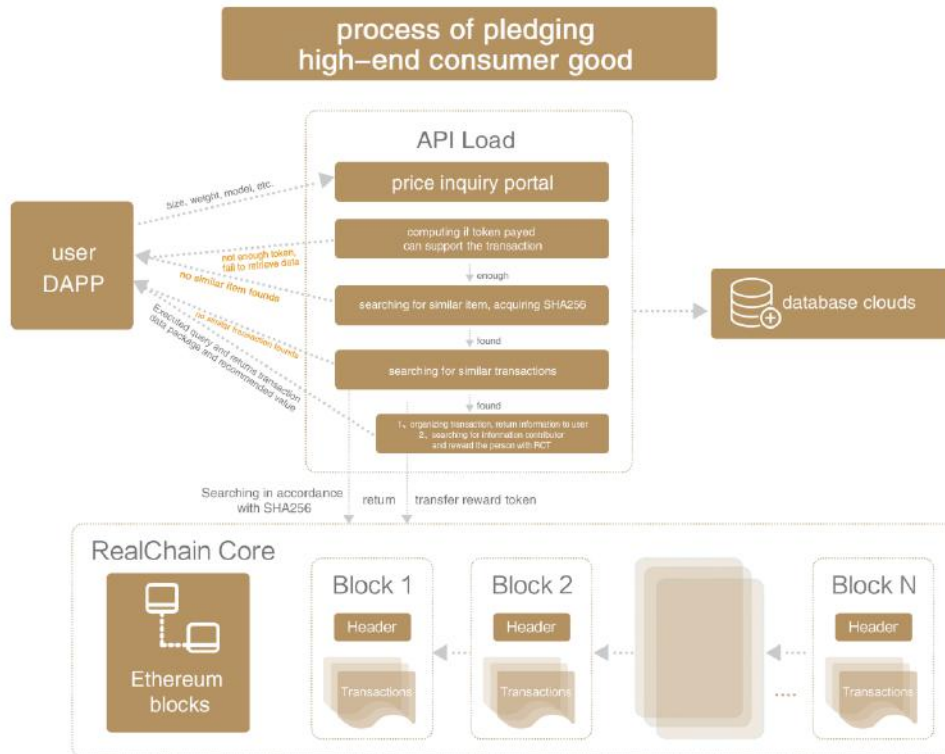
6.4 Requiring Appraisal



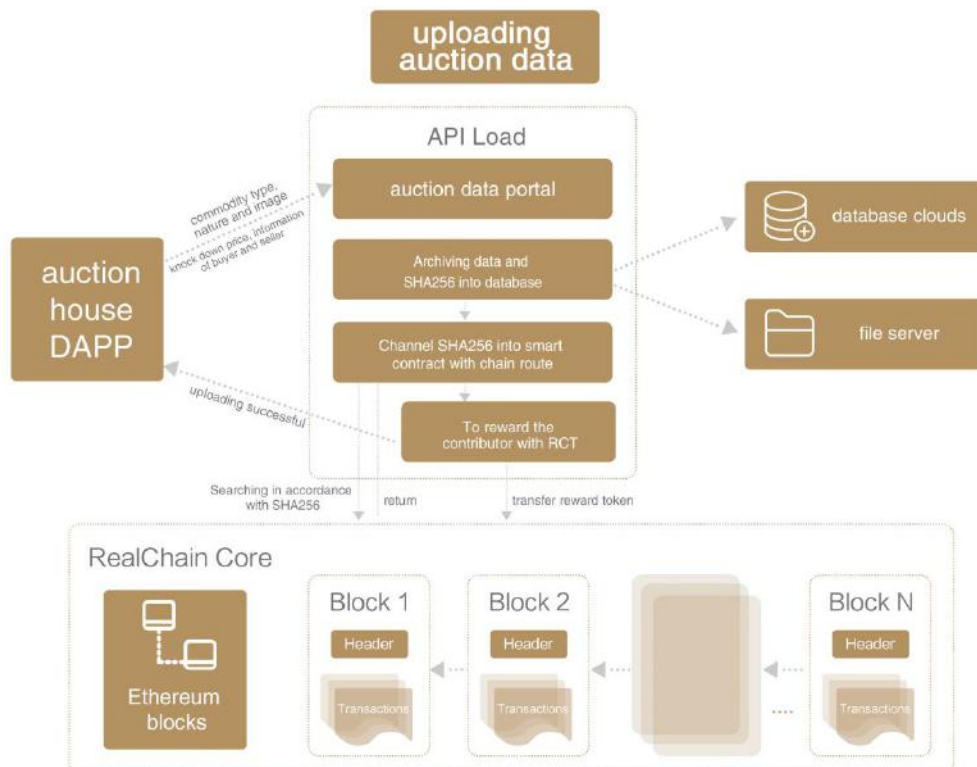
6.5 Uploading Transaction Data



6.6 Process of Pledging High-end Consumer Goods



6.7 Uploading Auction Data



6.8 File System

The file system aims to:

- (1) Eliminate redundancy
- (2) Balance computing capacity
- (3) Conduct linear scalability
- (4) Providing solid high concurrency service
- (5) improve the scalability and performance

To make it happen, RealChain network has introduced FastDFS structure, which can:

- (1) Save disk space by storing files in clouds
- (2) Support HTTP protocol
- (3) Support RAID expansion, principal and subordinate files.
- (4) Support recording meta-data
- (5) Support software RAID

6.9 RealChain AI SYS

AI (Artificial intelligence) refers to the theory, means, technology and applying system of studying and extending human's intelligence. It is a branch of computer science which aims to find the essence of intellectuality and produce a new machine who can react similar to human. Research in the area includes robots, sound recognition, image recognition, language processing and expert system.

RealChain has developed its own AI SYSTEM to conduct pinpoint anti-counterfeiting, image recognition, appraising, rating and

providing reference.

7. RealChain Foundation

The RealChain ecosystem is envisioned to be a community of partners, including blockchain node operators, validators, service providers, marketplace operators, businesses, and end users. They could provide or utilize the network services, and exchange RCT on the RealChain platform. The RealChain Foundation is intended as an independent, not-for-profit company that maintains and facilitates democratic governance for the members of this ecosystem. The RealChain Foundation's mission is:

To enhance transparency and fairness in the high-level luxury trading with blockchain and AI image recognition system.

7.1 Three structural principles of The RealChain Foundation

- **Impartiality**

- Managed solely to develop RealChain blockchain and applications;
- Separate legal entity from TDP and any other member company;
- Directors act independently of RealChain, and well-respected

within the tech community.

- **Governance**

- Serves the interests of RCT holders, to develop a robust and scalable system;
- Collaboration with TDP based on arms-length commercial agreements;
- Token issuance and distribution managed by the RealChain Foundation;

- RealChain Foundation is a separate legal entity, with distinct operations and its own governance framework;
- Advised by top-tier professionals;
- Implement best practices from other established foundations;
- Additional measures in response to regulatory changes and requirements.

7.2 The principal functions of the RealChain Foundation

- Open governance of its resources together with other ecosystem partners;
- Support and advance the technology related to RealChain blockchain network's implementation; and
- All matters related to ecosystem membership.

The RealChain Foundation's mandate is to grow an open ecosystem of digital services that consumers can easily explore and find value in, while giving developers an open and sustainable

platform to develop, deliver, and enhance those services and attract users. To fulfill its mission, the RealChain Foundation will dedicate resources to three specific goals related to research, development, and governance as described below.

A. Governance goals

The Foundation proposes to dedicate resources to establish a fair and transparent governance process that will take into account the voices and needs of all participants within the ecosystem. This open governance model would oversee decisions related to the membership process, participation rules, token issuance, pricing rules, legal matters, and content and compliance guidelines. The RealChain Foundation would be responsible for administering and

overseeing the security of the RCT reserve, as well as transparency in its use of RCT and any token proceeds.

B. Research goals

The RealChain Foundation aims to foster an environment of innovation by working with partners to test new ways to participate in the ecosystem and drive value creation and

beneficial network effects. The RealChain Foundation could fund research and development efforts to support an autonomous network that is secure and effective in providing business transaction services.

C. Development goals

The RealChain Foundation proposes to direct and fund the development of the RealChain blockchain itself, as well as tools that give ecosystem partners the ability to build, grow, and create value for the platform. As part of this process, TDP proposes to make its own database available as an open source project that can be leveraged to power new communities and add capabilities to existing ones. The RealChain Foundation would further this work by engaging development teams to continue improving the technology suite supporting the RealChain ecosystem, and will maintain an open source codebase that ecosystem participants can use.

8. RealChain Token Issuance

8.1 RealChain Token Issuance

The RealChain Foundation proposes to initially generate and issue 1 billion RCT. Further information about when and to whom RCT are proposed to be allocated can be found below.

Token Contribution is proposed to launch soon after incorporation of the RealChain Foundation. For further

information and updates regarding the Token Contribution, prospective participants are invited to provide their email address at <http://www.rcfund.org>.

Further updates and announcements regarding the timing and the details of the Token Contribution will be communicated through the website.

8.2 Use of Token Contribution Proceeds

The proceeds raised from the initial Token Contribution are intended to be used for the following purposes:

- (1) Fund the development and establishment of the RealChain blockchain protocol;
- (2) Marketing and operating expenses related to the expansion and migration of TDP's platform to the RealChain blockchain network. Arrangements with TDP and the RealChain Foundation will be at arm's length; and
- (3) Research and development costs incurred by the RealChain Foundation in developing the RealChain platform.

8.3 Allocation of RCT

Total number of RCT is 10 billion, and will be issued on the following allocation chart. After the Token sale ends, RCT will be released immediately in batches to ICO investors. The token allocation for both TDP and for the RealChain team and partners will be subject to a long-term (30 months) vesting period, to

ensure RealChain team continuously fulfills the roadmap after the token sale.

	Pre- Allocati on	Vesting Period	Release Mechanis m
Initial RCT Offering Investors	16.33%	14 weeks	Immediate release 30% after trading, then release in a 5% per week pattern within 14 weeks.
Private Funding	43.67%	2 months	Immediate release original price part after trading, then discounted part will be released in a 10% per month pattern

			within 2 months.
RealChain Team & Partners	30%	30 months	10% per quarter
RCT Foundation	10%	n.a.	
Total RCT	1.0 billion		

It is proposed that 30% tokens will be pre-allocated to TDP and RealChain team and its partners for developing the technology & operating the Foundation, in consideration for TDP's role in establishing the RealChain platform and developing the initial ecosystem for RCT.

The token allocation for both TDP and for the RealChain team and partners will be subject to a long-term (30 months) vesting period.

A further 10% RCT are proposed to be held in reserve for future release by the Foundation to end-users, to jumpstart the use of the RealChain applications and to encourage participation in the ecosystem. The RCT to be distributed is intended spur adoption of various RealChain processes and applications (such as voting on dispute resolution, setting up RealChain wallets, etc.), and completion of Smart Contracts on the RealChain network.

9. The RealChain Core Team and Advisors

- **David Zhang, Director of the RealChain Foundation**

Expert in financial IT technology

David is the senior software engineer and chief system architect in Planned Systems International, he is responsible for developing digital identification recognition software based on blockchain with many leading financial institutions. He has profound understanding in blockchain applications in the financial industry.

David, previously a product engineer and senior software engineer in CompSci Resources LLC and Primescape Solutions Inc., was in charge of developing the ITPLUS system for the SEC.

David graduated from University of Maryland with a master's degree of Computer Science.

- **Wenwei Jiang CTO**

Wenwei Jiang, a technical expert genuinely in solving real life problems with codes. He has worked as production engineer in giant tech company Facebook and Amazon, solved unique infrastructure problems that people could rarely meet in other places. His tech skills cover a wide range of backend development fields including coding and algorithm, operating system and network. He has a bachelor's degree in Physics

and a master's degree in Computer Engineering.

- **Kristi L Mercer**

Chief Analyst

Kristi is an experienced jewelry appraiser for the past 10 years, providing independent jewelry appraisal services to all clients for all kinds of purpose such as insurance scheduling, probate, bankruptcy liquidation and charitable contributions etc.

Kristi owns Graduate Gemologist, color Stone Graduate, Diamond Graduate Certification, Arts (A.A) of General Business Administration and Management diploma from Valencia College.

- **Kevin Carpenter**

Chief Appraiser

Kevin started his career in the Jewelry industry while in high school, and being the son of Geologist, he was literally grown up around gems and minerals. As an industry veteran of over 40 years, fine jewelry appraising combines his gemological knowledge and his lifelong passion for gems, with the experience he has been acquired as a store owner and manager by one of the largest Jewelry Store.

Kevin hold the titles of Graduate Gemologist from the Gemological institute of America, Certified Gemologist and Registered Jeweler from the American Gem society, and

Certified Member of the National Association of Jewelry Appraisers.

- **Roy Li**

Counselor to RealChain Foundation

Roy is a famous expert in security and IOT and the founder of IOT operating system Ruff.io. He is the research supervisor for Fudan University. Ruff.io was invested by Geek Capital, Jingshan Capital and Shanxing Capital.

- **Raymond Tan**

Counselor to RealChain Foundation

Raymond is a famous expert blockchain and big data. He is the founder of NABA. Having worked for Microsoft for over 13 years, Raymond published several technology books including *Blockchain 2.0*.

Raymond graduated from Fudan University and Duke University.

- **Dou Wang**

Counselor to RealChain Foundation

Dou is the founder of Geek Capital and Partner to Link VC, also the inventor of blockchain robot. He is famous of being a technical geek and expert in managing social groups. Dou has worked in senior level for IBM, MOTO and HP.

10. RealChain Foundation Major Investors and Partners

- **Initial RCT Offering Investors:**

LinkVc

LinkVc is a well-known global blockchain venture capital firm based in Singapore, currently focuses on working with block chains, digital money and internet financial services investments and projects.

Its investment projects include AICoin, QUOINE, Genaro, Tenx, shuzibi.com, BLOCKV, Cybermiles, BBEX, RAIDEN, Prochan and many other renowned block chain projects.

Hash Capital

Hash Capital is a famous global block chain investment, focusing on working with block chain applications and digital asset management projects on Asian markets. Projects invested by Hash Capital covers the block chain industry, including Smart Contracts, Securities Trading Settlement, personal identification, distributed accounting ledger, e-commerce, API and block chain infrastructure. Some of Hash Capital's successful investment cases include IPTChain, KTrade, Loopring, Qcash, CoinMeet, Halal Chain, Nuls and many other great digital assets.

Node Capital

Node Capital is a venture capital company focusing on blockchain industry. It is also one of the world's earliest professional investment institutions of blockchain industry layouts. Node Capital invests and serves a group of representative enterprises, which are key nodes in the industrial chain, to promote healthy and stable development of blockchain industry in their respective areas. Node Capital's investment covers media platforms, digital currency trading and storing platforms, blockchain technology standard and solutions providers, including over 50 companies such as Huobi, Coldlar, Bocheninc, Fengwo, Jinse, Chainup, and Dochain,

- **Cooperative Partners:**

Besides TDP, RealChain has other top-tier influential cooperative partners.

360 Finance

360 Finance – a spin-off from Qihoo, is one of the largest FinTech companies in China. It serves millions of consumers with various types of saving products and loan services. By leveraging Qihoo's massive 500 million PC users and over 700 million mobile users, 360 Finance is able to quickly and exponentially grow its user base, while building a comprehensive risk management platform and leading personal financial services in China.

360 Finance also provides blockchain media and supports the following areas but not limited to: flow, promotion and advertising community activities.

Jinse

Jinse is one of the most influential media platforms in blockchain industry. It covers blockchain News, project information, market price, communities and other blockchain service platform. Jinse aims to provide timely, comprehensive, professional and the most accurate information, products, and services to blockchain entrepreneurs and digital currency investors.

Jinse will provide full support to RealChain on branding, marketing, and advertising.

Beechat

Beechat is the largest cryptocurrency messenger and captures over 5 millions of users after launch. Beechat will actively collaborate with RealChain on community marketing and advertising to build a new blockchain ecosystem.

Qtum

Qtum is an open source blockchain project that is developed by the Singapore-based Qtum foundation. It builds decentralized applications that simply work executable on

mobile devices, compatible with major existing blockchain ecosystems, scroll to explore. According Coinmarketcap.com as of Nov.11, 2017, Qtum's global market cap ranking is 12 among other cryptocurrencies.

Qtum will closely work with RealChain on global marketing.

11. Project Milestones

Feb. 2013 TaoDangPu established.

Mar. 2013 TaoDangPu receives \$5 million (USD) Series A investment from BlueRun Ventures.

May 2014 TaoDangPu receives \$30 million (USD) Series B investment from TrustBridge Capital and BlueRun Ventures.

May 2015 TaoDangPu receives millions of dollars Series C investment from JD Finance, 360 Finance, TrustBridge Capital and BlueRun Ventures.

Jan. 2018 RealChain Foundation to explore the issuance of RealChain tokens (RCT).

Jan. 2018 RCT begins to trade on exchange platforms.

Mar. 2018 RealChain Foundation to launch v0.1 of Real Chain's "smart contract" modules.

Apr. 2018 RealChain smart hardware to launch on major e-commerce platforms.

May 2018 Available appraising subject expands to more than 1000.

Jun.-Jul. 2018 TaoDangPu app to begin accepting RCT to facilitate multiple marketplace applications.

Aug. 2018 RealChain smart hardware to launch on market.

Nov. 2018 RealChain modules to be available for use on other platforms to facilitate further adoption.

Dec. 2018 Available appraising subject expands to more than 10000.

References

[1] A. Narayanan. J. Bonneau. E. Felten. A. Miller. S. Goldfeder. *Bitcoin and Cryptocurrency Technology: A Comprehensive Introduction*. The China Citic Press, 2016.

[2] P. Wayner. *Digital Cash: Commerce on the Net* (2nded). Waltham, MA: Morgan Kaufmann, 1997.