



ALFA PRIVATE EQUITY

The world's first **STO token linking
mainstream financial markets**

Whitepaper

V1.

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Foreword

Blockchain has created a new computing paradigm and collaboration model for establishing trust at a low cost in a trust-less competitive environment. With this new technology, it has enabled a new way to raise funds. ICO is a simplified version of corporate financing. However, without supervision, the whole situation went haywire. The rights and interests of token participants are not guaranteed. And, because of the uncertainty in regulations, institutions are unable to partake in this activity. During this time, STO was born. STO complies with all regulatory requirements. And it is relatively much more flexible than the IPO market. STO is the key to connect blockchain industry toward mainstream financial markets. Currently, there is not a globalized regulatory framework for STO. Different countries have their own approach and framework to regulate the STO market. For example, in the United States, founders/ issuer will need to meet the regulations of the SEC. As follow:

- 1、 Accredited Investor
- 2、 KYC and AML (Know your customer and Anti money laundering)
- 3、 leaked data
- 4、 3 Exemptions : Regulation D、 Regulation S、 Regulation A+.

In the European Union, token issuance required to comply with the relevant security regulatory regulations of the ECB. For Singapore, if the Token is a

capital market product, then the sale / issue of such Token may be regulated by the MAS. In Hong Kong, the Securities and Futures Commission is putting qualified virtual asset trading platforms into a regulatory “sandbox” for at least one year of observation to explore whether it is appropriate to regulate virtual asset trading platforms.

After a long examination and observation on STO, we have come out with four main attitudes towards STO from mainstream economic countries around the world.

The first one like U.S.A., EU, Canada and other strong economic base countries, they are mostly neutral or having a positive attitude towards STO. With a more complete financial supervising strategy at the same time, they do not reject but regarding to law issues, they make sure STO is under a fully controllable condition and also to promote new technology is developed under a legal situation.

The second one like Singapore, Estonia, Malta and other similar areas, they are more lenient towards STO based on the supervising strategy, they are mostly on an open attitude, these countries obviously try to use the chance to take lead in the future financial system (certificate system) in the world.

The third one like China, it has always been strict and harsh on its financial system, therefore it does not encourage “tokenizing” blockchain and has banned ICO. We realize another perspective from then, China is resolute to number coins, but it is lenient towards blockchain. Although China is still being strict towards its financial system and strategy, the necessity of asset securitization and the rushing in from other countries around the world as well as the need of huge amount of asset liquidity which requires more countries to be involved into the supervising, China will not be absent.

The fourth is some behind countries like South America and Africa, they currently do not have strategy to come out to supervise. The supervising is based on a country position in the world. And regarding to South America and Africa, they are yet to be handling the whole project and supervising system, whether on the influence of finance or technology.

It is clear that STO, though, yet to have an obvious supervising frame, the bright future is unstoppable, it provides more confidence to the market.

1. Background

1.1 STO Definition

STO; means Security Token Offering. Security token is a certificate to show someone's property. Holders can prove the holding of the property or claims by showing their security token as a certificate or proof. The United States SEC thinks that way to satisfy Howey test is the security token. To satisfy Howey Test: a contract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party. Traditionally speaking, SEC sees every profitable investment as security token.

1.2 STO Target

STO is to tokenize current property, like shares and claims as a collateral, when the property is chained it becomes security token offering (STO), and it must be suitable for the supervising of Federal Securities Act.

From its characteristic, STO targets are the shares, claims and warrant. The targets for STO can be every warrant of real estate, investment regards to real estate, gold, CLP carbon credits, petroleum, art works or the copyright of musical product from its finalized product.

1.3 STO Solution

To have a step moving forward in the stage supervising. With ways to have additional extra token, to satisfy the supervising stage necessities, like prohibiting extra-large amount or too little money of transaction, to trade blacklist function and more. This has no doubt been satisfied the needs of supervising management. The legalized of Know Your Customer (KYC) and Anti Money Laundering (AML) have made sure the transparency of companies and investors, it is beneficial to the market.

Business cheating can be improved. Although it has hardened the barrier to approval, people who involve in the field hardly recognize the changes because most investors in the field are not qualified, they lack of knowledge and the ability to identify upcoming risks, they rush in when they see the money making effect instead of examining the underlying risks. Hence, having a third party in the middle, with having examination, also to supervise the issuance of token at the same time, this will be highly decreasing the thunderstorm in investment, and also the risk of investor group escaping.

Also, the advantage of token will be brought out, the liquidity of assets will be increased within a small and medium range area, at least within a supervising area, people can trade freely, make transactions on their own property, and it

is easier to show the proof of owning a property from an owner, it eventually brings out a new commercial structure.

1.4 STO Nine advantages

STO has its own advantages in the following:

- 1、 Inner value: STO has its real asset or profits as a value to back itself up, like the company shares, profits and real estate.
- 2、 Automatic legalized and quick liquidation: STO gets the approval from the supervising organization, and it changes KYC/AML mechanisms to automatic, and it implements quick liquidation.
- 3、 Every warranty is separated into smaller pieces: speeding the separation of asset warranty, reducing high risk investment approving barrier, like real estate and high-end artistic products.
- 4、 Democracy of risky investment: broaden the way to raise funds.
- 5、 5、 Assets interoperability: the regulation contract of assets promotes different kind of assets, the interoperability between different tokens to be more convenient.
- 6、 Increase the fluidity and the depth of market: going through lower fluidity investing of assets, not worrying about redemption. The depth of the market can also be increased as the following:
 - (1) The increase of number assets which has created a few billions dollars will be casted to the market.

(2) Structure like Bancor as market maker increases the fluidity of STO.

(3) The interoperability of assets promotes the fluidity of the global assets.

7、 Reducing the risk of supervising, enhancing investigation. It is suitable for skipping regulatory offer, and it puts the regulations of KYC and AML into a smart contract, hopefully to succeed the automatically contract written progress.

8、 STO is hoping to reduce the cost of the assets. Reducing transaction fiction during the process, like using smart contract to achieve automatically written regulations and fund gathering, chained contracts and accounting report data together, to increase separation of assets, to achieve the liquidation of T + 0.

9、 To get supervised by SEC, suitable for laws regulations and safer.

2.Blockchain investment's background

2.1 blockchain technology

The development of blockchain, digital currency and other fields can be described as going through trails and errors. Since 2013, Bitcoin has officially appeared in the domestic media for the first time, and in 2019, countries have officially clarified the blockchain technology's innovation in new technologies. It plays an important role in industrial transformation and puts forward specific requirements for the application and management of blockchain

technology. Blockchain technology has achieved unprecedented development.

Blockchain technology provides a new type of underlying architecture and bookkeeping model, establishing trust between different entities without a central party. The blockchain platform dominated by regulators is the underlying structure. All stakeholders (for example, government regulatory agencies such as the central bank, public security, industry and commerce) are included in the platform in the form of distributed nodes.

Potential use cases for blockchain applications:

Financial aspects: the integration of blockchain and payment, insurance, securities services, asset management, digital bills, credit reporting, etc.

For entertainment and retail: the integration of blockchain with music, games, live broadcast, revenue management, supply chain management, offline and online integration, etc.

Medical and legal aspects: the integration of blockchain with drug traceability, health management, smart contracts, evidence preservation, etc.

Others: The integration of blockchain and agriculture, public service, intelligent manufacturing, energy services, logistics, the Internet of Things and other fields.

2.2 Blockchain industry status

The legal system and regulatory mechanism related to the blockchain market is lagging. The economic activities related to the blockchain lack sufficient legal restrictions and protections. The legal compliance of blockchain technology applications needs to be further improved. The core logic of regulation is to achieve more effective risk identification, risk measurement and risk disposal requirements by applying innovative technologies to the existing regulatory process. Blockchain has huge potential to be adopted mainstream. However, bad actors are utilizing digital currencies to conduct fraud, money laundering and other illegal activities. Regulatory authorities will need to engage with industry experts to come up with a regulatory framework that involves new technology to combat these illegal activities.

Blockchain is super popular. And, some people see business opportunities, and some people find new ways to do fraud. As a new technology, the development of blockchain is in the ascendant, but various fraudulent profit-making activities are sophisticated.

Such as using high yield and blockchain concept as gimmick to engage in illegal fundraising and financial fraud activities.

Relying on the blockchain hype, fraudulently inviting people, issuing so-called digital currencies, and creating so-called blockchain projects are becoming a

new fraud scheme for MLM organizations. Blockchain technology started to appear in 2008. With its unique trust-building mechanism, it has a significant application value in trade, finance, public services and the traceability of agricultural products. According to the data provided by the World Communications Institute, the cumulative investment and funding of the global blockchain industry will reach USD 14 billion by February 2020. As the data has suggested, with the maturing of blockchain technology. The opportunity for this industry to grow is limitless.

2.3 High blockchain investment risk

The picture shows the privately held blockchain projects in the year 2017 and 2018, and there are many so-called unicorn projects. These projects have many famous personalities from traditional financial circles. These days, these projects are basically worthless or on their way there. Blockchain technology, whether it is wealth or a trap, has a very important relationship with whether there is supervision, funds, and standards among the founders.

As many professionals have repeatedly emphasized, blockchain is just a technical tool that can be applied in many scenarios, but it does not generate value on itself. There are a lot of scams around the blockchain industry. One of the common features is that those so-called projects have nothing to do with the real blockchain technology. The general public is familiar with the

organization and spread of fraud, and the high threshold and strangeness of technology itself will give many people an illusion that it is a rare investment opportunity.

Many investors, facing countless blockchain projects, have a hard time discerning which projects are fake and which are not. At present, there are two prominent modes of blockchain scams. One is to hype digital currencies under the guise of a "blockchain", which is to equate blockchain and digital currencies. Some illegal currency issuers then declared that "digital currency is the blockchain", attracting investors with the banner of the blockchain. But in fact, these fake projects are just disguising themselves as part of Bitcoin. The other scam involves creating pyramid schemes leveraging the name of blockchain. By promising low investment and high returns, the return on development and offline production is higher, but the project will never be materialized.

3. Introduction of APE

3.1 APE Token Project

The full name of APE is Alfa Private Equity. It is issued by the APE fund and works with the industry's well-known investment bank newhouse to create the

first STO token for the blockchain industry that connects to mainstream financial markets. It is used to exit and transfer transactions in mainstream financial markets. , Bulk entrusted withdrawal, hedging investment and quantitative trading.

In financial markets, we generally divide fund attributes into two categories:

The deterministic financial market is moving toward ALFE and the opposite non-deterministic financial market is moving toward BEAT.

APE is based on the deterministic financial market trend. Based on the joint issuance of token funds with the industry-leading investment bank New House, the first STO token fund will be issued using Alfa Private Equity.

At the same time, investors holding APE tokens will become shareholders of NEWHOUSE and enjoy the dividends from the top investment bank NEWHOUSE



3.2 About Newhouse Fund

Since 2016, NEWHOUSE has focused on serving the exit needs of shareholders.

The target covers early, mid- and late-stage unlisted companies, and the consulting part of the transfer of LP shares. It also has unblocked stocks after

the IPO and block transactions of stocks after lifting the ban. Provide one-stop equity exit service for shareholders.

Successful case show:

3.2.1 A Chinese parallel import distributor: Valuation of US \$ 150 million

The dealer has a deep accumulation in the industrial chain, leading sales, and has continued to empower downstream partners in financial and logistics aspects. It uses and deepens upstream binding to focus on marketing a custom model to increase gross profit and develop time sharing. Leasing business. The company's business model is stable and its profit growth is stable. Eventually helped the company to exit successfully at a valuation slightly below 1 billion yuan.

3.2.2 A head live broadcast platform: valuation of nearly 3 billion US dollars

The target is a certain world's top live broadcast platform, whose content spans the field of game live broadcast and show live broadcast. According to third-party data, its performance is in a leading position in the industry. Our strategy: Traditional investors generally believe that the live broadcast industry has seen the ceiling and entered the stage of stock games. However,

Tencent has invested in another game + show live broadcast head company. Such an opportunity should be reached as soon as possible with financial investors in the favorite Pre-IPO round. Eventually successfully withdrew for nearly \$ 3.5 billion.

3.2.3 A head internet financial company: market value of 2 billion U.S. dollars

The target is a well-known Internet financial company, known for its industry-leading institutional capital ratio and high growth rate. It is backed by an industry Internet security giant and its risk control capabilities have also been recognized by the industry. However, due to the tightening, the liquidity is cumbersome, and because the company had dozens of financial investors before listing, some hope to withdraw immediately after lifting the ban. Use its own hedging strategy to lock in earnings when the stock price is high before the ban is lifted. Eventually helped investors lock in earnings at \$ 14 per share before the ban was lifted, and the stock reached as low as \$ 9.9 per share after the ban was lifted.

3.3 APE project financial strategic partner NEWHOUSE

After combining NEWHOUSE with blockchain technology, it has changed from past financing to direct sharing of revenue and shared use rights (securities) financing.

(1) As long as NEWHOUSE has income, that is, when users start to buy APE in exchange for the products and profits of the enterprise, more APE will be injected into the circulation.

(2) The company has designed a system that will ensure capital flow on its platform. When users start to buy APE as currency and conduct transactions on the company's platform, APE will still be in the circulation.

The combination of NEWHOUSE and the APE Foundation binds APE users, corporate rights and token holders' interests. Also, users process the pricing of enterprises when they purchase APE. With the imagination that the APE foundation, currency users, project parties, and products flow organically within the enterprise and the community at the same time, the more currency users the community links, the more it will eventually promote the commercial value of APE.

In the network age, the network effect of APE has extremely powerful power, because behind it is the reaching of a strong consensus, which has been vividly reflected in Bitcoin. APE is much more than that. Behind APE is the realization of rights and interests, and it also reflects the power and requirements in community governance. In addition to sharing risks and

benefits. APE is a democratized platform that will increase its value as the community grows.

In summary, APE tokens, a proportion of which is allocated to NEWHOUSE, and the income obtained by NEWHOUSE in the fund market, so that APE holders can obtain a dividend in proportion to the income.

Therefore, the main applications of APE are : investment in early and mid-term global enterprises in the international capital market, PE exit, global capital OTC transactions, quantitative investment, stock lending and recovery, and etc. APE holders will enjoy the dividend income right of NEWHOUSE in the long and short investment strategy of the international stock market bulk market.

From a macro perspective, APE is more like an ecosystem, which includes APE tokens, APE financial public chain, APE industrial blockchain layout, community users, and other elements.

4. APE&STO application of assets

The APE team has worked in the field of international finance and has many years of experience in the field of stocks and traditional funds. From the traditional financial market to the blockchain token economy, we are constantly exploring. The value of blockchain technology lies in its application. Throughout the ten years of blockchain technology development, blockchain technology has gradually shifted from "speculative blockchain" to "industrial

blockchain". APE's macro planning will be based on the financial sector and extend to other areas. Based on the STO background, we will also take compliance as our first and foremost priority.

APE is committed to serving as a catalyst for the traditional financial and blockchain-based token economy, while protecting the due interests of investors, and will continue to empower the APE token. We will also be in the fields of payment and tourism. Gradually carrying out the strategic whole-industry layout will be an important step for our APE ecology.

4.1 APE Treasure

Token holders are protected under the securities rule. In theory, users are optimistic about the development of the ecosystem. Therefore, token holders are more comfortable with a longer-term holistic view of the market. Which in return, will benefit both the token holder and the project.

Unlike the traditional blockchain financial management project nor the Staking mining principle, STO has more access to the traditional financial market. APE, as the first STO token linked to the mainstream financial market built on the blockchain industry, will invest in early and mid-term global companies in the international capital market, PE exits, global capital market bulk transactions, quantitative investment, stock lending, and stock recovery is the main application. Therefore, APE will enjoy New House's dividend

income right in the long and short investment strategy of the international stock market.

In terms of traditional finance, the volume is larger than the whole digital currency market and is a lot more stable. At the same time, with our partners' New House and APE team's knowledge of traditional financial markets, we will be able to create benefits for our users.

Users holding APE tokens can lock their APE token in the APE smart contract on the platform. At this moment, we will provide incentives for the holder to participate in the APE wealth treasure. Participating in wealth treasure will reduce the user's APE holding cost by 50%. 50% of APE financing is delivered to the fund for traditional financial market financial management.

For users who lock their positions in APE tokens that can only be used via digital contracts. These users will enjoy the benefits of the fund after each batch of US stocks are closed. It is expected to annualize 15%-300%. According to the recent experimental trading income, in a 15day timeframe. The rate is as high as 30% and is consistent.

The financial market is often affected by the international situation, especially the in the short run. Volatility spikes when there are uncertainties. With our proprietary technology, which will bring greater benefits to users who lock positions. More detailed details of Ape Fortune will be announced in the

community in the later stages, please stay tuned for more information.

4.2 Defi

DeFi is an abbreviation of Decentralized Finance and is also known as Open Finance. In fact, it refers to a decentralized protocol used to build an open financial system, designed to allow anyone in the world to carry out financial activities at any time, anywhere. In the current financial system, financial services are mainly controlled and regulated by the central system, whether it is the most basic access to transfers, or credit or derivative transactions. DeFi hopes to establish a transparent, accessible and inclusive peer-to-peer financial system through a distributed open-source protocol that minimizes the risk of trust and makes it easier for participants to obtain financing and to convene. Compared to traditional centralized financial systems, these DeFi platforms have three major advantages:

- Individuals with asset management needs do not need to be trusted by any intermediary. Trust is based on machines and codes;
- No central party failure risk, platform decentralization;
- All protocols are open source, so that anyone can cooperate on an agreement to build new financial products and accelerate network-based financial innovation.

DeFi is a broader concept, including: currency issuing, currency trading, borrowing, asset trading, investment and financing.

An exponential trend in volume expansion has been shown.

In the APE system DeFi, the transaction mode with the liquid pool will be adopted, that is, the borrower and the lender will conduct transactions through the liquidity trading pool, instead of matching with the counterparty.

The interest rate of each loan and borrowing is determined by the liquidity of the pool, that is, the ratio between the total amount of money provided by the lender and the total demand of the borrower fluctuates.

In this DeFi system, APE will use major currencies such as BTC, ETH and USDT as borrowing currencies. In fact, this is also one of our tools for the ecological empowerment of APE tokens and APE platform.

4.3 Avalon Resort

Avalon Resort Cambodia is a famous touristic resort. The beautiful environment and sound facilities have attracted the arrival of tourists from all over the world. Before we travel abroad, we often need to exchange our domestic currency into the legal currency of the destination country. It is troublesome, and it is extremely unsafe to carry cash and it is inconvenient to use, to say the least.

Although payment methods such as Alipay and WeChat have made our lives

much easier, they are still in the early stages of cross-border payment. And APE relies on the blockchain technology and the STO token, which is also the first STO token to connect to the mainstream financial market built on the blockchain industry. It can not only support the free conversion of legal and digital currencies into the APE financial system and APE as a digital currency. Depending on its characteristics, it can be used directly as a means of payment. With our current blockchain technology, payment can be received in real time. Of course, all of this will be based on compliance with KYC / AML.

The APE network will also support information on the chain in the future to help Avalon Resorts build a decentralized reputation system.

At present, the tourism industry is monopolized by a third-party platform. Because the third-party platform is a centralized platform, on the one hand, consumers' rights and interests cannot be well protected, and users' opaque understanding of the merchant's profile makes consumers' rights and interests unprotected. For merchants, most of the profits are obtained by third-party platforms, making their profits not high, and their enthusiasm for providing good services is low, which is also the bottleneck facing the tourism industry.

The APE network builds a decentralized reputation management system to help business information be brought to the chain. Due to the irreversible and irreversible nature of blockchain technology, the information on the chain is

authentic and reliable. Users choose their own suitable merchants based on the judgment of the real information of the merchants in the APE network. The merchants and users directly trade through smart contracts. With the continuous improvement of the APE payment system, the APE network system will help the Avalon Resort to better build. Ecology.

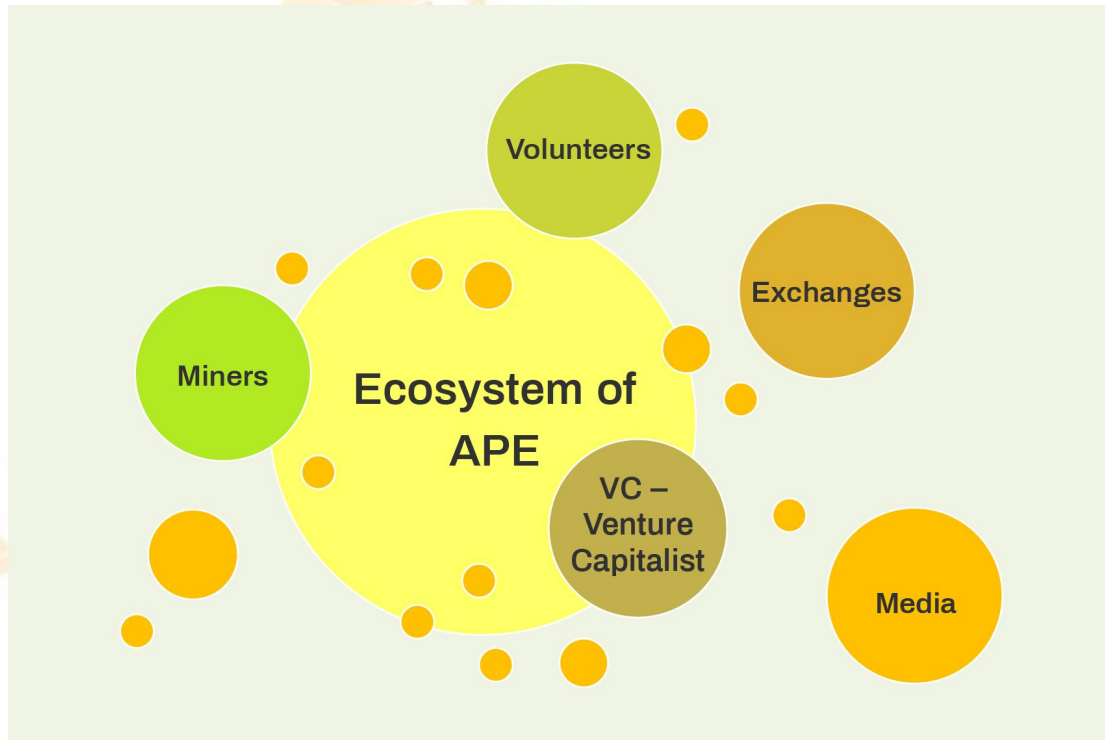
The Avalon Resort in Cambodia is currently building a pilot partner for smart tourism for the APE ecosystem. In the future, APE will help more partners build a decentralized tourism system and continue to give APE landing scenes and landing value.

4.4 APE Strategic Industry Alliance

The APE ecosystem will continue to tolerate a variety of business scenarios and will also aim to become an interconnection and integration platform for the entire blockchain industry. Both the upstream and downstream blockchain industries can enter and join the APE ecosystem and enjoy a variety of financial and information conveniences in the APE ecosystem.

The APE ecosystem also has a deep mining environment. Currently, several well-known miners, investment institutions and blockchain media have reached agreements. By launching this product and service, it will broaden the investment options of users in blockchain assets and promote the integration

of blockchain finance and traditional services.

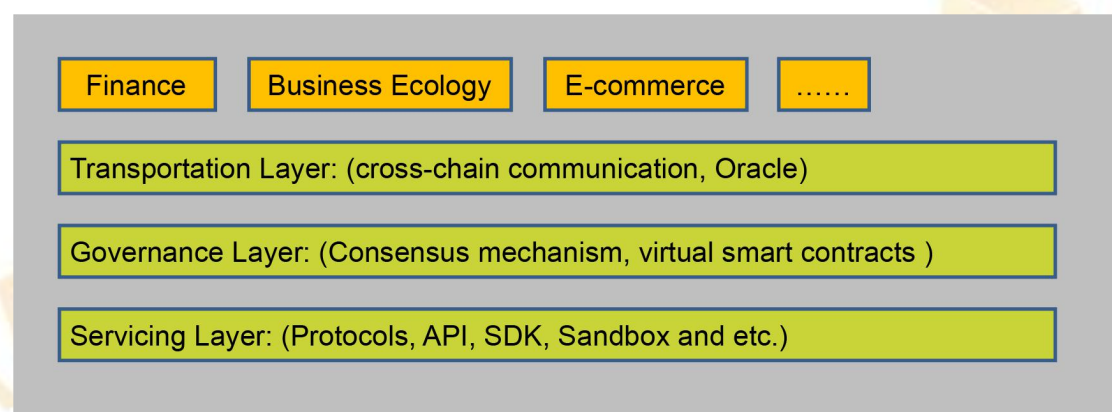


5. Brief statement of technical solution

The APE protocol is a new generation of decentralized financial blockchain network, which aims to realize the financial business ecology and provide efficient, transparent and secure financial blockchain decentralized network services for every user in the ecology. We are building a blockchain protocol for a decentralized financial and commercial platform to improve performance, scalability, robustness, and solve mobile adaptation and latency issues. Since the PoW consensus mechanism has more obvious efficiency problems when

processing throughput transactions, we will use the current more efficient DPOS as the consensus mechanism and improve it based on this.

The blockchain structure of the APE system includes three layers: the governance layer, the transmission layer, and the service layer. The governance layer includes the account system, the DPoS consensus mechanism, and smart contracts. The transmission layer consists of a smart contract-based cross-chain protocol group, a pre-machine protocol group, a data mapping, and a storage protocol group. The service layer includes a complete three-chain protocol, API and SDK, test sandbox and related components. In addition, the APE state has designed identity interfaces for developers, users, market makers, and other roles. The entire state system has implemented a complete closed loop of information production, consumption, and transfer.



5.1 Governance

5.1.1 Consensus mechanism

The PoW consensus algorithm used by Bitcoin must obtain a corresponding reward through a certain amount of calculation workload. It requires miners to perform mathematical operations to obtain bookkeeping rights and new coins. It takes a lot of time and resources as a guarantee to ensure the true and effective bookkeeping. The advantage of PoW is that the algorithm is simple, and it is easy to implement using recognized mathematical logic. If you want to destroy the PoW system, you need to invest huge computing costs and have certain security guarantees. However, the disadvantages of PoW are obvious. It requires a lot of power and has low processing efficiency. It can only process 7 transactions per second. Obviously, such poor performance is not enough to support its ecological richness of the APE network.

People were afraid of the increasingly centralized computing power distribution and amazing energy consumption of PoW, so PoS was born. PoS generates interest by holding coins, and rewards nodes that produce blocks.

There is a unique concept in PoS, coin age (coin age = currency amount x number of days held). Once a PoS node finds a block, its coin age is validated and a block reward will then be obtained. The older the coin held by the node participating in the PoS block generation, the greater the probability that it will get the right to produce the next block. The advantage of PoS is that it

does not require mining power and does not waste electricity. Reduce the time to reach consensus and improve efficiency. The disadvantage of PoS is that participants with equity can easily generate monopoly because they can hold currency to earn interest. Moreover, the performance of the PoS network is not much higher than that of the PoW network. The confirmation of a transaction still needs to wait for several minutes, which is difficult to meet the performance requirements of dApps.

According to the design of the DPoS, the APE network consists of several block generating nodes to undertake network maintenance. These APE block-producing nodes will be voted together by all APE holders. This vote is updated at any time, and the top node candidate at any time will be given the right to block by the APE network and participate in the block chain to produce blocks. The weight of node voting is proportional to the amount of APE tokens held by voters. Whoever holds more APE tokens will be more able to represent the APE network. So holding APE is the only voucher to participate in APE network voting. At the same time, in order to reward those APE block-producing nodes, the nodes will receive a certain APE token reward every time they participate in network block-producing. This will cause the number of APEs to increase slightly each year. But compared to the annual inflation rate of BTC and ETH which is closer to 4%, the inflation rate of APE will be much smaller than them.

At present, DPOS runs smoothly in the EOS network, but the design of mechanisms such as the number of nodes and alternative nodes has been improved.

5.1.2 Virtual Machine Smart Contract

We will use WebAssembly (WASM) as our virtual machine to provide users with smart contract services. The user can implement all of his needs in WASM, but considering that many cryptographic basic operations are quite resource-consuming, we will slightly modify the WASM so that he can use the computing power of the host to perform complex cryptographic tasks. Calculate and feed the results back to the virtual machine for execution. Such a design can allow the settlement of contract resources and developer resources, while promoting the use of cryptographic tools and the mining of privacy needs. For the financial scenario of the APE ecosystem, a large number of smart contract deployments will be required in the future.

5.2 Transport layer

The transport layer is one of the key layers in the entire network architecture. It is mainly responsible for providing services to the communication between processes in two hosts. Since one host runs multiple processes at the same time, the transport layer has multiplexing and demultiplexing functions. The transport layer provides transparent data transmission between end users.

And, it provides reliable data transmission services to the upper layer. Through a given link, flow control, segmentation / reassembly, and error control are used to ensure reliable data transmission. Components include cross-Chain protocol group, pre-processor protocol group, data mapping and storage protocol group.

The basic functions are as follows:

- (1) Dividing and reorganizing data
- (2) Addressing by port number
- (3) Connection management

Error control, flow control, and error correction functions The transport layer must provide the communication layer with the reliability of the communication service to avoid errors such as error, loss, disorder of delay time, repetition, and disorder.

5.2.1 Implementation of cross-chain technology

As support for the AFi ecosystem's DeFi protocol, cross-chain is also essential in the APE ecosystem. Through comparison of cross-chain technologies such as relay technology, distributed private key secret control, notary public mechanism, and hash lock, finally, We decided to adopt hash lock technology to support the cross-chain of the APE blockchain network.

The hash lock atomic swap has been applied to some blockchains. Although the hash lock technology is not yet mature, it provides the highest level of security to help guarantee for the exchange services and the circulation of cross-chain assets. We will first have atomic swaps applicable to BTC and ETH, and then use them for other main chain assets as the APE project progresses.

At work, if Alice wants to exchange her ETH for Bob's BTC, she will do the following.

Alice creates a random password and calculates the hash value h of the password, that is, $h = \text{hash}$. At the same time, Alice sends the hash value h to Bob.

2. Alice and Bob lock their assets successively through smart contracts (Alice first, then Bob). Smart

The contract implements the following logic:

Condition 1: If someone can provide a random value s 'to the smart contract within H hours, and once the smart contract verifies the hash

$(S') = h$ (when s is equal to the original password), Bob 's BTC will be automatically transmitted to Alice and will be returned to Bob when it times out.

Condition 2: If someone can send the original password to the smart contract within 2 hours, Alice's ETH will be automatically transferred to Bob, otherwise it will be returned to Alice.

Condition 1 is set for Alice. In order to get Bob's BTC, Alice will provide random password verification before the smart contract time, so that the smart contract will be successfully verified, thereby transferring Bob's assets to Alice.

When the transaction is completed, the original passwords provided by Alice will be broadcast and recorded in the blockchain. At this point, Bob can send the public password to the smart contract and obtain Alice's ETH, which is locked in the smart contract specified in Condition 2. In theory, Bob has 1 to 2 hours to complete the above process (depending on the time it takes for Alice to complete).

Of course, Alice has the initiative and more advantages in Hash locked transactions. In real transactions, such as exchange rate fluctuations, Alice can choose to wait until a more satisfactory exchange rate comes out to trigger the transaction, and Bob can only passively Accept it.

Usually, cross-chain hash locks will match the "state channel" to avoid the problems described above.

5.2.2 Oracle

Because the blockchain system is currently a closed system, off-chain information cannot be directly connected to the blockchain system. Since the APE system is mainly used for conference applications, a large amount of

off-chain information will be connected to the chain and passed through the oracle. achieve.

Advance machines are trusted entities that use signatures to provide information about uncertain external world states to smart contracts. The smart contract can access the local data verified by the signature of the pre-processor. It is necessary to pull data from the third party to ensure access efficiency and price consistency. The APE system supports multi-node pre-processing solutions to ensure its reliability, stability, and decentralization characteristics. Only when half of the node data agrees will a transaction with external data remarks be initiated to the blockchain. Due to the adoption of the DPoS consensus mechanism, the actual transaction confirmation time of the advance machine is usually equivalent to the time when a block is completed.

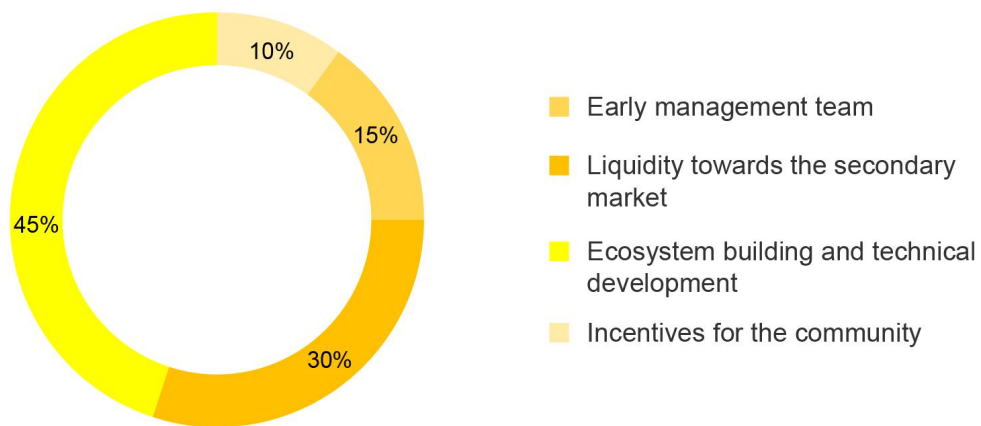
More technical details will be presented in full in the technical yellow book.

6. Token Distribution

In the early days of APE, we will issue ERC2.0 tokens based on the Ethereum public chain. After that, APE's blockchain will be launched in the future. We will then pair the conversion ratio to 1:1.

The total number of APEs is 30 million, and the specific distribution details are as follows:

Token distribution



15% Early launch of new operations

30% slowly enter the circulation market through a reasonable token distribution mechanism

45% Ecological Construction and Technology Development

10% community incentives

7. Disclaimer

This document only introduces the project and does not constitute any investment opinions and suggestions. At the same time, this document does not constitute any form of contract or commitment. Participants in this project must clearly understand the project risks. Once the investor participates in the investment, he understands and accepts the risks of the project and is willing

to bear the corresponding results. The project team clearly stated that it will not bear any direct or indirect losses caused by participating in the project.

The disclaimer for this project includes and is not limited to:

There is no guarantee that points will increase in value, and their value may decline under certain circumstances.

Points are not a form of ownership or control, and the project does not grant any individual any rights to project and application decisions.

c) the risk of any form of loss, theft, or deception.

d) Risks related to judicial supervision. Digital currencies have become the object of supervision in various major countries in the world. For example, the involvement of regulatory bodies or the exertion of pressure may affect the project or project points.

e) The risk of lack of attention to the project or project credits. There is a possibility that the credits may not be noticed or used by a large number of individuals or organizations.

f) The project or project points do not meet the risks expected by the project itself or investors.

g) Risk of hacking.

h) Risk of project vulnerabilities or being cracked.

i) Risks of going to specific exchanges. The project team does not promise to go to specific exchanges. Investors are requested to know this risk.

j) There is a risk of dissolution of the project team. There is such a possibility.

For various reasons, the team's development may encounter problems, the business relationship is broken, or intellectual property claims may be caused by the project. At any time, the project may encounter a major blow or be directly disbanded.

k) Failure risk of official website and wallet related to the project.

l) Other unforeseen risks, unless you know the development path of the project and the risks associated with the digital currency industry.

Risk, otherwise it is not recommended to participate in the pre-sale of points. Crypto digital assets are an early and high-risk industry. Investment and participation require very careful and careful. Dan participates in the pre-sale of points. Except for the failure of the pre-sale of points, your crowdfunded digital assets will no longer be returned. This project has the possibility of project development failure due to legality, market demand, technicality or other uncontrollable reasons.