

NEST: Economic Model of Distributed Business

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In 2008, Satoshi Nakamoto solved the problem of issuing e-money on the Internet through decentralization and realized value exchange independent of third parties. Subsequently, Ethereum (ETH) introduced complex interactions into blockchains more conveniently based on intelligent contract technology and thus opened the door to applications of blockchain technology, such as universal distribution of ERC20 tokens and development of ERC721 games. So far, however, the commercial application of Bitcoin and ETH are still at the stage of isolated and fragmented development; moreover, the high threshold of blockchain and intelligent contract development has prevented most ordinary users from direct use and a simple ERC20 token cannot be easily developed without the guidance of professionals. On the other hand, blockchain applications in the market have not really embodied the spirit of the decentralization of blockchain technology, but just replaced the centralized servers of traditional Internet applications with a certain public chain. Therefore, in this paper, we take ETH as an example to describe a distributed business model based upon it. This model has not only embodied the advantages of blockchain and intelligent contract, but also constructed an economic model totally different from traditional business by introducing an incentive mechanism. Besides, this model has the advantage of self-reinforcement and will have a strong impact on the traditional business form.

1. Principle of DAPP

DAPP was developed to smooth real applications of ETH, EOS and other public chains, because the public chains mainly aim at developers, whose original tokens exist in the form of GAS or "raw materials" but cannot connect users' "daily necessities". For more user orientation, it is necessary to organize infrastructure into effective "products" and forge raw materials into attractive "supplies", which thus has generated DAPP. Considering the inalterability and the high costs of such operations as blockchain writing-in, we think it unnecessary to completely decentralize the information interactions irrelevant and modifiable, while the interactions related to assets or values can have the risk of trust lowered through decentralization. Therefore, current DAPP development should follow the basic principle of "information interaction centralization, value interaction decentralization".

At present, DAPP in the market is not a real DAPP in essence, but an APP that uses intelligent contracts or blockchain technology to replace centralized servers. Its operation cannot be separated from the Internet traffic-centric mode, which is contrary to the idea that blockchains emphasize mechanisms and neglect traffic, because the success of such APPs depends highly on the operation cost, which is a centralized concept. We believe that a real DAPP is not only using intelligent contracts or blockchains, but more importantly transferring operations to each DAPP participant through a mechanism to enable it to have the functions of automatic dissemination, promotion and positive incentives, which is different from the

operation of centralized organizations.

2. Distributed business

Distributed business is an extension of DAPP, different from DAPP in the expandability of services or products, that is, more products or services can access the system. The greatest difficulty in extensibility enhancement is that there is inevitably a need for at least semi-centralized management. Otherwise, limited rules mean limited and established services. Even in the case of Bitcoin focusing on payment, there are bottlenecks in sustainable development. Recent disputes over expansion have directly led to community separation! On this way to practices, EOS has provided a good solution to solve the problem of extensibility through super nodes. This scheme is doubtful if used in the underlying public chain, but as an application layer, as DAPP mentioned earlier, many information exchange services even involve the choice of centralized servers. Moreover, it is more reasonable to implement distributed governance via user-based community rather than miners, moreover users are more familiar with the use scenario and can more efficiently embody a spirit of governance, so distributed commerce needs to introduce super-node-like mechanisms to enhance system expansibility. In this part, we will strictly regulate the power boundaries of the entire governance structure.

3. NEST model

NEST describes an economic model for distributed business, in which we can achieve the goal of openness and effective incentives through a decentralized architecture and an intelligent contract system. NEST has clarified the boundary between centralization and decentralization, and provided a brand-new incentive mechanism, all of which are accomplished through intelligent contracts, while super-nodes exercise their power under established rules, only for emergency or negative operations, and under the supervision of the community: Once the rule is determined, no one can modify such a rule before the next round of voting has started, which meant that de-centralization can be guaranteed in most cases.

4. Incentive mechanism

Everyone is familiar with the incentive mechanisms constructed based on Bitcoin and ETH, which will stimulate object and user separation. Miners are not Bitcoin or ETH users to the broadest sense and especially in terms of the ETH, the users are tens of millions of development teams and ETH traders. The NEST system is a user-oriented business model based on the underlying public chain, so it does not need “miners” packaged in blocks, but users can obtain corresponding NEST rewards by using the NEST system, which can accord with the basic spirit of distributed business: Since users are the main contributors to the system, they should also be its main beneficiaries. Moreover, the product (protocol) developers who also provide service sources for the whole system and the super nodes as community representatives will also be given some incentives for encouraging more service (protocol) developers to join in the NEST system. In our set economic model, all NESTs need to be generated through completed services, that is, no pre-distribution exists, which is somewhat similar to the generation of Bitcoin, but different from ETH, and its initial large-scale ETH is used for financing and development expenditure. To avoid only positive feedback and speculative use, we have adjusted the difficulty of the NEST reward algorithm and created a

mechanism for individual and total reward attenuation, mainly to stimulate real demands for use and maintain the long-term stability of the system. This approach will enable us to avoid extensive economic models in the market.

Furthermore, to effectively attract the interest of non-user third parties in NEST and anchor the intrinsic value of NEST, we charge a certain commission or service fee for each business at a proportion varying to different business types. The fee is finally summarized and rewarded to all NEST holders. Unlike Bitcoin or ETH, their values come only from changes in demand for use, which makes valuation difficult and highly unstable.

Consequently, we have provided an incentive mechanism including users, external developers, system developers and any third party. By virtue of the incentive algorithm, we have avoided only positive feedback and large-scale speculative use, which can not only stimulate real demands, but also improve the long-term stability of the NEST system and NEST intrinsic value.

5. Contract/protocol as services

In the eyes of the blockchain followers, all kinds of services in the real world can be accomplished on the chain, and even on/off-chain connection can be achieved. This is a fundamentalist ideal. The realization of this ideal requires huge infrastructure construction, such as guarantees of the de facto chain/authorities or community verification predictors, and so on, and the development of these things will be much slower than the services directly generated on the chain: Various source-open contracts. A typical source-open contract, namely ETF ERC20, can provide TOKEN developers with a free standard and the creator of the contract standard has not obtained real benefits from the use of others, but the development of ERC20 has become the most important event in ETH. In the future, there will be more and more wonderful service contracts and their creators will benefit from them by embedding an allocation address only. At present, all kinds of de-centralized exchange protocols, bancor protocols, kyber protocols, domain name registration contracts, account contracts, loans, insurance, bonds, options and derivatives contracts, CryptoKitties, FOEM3D and so on appearing in the market, even the contract for simplest one-click TOKEN deployment may have certain users. The contract as a service is in line with the principle of value interaction de-centralization mentioned earlier. If the service itself does not contain any value interaction, the use of blockchains will be much less meaningful, for example, only as a certificate.

In the NEST system, besides lowering the threshold of contract deployment and providing various functions of one-button deployment, many practical contract services will be provided. The service providers will share the value with users and stimulate more real demands and external development through NEST rewards.

6. Voting contract

NEST is open to external contracts and the NEST system access can be available only if the NEST incentive rules are accepted. Any contract, if not examined carefully, may be prone to potential safety hazards and moral risks. We give the community the right to audit and determine whether the NEST system

access can be available by community users' voting to avoid the problem of fraud and information screening caused by all kinds of garbage contracts entering the system due to the full open source. Voting needs to use NEST and is completely realized through intelligent contracts. Voting itself does not consume NEST. At the end of or in the process, voters can retrieve their NEST. Voting rules are determined and publicized before voting; any up-to-standard contract can enter the NEST system automatically and users can use it; moreover, contract developers can also share certain benefits accordingly.

7. Contract-oriented APP

For users, the NEST system and its various internal contracts should be present in the form of a front-end APP (or web terminal) in order to achieve interactions. Therefore, the NEST APP includes a wallet module or can be compatible with wallets subject to the NEST contract methods, which is different from traditional APP because traditional Internet products do not necessarily contain value interactions. The characteristics of blockchains have determined that the current contract interaction cannot be entirely oriented towards time flow or process management, which will cause a variety of asynchronous problems. The development of our APP will be contract-oriented, regarding contract management as the most important function of APP and completing various NEST contract services in a way that conforms to the characteristics of intelligent contracts. In addition, APP itself will provide some centralized services, which will not affect the execution of contracts, nor the interaction of user values. But it is quite necessary to improve user experience. Especially, some areas need to complete KYC for users only by implanting centralized services in APP before the identities of individual blockchains has been fully realized.

The development of an APP will be source-opened gradually, and anyone can develop an APP compatible with the NEST system, as long as the NEST interface is applied. However, the user losses caused by misleading information from other APP developers should not be attributable to a source-open NEST system; moreover, we'll remind users repeatedly to follow the information on the chain, but such a situation may still occur.

8. Super nodes

Distributed business features expansibility, which inevitably will bring about some source-open risks and an emergency mechanism is more urgently needed for repairing various contract bugs or handling accidents. Traditional public chains use bifurcation to solve these problems, which is a high-cost solution, but if the handling power is controlled entirely in the hands of a certain organization, the risk of centralization also may occur. We use the EOS super-node mechanism for reference and adopt the super-node voting mechanism for some top principles. Super nodes feature openness and their power will be strictly agreed upon, mainly by formulating some top principles, eliminating some fraudulent contracts in the system and modifying the system bugs and incentive loopholes, etc. When all is decided, some major amendments will enter the community voting process, and if the community votes against the changes, even the super nodes cannot be adjusted. Super nodes will enjoy the reward share of the whole system in proportion and can be auctioned by the community, which can choose any credible initiator for node bidding. Moreover, all auction participants will enjoy the share of the super nodes according to the proportion of input. All will be completed by intelligent contracts.

9. Contract security

The security of intelligent contracts has always been the focus of the blockchain industry. At present, the industry adopts third-party auditing to ensure contract security. Such a method somewhat functions, but it is still restricted due to poor ability and experience of professional institutions. Therefore, the contract security needs to be maintained from the framework to the community as a whole. It is more reasonable to ensure contract security through contract structure design and open windows for community contract inspection (including contract inspection incentives) than only using third-party audits. Contract security will be a long-term challenge for the NEST system, requiring the joint efforts of all communities.

10. Cross-chain assets

With the outbreak of public chains, more and more assets and protocols are generated in different public chains. ETH and EOS are two fast-developing public chains and are incompatible. NEST will gradually be compatible with different public chains through technical means to achieve the interoperability of assets and contracts, that is, the NEST system is not only developing on a certain public chain, but always targeting users, contracts (services) and assets.

11. NEST ecology

NEST will first take aim at such industries as finance, business transactions and gaming, using a continuous stream of innovative products to let ordinary users operate blockchain technology and intelligent contracts, and returning the value shared in traditional services to users through an incentive mechanism. The products, such as decentralized loans, decentralized insurance, exchange, financial management and decentralized banking, will first be introduced in the NEST system, so that users could have their needs satisfied and become NEST holders while using such products.

Except for intelligent contract products and services, NEST will also provide some basic ecological construction. The domain name system subject to wallet address coding, account system related to receipt and payment, contract-oriented browser, developer-oriented interface training, etc., will also be the necessary work of NEST ecological construction. The construction of the NEST ecosystem can have users attain better blockchain services and thus facilitate blockchain implementation. Communities can participate in the above-mentioned ecological development to better reflect the spirit of co-governance.

12. Establishment of NEST consensus

NEST, as a real application-oriented system after ETH, has a self-reinforcing ability once its consensus has been established, because: A user, once his business needs are met in NEST, will receive corresponding NEST rewards, and to enhance the dividend and NEST value, he has the power to maintain the NEST consensus and invite more participants, instead of choosing any other product that can only meet his needs without consensus. As a developer, self-production means huge operating costs. If the NEST model is copied, its consensus needs to be promoted, and when the NEST consensus has been established, there is no need to start anew. As a super node, any benefit from the NEST system is directly

proportional to its ratio, so it is more motivated to continuously promote the establishment of the NEST consensus. As a third-party investor, when he has realized that higher returns can be obtained from the rewards generated by the NEST consensus and known that more NEST understanding will produce greater returns, he will be motivated to participate in the establishment of the NEST consensus. For all participants in the system, they are justified to promote the establishment of the NEST consensus, but not the opposite. Therefore, the NEST consensus is characterized by continuous self-reinforcement, which is also one of the basic requirements necessary for distributed business.