

A New Model of Social Reading Based on Blockchain technology

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Abstract: Social reading is becoming the main way of reading in China. Social reading promotion is conducive to the realization of national reading. Block chain technology, with its advantages of decentralization, distributed structure, non-tampering timestamp technology, security and anonymity trust mechanism, programmable intelligent contracts, has landed in some industry scenarios in China. In the promotion of social reading, the new model of social reading promotion based on blockchain technology can include the following: establishing a social reading side chain that users and function providers jointly manage, using smart contracts to build a standardized social reading behavior system, using timestamps Technology builds user social reading data tracking and information anti-counterfeiting mechanisms. A secure and anonymous trust mechanism is used to build a good social reading experience environment system.

1. Introduction

According to the data of the 15th National Reading Survey published by the China Academy of Press and Publication, the average number of mobile phone contacts per capita in China is 80.43 minutes per day, and the digital reading contact rate is 73%. 21.7% of Chinese adults regard "reading online books and newspapers" as one of the main online activities. More than 63.4% of Chinese adults have read Wechat, which means that Wechat reading social reading is expected to become the future of reading. At the same time, 64.2% of the adult nationals in China hope that the relevant local departments will hold reading activities or reading festivals [1]. Since 2014, "advocating or vigorously promoting reading for all" has been written into the "Government Work Report" for five consecutive years, actively constructing a new model of social reading promotion, and comprehensively carrying out social reading promotion activities is an important way to realize reading and building a scholarly society for all.

2. Social Reading and Its Promotion

Social reading is social network (media) +reading. In cyberspace, with the help of social context and form, reading transmission, communication and sharing can be carried out to achieve people's acquisition of multiple knowledge and to meet people's deep reading perception and experience [2]. Social reading emphasizes injecting social ideas into the user's reading behavior, starting from the user's relationship chain, creating a user reading ecology, and creating a social reading mode with strong relationships.

At present, social reading applications such as "love reading" and "thumb reading" have a large amount of downloads. Tencent's "Weixin Reading" APP not only provides users with a well-designed reading experience environment, but also provides the functions of finding books, sharing reading notes, checking friends' reading dynamics, participating in friends' reading ranking, and purchasing books. At the same time, unlike the general consumption mode of purchasing books directly by reading APP, "Wechat Reading" creates a new incentive and consumption mechanism. Users can exchange book coins for the length of reading, and friends can buy one for one. Emphasize that reading is better than purchasing. If the user does not have the willingness to purchase for the time being, he can read some of the content first and then choose "whether to continue" when the user wants to purchase, which reduces the psychological threshold for the user to purchase. This viral communication concept is an important catalyst for stimulating users to read

and share. It effectively promotes the APP and plays a big role in social reading promotion.

Even so, the following problems still exist in Wechat Reading, which leads to the loss of users: new users with unclear reading purposes do not know what kind of books they should continue to choose after reading the books recommended by the system. Users can't buy books across the platform because of the book money accumulated in "Wechat Reading", which brings users a relatively poor social reading experience. At the same time, the "WeChat Reading" APP has a relatively simple profit model. The gift money, book time replacement, book sharing, free books, etc. allow users to read many books without spending money. These activities will bring losses to the APP. It is not conducive to building a good business ecosystem, which is not conducive to further promotion of social reading.

Under the background that social reading has become the main form of reading in our country, how to effectively guide users in familiar or unfamiliar relationships to easily access books that they are interested in. Enable users to meet individual reading needs while reading in groups, improve individual reading quality, carry out active and effective social reading, and create a social reading platform with intelligent characteristics. Building a new era of social reading promotion in the new era has become an issue that needs to be further explored in the field of social reading promotion.

At present, there are relatively few studies on the promotion of social reading by Chinese scholars. The main research contents are focused on the following three aspects: starting from the perspective of promoting reading subjects, such as the promotion of social media reading in libraries, it is believed that university libraries should improve the promotion of reading with form as the core, pay attention to the construction of social sharing and reading community, and build an expanding reading ecosphere [2]. Starting with the promotion of readers, such as the research on Social Reading Promotion Based on social reading groups, it is believed that the open, flat and equal "de-centralized" reading environment constructed by social networks is easy to break the passive participation of readers in traditional reading promotion activities, and make the promoters become the peers and supporters of readers in social reading groups, which is beneficial to readers. Psychological identity promotion activities, into the sharing, exchange of reading process [1]. From the theoretical level, such as user satisfaction perspective, social reading promotion research emphasizes that in the process of social reading promotion service, it helps users to face the challenges brought by new social changes, and the social reading promotion is changed from "social relationship driven" to "Reading value-driven, to promote users to establish a lifelong reading attitude, to achieve the true value of reading promotion [3].

To sum up, the research on Social Reading Promotion in China is still in its infancy, and the research on social reading promotion with the help of related emerging technologies is particularly weak. How to build social networks with emerging technologies to promote social reading promotion, to achieve readers' reading, continuous and effective reading, further research is needed. The social reading promotion based on blockchain technology will become an important attempt in these explorations.

3. Four Application Advantages of Block Chain Technology

On November 1, 2008, a self-proclaimed Satoshi Nakamoto published the article Bitcoin: A Point-to-Point Electronic Cash System, explaining the framework concept of electronic cash system based on P2P network technology, encryption technology, timestamp technology, Blockchain technology, etc. On January 3, 2009, the first bitcoin creation block with the serial number 0 was born. On January 9, 2009, the block numbered 1 appeared, and connected with the block numbered 0 to form a chain, marking the birth of the blockchain [4].

The core advantage of block chain technology is decentralization. It can use data encryption, timestamp, distributed consensus and other means. Decentralized credit-based peer-to-peer transaction, coordination and collaboration in a distributed system where nodes do not need to trust each other, providing solutions to solve the problems of high cost, low efficiency and insecure data storage that are common in centralized organizations [5].

Block chain technology is essentially an Internet protocol, which has the following four

application advantages:

3.1 Decentralization and distributed recording and storage can save storage intermediary costs

Decentralization is the most critical feature of block chain. Its realization depends on three dimensions: decentralization at the architecture level, decentralization at the control level, and consensus mechanism at the logical level. Block chain technology is de-centralized at the level of architecture and control rights. There will be no fault initiation point in the system architecture, and no single node can completely control the system. However, at the logical level, it is necessary for the group to reach a consensus. The establishment of a consensus mechanism makes the existence of a decentralized system such as the blockchain possible. At the same time, the blockchain can realize distributed recording and distributed storage of global data information. All data in the database is stored in all nodes of the system and updated in real time. As long as not all participating nodes in the network collapse collectively at the same time, the database system can always operate [5]. Therefore, blockchain technology can effectively avoid the core defects of centralized database technology that easily lead to collective collapse. At the same time, this decentralized distributed structure can save a lot of intermediary costs in reality, that is, no central storage system is needed. Store all data.

3.2 Programmable Intelligent Contracts Help Regulate User Behavior

Programmable intelligent contracts can flexibly change the conditions that cost retention value, such as requiring users to have two or more private keys or not requiring any private keys before they make an operation. It can attach some conditions of value redistribution when sending value, and standardize the future use and direction of specific value. In a decentralized environment, all protocols need to be agreed in advance, with a programmable smart contract. Blockchain technology will give the system the opportunity to deal with unforeseen transaction patterns, ensuring that this technology will not become obsolete in future applications, increasing the usefulness of the technology.

3.3 Untamperable timestamp technology is conducive to data tracking and information anti-counterfeiting

Block generation time in the block chain is set by the system. Usually, a block is generated every few minutes on average, because each block contains the ID of the former block and the latter block. This design allows each block to find its front and back nodes, so that it can be pushed back to the starting node. At the same time, the block chain allows the recorder of the whole network to put a time stamp on each block to account, indicating that the information was written by someone at that time, forming a database that can not be tampered with and forged. A timestamp can prove that someone did something on a certain day, can prove who the first creator of an activity is, and the "existence" of anything becomes very simple [6]. Time stamps play the role of notary in the blockchain and are more credible than traditional public trust systems.

3.4 Secure and anonymous trust mechanism is conducive to saving the cost of credit intermediation

Block chain designers use the cryptographic principle of Asymmetric Encryption Mathematics to solve the consensus mechanism, allowing users to use two passwords respectively when "encrypting" and "decrypting". When encrypting, the password (called public key in block chain) can be seen all over the network. Everyone can encrypt a piece of information with his own public key (to ensure the authenticity of the information). The encrypted information can only be decrypted with his own private key (to ensure the security of the information). The blockchain protocol mechanism allows each node of the entire network to verify the correctness of the results recorded by other nodes while participating in the recording. Only when most nodes (or even all nodes) of the entire network have the same verification result, the authenticity of the records can be obtained. It is recognized that the recorded data is allowed to be written to the block [7]. Blockchain

technology redefines the way credit is generated in the network. Participants do not need to know the background of others, nor do they need to use third-party organizations to guarantee or guarantee. This technology can ensure that the system records, stores and transmits activities such as value transfer. The results must be credible [6]. Effectively solve the core defects of today's IoT technology that require credit intermediation, and ensure the high efficiency and low cost of system operation while ensuring information security.

At present, block chain technology has evolved from a decentralized public block chain to a side chain attached to the public chain. Public block chain is the initial form of block chain. It is a completely decentralized distributed storage database. Anyone can access the data on the public block chain and exchange value on it. The establishment of trust mechanism is also guaranteed by cryptographic technology. The side chain is an extension of the public blockchain, which can realize the transfer of the value of the common blockchain and the value of other books in multiple blockchains. While using the public blockchain to assist in the proof of credit, the sidechain can support For complex data structures and operations [6].

The application of block chain technology has been gradually developed in China. Baidu Totem Service Platform tries to realize the functions of whole process copyright protection, multi-channel content publishing and technology-enabled ecology through block chain. Tencent's "Tencent Blockchain Development White Paper" released in 2017, Tencent's blockchain overall architecture has been fully presented, Tencent blockchain has been applied to supply chain finance, digital assets, logistics and other application scenarios.

4. A New Model of Social Reading Promotion Based on Block Chain Technology

Using block chain technology to build a new model of social reading promotion, the core idea is to use block chain technology to integrate social reading from the loose structure of various social reading APP "self-governing" into a "community" of social reading with diverse content, form and function. Build a distributed application that does not need to rely on the central server to run, not only allows direct interaction between the user and the user, but also allows direct interaction between the user and the function provider, further improving the user's social reading experience. Enhance the user's social reading effect. At the same time, use the consensus mechanism of blockchain technology to strengthen the management of social reading promotion by government organizations and other organizations, and help relevant organizations to organize online and offline activities to further promote social reading.

4.1 Establishing a social reading side chain governed by users and function providers

New technology not only makes users become producers, but also determines the way in which new technology is used. At the same time, the ultimate value of network system lies in what benefits the system has for users [6]. The social reading system is managed by users and function providers, which helps to ensure that the interests of both parties can be realized. Therefore, it is very important to establish a social reading side chain that users and function providers jointly manage.

The social reading side chain jointly managed by users and function providers requires all social reading class APP to be combined in a chain mode, and the social reading class APP side chain is constructed by using Blockchain technology. Each social reading APP will not become the center of the side chain and the center of control, but they need to reach a consensus to ensure the normal operation of the side chain, which includes the consensus on the code of conduct for users and function providers. For example, agreement is made between function providers to ensure that users can perform reading, consumption and other operations across platforms among different social reading apps. At the same time, the side chain can store all historical data, and data of each interaction between the user and the user, the user and the function provider, and the function provider can be recorded. All the data generated by the side chain is stored in all the nodes of the system and updated in real time. As long as all the participating nodes in the network collectively collapse at the same time, the side chain system can always run, and truly build a social reading side

that can be landed. Chain application scenario. Users and users perform reading and sharing, mutual exchange of books and book currency in this scenario, and users and function providers implement communication, transaction, and the like in this scenario, and multiple function providers jointly provide users with various scenarios in this scenario. Personalized service. Such as allowing book currency exchange and other activities, to achieve user and function provider autonomy, to meet the user's various social reading needs, to ensure that the function provider's business profits are maximized.

4.2 Using Intelligent Contract to Construct Normalized Social Reading Behavior System

In 1962, Marshall McLuhan realized that electronic media were turning the world into a "global village". At present, digital "word of mouth" can reach anyone, anywhere and millions of people in an instant. Once we upload information to the network, other people can not only use, appreciate and benefit, but also use it according to the user's convenient time [9]. "Endless choices" are creating "unrestricted demands," so building a standard social reading behavior system is indispensable.

In reading APP-like side chain databases, programmable Smart contract can reach a consensus in advance to flexibly change the conditions for using retained value and restrict various behaviors of users and function providers. For example, it can require users to have two private keys or several private keys or no private keys before giving away the book coins and before confirming the completion of the exchange of book coins between function providers [6]. It can stipulate that the book coins can only be used to purchase certain types of works before users give away the book coins to friends. Only when friends' operations meet the requirements can the book coins be used normally. Using programmable smart contracts, blockchain technology will enable interaction with new schema attributes in existing reading-type APP sidechain databases in the future when new interactive models emerge. Ensure that the technology will not become obsolete in future scenarios, and increase the practicality of the technology while building a standardized social reading behavior system.

4.3 Using Time Stamp Technology to Construct User Social Reading Data Tracking and Information Anti-counterfeiting Mechanism

In 1644, John Milton advocated in his speech "Areopagitica" that we should allow truth and falsehood to decide the outcome in the market of ideas. Driven by new technologies, everyone can create content and let people all over the world "see" the content. Readers become authors and viewers become producers. Everyone can decide when and where to get the text, audio and video provided by any platform. In this context, from the perspective of ensuring freedom of speech and compliance with laws and regulations, it is essential to construct user reading data tracking and information anti-counterfeiting mechanisms.

In reading APP side chain database, timestamp technology can make every data on block chain have a timestamp. It can prove when the users in the side chain read which book, how long they stayed when they read that page, when they read which part they shared their ideas, which book they shared with which friends, etc., and no one can modify it in any way. At the same time, in the reading APP sidechain database, if the user, such as a content creator, completes a work, if he wants to get guidance from relevant experts, in order to avoid the expert's own name published by the expert. Users can save the copyright by saving the work on the chain first, and any information posted by the user on the social reading sidechain can be traced to the data producer. Therefore, all subjects that generate data at different nodes are responsible for the various information they publish, which is conducive to building a healthy social reading environment.

4.4 Using the Trusted Mechanism of Security and Anonymity to Construct a Good Social Reading Experience Environment System

According to the "China Social User Behavior Report 2016" published by China Internet Information Center, social users such as Wechat emphasize acquaintance socialization in social relations, while users such as Weibo emphasize strangers socialization in social relations. Thus,

when using social media, we have implicit or explicit needs in both acquaintance and stranger social interaction. At the same time, the environment created by smartphones allows us to show more openness and more privacy when using new technologies. We need any information, when and where we need it, and we also need to share a lot of information [9]. Therefore, it is especially important to build a good and trustworthy social reading experience environment system.

In the reading class APP side-chain database, users or function providers can "encrypt" the information generated by their own behavior with "public key". Such as information generated by users' cross-platform payment behavior, information generated by users' interaction with users, information generated by users' interaction with function providers, etc. This information can be seen by all users and function providers on the reading APP side chain. All users and function providers can verify the correctness of the results of recording these information. When the verification results of most nodes (or even all nodes) of the whole network are consistent, the authenticity of the data recorded by the user or function provider can be recognized by the whole network, and the data recorded by him can be written into the block [7]. Users or function providers can "decrypt" their own data only by using "private key" to ensure the security of all kinds of behavior and the data generated. At the same time, users or feature providers do not need to know each other's background, nor do they need to rely on a third-party agency to guarantee or guarantee. All information and value transfer activities generated by sharing, giving and other activities on the side chain of the reading APP are recorded, stored and transmitted, which is conducive to building a new trust mechanism, which is enough to build a new social reading experience environment system for users.

5. Conclusion

On the basis of block chain technology, a social reading side chain governed by users and function providers is established, and a normative social reading behavior system is constructed by using intelligent contracts. The timestamp technology is used to construct the social social data tracking and information anti-counterfeiting mechanism, and the secure and anonymous trust mechanism is used to construct a good social reading experience environment system. Making full use of the advantages of decentralization, distribution, security and intelligence of blockchain technology is of great significance for promoting the social reading of Chinese nationals.

At the same time, the lectures, forums and meetings based on reading promotion promoted by libraries and other organizations lack scientific and systematic data support and evaluation system in reading guidance, supervision and evaluation of reading effects. The organizers of various offline reading activities lack standardization in the activities of reading activities, division of functions, and expense management. The problems encountered in the above reading and promotion process will rely on blockchain technology to complete the trustworthy data link. Can be solved.

On the one hand, when we use any technology, we will gradually become accustomed to relying on this technology. Similarly, when we construct and use a new mode of social reading based on block chain technology, we will also rely on the former mode. On the other hand, the new model of social reading promotion based on blockchain technology will inevitably lead to excessive use of electronic energy consumption when saving centralization costs. The data of each node is completely synchronized, so that the storage space capacity of the social reading APP side chain becomes a fundamental problem that restricts its development.

Whether the application of block chains in the promotion of social reading can really land or not requires the relevant commercial organizations to increase cross-border cooperation. It is also necessary for the relevant government policies to stipulate the legal scope of use of data involved in blockchain technology and to regulate the legality of relevant acts in the text.

With the development of block chain technology, more and more capital, talent and resources are invested, and laws and other rules and regulations are becoming more and more perfect. It is only a matter of time to solve the above problems. The new model of social reading promotion based on blockchain technology will also play a greater role in the promotion of social reading in China.

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