

Build Content Ecosystem Based on Blockchain Technology

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Abstract

The increasingly mature blockchain technology is of great significance for improving the level of ecological governance of online content. In this paper, based on the technique of block chain system foundation and the content of the traditional management mode, put forward the necessity of ecological management main body participation content more, discusses the big data and artificial intelligence, personal information and copyright protection, block chain education with the combination of multi-agent cooperative governance, and put forward based on chain technology to realize the block chain technology can assign the content of ecological management, Build a trusted blockchain ecosystem.

Keywords: *blockchain; Content ecology; Internet governance;*

1. Introduction

At present, the quality problem of user generated content (UGC) is serious, and content governance has become a key behavior for the development of UGC platform. Cyberspace security and a community of shared future cannot be established without a healthy content ecosystem. From the perspective of "content ecology", network content governance can be subdivided into two specific forms: "network content regulation" and "network content ecological governance"[1]. In order to build a safer content ecology and realize efficient network content regulation and network content ecological governance, block chain technology can effectively bridge the shortcomings of the current content ecological governance. The complexity of the blockchain industrial ecosystem itself cannot be ignored when applying blockchain to content ecological governance. This paper puts forward a governance mode based on technical logic for the content ecological governance mechanism. Different from the one-way governance mode of public governance and media governance, the governance mode based on blockchain technology can better realize the collaborative governance of multiple entities.

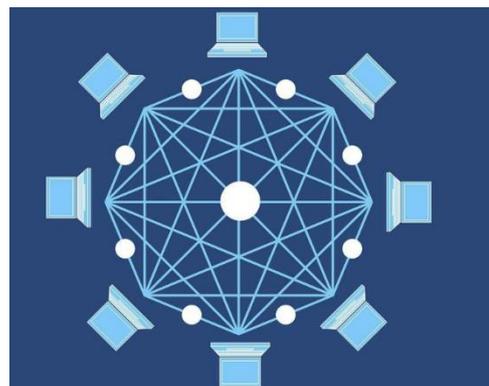


FIG. 1 Decentralized multi-agent collaborative governance (The picture is quoted from <https://www.artificiallawyer.com/2019/04/08/mishcon-handles-uks-1st-blockchain-property-deal/>)

2. Multi-subject co-governance based on blockchain technology

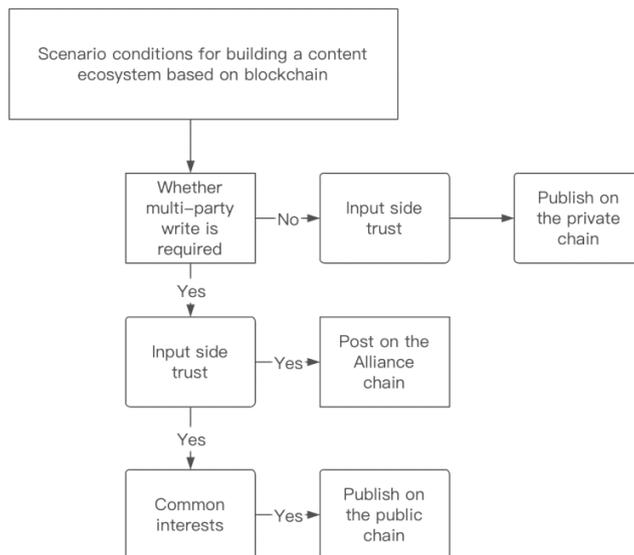
2.1 Institutional basis for co-governance by multiple entities

Since 2021, China has issued and implemented a number of laws, regulations and policy guidelines, such as the Measures for the Administration of Internet Information Services and The Opinions on Strengthening the Construction of Internet Civilization, to guide the practice of ecological governance of online content. The Regulations on Algorithm Recommendation

Management of Internet Information Services, which came into effect in March 2022, makes the ecological governance of Online content more operable and more relevant to real problems. Combined with specific

regulations of the industry, the scenario conditions for building content ecosystem based on blockchain can be determined from the following aspects.

Table 1. Scenario conditions for building a content ecosystem based on blockchain



2.2 The traditional content governance model is not enough to apply

At present, the Internet content ecological governance adopts the governance mode of "algorithm + manual" to identify and screen harmful information and undesirable information, and has achieved initial results. The illegal content can be automatically screened and deleted by machines through keywords, manual "labeling" and deep learning [2]. Deleting content on a block requires the agreement of all verifiers, and global data deletion is considered modification. If you want to block chain

$C_N = \langle B_0, B_1, \dots, B_N \rangle$ Delete multiple adjacent blocks in $\langle B_i, \dots, B_{i+n} \rangle$ you can put the block $B_{i+n+1} = \langle s_{i+n+1}, x_{i+n+1}, ctr_{i+n+1} \rangle^t$ the hash link in the $s_{i+n+1} = H(ctr_{i-1}, G(s_{i-1}, x_{i-1}))$ [3]. However, the dilemma of algorithm regulation lies in that the algorithm implementation is based on the training iteration of existing text, and the recognition accuracy of sensitive words, ironic voice and other network content is weak, lag, and high cost. In addition, the platform uses algorithms to censor and block specific negative words, which will cause some unintended consequences. For example, positive words will be stigmatized as netizens borrow homophonic words to evade the censor. Excessive reliance on algorithms to screen content will

also lead to part of the normal network content will be limited, content producers are dissatisfied with the platform audit "black box", further resulting in user loss, which is not conducive to innovation and the construction of a good Internet content ecology.

2.3 The necessity of multi-subject participation in content ecological governance

In the framework of multiple collaborative governance, content producers and subjects participating in content ecological governance are not limited to a certain group of people, but include individuals, professional media, we media, network platforms and other subjects. The governance mode is changed into "monitoring in the event and executing after the event". This requires each kind of network content producer, should accept external supervision at the same time, strengthen self-discipline. In addition to taking the initiative to post the content should bear the corresponding responsibility, like, comment, forwarding and other behaviors also bear the responsibility of supervision. Multiple subjects should play an active role in constructing a cooperative governance model of network content ecology. By emphasizing the consultative process between society and technology, ANT implies tension between structure and agency, as humans can delegate tasks to technology, which in turn can dictate actions to humans (Latour, 1988) [4].

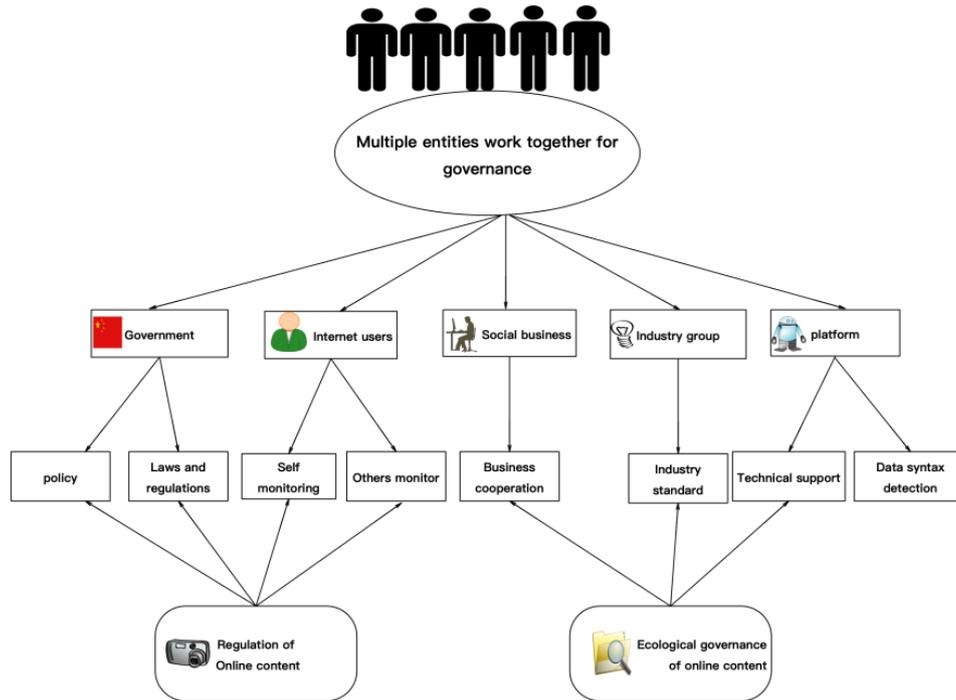


FIG. 2 Multi-agent cooperative governance model

3. The prospect and key points of multi-subject collaborative governance

"The future is here, it's just not yet fashionable." The State Council issued the "13th Five-Year Plan for National Informatization" in the block chain as a national layout of the key, clearly put forward the need to strengthen the innovation, test and application of new technologies such as block chain, in order to achieve the dominance of the new generation of information technology. As can be seen from the current development status, the application of blockchain is changing the media ecology and will penetrate into more fields of media applications in the future.

3.1 Accelerating collaborative governance with big data and artificial intelligence

As a cutting-edge technology, blockchain technology has a relatively complex technical principle. However, even if cutting-edge and high-end technology cannot be effectively integrated with other fields and applied to more practical fields, it is a waste of resources.

Throughout the history of human society, we first relied on blood and clan to build trust, then relied on traditional morality and religion to build trust, and now rely on laws and government organizations to ensure a healthy and orderly online ecosystem.

Blockchain technology is increasing the combination with big data, artificial intelligence, unstructured data and structured data integration for necessary screening analysis to further improve the content review

mechanism, to provide comprehensive, accurate and valuable content for the public, forming an open and shared content ecosystem. Through the construction of individual credit center, the establishment of a global credit system, to help high-precision content classification. Decentralized, traceable and untampered blockchain also has great potential in content production and distribution.

For media ecology, trust is the basis of effective co-governance. In the ecological management of content, China should focus on comprehensive management and prohibit and resist the production and dissemination of illegal and undesirable content. In terms of governance system, it is different from the multi-center governance model based on government regulation, industry self-discipline and user self-restraint in The United States and Europe [5]. The governance of Internet content in China is still characterized by the authoritative collaborative governance mode of "government control, platform implementation and user cooperation"[6]. The enablement of block chain technology is conducive to collaborative governance of content ecology.

As a decentralized ledger, the immutable characteristics of blockchain put forward higher requirements on the authenticity of content source. In the future, more investment should be made in blockchain technology to emphasize the authenticity and timeliness of content. Actively put automatic machine writing software into content production, release relevant information on the basis of ensuring accurate data, ensure the authenticity of information production and traceability of information circulation, and lead the establishment of network security space. Relevant

technical workers should actively promote the integration of blockchain technology and ARTIFICIAL intelligence, and make use of AI's massive data computing and analysis capabilities to effectively establish consensus mechanisms. Digital features can present content in code

or ledger form, upload relevant content to blockchain, convert it into personal points, build reputation profiles, and lay the foundation for the points system of content audit model.

Table 2. Platform auditing standards based on blockchain technology

Content attribute	Platform operation	Platform to judge	Attribute judgment of media platform	Rewards and punishment mechanism
The real content	Spread	Communicate authentic content effectively	Media platform Judged to be true content	Increase credits for real content 24 hours after Posting. Rewards are graded based on timeliness and traffic
	Intercept	To cover up The real content	Media platform miscalculation	According to the timeliness of the content published, determine the content source score and grade
			Media platform Judged to be false	Replace the currency accordingly
The false content	Spread	Malicious dissemination of false content	Media platform Judged to be false	First critical warning found For the second time, the media platform was found to be permanently closed, and those responsible were included in the trust-breaking list
			Media platform Misjudge the content as true and correct it promptly	The relevant responsible person of the media platform shall be responsible for dereliction of duty Timely correction, media platform deducted content information source points
	Intercept	Effectively block false content	Media platform Judged to be false	After the media platform intercepts successfully, the content information source points will be increased

3.2 Strengthen the protection of personal information and copyright

Blockchain technology is used as the technical support for personal information protection, and "full anonymity" in cyberspace is realized through the traceability mechanism, so as to reduce the possibility of leakage and theft of personal information in cyberspace and reduce the occurrence of online violence. In addition, the integration of token mechanism will effectively ensure the protection of personal information and copyright, to achieve effective punishment of false content. To solve the current situation of fake content and the disregard of intellectual property rights through smart contracts. Collaborative governance of multiple subjects is conducive to activating the creative enthusiasm of content producers, and the construction of relevant "smart

contract" can effectively ensure content production and copyright protection. Using the method of Copyright Inside to protect Copyright content, the information describing Copyright and authorization rules are constructed to form Copyright identification, so that Copyright can be traded, inquired and authorized, and the profits obtained belong to the Copyright owner. Relying on advanced technical support, it can improve infringement monitoring, rights protection appeal and provide intelligent identification. In media era, facing the vast amounts of infringing content, use of chain blocks, copyright watermark type identification number, the hotlinking, fingerprint identification technology such as audio and video content verification, fact judgement, copyright protection has become a network platform of a general operations [7].

Actively giving play to the decentralized, traceable, non-tampering characteristics of blockchain and the collaborative governance of multiple entities is conducive to an effective crackdown on the infringement of content publishers. In fact, some network platforms have gradually formed an effective system for content review and conducted beneficial exploration. Injured and Steemit platforms, according to the thumb up and comments on content producers must pay, promoted the creation of content production main body enthusiasm, the future can strengthen the exploration of this kind of mode, actively promote the high quality content to pay to drive revenue, media institutions make full protection of the intellectual property rights, stimulate the content creators to produce more high quality and depth of content.

3.3 Promoting blockchain education

At present, China's blockchain technology and industry talent demand is in a state of imbalance between supply and demand, relevant schools should increase the introduction of relevant professional teachers and the opening of relevant courses, accelerate the popularization and implementation of blockchain education. On July 31, 2017, Tsinghua University established a joint research Center for Blockchain technology. In 2018, Zhejiang University set up a new course named "Blockchain and Digital Assets". Blockchain is a future-oriented frontier technology. In the future, research centers, majors and courses dedicated to the research and practical application of blockchain technology will be further opened to cultivate talents related to blockchain. In addition, content platforms should also build "blockchain" talent pool, actively organize industry talents to participate in blockchain vocational training, and reserve "reserve army" for the development of related work.

4. Conclusions

The collaborative development of multi-subject co-governance of online content ecology based on blockchain technology is conducive to opening up the mechanism of content production, circulation and review, improving the efficiency of social management and improving the way of network governance. In the context of the new era, we should build a platform with a pragmatic attitude, connect industry resources, layout high-quality projects, explore industrial development, and promote the progress of blockchain technology. Relevant technical workers should start from the framework and practice of Internet governance to explore the governance path of multiple cooperation and co-governance. Governments, platforms, enterprises and other organizations and individuals should work together to build a credible content ecological network to achieve the effectiveness of blockchain embedded content

ecological governance to achieve The Optimization of The Palo alto.

References

- [1] He Mingsheng. Concept construction and morphological subdivision of network content governance. Zhejiang Social Sciences, 2020(9).
- [2] Zhang ZA, Nie X.(2022) Research on network content governance mechanism in the Social Context of Internet Platform [J]. China Editor.05:4-10.
- [3] Yuan Y, Wang FY. (2020)Editable block chain: model, technology and method [J]. Journal of automation, 46:831-846.
- [4] Latour B.(1988) Mixing humans and nonhumans together: The sociology of a door-closer. Social Problems 35(3): 298–310.
- [5] Liu ED. (2019)Policy system of Online content regulation and governance in the United States. Governance Studies, 35(3):102-111.
- [6] Yi QI, Tang FY. (2021)A new model of Online content governance in China under the background of platform. Modern Communication,43.01:13-20.
- [7] Liu ZC.(2021)Copyright protection and the development of science and technology synchronization. China Press and Publication Radio & Telegraph, 007-03.

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