The Evolution and Transformation of Trust in Media Organizations under the Background of Blockchain Technology

Dengke Wang

Zhengzhou University, Zhengzhou, China

1850644928@qq.com

Abstract. Media organizations have undergone an evolution from hierarchical organizations to platform organizations. The role played by media organizations has evolved from information producers to information managers, and their trust mechanisms have also shifted from authoritative trust to payment trust, achieving large-scale production of media content. However, the platform centered hegemony formed around payment trust mechanisms is not conducive to deep collaboration among organizational members. The decentralized organization based on blockchain technology has achieved digital trust, forming peer-to-peer trust relationships among organizational members, and promoting the safe and efficient operation of media organizations.

Keywords: Blockchain; Decentralized organization; Digital trust.

1 Introduction

In the digital age, trust is the foundation of all development. Since the first industrial revolution, in order to meet the needs of collaborative production, pyramid shaped bureaucratic media organizations have emerged. In the Internet era, platform based media organizations have emerged, and as a third-party platform, they provide payment trust guarantees to content producers and consumers. Mass production of media content has been achieved. However, payment trust has also led to centralized hegemony of the platform, triggering a trust crisis for the organization. Blockchain technology has the characteristics of security, openness, decentralization, and immutability, achieving digital trust in decentralized organizations, changing the inherent shortcomings of payment trust mechanisms, and promoting deep collaboration among organizational members.

2   Authoritative Trust: the Trust of Traditional Media Pyramid Organizations

2.1   Traditional Media and the Formation of Authoritative Trust

There is no unified standard for the concept of trust, but many definitions indicate that trust is an expectation, a psychological state. Some scholars believe that trust is a psychological state based on positive expectations of the behavior or intentions of others, which puts oneself in an undefended and vulnerable position. [1] Authoritative trust arises from hierarchical groups. In the era of traditional media pyramid organization, the media was the main organization for producing media content, controlling the main channel for content distribution. The media mainly achieved public trust by reflecting its own authority. News is the main content of media production, and the news industry, as an important production system of public knowledge and social culture, relies on institutional and professional authority as its lifeline. [2] Traditional news professionalism believes that news authority comes from the objectivity and authenticity of news, which is reflected in theoretical statements such as "truth is the life of news". Only by achieving the objective truth of news through the media can news authority gain public trust, establish stable connections with content consumers, and maintain organizational operations.

Zelitze believes that the media, through their collective interpretation of key public events, demonstrate to the public their ability to provide knowledge about reality. [3] In this process, news media has constructed a set of corresponding news ethics, and its organizational members have relevant qualification requirements. Of course, the process of achieving authoritative trust is not a closed process, but rather to gain public trust through the practice of real news relationships. [4] When disturbed by multiple factors, it is often difficult to form good relationship practices and gain authoritative trust.

2.2   The Limited Scope of Collaboration: Defects in Authoritative Trust Mechanisms

The authoritative trust mechanism between traditional media and the public has flaws. Firstly, establishing authoritative trust requires media organization practitioners to have high quality, receive relevant training, and effectively control content, all of which make the content production boundary of media organizations limited. Secondly, the realization of authoritative trust relies on the mastery of information dissemination channels. When digital media platforms have mastered the dissemination channels of media content, they promote the establishment of a highly selective media environment, diversify the sources of media content, and traditional media methods no longer have self-evident authority in publishing content. Under business pressure, traditional media even needs to constantly adapt to the traffic rules of the platform, neglecting the requirements for content authenticity and objectivity, which further leads to the dissolution of the authoritative trust of traditional media.

3   Payment Trust: Trust in Platform Based Digital Media Centralization Organizations

3.1   Payment Trust and the Formation of Bilateral Markets

The emergence of platform organizations breaks the boundaries of existing enterprises, and Tirol believes that the essence of platforms is a bilateral market. [5] The formation of a bilateral market first needs to address payment risk issues in order to complete transactions. In offline markets, risk can be reduced through real-time trading, but it cannot be achieved in online markets. As a third-party guarantee, digital media platforms solve the problem of payment trust, providing effective channels for content producers to monetize their traffic and gain economic benefits through advertising and sales. On the other hand, content consumers can also provide direct rewards or virtual gift support to content producers, enhancing their production enthusiasm. Digital media platforms establish connections between online merchants, banks, and consumers, and play a regulatory and technical role. The platform can also charge relevant fees during this process to achieve a win-win situation for all parties.

Payment trust forms a bilateral market effect. The bilateral market effect refers to the mutual promotion effect between supply and demand, which can promote the development of a virtuous cycle between supply and demand. The platform has become the link between the supply and demand market, which profoundly reflects the essence of Internet connectivity. The more platform creators, the more users there will be. Supply and demand continue to promote each other, connecting content consumers and producers, and solving the contradiction between the simplification of production subject and the individualization of demand subject. Digital media platforms have also grown as a result, so payment trust is the core trust mechanism of digital media platforms.

3.2   Centralized Hegemony: Defects in Payment Trust Mechanisms

Nobel laureate in economics Joseph Stiglitz once stated that if a company is trusted to verify transactions alone or plays a key intermediary role in market transactions, it will give it a greater information advantage than buyers and sellers. [6] Although digital media platforms act as third-party guarantees for both parties involved in transactions, eliminating trust risks during the payment process, and playing a key intermediary role, leveraging a centralized World Wide Web architecture and a series of rules and protocols, it is easy to obtain information data from content producers and consumers. The concentration of data brings the centralized hegemony of digital media platforms. In the absence of other forces to balance and supervise, The inability to safeguard the interests of all parties has triggered a crisis of trust.

Specifically, as a centralized data node, digital media platforms are vulnerable to hacker attacks and can also leak user data for their own interests, leading to a crisis of user privacy. Secondly, as a key intermediary, digital media platforms hold the right to distribute interests and traffic. There is a lack of consensus on the distribution of interests between content producers and platforms. In the era of traffic stock, a zero sum

game is formed between content producers and platforms, leading to a tense trust relationship between the two. Finally, as intermediaries, digital media platforms, driven by commercial logic, often harm user rights. For example, big data plagiarism infringes on user interests, bidding ranking mechanisms push inferior information, and commercial interests flood the platform with vulgar, vulgar, and rumored content.

4   Digital Trust: the Trust of Decentralized Organizations in Blockchain Media

Guoming Yu pointed out that there is a problem of mutual distrust among many entities in the content distribution market. [7] Blockchain technology is considered a "machine for manufacturing trust". It has the characteristics of decentralization, immutability, traceability, and transparency. [8] It can achieve digital trust in decentralized organizations of blockchain media, and break free from the centralized hegemony problem caused by payment trust. The core of digital trust is people's mutual trust in technology and machines. Its design concept assumed from the beginning that "human nature is inherently evil", and through blockchain technology, factors that disrupt trust due to participant wrongdoing are isolated. There is no longer a need for intermediaries to provide credit guarantees, achieving built-in trust in digital technology.

4.1   The Formation of Digital Trust in Decentralized Organizations

Distributed Database: Achieving Transparent and Open Operation of Media Organizations, Providing a Trustworthy Environment

Blockchain technology can help establish open and shared distributed databases, achieving distributed storage of content and decentralized information management. Distributed databases are formed through the use of chain data storage structures. With the help of blockchain technology such as hash algorithms and timestamps, distributed databases have strong security, traceability, and data tamper resistance. Distributed databases can achieve multi-party information sharing and supervision, helping media organizations establish a trustworthy information environment. Firstly, we can prevent and control the generation and governance of false news. In terms of content publishing, a collaborative content publishing troubleshooting mechanism can be established. Taking the blockchain community Steemit as an example, the generation of each content block requires the joint supervision of witnesses, curators, and content creators. After content is published, due to the immutable nature of blockchain, publishers are more cautious about publishing content, ensuring its authenticity and reliability. At the same time, they can also use timestamp and hash algorithms for factual verification and content tracing, efficiently identifying the source of false content, reducing the cost of factual verification, and quickly processing false content.

Secondly, distributed databases can achieve information disclosure for media organizations, ensuring their transparent and open operation. Firstly, the quality and recommendation of content can be determined by users, rather than being controlled by algorithmic technologies that represent platform interests. Secondly, a distributed digital

architecture also means that the organization operates openly and transparently, and the daily affairs of media organizations can also be made public on the platform. Users can understand and participate in the organization's daily development and operation, avoiding the "black box" state of organization operation and trust risks caused by information asymmetry, thereby establishing a secure and trustworthy organizational environment.

Asymmetric Encryption Algorithm: Protecting User Privacy Data and Reducing Trust Risks Consensus Mechanism and Smart Contracts: Breaking the Prisoner's Dilemma and Rebuilding Trust Bonds

Asymmetric encryption algorithms provide a solid guarantee for the protection of private data. Asymmetric encryption algorithm refers to the ability of blockchain to generate two types of keys: public key and private key, which can decrypt different encrypted information and achieve privacy data security in the blockchain. With the help of asymmetric encryption technology, it is possible to form a distributed digital identity (DID) for users. [9] As a secure, trustworthy, and decentralized digital identity technology, DID can effectively achieve data authentication, protect the privacy data of organizational members, and reduce trust risks.

Based on DID technology, the personal identity and privacy data of users can be stored on the blockchain. Users can use private keys and digital signatures to prove their identity and manage the related rights of identity associated information. They can also use public keys to verify the authenticity of the identity of the other party and the rights of the exchange. Through DID technology, user privacy can be effectively protected. Firstly, users can control their own identity information and privacy data, and clarify the ownership of the data. Secondly, DID technology breaks the traditional centralized network resource management model, effectively preventing digital media platforms from improperly utilizing user data and infringing on user data. Finally, users can achieve personalized management of their digital identities. Personal privacy data such as browsing traces left by users on social platforms can be made public or hidden, allowing for effective management of their own data.

Consensus Mechanism and Smart Contracts: Breaking the Prisoner's Dilemma and Rebuilding Trust Bonds

Digital media platforms occupy the position of intermediaries, making it difficult for content creators to break free from platform control. Users' personal data is also occupied by the platform, and there are value contradictions and trust risks between the platform and various participants. Throughout history, humans have made numerous attempts at autonomous communes based on conventions, hoping to establish a fair and mutually beneficial society. However, in the process of implementing the convention, it is difficult to ensure that "there is a promise to be fulfilled, and there is a responsibility to be compensated". When members of the organization find that slacking off can bring greater benefits than following the rules of the commune, there will be a prisoner's dilemma where personal interests and collective interests are not aligned, and they will eventually have to return to a centralized management model. Consensus mechanisms

and smart contracts can break free from the prisoner's dilemma and become a trustworthy link for organizational members.

The consensus mechanism is a contract operation mechanism in which various blockchain nodes negotiate and agree. In a decentralized organization, voting and confirmation of events or transactions can be achieved through the voting of special nodes. When the votes are inconsistent, consensus can be reached through the corresponding consensus algorithm. Through consensus mechanisms, the affairs of media organizations can be openly operated, with each node supervising each other, forming operational rules and benefit allocation mechanisms that are compatible with the interests of all parties, avoiding exploitation by centralized platforms and algorithmic black boxes in daily operations, ultimately becoming a trusted link for participants.

A smart contract is a digital contract that can automatically make conditional judgments and trigger execution behavior, and can effectively execute consensus protocols formed by consensus mechanisms. The consensus agreement reached by various entities in the blockchain after consultation will be encoded into the distributed ledger of the blockchain. The content of the agreement does not require third-party supervision, but is judged and automatically executed by the intelligent system based on triggering conditions. The characteristic of smart contracts no longer requires a post punishment system, reduces credit costs, and achieves a "promise must be fulfilled, responsibility must be paid" that is difficult to guarantee in interpersonal society. The consensus mechanism of decentralized organizations is guaranteed, and trust bonds will be effectively established.

5   Conclusion

In the Internet era, the communication scope is larger, the information flow is faster, and the value creation is more frequent. This increasingly requires a new trust mechanism to meet the needs of media organization members to collaborate. The authoritative trust of traditional media pyramid organizations has been replaced by the payment trust of platform based digital media, but payment trust has also formed a centralized platform hegemony, which is not conducive to the deep cooperation of organizational members. The digital trust of decentralized organizations based on blockchain technology can achieve full mutual trust among organizational members, meet the needs of value creation in the digital age, and reflect human wisdom.

Reference

1. Rousseau, D. M., Sitkin, S. B., Burt, R. S., &Camerer, C. (1998) Not so different after all: A cross disciplinary view of trust The Academy of Management Review, 23 (3), 393-4 04.
2. Chang Jiang, Yang Huihan. Ecological Restoration: The Composition and Construction of News Authority in the Digital Era [J]. News and Writing, 2023 (07): 5-15.
3. Zelizer, B. (1992) Covering the Body: The Kennedy Assessment, the Media, and the Shaping of Collective Memory Chicago: University of Chicago Press. p.8.

4. Wang Chenyao. Truthfulness and Trust: The Practice of Realistic Relations in News and Public Trust in the Digital Age [J]. News and Writing, 2022 (07): 26-36.

5. Rochet, J. C., &Tirole, J. (2003) Platform competition in two side markets Journal of the European economic association, 1 (4), 990-1029.

6. Sun Jin, Yuan Ye. Anti monopoly concerns and countermeasures in the application of blockchain technology [J]. Learning and Practice, 2019, (09): 81-90.

7. Yu Guoming is the key to success Blockchain: Empowering and Empowering Traditional Mainstream Media in Media Fusion New Observations on Media Integration, 2019, (06): 4-6.

8. Agata F. Regulating smart contracts: legal revolution or simple evolution? [J] Telecommunications Policy, 2021, 45 (2): 1-16.

9. Yao Qian, Zhang Dawei. Research Review of Identity Management Technology in Blockchain Systems [J]. Journal of Software, 2021,32 (07): 2260-2286.