

Retraction

Retracted: Security Control Strategy of Converged Media Platform UGC Based on Blockchain Technology

Mobile Information Systems

Received 8 August 2023; Accepted 8 August 2023; Published 9 August 2023

Copyright © 2023 Mobile Information Systems. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

- [1] Y. Zhang, "Security Control Strategy of Converged Media Platform UGC Based on Blockchain Technology," *Mobile Information Systems*, vol. 2022, Article ID 5924858, 10 pages, 2022.

Research Article

Security Control Strategy of Converged Media Platform UGC Based on Blockchain Technology

Yun Zhang 

School of Digital Art and Design, Dalian Neusoft University of Information, Dalian 116000, Liaoning, China

Correspondence should be addressed to Yun Zhang; zhangyun@neusoft.edu.cn

Received 16 May 2022; Revised 14 June 2022; Accepted 6 July 2022; Published 5 August 2022

Academic Editor: Chia-Huei Wu

Copyright © 2022 Yun Zhang. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

In the current society, the Internet of Things technology is gradually developing, among which there is blockchain technology. At present, it is also in a stage of steady development. After the information revolution, it is gradually entering the era of take-off, which is also the third project of the revolution. Blockchain technology is a general technology of digital currency. In this article, the comparison is made mainly from the perspectives of the safety factor of the fusion media platform, the efficiency of screening, the proportion of the quality of user-published content, and the credibility of user-generated content. This article uses the calculation method of the Merkle tree. The comparison found that the safety factor has increased by 22%, the screening efficiency has increased by about 10%, and the pros and cons of the creation of works have been significantly improved after the use of blockchain technology, at about 23%. The authenticity of the content on the converged media platform increased by 26%.

1. Introduction

In the Internet age, the fast-developing new media platforms are constantly dividing up the market share of traditional media and challenging the dominant advantages. The concept of “media fusion” originates from the concept of media fusion, which was first proposed by a well-known scholar in 1978. “Converged media” does not refer to a single medium but a model that integrates radio, TV programs, and the Internet. News, in this article, refers to the information conveyed by people through newspapers, radio, the Internet, and other media. The news report is not a single isolated event but a national, economic, and social development.

In this article, the comparison is made mainly from the perspectives of the safety factor of the fusion media platform, the efficiency of screening, the proportion of the quality of user-published content, and the credibility of user-generated content. The comparison found that the safety factor was increased by 22%, and the screening efficiency was increased by about 10%. The pros and cons of creative works have been significantly improved after the use of blockchain technology. At about 23%, the authenticity of the content of the fusion media platform has increased by 26%.

2. Related Work

As the network platform has higher and higher requirements for security, people have begun to study blockchain technology. Blockchain (BC) is the technology behind the Bitcoin cryptocurrency system. It is believed to be used in a variety of applications to ensure enhanced security and (in some implementations, untraceable) privacy and other fields, and it is under intensive research in both academia and industry. Proof of Work (PoW) is a cryptographic problem, and MirazMH played a crucial role in ensuring the security of BC by maintaining a digital ledger of transactions that is considered incorruptible [1]. Yeoh aimed to study key regulatory challenges affecting blockchain, innovative distributed technologies in the European Union (EU) and the United States. Through the design, the method is validated and explained in this article. It relies on primary data from applicable regulations and secondary data from the public domain, including relevant case study insights, with a smart regulatory approach. It largely heralds the future innovative contributions of blockchain in financial services and related fields and enhances financial inclusion [2]. Blockchain technology could have transformative potential for those

related to recorded music and the sustainability of the music business. This is verified by O'Dair and Beaven on relevant materials. They suggested though that predictions of widespread disintermediation may be premature [3]. The financial technology (FinTech) sector sees high potential value in cryptocurrency blockchain protocols or distributed ledger technology (DLT). However, the requirements and guarantees that blockchain places on cryptocurrencies do not match those of fintech—from transaction throughput to security primitives and privacy. Ittay discussed how blockchain research beyond Bitcoin can bridge these gaps and some of the remaining challenges [4].

With the deepening of network technology, the information protection of UGC has become particularly important. Internally, more and more information is contained, such as online user-generated content (UGC) and crowdsourcing, which pose challenges for conceptual modeling in information system (IS) development. Lukyanenko R demonstrated the social importance of UGC. He analyzed its salient features, identified specific conceptual modeling challenges in this environment, and evaluated traditional and recently proposed UGC modeling approaches. He proposed a set of conceptual modeling guidelines for developing ISs utilizing structured UGC [5]. His research focused on online protests in websites that rely on user-generated content. Silva and Panahi developed a case study on Digg, a site powered by user-generated content, but faced a backlash from the community. Through an explanatory analysis of the case, it identifies the context and interactions between key players. The findings suggest that tensions between users and administrators intensified during the protests, and site administrators should consider it carefully [6]. Friedlder surveyed the three most popular messaging services Periscope, Ustream, and YouNow. They are a replacement for all social live streaming services (SLSS) to analyze their streaming motivations and user-generated content, collecting demographic data (gender and age). He observed more than 7,500 streams from users in the United States, Germany, and Japan, where the main motivation for streaming in the United States is to reach a specific group, while in Japan, it is social, and in Germany, it is considered boring [7].

3. UGC Security Control Strategy and Blockchain Technology

3.1. Converged Media Platform and UGC. UGC is also called user-generated content or user-created content, which is the English abbreviation of user-generated content. This is usually text content, images, audio, video, and other content created by social network users according to their personal preferences, disclosed, displayed, or made available to other users through online platforms [8]. With the popularity of mobile Internet terminals, user-generated content has become an important part of network content production. It is widely used in web video, image, and other fields. For example, online platforms such as the Internet can not only provide necessary resources for media platforms but also allow users to share personal resources. User-generated

content plays an active role in the collection and dissemination of information resources. In the process of producing content, the media can not only make up for the modern deficiencies, audibility and richness of traditional TV programs but also select high-quality content related to the topics transmitted by the platform. It produces user content as a material resource for the program. At the same time, it can improve the compatibility of show hosts and audience users. The previous media advocated the use of Internet resources for content production and gradually made Internet users an important part of broadcast content production. The material resources generated by the user's productivity are affected by the user's objective environment and subjective factors. In order to use it as part of the broadcast content, it is necessary to review and evaluate the completeness, accuracy, and reliability of the material content resource. This article provides a customized content security control strategy based on a multimedia content production platform, which can effectively improve the security and timeliness of content production. Taking financial media distribution as an example, media production platforms have shifted from traditional radio stations to new media production platforms. It is difficult for network technology platforms to create different content integration platforms for users because there is no single functional platform for information processing, content filtering, content editing, content distribution, and user management. User content creation is difficult, processing load is high, and content reuse is low. It is difficult to meet all the needs of broadcast media development [9].

Today, traditional TV operators and TV networks use the most advanced computer technologies such as big data to redesign the production process and gradually build a comprehensive multimedia content production platform. A typical integrated multimedia content production platform, such as the aggregation of content platforms created by different users, is implemented through the application programming interface (including content editing and inspection). It fills gaps in enhanced management, editorial, and security for traditional broadcasters and online content. In terms of user-generated content security, the platform mainly uses strategies such as sensitive language detection, source monitoring, and reviewing and identifying manuscripts. However, these security policies do not include security management policies such as user identity, user behavior, and content analysis. Therefore, it is necessary to further strengthen the security strategy of user-generated content and improve the security and timeliness of program content [10].

There are many types of online platforms for which social users produce content with large numbers of users and complex employee attributes. This largely leads to the credibility of consumers' identities, and there are many flaws in the content they provide. Some users create and post fake spam content. The described content has nothing to do with the object, has no factual basis or compressed content, and violates the principles of authenticity and availability of information. In addition, a large number of users create a complex burden by creating content resources to filter

existing information. The user-generated content accepted by broadcast media is authentic and reliable, which not only meets the needs of media advertising but also has high requirements for the timely delivery of materials. They are likely to be able to provide users with high-quality content [11].

3.2. Security Management Strategy. There are many technical and legal difficulties in establishing an independent certification system on a financial media production platform. At present, user IDs are mainly verified and managed through the content platform, authentication system created by existing users. As countries gradually adopt real-name authentication and user management in multiple social networks, the reliability of user identities will increase. The radio and television financial media production platform focuses on the intelligent management of consumer identity; for example, users are divided into internal users and external users according to security and reliability. Internal users mainly include performers, reporters, editors, directors, guests, and other program producers. External users are those who are completely unreliable in identity and content. It requires control over the disclosure of important information to users. According to the information value of shared content, users can be divided into important users and regular users. The content provided by key users is reliable and valuable, and the information provided by general users must be strictly controlled. It is very important to ensure the security and timeliness of user-created content by managing the user ID of the platform [12].

The quality of content produced by consumers is influenced by objective and subjective factors. There is the consumer's natural and social environment, as well as the influence of personal feelings and consumer values. For example, consumers may express irrational opinions if their emotions are out of control and rational opinions if their emotions are calm. Past user behavior can also affect the quality of user-generated content. In the past, high-performance consumers may have published high-quality content in consumer products. On the other hand, it examines the content of the user's product. User behavior directly affects the reliability, authenticity, and integrity of the content created. Managing user activity is an important strategy for improving the security of official content. The financial media production platform divides users into different priorities, collects, extracts, counts, and analyzes users' historical information behaviors, such as making, redirecting, commenting, sharing, liking, and collecting to achieve accurate and dynamic management. Users who provide high-quality information are divided into trusted user groups, the content created is best attributed to program makers, users who post malicious information and spam are divided into unreliable user groups, and the generated content is censored. By strengthening the management of user activities, the ability of high-quality user-generated content can be significantly improved [13].

In general, online platforms lack strict constraints on the form of user-generated content, and effective tools for

monitoring and managing content security are also lacking [14]. Media agencies also have high standards for assessing things like voice quality and content security. Therefore, it is difficult for network users to use emoji, text, voice, video, and other forms of information content to convey their views and feelings, especially for security audits that effectively control the quality of multimedia information content. The broadcast media not only requires the authenticity, knowledge and audibility of the information content but also requires the conversion of various forms of information content into sound signals that meet the needs of the broadcast media. Content analysis, on the other hand, is a comprehensive evaluation of the form and purpose of user-generated information content.

By defining specific content analysis strategies, the financial media production platform will automatically filter the user's production content and identify material resources that meet the requirements of broadcast programs. User-generated content can be converted into text, images, sound, video, and more. It filters the content unrelated to program production and obtains the resources required for program production. For example, if the content of a symbol is less than a certain length and cannot represent a certain position, the content of the generated text can be filtered. For the acquired audio content, if the sound signal-to-noise ratio is less than the set value and the signal quality of the program is impaired after transmission, it must be changed and checked. In addition, voice content can use voice signal detection and keyword filtering techniques to improve the effectiveness of content security checks. However, there is no precise detection technique for video and image options, depending on editing controls. Through our content analysis strategy, we can significantly improve the efficiency and reliability of finding quality users to create content [15].

3.3. Blockchain Technology and Architecture. When it comes to chain stores, many people confuse blockchain with Bitcoin. Bitcoin is a digital currency based on mutual payment, and blockchain is the minimum technology to implement this system. To be precise, a blockchain is a data structure that consists of data in connected blocks arranged in chronological order in the form of a graph. Cryptography does not manipulate or tamper with data, and it is a decentralized public registry or distributed database system. Blockchain technology refers to encrypted blocks based on multiple node structures. P2P is a distributed infrastructure blocking technology composed of communication technology and smart contract technology [16]. Figure 1 is an integration of many mature technologies.

The infrastructure of the blockchain is shown in Figure 2.

Network schemas, message protocols, and data validation mechanisms constitute the distribution of network layers and distributed node topologies. Two random nodes can work without generating mutual trust. Transaction information shall be transmitted wirelessly. In order to maintain the normal operation of the entire network, it uses a stimulus mechanism to ensure sufficient partial nodes and input computing power. This mainly includes functions such



FIGURE 1: Example of blockchain link.

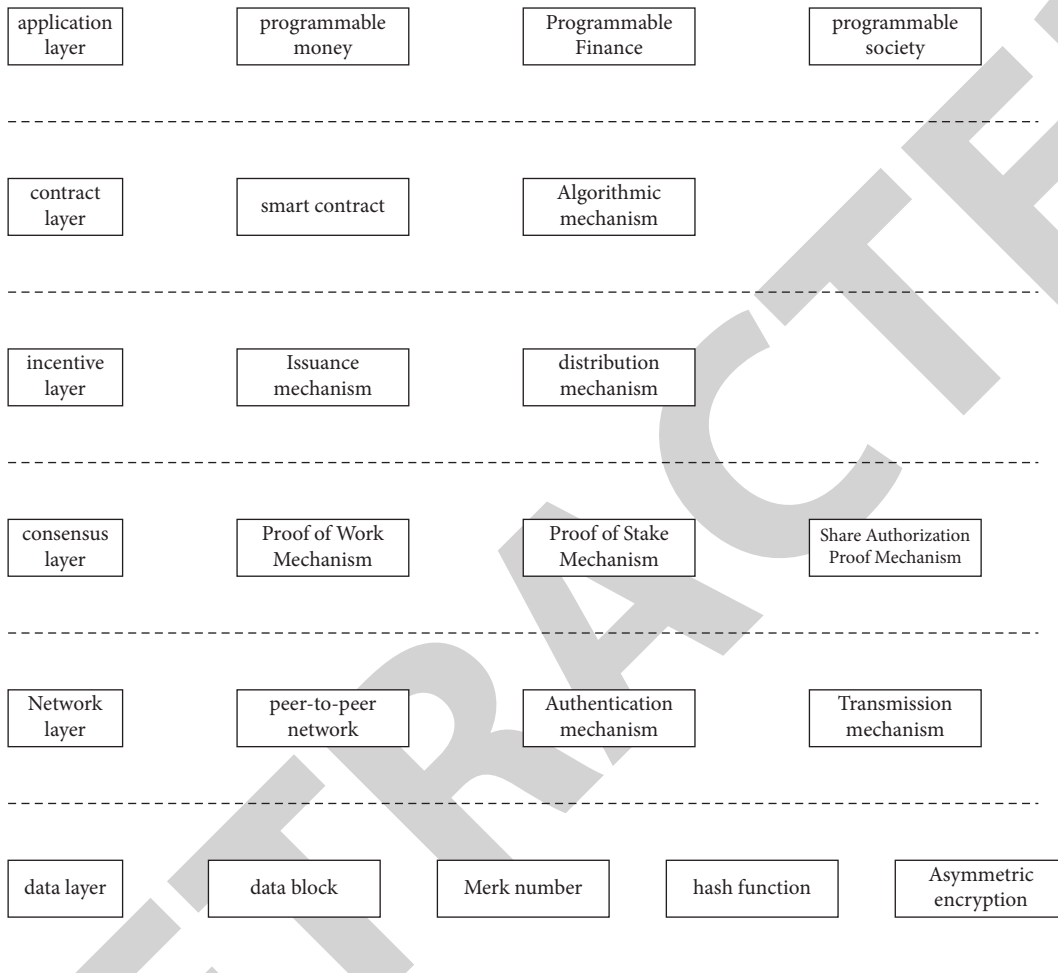


FIGURE 2: Blockchain technology architecture.

as route detection, transaction information verification, transaction information transmission, and new node discovery. While this will not affect the corruption of some nodes, the cost of maintaining all nodes will also increase. All network nodes monitor online information transmission in real time. If transfer data is found in other nodes, check signatures, timestamps, and other transaction symbols and verify transaction and block validity with block loading certificates. After the scan passes, the transfer will be held and resumed. Otherwise, the data will be deleted and not transferred. The node sends the generated transaction information to the surrounding nodes, and other nodes distribute it after verification. Transactions are transmitted after it receives information from the majority of nodes (48%). If the information is not verified, it will be rejected and misinformation will spread more widely. Since decision-making in a distributed network is highly decentralized, each node must effectively achieve data efficiency and achieve effective consensus. The consensus level effectively solves

this problem through various schemes, such as workload testing mechanisms and fair testing mechanisms. It clears the license test engine (dpos) and scatter-matching algorithm. The combination of the consensus process and economic incentives will significantly increase the credibility of the blockchain network. For the purpose of working in a mechanism or a forged block, a random number of blocks and all subsequent blocks must be found, which is only possible after checking the computational power of 48% or more of the blocks. That is why the cost of an attack is so high. To overcome wasted energy and a 48% attack, the mechanism uses fair proofs (coin age, number of coins, etc.) rather than computer tests. As the number of resources increases, mining difficulty decreases, which to some extent destroys the concept of complete diversification. The voice of the organization is similar to the voice of the management committee, each node can be represented by a node, nodes represent other nodes, and nodes create new blocks in the form of accounting. By reducing the number of nodes

involved in auditing competitor data and the number of nodes involved in resource consumption in accounting, secondary consensus control is carried out. It does this by reducing the number of nodes involved in auditing competitor data and the number of nodes involved in resource consumption in accounting. Consortium chains are different from general chains with completely decentralized requirements, which are suitable for decentralized integration algorithms that do not consume too many computer resources [17]. It elects the master node in the block network to stop generating new blocks and sending node transaction information.

At the incentive level, economic elements are integrated into the blockchain system, and public identifiers form a mechanism for grouping services among public identifiers. It not only maximizes their benefits but also ensures the efficient overall operation of the entire system. The general distribution mechanism of the system includes share-based payment, share-based payment, and proportional payment [18].

Smart contracts created in programming languages can implement business logic. This contract will be published to all nodes in the blockchain. After completing the transaction logic and data access rules in a smart contract, third-party applications refer to it as a smart contract, block state access, or blockchain data exchange [19]. The main advantages of smart contracts are low risk of human intervention, punctual execution, real-time modernization, energy decentralization, and low operating costs.

Based on the blockchain platform, different scenarios and applications can be implemented at the application layer. Blockchain 1.0 can support virtual currency applications, create distributed electronic currency applications for digital transfers and settlements, and provide services such as cross-border transactions and fast payments. Bitcoin application is a typical representative. Blockchain 2.0 adds innovative applications to smart contracts. As a fair basis for financial markets in the financial sector, smart contracts can be widely used in securities, stocks, property rights, loans, and mortgages. Additionally, the technology can be scaled to support decentralized markets and expand the scope of transactions. Blockchain 3.0 involves global resource allocation, with the idea of decentralizing and expanding the scope of blockchain in various fields of money and finance, such as government elections, cultural copyright, social justice, and healthcare.

3.4. Blockchain Types and Introduction. Blockchain types can usually be divided into public chains and consortium chains with consortium attributes have begun to enter the market, while private chains are the least open. Nowadays, blockchain development platforms emerge in an endless stream. Figure 3 shows some of the major platforms currently developing blockchain applications.

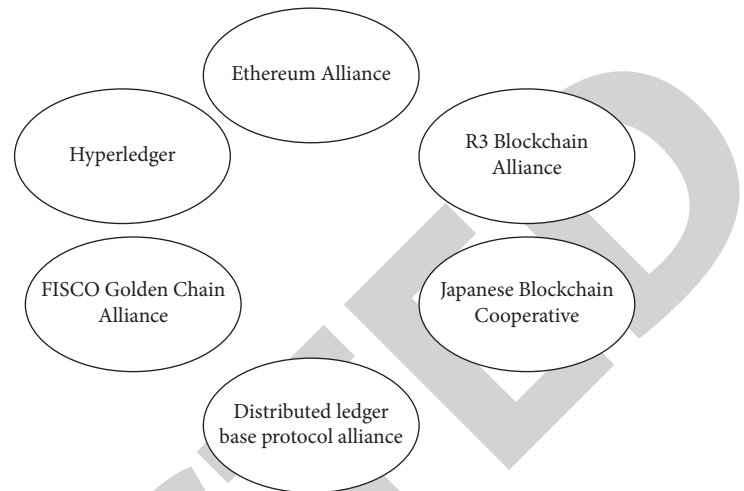


FIGURE 3: Mainstream blockchain platforms.

A public chain is a truly decentralized blockchain that can quickly reach consensus and create a decentralized working mechanism in a decentralized network environment [20].

The reading and written authorization of users in the union chain shall be made in accordance with the union rules. Due to the limited registration authorization of the affiliate chain store, it is suitable for negotiation. The consensus mechanism requires a high degree of security. Consensus algorithms are used to replace load-resistant extraction mechanisms, such as Bayern's error-proofing or error-correcting algorithms and the practical flock algorithm [21].

Private chain networks are used only by private organizations. Often, private enterprise applications (such as database management and private chain monitoring) are effectively protected against internal or external security attacks. Based on an anarchist project, the network is used to achieve full decentralization and private organizations control private chains. Data information is not public; only company employees can participate.

3.5. Problems with Blockchain

3.5.1. Security Issues. In a consensus-based blockchain system, 48% of attacks face the biggest security threat: 48% of computer power acquisitions are difficult to attack the network and the return is lower than the investment, but there is always a risk [22, 23].

3.5.2. Anonymity and Privacy. A blockchain node has no real anonymity, but if an IP address is provided at the time of data transmission, which means it has the ability to identify and locate, privacy cannot be guaranteed [24, 25].

3.5.3. *Throughput Efficiency.* It uses blockchain system security without sacrificing performance metrics. The system transaction speed is only 7 bits per second, which the system can control. The workshop frequency range is only 25 TPS.

3.5.4. *Waste of Resources.* Most of the computing power of the type-authentication engine is used for searching for random numbers and migration, and has no practical value. This is a typical waste of resources.

3.5.5. *Data Space Storage.* All nodes of the locked network store the same data information. With growth and data collection, it is an excellent object to efficiently address disk demands.

3.5.6. *Concurrent Processing.* Blockchains are connected to each other through a network, and each node has the same identity.

3.5.7. *Decentralized Autonomous Organizations.* In fact, the current blockchain system does not achieve complete decentralization but weak or multiple centralization.

3.6. *Blockchain Technology Algorithm.* Blockchain-based security technology has been widely researched and applied in the field of cloud computing, especially in the field of cloud computing. For example, the development and application process can be accelerated to meet the needs of start-ups, academic institutions, open source institutions, alliances, and financial institutions for blockchain applications in the future blockchain ecosystem. By studying the mechanisms that support dynamic work, interested researchers use the structure of the sea tree to ensure the accuracy of data blocks. Unlike the blockchain system, the amount of data in the cloud storage environment is growing rapidly at this stage. In this case, using the traditional cloud data sequence tree, it is necessary to significantly increase the number of file blocks and reduce the size of each file block. In a normal fork-tree structure, data files are locked to generate hashes of page nodes. Increasing the number of data file blocks increases the number of nodes generated on the page, which means that the numbers of nodes in the tree structure and the tree height increase. In a tree structure, if the total number of nodes is the depth of the tree, and the number of nodes in a leaf is n , there is

$$N \geq n + \frac{n}{2} + \frac{n}{4} + \dots + 1 = 2n + 1, \quad (1)$$

$$\log_2 n + 1 \leq \text{depth} \leq \log_2 n + 2.$$

Transform the above formula into

$$\text{depth} = \lceil \log_2 n \rceil + 1. \quad (2)$$

In a tree-like split structure, the number of all nodes and the height and depth of the tree grow linearly with the number of leaf nodes. This means that the performance of the data tree-based system increases, which means that the performance of the data structure also increases accordingly. Based on the above research, this article proposes a V-axis multi-axis design to effectively manage the axis height and improve the access efficiency, as shown in Figure 4. It is a local structure of a polytree, p is a cursor indicating the first subset of the current node's children. K shows the search codes, and the search codes for each node are sorted in ascending order. H is the combined hash corresponding to the hash values of all subsets of data in the current node t .

$$h = \text{Hash}(h_1|h_2|\dots|h_n). \quad (3)$$

There are two main types of Merkle tree methods. The tree type in the market needs at least one dispersion method but no more than two attribute branches. The method tree branches are dispersed on the original basis. Therefore, the Merkle tree created by data block N is the following join:

$$2 \left\lceil \frac{m}{2} \right\rceil^{d-2} \times \left\lceil \frac{m}{2} \right\rceil \leq n \leq m^{d-1} \times m. \quad (4)$$

Then the depth of the tree that can be multiforked Merkle tree is

$$\log_m n \leq \text{depth} \leq \log \left\lceil \frac{m}{2} \right\rceil \left(\frac{n}{2} \right) + 1. \quad (5)$$

Trees built with the same number of data blocks have very small depths, which means many trees have fewer nodes than traditional wood theory when examining queries. This reduces system overload and increases the efficiency of application control.

Figure 5 shows the multiforked Merkle tree construction process, which basically builds the general and specialized parameters required for the verification process, blocks the data file according to the set of homomorphic markers, and generates a tree structure with multiple forks. One creates a key for the client, and two closes the data file. Third, the client sends the homomorphic labels together with the data files to cloud storage, but at the same time, the two data are not stored locally.

$$F = (f_1 f_2 \dots f_n). \quad (6)$$

Then generating a set of homomorphic labels, and get

$$\text{TagBlock}(sk, F) \longrightarrow \Phi. \quad (7)$$

Then using the following formula,

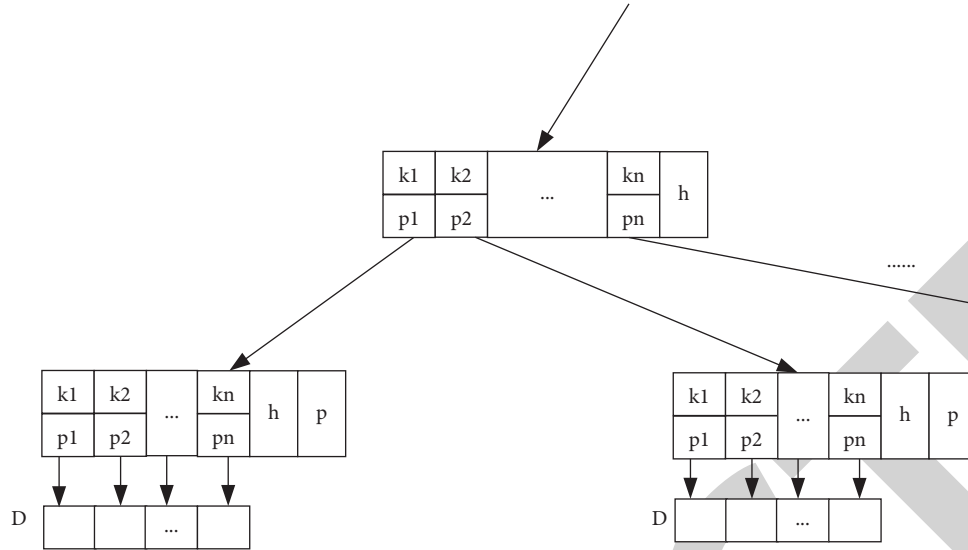


FIGURE 4: Local structure of a multiforked Merkle tree.

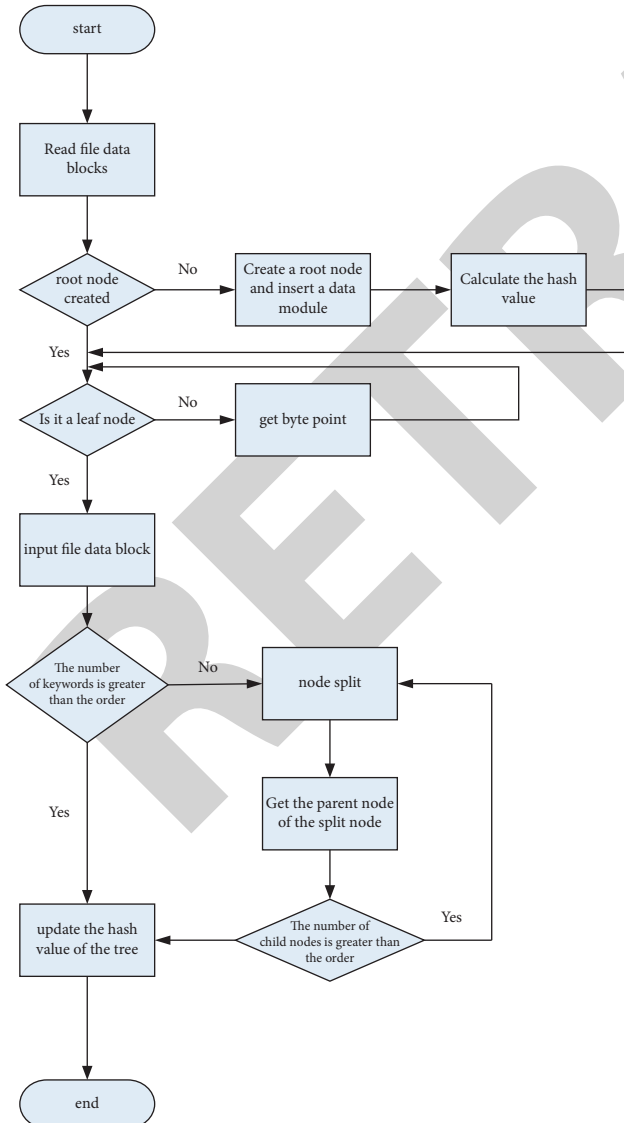


FIGURE 5: Multiforked Merkle tree construction process.

$$\sigma_1 = (H(f_i) \bullet u^{f_i})^x \mid \sigma_i \in G, i = 1, 2, \dots, n. \quad (8)$$

At this stage, the client sends the corresponding verification request to ECS, selects any element v_i from the data block index set $[1, n]n$, and selects an arbitrary number for each element. By combining them, a request is generated and sent to the server to start the verification process. The server uses the data file to generate tests that match the data file.

$$\sigma = \prod_{i=s_j}^{s_j} \sigma_i^{v_i} = \prod_{i=s_j}^{s_j} H(v[i])^{v_i} u^{v_i s_i}. \quad (9)$$

Evidence is available:

$$P = \{\sigma, \mu\}. \quad (10)$$

It sends evidence P to the client, and the client executes the Checkproof $(pk, chal, p) \rightarrow (T, F)$ algorithm after receiving the evidence, whether the evidence is true, that is,

$$e = (\sigma, g) \stackrel{?}{=} e \left(\prod_{i=s_j}^{s_j} H(v[i])^{v_i} \bullet u^\mu, v \right). \quad (11)$$

4. Comparison of UGC Security Projects Based on Blockchain Technology

This article mainly compares from the perspectives of the security factor of obtaining information, the efficiency of screening, the proportion of the quality of user-published content, and the credibility of user-generated content. The information security of media platforms has a great impact on CGC. The security construction of the information platform has a positive effect on user originality. The information security comparison between the integrated blockchains is shown in Figure 6 (the security coefficient

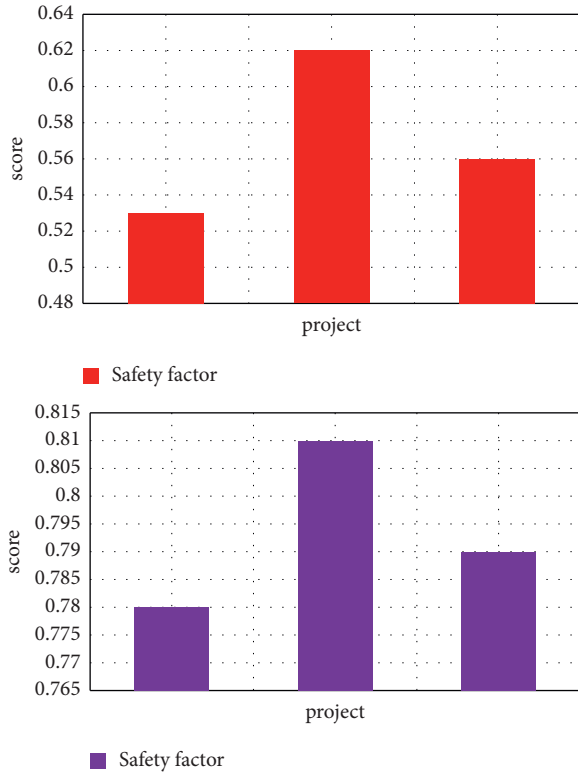


FIGURE 6: Comparison of safety factors for information.

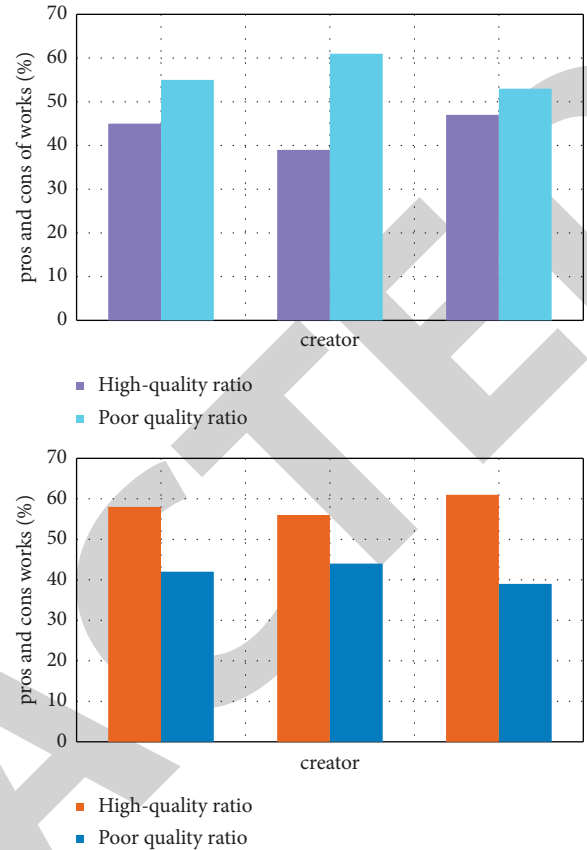


FIGURE 8: Comparison of the quality of user-published content.

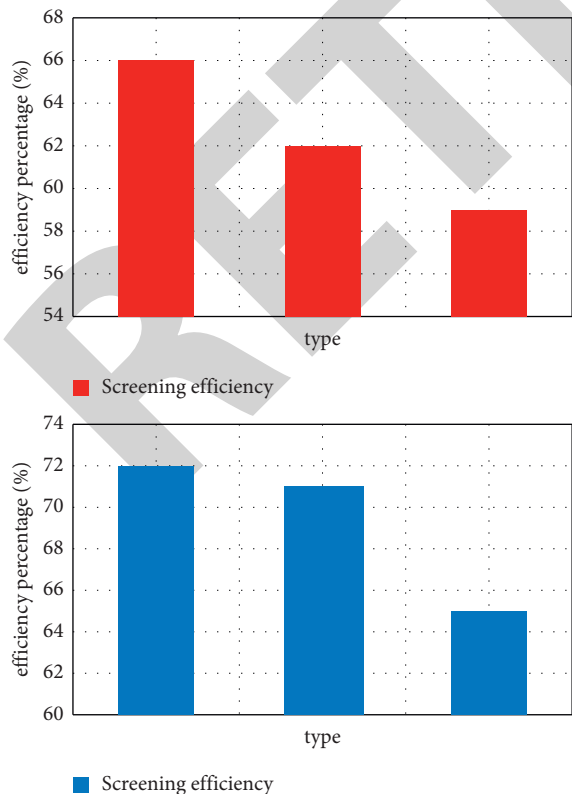


FIGURE 7: Screening efficiency comparison.

ranges from 0 to 1; the larger the value, the higher the coefficient).

In terms of information security, through the comparison in Figure 6, it is found that the security performance of the blockchain technology is improved by about 22%, which also shows that the blockchain has a stronger guarantee for the information security of UGC. It also has a better promotion effect on the user's independent creation, and the new information security also has a far-reaching impact on the user himself. It is the basis for the development of the fusion media platform, and it is also the nourishment for its development. It needs strong protection for the information security of users' self-created information.

It is not easy to find accurate information from many UGCs. In the screening of the content of the works, this article combines the blockchain. It has a greater effect on saving human and financial resources, and it also avoids the burial of excellent UGC. As shown in Figure 7, the efficiency of screening is compared.

As shown in Figure 7, in the use of block connection technology, the screening efficiency is improved by about 10%, which greatly reduces the possibility of UGC being buried. And to a certain extent, it has a positive effect on the original author. Assuming that the video content is liked and commented on by many people, the author himself can also get the commission of the platform. And it is also affirmative to the author, which will also prompt the author to do more UGC creation.

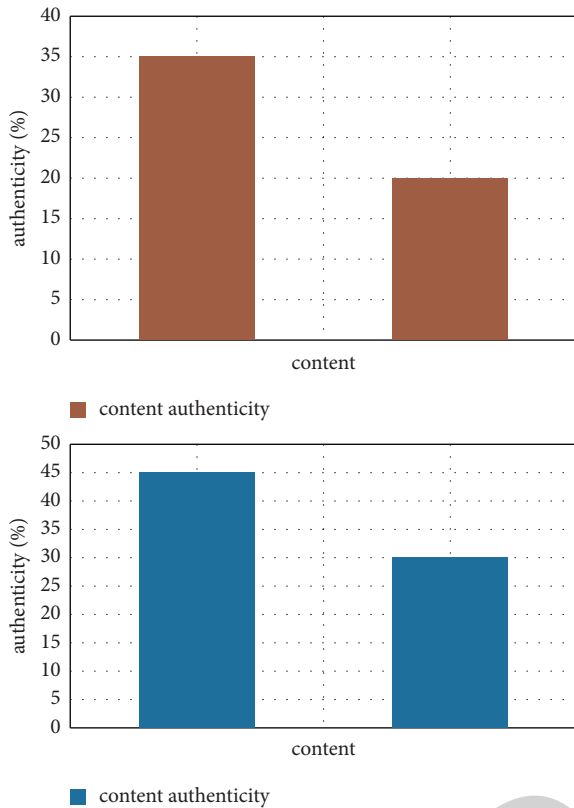


FIGURE 9: Authenticity comparison of content on converged media Platforms.

Everyone can publish their own content on this platform, but the quality of the content also has great advantages and disadvantages. For the same number of works of the same person, this article makes a judgment on the pros and cons of their creations. The merits and demerits of the works after using the blockchain are judged and compared, as shown in Figure 8.

Through comparison, it is found that the pros and cons of creative works have been significantly improved after the use of blockchain technology. From the mean of the three sets of data, the improvement rate is about 23%. It also has stronger predictability of the creator's own sensitivity to the work. It can also have a more accurate understanding of the people who watch the works so that they can publish more representative and high-quality content.

Most of the modern video creations are performed according to the script, and the video content specially displayed according to the preferences of the viewing group does not have a strong reality and authenticity. As shown in Figure 9, the authenticity of the content published by the convergent media platform under blockchain technology accounts for the authenticity of the content. The authenticity of the content also has a great impact on the viewing group. And the group can also distinguish the authenticity of most of the content.

Through two sets of comparison charts, it is found that the authenticity of the content of the convergent media platform under blockchain technology has increased by 26%.

It also shows that under the technology, it can promote the author's release of original content and has a good effect. The authenticity of modern online content is also controversial, and it is good for the masses to maintain their original intentions.

5. Discussion

User-generated content provides a large number of material resources for the content output of converged media. However, there are uncertainties in the integrity, accuracy, and credibility of user-generated content. This makes converged media face greater security risks when selecting user-generated content. According to the application requirements of the Broadcasting Media Law on the safety management of user-generated content, it is not enough to compare the safety factor, the efficiency of screening, the quality ratio of user-published content, and the credibility of user-generated content. It is more convincing to analyze the influence of all possible factors as far as possible. There are relatively many situations that need to be considered in the UGC security control strategy of the converged media platform. There may be many possibilities, and the whole reason is not analyzed in this article.

6. Conclusion

This article mainly analyzes the safety factor of the converged media platform, the efficiency of screening, and the proportion of the quality of user-published content. This article contrasts these perspectives on the credibility of user-generated content. It uses the intelligent algorithm of the Merkle tree, introduces the media convergence platform and UGC, and analyzes the security management strategy. It builds and calculates blockchain technology and architecture. The comparison found that the safety factor was increased by 22%, and the screening efficiency was increased by about 10%. The pros and cons of creative works have been significantly improved after the use of blockchain technology. At about 23%, the authenticity of the content of the fusion media platform has increased by 26%.

Data Availability

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Conflicts of Interest

The author states that this article has no conflicts of interest.

Acknowledgments

This work was supported by Liaoning Provincial Social Science Planning Youth Fund Project, item no. L21CXW001, and Project of Dalian Academy of Social Sciences, item no. 2021dlsky162.

References

- [1] M. H. Miraz and M. Ali, "Applications of blockchain technology beyond cryptocurrency," *Annals of Emerging Technologies in Computing*, vol. 2, no. 1, pp. 1–6, 2018.
- [2] P. Yeoh, "Regulatory issues in blockchain technology," *Journal of Financial Regulation and Compliance*, vol. 25, no. 2, pp. 196–208, 2017.
- [3] M. O'Dair and Z. Beaven, "The networked record industry: how blockchain technology could transform the record industry," *Strategic Change*, vol. 26, no. 5, pp. 471–480, 2017.
- [4] I. Eyal, "Blockchain technology: transforming libertarian cryptocurrency dreams to finance and banking realities," *Computer*, vol. 50, no. 9, pp. 38–49, 2017.
- [5] R. Lukyanenko, J. Parsons, Y. Wiersma, G. Wachinger, B. Huber, and R. Meldt, "Representing crowd knowledge: guidelines for conceptual modeling of user-generated content," *Journal of the Association for Information Systems*, vol. 18, no. 4, pp. 297–339, 2017.
- [6] L. Silva and H. Panahi, "Catch me if you can: online protests on sites powered by user-generated content," *Information & Management*, vol. 54, no. 1, pp. 103–114, 2017.
- [7] M. B. Friedlnder, "Streamer motives and user-generated content on social live-streaming services," *Journal of Information Science Theory and Practice*, vol. 5, no. 1, pp. 65–84, 2017.
- [8] R. Beck, M. Avital, M. Rossi, and J. B. Thatcher, "Blockchain technology in business and information systems research," *Business & Information Systems Engineering*, vol. 59, no. 6, pp. 381–384, 2017.
- [9] D. C. Folch, S. E. Spielman, and R. Manduca, "Fast food data: where user-generated content works and where it does not," *Geographical Analysis*, vol. 50, no. 2, pp. 125–140, 2017.
- [10] S. Ehrlick, N. Schwartz, and J. D. Slotta, "Authentic experiences: how active learning and user-generated content can immerse university students in real life situations," *The Open Cybernetics & Systemics Journal*, vol. 18, no. 5, pp. 21–30, 2021.
- [11] Y. Chen and S. Y. Bae, "The study on the influence of Korean food image in user-generated content (UGC) on travel intention to korea: focused on the Chinese platform, xiaohongshu," *Korean Journal of Hospitality & Tourism*, vol. 31, no. 1, pp. 123–135, 2022.
- [12] S. Karimi, A. Shakeri, and R. Verma, "Online news media website ranking using user-generated content," *Journal of Information Science*, vol. 47, no. 3, pp. 340–358, 2021.
- [13] Y. Huang, W. J. Huang, X. L. Xiang, and J. Yan, "An empirical study of personalized advertising recommendation based on DBSCAN clustering of sina weibo user-generated content," *Procedia Computer Science*, vol. 183, no. 8, pp. 303–310, 2021.
- [14] G. Rasool and A. Pathania, "Reading between the lines: untwining online user-generated content using sentiment analysis," *The Journal of Research in Indian Medicine*, vol. 15, no. 3, pp. 401–418, 2021.
- [15] B. Seyoum, "National security export control regimes: determinants and effects on international business," *Thunderbird International Business Review*, vol. 59, no. 6, pp. 693–708, 2017.
- [16] B. A. Kheifets and V. Y. Chernova, "Effects of export control policy on food security: the case of the grain market in Russia," *Studies on Russian Economic Development*, vol. 33, no. 2, pp. 211–217, 2022.
- [17] R. Pan, G. Wang, and M. Wu, "An attribute-based access control policy retrieval method based on binary sequence," *Security and Communication Networks*, vol. 2021, no. 4, 12 pages, Article ID 5582921, 2021.
- [18] M. H. Amin, E. K. Mohamed, and A. Elragal, "Corporate disclosure via social media: a data science approach," *Online Information Review*, vol. 44, no. 1, pp. 278–298, 2020.
- [19] J. Huang, "Retracted article: the characteristics of urban soil deposition and financial management of state-owned assets based on big data system," *Arabian Journal of Geosciences*, vol. 14, no. 14, pp. 1383–1416, 2021.
- [20] T. Liu and Z. Yu, "The analysis of financial market risk based on machine learning and particle swarm optimization algorithm," *EURASIP Journal on Wireless Communications and Networking*, vol. 2022, no. 1, pp. 31–17, 2022.
- [21] L. Qiao, S. Dang, B. Shihada, M.-S. Alouini, R. Nowak, and Z. Lv*, "Can blockchain link the future?" *Digital Communications and Networks*, 2021.
- [22] L. Ogiela, M. R. Ogiela, and H. Ko, "Intelligent data management and security in cloud computing," *Sensors*, vol. 20, no. 12, p. 3458, 2020.
- [23] A. Maseleno, "Design of optimal machine learning based cybersecurity intrusion detection systems," *Journal of Cybersecurity and Information Management*, vol. 0, no. 1, pp. 32–43, 2019.
- [24] O. I. Khalaf and G. M. Abdulsahib, "Optimized dynamic storage of data (ODSD) in IoT based on blockchain for wireless sensor networks," *Peer-to-Peer Netw. Appl.*, 2021.
- [25] M. Tanriverdi, "A systematic review of privacy preserving healthcare data sharing on blockchain," *Journal of Cybersecurity and Information Management*, Special No.-RIDAPPH, vol. 4, no. 2, pp. 31–37, 2020.