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The Application of Blockchain in the Accounting Industry

Yunan Bai[1]

[1] Hainan University, Haikou 570228, Hainan, P.R. China
Correspondence: Yunan Bai, Hainan University, Haikou 570228, Hainan, P.R. China.

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Abstract

Blockchain technology is one of the new information technologies, because of its consensus mechanism, distributed mechanism, smart contract and other technical characteristics, as well as non-forgery, open and transparent, traceability, whole-process traces, collective maintenance and other characteristics, has been widely concerned by various industries.

Accounting is the language of business and a management information system that provides financial and accounting information. In today's highly developed market economy, accounting plays an indispensable and important role. The in-depth application of blockchain technology in the accounting industry can promote the development of the accounting industry, but also can promote the integration of blockchain technology into the overall social and economic environment.

This paper studies the application of blockchain technology in the accounting industry. "Luckin coffee financial fraud" events as examples, by analyzing the Luckin coffee event accounting problems, put forward the problems existing in the traditional way of accounting, and block chain technology used in comparing the advantage of the accounting profession, points out that block chain technology can solve the problem of some of the existing accounting, to perfect the accounting and internal control to provide a better strategy and scheme. At the same time, this paper also analyzes the risks existing in the application of blockchain technology in the accounting industry, and briefly puts forward several countermeasures. Finally, the development of block chain technology into the accounting industry is prospected. Blockchain technology not only promotes the development of traditional financial accounting, but also promotes the development of management accounting, and promotes the overall reform of the accounting industry.

Keywords: blockchain technology, accounting profession, financial accounting, internal audit

1. Introduction

With the advent of Bitcoin, blockchain technology has gradually become known. The emergence of blockchain technology has brought a new revolution to many industries. Due to the advantages of blockchain technology, it is widely used in various industries, and many countries are also vying to take the lead in the development and operation of blockchain technology. Similarly, blockchain technology also has great advantages in the field of accounting, and with its continuous

development, some problems existing in traditional accounting will be slowly solved.

2. Overview

2.1 Background of Blockchain Technology

Blockchain, one of the underlying technologies of Bitcoin, was proposed by a man who called himself Satoshi Nakamoto. In fact, blockchain is a decentralized database, which is a chain of many data blocks, so it is called "blockchain". Each block of data is composed of cryptography and contains a batch of network transaction information, which can prevent information forgery and can also generate the next block.

It has the characteristics of non-tampering, openness and transparency. These features ensure the security and openness of the blockchain. The wide range of application scenarios of blockchain is basically based on the "honest" characteristics of blockchain technology to solve the problem of information asymmetry.

2.2 The Working Principle of Blockchain Technology

2.2.1 How Blockchain Technology Works

The blockchain system consists of 6 layers, which are the data layer containing the basic data and encryption algorithms; the consensus layer that runs the consensus mechanism; the network layer that runs the distributed mechanism; the contract layer of programming smart contracts; It consists of an incentive layer for economic incentives and an application layer for running application markets and cases. Among them, smart contracts, economic incentives, consensus mechanisms, and chain structures are the most representative innovations of blockchain.

2.2.2 How Blockchain Works in the Accounting Business

Blockchain is a distributed shared ledger formed by various algorithms and computer mechanisms.

When a transaction occurs, the enterprise must first upload the original voucher that needs to be calculated, and then process it into a block through a hash algorithm and asymmetric encryption mechanism. Then, after verifying the original credentials and obtaining the consensus of each node, you can start recording at the same time, and give priority to the transaction node that completes the record with high quality, and its record information will be adopted to form a new block information, and then the data information will be copied and disseminated to other nodes, so that a complete block will be generated. Finally, each node should check the accuracy of the new block information, and after confirming that the newly formed block information is true and valid, this block can be connected to the main chain of each node. Because every node has access to all the ledger data, it cannot be modified at will when the blockchain is formed.

If changes are needed to the information in the blockchain, the peer-to-peer transmission and consensus network mechanisms will operate and can only be modified when two-thirds of all nodes agree to the changes. The modified information will be timestamped, modified with a record and a digital signature. Moreover, the modified data and accompanying information still need to be agreed before a new block can be formed and stored on the main chain.

2.3 Technical Characteristics of Blockchain Technology

2.3.1 Cannot Be Tampered with

Cryptographic algorithms are used between nodes in blockchain technology so that data can be securely verified and exchanged. The blocks are linked by a hash algorithm, and each block is accompanied by a two-way cryptographic assignment. Before and after the data modification, all nodes need to be re-agreed before and after the data can be modified and stored, and it has a modification record, timestamp and digital signature that cannot be deleted, which can avoid artificial and subjective modification of the data, so that the blockchain has a high security.

2.3.2 Leave Traces Throughout the Process

Smart contract technology can ensure the traceability and irreversibility of transaction data. The two participants plan the contract in advance through information technology, and when the transaction is made, the transaction can be recorded directly in accordance with the planned computer protocol without a third party, and all the data of economic business will be recorded and stored in the blockchain, and the enterprise can access the data required for query at any time. In addition to this, any modification of the data in the blockchain will be left with a record for easy access later.

2.3.3 Be Transparent

Each node in the blockchain technology can access the query data through a function algorithm. The transaction data is all public in the blockchain, and each node can view the accounting copy in the database through algorithm functions and authentication, so as to accurately grasp the data. Data can be obtained without passing through a third party, and there is no opportunity to conceal or change it, and it is transparent.

2.3.4 Collective Maintenance

All transactions of an enterprise need the consensus of each node before they can become new nodes and join the overall blockchain. All participants jointly confirm and maintain together, and it is no longer a small number of senior personnel who hold financial information, which is more conducive to the transparency and authenticity of accounting information and avoids the risk of information being tampered with. In the mode of centralized accounting, if someone tries to tamper with the information, they only need to attack the individual who has the information to tamper with the information, but the blockchain has the characteristics of decentralization, and each node will have a high-level password to maintain each block, and only one node cannot tamper with the information. Therefore, the characteristics of collective maintenance of the blockchain greatly avoid the risk of information tampering.

2.4 The Current Situation of the Application of Blockchain Technology in the Accounting Industry

On January 10, 2019, the Cyberspace Administration of China (CAC) issued the Provisions on the Administration of Blockchain Information Services. On October 24, the Political Bureau of the Central Committee of the Communist Party of China (CPC) held the 18th collective study on issues related to the development of blockchain technology. In the collective meeting, the president of the country noted: Blockchain technology has been applied to many fields. In order to give full play to the advantages of blockchain technology in the application of various industries, it is necessary to take blockchain technology as the core technology and accelerate the development of technology. This shows that blockchain technology has begun to be concerned by society.

Among them, blockchain technology has been quietly applied in accounting. For example, in terms of expense reimbursement, when an employee of the company reimburses "meal expenses", "gift expenses", "car expenses", etc., the accountant cannot determine the true data. In the face of a large number of reimbursement fees, even if the accountant perceives a problem, it may not be able to verify it because there is no solid evidence. However, when the company uses blockchain technology, every time an employee who applies for reimbursement gives a banquet or gift, it will be recorded by customers and merchants. Accountants can obtain the data and information of relevant personnel when checking the reimbursement form, compare and verify, and grasp whether the employees applying for reimbursement have reimbursement fraud and fraudulent behavior. Therefore, when blockchain technology is applied to expense reimbursement, expense reimbursement can achieve openness and transparency of information and data, and at the same time, it can also play a role in controlling costs and expenses for enterprises.

In terms of information leakage, it is particularly beneficial for the supervision of listed companies. As we all know, listed companies are prone to the problem of false fraud. When blockchain technology is applied in accounting, the information between related parties in a company is no longer known only to both parties. All stakeholders, including social regulators, can query by accessing the data and information of the blockchain, which makes it difficult to have the problem of information asymmetry, which is conducive to the supervision of listed companies and the protection of the interests of stakeholders.

In terms of data modification, in traditional accounting, accountants have the opportunity to modify the problematic data or adjust the problematic vouchers at will. Sometimes, because of the large amount of transaction data, it is difficult to trace back to the correct source. After the application of blockchain technology, it is difficult for accountants to modify the data at will because the data information has been distributed and recorded after the transaction. Blockchain technology has the characteristics of non-tampering, which makes it difficult for enterprises to make "fake accounts" or "two sets of accounts". Second, the decentralization of the technology also makes the company's top management no longer the only controller of

accounting information, so it can no longer instigate or coerce accountants to make false ledgers for profit.

At present, the application of blockchain technology in the accounting industry is still in its infancy, and it will take a long time to explore and practice the widespread application of blockchain technology. China has now included it in the national science and technology strategy level of technology, which also lays the foundation for China's research and development of digital currency. During the two sessions in 2020, Yi Gang, governor of the People's Bank of China, pointed out that China will carry out closed point tests of digital currency in some areas.

3. Advantages of Blockchain Technology Applied to the Accounting Industry

In this paragraph, through the analysis of the accounting problems of the "Luckin Coffee Fraud Incident", the accounting problems existing in the current traditional accounting mode are proposed, and compared with blockchain accounting, reflecting the advantages of blockchain technology in the accounting industry.

3.1 Case Analysis

3.1.1 An Overview of the Luckin Coffee Incident

On January 31, 2020, Muddy Waters, a well-known short-seller in the United States, claimed that Luckin Coffee's revenue and expenses in 2019 had false growth. To this end, Ernst & Young has deployed an anti-fraud team to intervene in the investigation, and at least 10 U.S. law firms have opened legal proceedings against Luckin Coffee for financial fraud and fraud. Finally, on April 2, 2020, Luckin Coffee publicly admitted that it had fraudulent transactions, and the sales involved in false transactions amounted to 2.2 billion yuan.

On April 7, 2020, Luckin Coffee announced the suspension of trading; On May 12, its top management was suspended, and the SEC decided to delist Luckin Coffee.

3.1.2 Accounting Issues in the Luckin Coffee Incident

3.1.2.1 Inflated Sales Revenue

According to the comparison of the information in the report of Muddy Waters and the financial report of Luckin Coffee in the third and fourth quarters of 2019, it can be found that Luckin Coffee has fictitiously increased sales revenue through three means.

First of all, the data in the financial report exaggerates the number of items sold in each store on a daily basis. In the third quarter of 2019, sales per store were inflated by 69%, and in the fourth quarter, daily sales per store were inflated by 88%. Luckin Coffee also artificially increased the number of online orders on the app. In the actual sales process, artificially control the skipping of meal codes, so as to increase sales.

Second, the figures in the financial statements exaggerate the net selling price of the product. Luckin's 2019 financial report shows that the net selling price of a single product is 11.2 yuan, while Muddy Waters' investigation shows that the actual net selling price of a single product is less than 10 yuan, an inflated 12%.

Finally, Luckin also created the illusion of profitability for a single store by increasing the number of items per order. Actual units per order decreased from 1.38 units in the second quarter of 2019 to 1.14 units in the fourth quarter.

3.1.2.2 Inflating Costs

According to the survey report, Luckin's advertising spending in the third quarter of 2019 was exaggerated by more than 150%. Mainly through the inflated amount of advertising expenses in Focus Media, this expense alone was inflated by 300 million yuan. According to the data, the company is suspected of secretly exchanging the inflated advertising expenses with the inflated income, and Luckin may use the false advertising expenses to explain and cover the company's inflated revenue, so that the financial statements look complete and good-looking.

3.1.2.3 Implied Related-Party Transactions

From the company's registered address and legal representative, it can be found that Luckin Company may be related to Zhengzhi International Trade Co., Ltd. and Zhongcheng Century Supply Chain Management Co., Ltd. The main business of these two companies is highly consistent with the main business of Luckin. However, these relationships with related parties and possible benefit transfer issues have not been disclosed and explained in detail in Luckin's financial reports.

3.1.3 Accounting Analysis of the Luckin Coffee

Incident

The main reason for the financial fraud incident of Luckin Coffee is that the current traditional accounting and bookkeeping methods have given Luckin's senior management an opportunity to commit fraud.

First of all, it can be seen from the means of financial fraud of Luckin Coffee that the artificial subjective operation of the transaction is too strong. The number of orders, expenses, and transaction prices can be changed by manual operation through the authorization of the upper level. The reliability and authenticity of the data and information in the financial statements released by Luckin Coffee are also questionable. The lack of transparency in the transaction process provides opportunities for those who are interested in financial fraud.

Secondly, as a listed company, the company should establish a good information disclosure system and strengthen the requirements for the quality of information disclosure. Enterprises should focus on the disclosure of items such as revenue and profits, clarify the disclosure of assets and other items, and refine the disclosure of related party transactions, the use of funds raised by enterprises, and corporate mergers and acquisitions. At the same time, the company's board of supervisors, independent directors and professional committees of the board of directors should fulfill their responsibilities of supervising information disclosure, but Luckin did not do so. Luckin Coffee's inadequate internal control system provided an opportunity for the company's financial fraud.

3.2 The Advantages of Blockchain Technology Applied to the Accounting Industry

The accounting profession includes financial accounting, management accounting, economic law, tax law, corporate management and other majors. In this paragraph, we will study the advantages of blockchain technology application from two aspects: accounting for financial accounting and internal audit of the company.

Accounting is the basic professional knowledge that every accountant must master, and it is the common sense of every accountant who goes deep into the bone marrow. The process of accounting is financial accounting, accounting confirmation and measurement play an important role in the formation of financial reports, and are also the basic procedures for the formation of financial report information, which is an important part of accounting work.

Auditing is the review and evaluation of accounting data, and only high-quality accounting information can form a good economic environment and the accounting industry can develop steadily. Audit is divided into internal audit and external audit, for the company, having a perfect internal audit system can better improve the company's financial accounting level and promote the good development of the enterprise. This paragraph will analyze the advantages of the application of blockchain technology from the perspective of the company's internal audit.

3.2.1 Advantages of Blockchain Technology Applied to Accounting

3.2.1.1 Accounting Confirmation

After the economic business occurs, the financial personnel need to obtain the relevant original vouchers and review the original vouchers obtained. It is necessary to review whether the original voucher is true, accurate, legal and reasonable, which is accounting confirmation. When making accounting recognition, it must be based on the standard of accounting recognition. We will examine the advantages of blockchain technology in accounting recognition from the two criteria of reliability and relevance.

1) Blockchain technology improves the reliability of accounting confirmations

Reliability is one of the criteria for accounting recognition. Reliability is the true and accurate reflection of the relevant information of the project to be confirmed. The confirmed project information can be verified without any false tampering, so as to ensure the accuracy of the subsequent accounting record data.

Traditional accounting confirmation is through the acquisition and review of transaction bills, bank bills and other original documents, and accounting records, which will inevitably cause errors in the transaction process, or be tampered with in the original data. For example, in the case of Luckin Coffee, the company inflated its revenue and inflated advertising expenses, all of which were directly created fake original vouchers for accounting operations. The peer-to-peer computer network in blockchain technology can directly copy and share the data when the transaction is generated, so that all participants can see the information and data

without going through a third party. In this network, everyone can become a provider of information resources and a user of information, so as to achieve the purpose of openness and transparency, and make transaction information more accurate and reliable.

2) Blockchain technology improves the relevance of accounting confirmations

Accounting recognition is to confirm whether the relevant information of the project is useful in the decision-making process of the user. Different accounting information for the same economic transaction can bring great differences in the decision-making of information users. Accounting primarily recognises the inflow and outflow of relevant future economic benefits and whether the monetary amount of the cost or value of the item can be reliably measured.

At present, the accounting confirmation is classified and confirmed by the financial personnel according to the accounting standards by reviewing the original vouchers. Sometimes, when encountering economic operations with complex accounting elements, there may be problems where the accounting confirmation information is not irrelevant. For blockchain technology, when the data of a transaction is agreed into a block, everyone can gain access through the hash function. When information users make decisions, they can obtain useful information through the data stored in the blockchain, and can easily and quickly find the data of related businesses, which greatly improves the relevance of accounting confirmation. This reflects the traceability and immutability of blockchain technology.

3.2.1.2 Accounting Measurement

Monetary measurement is one of the basic accounting assumptions in China's current accounting standards. China's Basic Standards put forward five measurement attributes, namely historical cost, replacement cost, net realizable value, present value and fair value. Accounting measurement is a prerequisite for accounting recording and reporting, while monetary measurement units are the basic conditions for accounting measurement attributes. Therefore, the study of the advantages of blockchain technology in accounting measurement is also carried out from these two aspects.

1) The impact of blockchain technology on monetary measurement

Accounting measurement requires a unit of measurement that can integrate various types of economic operations as a common measure of the impact and results of various economic operations. Under the conditions of a commodity economy, money is the general expression of value, so this common measure is the monetary unit. At present, China's accounting is based on the renminbi as the base currency. Units whose business income and expenditure are mainly in currencies other than RMB may choose one of the currencies as the base currency of accounting, but they need to be converted into RMB when preparing financial statements.

Since the advent of Bitcoin, digital currencies have grown rapidly in various countries. At first, private digital currencies such as Bitcoin and Libra entered the market, and later countries continued to promote the development process of digital currencies. In the just-concluded Fourth Session of the 13th National People's Congress, the digital yuan launched by China's central bank has received widespread attention and has begun to be piloted and promoted in some regions. As one of the underlying technologies of digital currency, blockchain technology occupies an important position. Therefore, incorporating blockchain technology into the accounting system and docking with the payment and settlement system of digital currency in the future can help enterprises track business cash flow more accurately and make monetary measurement more efficient and accurate.

Blockchain technology can track the whereabouts of money, and you can grasp the total amount of money and the speed of currency circulation, so as to avoid the problem of artificial repeated return and utilization of current currency.

2) The impact of blockchain technology on metrological attributes

Historical cost, replacement cost, net realizable value, present value and fair value are the five measurement attributes in China. Among them, historical cost is a measurement attribute commonly used in current accounting, because historical cost is the most convenient to obtain, and generally only the original voucher is used as evidence. It is currently the most objective, easy-to-understand and easy-to-verify metrological attribute. However, the reference to

historical cost measurement is still opposed by many economists. Based on the accounting information provided by the financial statements, the information users of enterprises should predict the changes in the company's cash flow and the development and changes of the economic market in the future, so as to make better decisions for the future. However, with the continuous development of the economic market, the uncertain factors of the economic environment increase, the upgrading of commodity types and the speed of innovation accelerates, the trading market will become more and more active, which may increase the change in transaction prices. However, historical cost measurement is only the data of the past stage, and the transaction information that has just occurred has not been recorded and sorted, and the information users cannot obtain the latest data, so the historical cost measurement cannot be better used to predict the future. Changes in the market environment and changes in commodity types have put forward higher requirements for accounting measurement attributes.

Blockchain technology can be formed by forming blocks, providing more comprehensive, objective and reliable data information for various measurement attributes. In the blockchain, each transaction will be timestamped, and these transaction information and data can record the change process of accounting elements from initial measurement to subsequent measurement and related economic business information, which can provide a basis for tracing the change process of accounting elements and predicting subsequent development. Users of accounting information can quickly obtain the most recent economic information to facilitate forecasting.

In addition, the smart contract in the blockchain can input logical rules for different levels of fair value, which can improve the efficiency of fair value measurement.

3.2.1.3 Accounting Records

Accounting records are the process of bookkeeping economic operations that have been confirmed and measured by accounting, so as to form account books. The current accounting bookkeeping adopts the double-entry bookkeeping method, which requires financial personnel to ensure the quality of accounting information and the efficiency of records in the bookkeeping process.

1) Blockchain technology fulfills the quality requirements of accounting information

The traditional accounting model is a centralized working method, and the data information of the economic business of the entire enterprise is mainly in the hands of the accountant. The economic and operational data of various departments are compiled by accountants, and others do not know whether the data in the account book are true or not, and need to be specially reviewed by auditors. The major disadvantage of this method is that it is impossible to verify the authenticity of the account books in a timely manner, resulting in the widespread occurrence of financial fraud in enterprises. For example, in the case of Luckin Coffee, if no one reported the company's financial fraud, or if it was not detected, it is generally difficult to detect its fraud.

The distortion of accounting information will cause damage to the enterprise and related stakeholders, so the accounting standards have quality requirements for all recorded accounting information: reliability, relevance, comprehensibility, comparability, substance over form, importance, prudence, timeliness, etc. Blockchain technology can make up for the shortcomings of the current accounting model.

Distributed ledger is characterized by decentralization, which can realize the sharing of ledgers, everyone can access ledger data, has the advantages of openness and transparency, and greatly safeguards the economic interests of enterprises and stakeholders. The peer-to-peer computer network and consensus mechanism require each node to only record real transactions, which ensures the authenticity of the data and reduces the behavior of manually modifying the ledger. The smart contract can directly generate financial statements according to the program based on the data in the blockchain to avoid financial fraud.

2) Blockchain technology improves the efficiency of accounting records

The traditional bookkeeping mode is cumbersome and consumes a lot of time, the account book is mostly manually recorded, calculated and compiled by accountants, even if there are many kinds of accounting information systems today, but the original data still need to be manually entered, which will inevitably cause some errors or deviations. When there is

an error, the accountant needs to look for the source of the error, and in the face of a large amount of accounting data, repetitive work, a lot of time will be wasted. When the source of the error cannot be found, the error of the ledger data and the asymmetry of the information will lead to tax evasion and tax evasion, thereby increasing the audit workload and reducing the work efficiency.

After applying blockchain technology to accounting, the economic and business information of the enterprise will be automatically synchronized every time, and there is no need to consume more manpower and material resources, thus improving work efficiency. Contracts will be executed by a pre-programmed program substitute, which will be verified in the public eye, enabling book transparency, tax automation, etc. Distributed bookkeeping also has the function of self-audit, which can automatically verify each transaction, reduce the workload of auditors, and also ensure the standardization of auditing, and play an invisible role in supervising the account books of the accounting department. In addition, it can also reduce the burden of tax declaration, thereby avoiding tax evasion, gradually improving the efficiency of financial work, and providing a strong guarantee for the authenticity of account books.

3.2.1.4 Accounting Report

Accounting report refers to the documents provided by an enterprise to stakeholders that reflect the financial position of the enterprise on a specific date and the operating results and cash flow of a certain accounting period. Based on the ledger records, the company's operating conditions are passed on to information users by editing tables and text descriptions to help them make the right decisions.

1) Blockchain technology enables users of financial statements to make the right decisions

Corporate financial statements are generally compiled by accountants, and the information provided is the basis for users to make decisions, so it is particularly important. There are a number of problems with the current accounting presentation model: first, the lack of timeliness of reporting. The report user can only know the financial information of the previous point in time, but cannot know the financial information of the current stage, which is not conducive to the user's decision-making on the current and future development of the company. Second, the current financial report is relatively simple, and only the final static data can be seen, and the report users cannot connect the numbers with economic operations. Finally, even if a company has an internal control system and external audit control, there is still a problem of falsifying financial statements. For example, Luckin Coffee's published financial statements are very different from the actual evidence of Muddy Waters' investigation.

Blockchain technology solves this problem. The relevant financial data information on blockchain technology is also derived from the accounting confirmation, measurement and recording links on blockchain technology, and economic operations will be recorded on the distributed ledger under the accounting rules of smart contracts. Through a series of cryptography and timestamp storage, the data can be updated autonomously, and the financial data is consistent with the economic business throughout the process, reducing the dependence on manual regular verification and correction. At the same time, the financial data in the distributed ledger will be shared among the blockchain nodes, avoiding the tampering of data by a single individual. This allows users of financial information to access data information and generate financial statements at any time through keys without time constraints, making financial statements more time-sensitive, more reliable and more accurate, and thus more conducive to users to make correct decisions.

2) Blockchain technology can avoid ethical risks

It is precisely because of the characteristics of blockchain that it cannot be tampered with, open and transparent, and full traceability that professional ethical risks can be avoided.

If blockchain technology is used in the accounting confirmation of economic business from the beginning, then all accounting information will be open and transparent, updated synchronously, and will be maintained by all nodes. If someone violates the professional ethics of accountants and tries to tamper with the accounting information on the blockchain, they need to control 51% of the blockchain nodes before they can break the blockchain and make modifications. But each node is formed by a series of advanced

cryptographic and functional algorithms, which are generally difficult to crack. And it is very difficult to crack not only the node that you want to tamper with, but also all the blockchains in front of the node. Therefore, blockchain technology is very secure for accounting information and can avoid the damage caused by professional ethical risks to enterprises.

3.2.2 Advantages of Blockchain Technology Applied to Internal Audit

3.2.2.1 Blockchain Technology Improves the Work Efficiency of Auditors

In addition to having an internal audit system, an external audit firm is generally invited to conduct an audit, especially a listed company, which needs to show stakeholders the real business situation of the company to ensure their interests. After the blockchain technology is applied to accounting work, the audit firm can be added to the blockchain network of the audited enterprise in the external audit process, which facilitates the external auditors to obtain information. External auditors can obtain the most authentic and reliable data information by authorizing access to all transaction data of the enterprise, reducing the workload of staff re-audit, improving the efficiency of staff work, and reducing audit errors.

3.2.2.2 Blockchain Technology Can Reduce Audit Costs

Connecting the network of external auditors with the blockchain system of the audited enterprise is conducive to the staff to obtain effective information, so it improves the efficiency of auditors and reduces audit costs. Auditors can directly review the economic and business transactions of the enterprise through the network at the place of work, without the need to go to the location of the audited company to conduct the review, which reduces travel costs. At the same time, all data information is stored through the blockchain network, which reduces storage costs and related costs.

4. Risks of the Application of Blockchain Technology in the Accounting Industry

4.1 Technical Risks

Blockchain technology has the characteristics of non-tampering and traceability, so it ensures the authenticity of the ledger data to a certain extent, greatly protects the accuracy of the ledger information, and the common authentication of multiple nodes can also protect the ledger.

But blockchain technology is not completely secure. At present, the security technology of the blockchain cannot guarantee that it can fully resist external malicious attacks. If there is a high-tech hacker or hacking team, as long as they breach 51%-60% of the blockchain nodes, then they can modify and steal data information at will, and its security cannot be completely guaranteed. The asymmetric key mechanism plays an important role in maintaining the security of the blockchain, but there is still a danger of confidential information leakage caused by "black technology" attacks, which greatly endangers the interests of enterprises.

Blockchain technology is in the early stages of development, and technology development is not yet fully mature. Among them, smart contract technology is a computer protocol planned in advance, and while data is shared, its problems will also be seen by all nodes on the blockchain, exposing the problem, which is undoubtedly dangerous. In addition, the data information stored by the blockchain comes from external economic transactions, and if there is a problem when the transaction information is uploaded at the beginning, even if the blockchain technology runs completely correctly, the authenticity of the stored information cannot be guaranteed, and the effective value of the blockchain technology cannot be realized.

4.2 Regulatory Risks

The emergence of new technologies requires the development and application of new regulatory regimes. As a new technology developed in China, blockchain technology is widely used and can bring new changes to all walks of life. However, at the same time, new problems will arise in the process of technology application, which requires relevant departments to formulate relevant systems for supervision on new problems. The application of blockchain technology in various fields is still in its infancy, and follow-up practice is needed to discover the existing regulatory loopholes, and there are regulatory risks in this process, and some enterprises may be harmed by their interests.

4.3 Legal Risks

Because blockchain technology is still a new type of information network technology in China, it has not yet been well known by the market and the public, and the country's laws and regulations on it are not very perfect, so

there will be many commercial and economic frauds in the name of "blockchain", which is obviously not conducive to the economic development of the country and enterprises, and also disrupts the market social order. On the other hand, due to the imperfection of the laws on blockchain, enterprises may find loopholes in the law of blockchain when applying blockchain technology, and use these loopholes to obtain benefits and harm the interests of others. These phenomena are not conducive to the development of companies, society, and blockchain technology itself.

4.4 Talent Risk

Technical talent is one of the main factors supporting the sustainable development of blockchain technology. From the market recruitment information, it can be found that the demand for blockchain technology talents in large enterprises is increasing year by year, but there is a lack of talents in related majors, resulting in the problem of short supply.

At present, the research on blockchain technology is still in its early stages, and there is a lack of technical experience in this area, and there is not enough technical experience to provide teaching materials to colleges and universities, resulting in a lack of not only high-level talents, but also a lack of experienced blockchain technology teachers.

In addition to this, the demand for accounting talents is also increasing. The operation of the blockchain still requires the entry of raw data, and if the information transmitted by the accountant is not accurate and fast, there will also be information errors or affect the speed of operation.

5. Countermeasures for the Application of Blockchain Technology in the Accounting Industry

5.1 Give Full Play to the Advantages of Blockchain Technology in the Application of the Accounting Industry

5.1.1 Give Full Play to the Advantages of Blockchain Technology in Accounting

The advantage of blockchain technology in accounting is that some of its characteristics can improve the quality of accounting information, improve the efficiency of accounting, promote the steady rise of the enterprise economy, and form a good economic environment.

The senior management of enterprises should learn more theoretical knowledge about blockchain technology, understand the relevant policies and regulations of blockchain technology in accounting applications, and efficiently apply blockchain technology to the daily accounting of enterprises. Pay attention to the cultivation and selection of accounting information technology talents, find problems in the practice of blockchain application to accounting, and change and formulate policies in a timely manner. The characteristics of non-tampering, full trace, openness and transparency, and collective maintenance are flexibly applied to accounting confirmation, measurement, recording and reporting, so as to improve the work efficiency of accounting personnel, improve the quality of the company's accounting information, and promote the steady development of the enterprise economy.

5.1.2 Give Full Play to the Advantages of Blockchain Technology in Internal Audit

The advantage of blockchain in internal audit is that it can reduce the workload of auditors, speed up their work, and at the same time reduce the audit cost of enterprises. Therefore, the combination of blockchain technology and accounting can greatly exert its characteristics, which can facilitate auditors to check information and review economic business data during the internal audit of enterprises. At the same time, the application of blockchain technology improves the quality of accounting information, reduces the probability of financial problems in enterprises, and reduces the audit cost caused by external audits.

Enterprises should fully understand the advantages of blockchain technology in internal audit, use its characteristics, integrate technology into daily internal audit work, and promote the improvement of internal audit and the development of enterprises.

5.2 Avoid the Risks of Blockchain Technology Application in the Accounting Industry

5.2.1 Improve Scientific and Technological Research

At present, the security technology of blockchain technology is still not perfect, and it is likely to leak a large amount of data information. The authentication method of each node should be strengthened, more types of authentication modes should be designed, and the key should be set through more complex cryptographic function algorithms, so as to

create more difficulties for hacker attacks and increase more capital consumption. At the same time, it is also necessary to strengthen the supervision and control of private keys, realize a variety of automatic condition authentication, accelerate the establishment of relevant security guarantee systems, improve the security level of blockchain, and promote the application of blockchain technology in the accounting industry.

5.2.2 Strengthen State Oversight and Guidance

The state should issue relevant policies on blockchain technology, propose some preferential policies, and encourage enterprises to apply the technology to their company operations. At the same time, the government should strictly control the development qualifications of the blockchain platform and establish a sound information transmission channel. It also updated the accounting standards, added relevant standards and supervision systems, and increased publicity. Try to let the economic market use the same blockchain platform, and add all enterprises and relevant government departments to the blockchain, which is convenient for transactions between enterprises and is also conducive to government supervision. The financial department and the information department should cooperate with each other, complement each other, comprehensively supervise the financial information, platform order and operating procedures, and give full play to the role of the blockchain.

5.2.3 Improve the Relevant Legal System

On January 10, 2019, the Cyberspace Administration of China issued the Provisions on the Administration of Blockchain Information Services, which clarified the information security management responsibilities of blockchain information service providers, and regulated and promoted the healthy development of blockchain technology and related services. As a new product, it is inevitable that there will be conflicts of interest in the application of blockchain technology, but the lack of relevant legal standards will cause the interests of some people to be damaged. According to the rights and obligations of users, the financial department should formulate special technical standards for blockchain and issue corresponding application regulations in combination with specific application scenarios to realize the standardization and legalization of blockchain technology.

5.2.4 Strengthen the Training of Technical Personnel

The emergence of blockchain technology has new requirements for talents. For the accounting industry, it can replace a lot of basic accounting work, reducing the need for accounting personnel. This requires accountants not only to master accounting professional knowledge, but also to be familiar with the relevant theories and operations of blockchain technology.

In order to make the blockchain platform play efficiently, colleges and universities should set up relevant majors and courses, and enterprises should also conduct relevant training for accounting employees to understand the advantages of blockchain technology for accounting applications and learn how to use blockchain technology in their daily work. The improvement of the professional level of accounting personnel can improve the quality of work and reduce the possibility of errors in blockchain applications. It is also necessary to improve the professional ethics of accounting personnel and cultivate high-quality talents who understand both professional accounting knowledge and information technology.

6. Summary and Outlook

6.1 Summary

It is the development trend of the accounting industry to apply blockchain technology to accounting and internal audit, integrate it into all aspects of accounting confirmation, accounting measurement, accounting records and accounting reports of enterprises, and use blockchain technology to improve the efficiency of internal audit of enterprises.

Through the case of “Luckin Coffee Incident”, it can be seen that traditional accounting has problems in the recognition, measurement, recording and reporting of accounting information. In the process of economic transactions, traditional accountants cannot fully achieve openness, transparency and full traceability of data information such as expenses, income and implicit related parties, and accountants have the opportunity to modify and change relevant data. At the same time, at the end of the accounting period, it is difficult to check and review in the face of a large amount of data and information, which increases the

workload of accountants on the one hand, and on the other hand, it also makes the final accounting report have the possibility of information distortion. The inaccuracy of the accounting information of the enterprise will cause damage to the stakeholders, and the enterprise itself will also be affected, and at the same time increase the workload of external audit and increase the audit cost of the enterprise. At this time, the application of blockchain technology is particularly important.

Blockchain technology has the characteristics of non-tampering, full traces, openness and transparency, and smart contracts, which can bring new development and changes to the accounting industry. It can improve the process of accounting work, solve the problems existing in the accounting industry, and improve the quality of enterprise accounting information, so as to promote the stable development of enterprises and social economy, as well as the improvement of financial accounting level.

However, there are still limitations in the research content of this paper, and the exploration content is not comprehensive enough. Due to the fact that the application of blockchain technology in the accounting industry is in its infancy, there is a lack of actual data for the application in the accounting industry, so it is temporarily impossible to conduct quantitative research and analysis and draw more detailed conclusions. However, with the research and further application of blockchain technology in the accounting industry, the application of blockchain technology in the accounting industry can be quantitatively studied and discussed, and the application of blockchain technology in the accounting industry is still the main research direction of the accounting industry in the future.

6.2 Prospects

6.2.1 Blockchain Technology Promotes the Development of Management Accounting

At present, with the improvement of science and technology, computerized accounting has replaced manual financial accounting, making management accounting the main accounting development direction of enterprises and society. The application of blockchain technology in accounting and internal audit not only improves the efficiency and accuracy of financial accounting, but also improves the vision and level of management accounting. Blockchain technology can promote the development of management accounting from the technical level, management accountants can obtain more comprehensive, multi-dimensional, and more business-oriented financial data from more accurate and efficient financial accounting information, and the characteristics of blockchain technology can ensure that management accountants can trace and track financial data at any time for management accounting analysis and guidance. Business stakeholders can also make better use of accounting information to provide stronger support for decision-making.

At the same time, the real-time updated data and complete information are conducive to the formation of an objective reference, helping management accountants to complete management accounting work such as management performance evaluation and economic forecasting, which can provide more reliable data for the future development of enterprises and provide correct strategic decision-making and forecasting directions for management accountants.

6.2.2 Blockchain Technology Promotes the Transformation of Accounting Technology

The application of blockchain technology continues to promote the transformation and upgrading of accounting personnel. Smart contracts can be self-bookkeeping, real-time reporting, real-time auditing, all of which have alleviated the work of current accountants and auditors and improved their work efficiency, but at the same time, accountants are also facing huge challenges, traditional accounting work no longer needs a large number of staff, and high-level technical accounting work often needs more talents. In this case, the self-improvement and transformation of accountants is essential. Enterprises are more focused on the data analysis of management accounting, and blockchain technology has brought more accurate accounting information to the accounting industry, which requires accountants to improve their ability to analyze data and use data to make decisions and predictions. At the same time, it is necessary to learn blockchain technology and enrich its ability to use information technology to adapt to the new accounting environment.

The emergence of blockchain technology, in

addition to affecting the changes in personnel and focus on the accounting industry, provides a trusted channel for information and value transmission and exchange in the Internet, which is changing the existence mode of traditional accounting. The experimental integration of blockchain technology with the Internet of Things and artificial intelligence, as well as the development of 5G transmission networks and quantum computers in the future, can provide a higher guarantee for the speed and efficiency of blockchain technology, thereby promoting the development of blockchain accounting. Blockchain technology has the integration of a variety of new science and technology, and the combination of this technology and accounting can promote new changes in accounting technology.

The application of blockchain technology to accounting will become a new trend in the future industry progress, and the exploration of the impact of blockchain technology on accounting will also become a cutting-edge research in the future. The future change and development of the accounting profession will become our concern and expectation.

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