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Application of Blockchain Technology in the Teaching of Engineering Project Management Major

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Abstract: *With the emergence and continuous development of blockchain technology, it is also widely used in project management. In order to meet the needs of social development, we have a certain competitive advantage in domestic and foreign markets and adapt to the development of the times. After introducing technology into project plan management, blockchain can effectively improve project management efficiency and management level. Blockchain technology has been widely used in all stages of the project, but many research and application in the construction stage are not enough. At present, the research on blockchain program management based on Technology in China is relatively less, and the research scope is relatively limited. At the same time, the application of blockchain technology in project program management has great limitations, which makes the application of blockchain technology more accurate. This price cannot be used in full. Therefore, this paper studies the application of blockchain technology in plan management from a new perspective, which has specific theoretical value and practical significance for application practice. In this paper, a large number of data are classified and collected by combining with the existing statistical methods to contain a large number of reference materials. The blockchain model is introduced into the schedule management to solve the existing program management problems. Firstly, it studies the information formation model for four dimensions, which is the basic management technology of blockchain program. This paper establishes the framework of schedule management system based on traditional blockchain software tools,and further explores the application of blockchain technology in the process of schedule management. Compared with the previous analysis, the differences of program management before and after blockchain technology introduction and solving the existing problems are compared again. Finally, it summarizes the current blockchain technology, puts forward the obstacles in the application of blockchain technology in plan management, and puts forward the countermeasures and suggestions for the application of blockchain technology in program management, so as to provide the basis for the report. This technology has improved management efficiency by more than 30%.*

Keywords: *Blockchain Technology, Construction Engineering, Project Management Teaching, Building Information Model*

1. Introduction

The domestic construction industry, like many other traditional industries, is also facing fierce competition from many large foreign companies, and compared with other industries, the pace of the construction industry to conform to international standards is obviously much slower. Engineering project information management system realizes process integration and business process data concentration on the basis of information integration, which has attracted more and more enterprises and research units' attention. The research significance of project management planning lies in its necessity, which is of great significance to the development of construction enterprises. Existing cloud-based distributed high-performance computing infrastructure costs are too high, and the operation is too complicated, which brings challenges to the application and practice of blockchain.

With the development of modern science and technology, the globalization and internationalization of modern economy, and the increasingly fierce, complex and severe market competition. Due to the complexity of the project itself and the uncertainty of the implementation environment, there are more and more problems in the process of project implementation, such as insufficient resources, overtime and budget overrun in the project plan. Blockchain project management is an effective way to solve this

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problem. Blockchain project management is a new technology, which is used to manage the project plan based on constraint theory. It solves the defects of traditional program management technology in planning and arranging activity time and controlling activity time, emphasizes the continuous improvement and dynamic management of the whole project program, and adopts the methods of critical chain identification, buffer setting and promotion, and management buffer monitoring. Improve the management level of project plan.

Yong y believes that blockchain can solve the trust problem of multiple parties. As a decentralized, unchanging and traceable distributed database managed by many parties, blockchain can establish reliable trust between parties who do not know each other. Without the coordination of third-party intermediaries, it implements reliable data exchange and peer-to-peer value transfer [1].Ouyang Xu believes that as a newly emerging distributed database technology, blockchain technology should have relatively large market potential in the future energy Internet. Therefore, the research on how to apply the blockchain technology to the direct purchase of electricity by large users will not only help to promote the reform of the electricity market, but also promote the practical application of the blockchain technology with the development of the power system to the energy Internet. However, blockchain technology has just started and lacks in-depth research [2].Ji Yannan believes that municipal engineering is an important part of urban design, and its overall construction quality is closely related to people's daily life. Most of the municipal project construction is carried out under the active cooperation of different departments, therefore, it is particularly important to have an excellent construction management. In a construction process. From the perspective of building foundation materials, the characteristics of municipal engineering make it easy to affect people & apos; s daily life in the construction process. Therefore, the construction management also has the ability to coordinate various processes and take effective measures according to the actual situation, and the impact of construction can be controlled at the lowest level. But the construction cost will be greatly improved, and the practicability is not strong [3].

Its innovation is to integrate cost,progress, information and other data information into one by using three-dimensional building model to realize the sharing of data and all kinds of information. In the real sense, it can solve the problems of poor information exchange, data can & apos; t be updated in time, data inaccuracy and so on in the project cost management, and realize the whole process of construction cost management To reduce enterprise costs, improve the economic benefits of construction projects, and promote the sustainable and stable development of China & apos; s construction industry. Through the critical chain technology, the semiconductor factory construction time was successfully reduced from 46 months to 14 months; lucent also reduced the launch time of a new product by 50%(1999). All these show that the blockchain technology has greatly promoted the development of engineering project management in terms of details. Expose the system focus covered by engineering project management through intuitive data, which will enable students to grasp the main points in the learning process.

2. Engineering Implementation Method of Blockchain Technology

2.1. Discussion on the Method of Blockchain Construction Mode

Blockchain model is usually used in the following areas: distributed applications, large-scale and long-standing applications, where interface and back-end portability are very important, where multiple methods of observing and processing data must be used to support modern and modular development. They allow work to be distributed based on skills, simplified unit testing, and the use of blockchains that can be reused in different applications [4].It can be seen from the above analysis that the following benefits can be obtained by using the blockchain model for system design:

1) Clear design: it & apos; s easy to understand how to control the behavior of the model with the help of the methods used in the model to process the data and its state. When designing an application, this method helps to run and maintain the whole program.

2) Module efficiency: any component or even the whole module can be replaced if necessary, and changes to the projector, controller or model will not affect other aspects [5].Different components can be developed at the same time.

3) Code reuse and Design: the widespread use of reusable components can reduce the cost of developing new projects. By reusing design [6], we can better understand the communication between the development team and the designed system.

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4) Easy to maintain: controller and view can be extended according to model extension. You can use older controls and displays as long as you keep the public interface [7].

5) Powerful user interface: this user interface is combined with model method calls. The "standard "commands sent to the model are triggered by user actions. In this way, the program can be shared with users through a clearer and more user-friendly interface [8].

6) Allow multiple user interface extensions: in MVC mode, there is no need to map views and models, and all content is mapped through the controller [9].If you want to add a new user interface, all you have to do is change the appropriate views and controllers without changing the model.

2.2. In This Paper, the Experimental Methods Are Summarized

Executive decision makers at each level only focus on doing their own work well, and basically do not consider the project management level of the whole process. In the cruel market competition, relying solely on the traditional management model is no longer sufficient for modern projects. Construction requirements. The basic idea of this development mode is: in a certain field, the domain frameworks of different systems and different versions are basically the same or similar, it can be used in all systems in the field [10], or a reasonable framework can be used to deal with such problems, which reflects the commonness of all systems in the field. The domain framework is mainly oriented to domain reuse and can achieve the goal of large-scale software reuse[11-12].Domain engineering is a process of general domain analysis, building domain model, designing general domain framework and developing reusable components. In domain engineering, user requirements are used to build a set of reusable and modifiable components and computing software units to build a flexible dual life cycle model product line. It provides a highly structured and systematic reuse foundation within the product line organization. Application engineering only needs to select the existing reusable components under the knowledge of the domain framework [13-14], and can quickly build the target application system by assembling the system. Therefore, the above methods are summarized and discussed

(1) Literature research method: through HowNet, Wanfang and other academic platforms, this paper downloads more than 120 papers based on keywords: "blockchain technology", "whole process cost management of blockchain technology application" and other related papers, of which more than 40 papers are extracted as reference;

(2) Case analysis method: because I have some practical experience and theoretical knowledge in each stage of the project cost, I have mastered some basic research methods of the whole process cost management. Therefore, combined with work experience, I introduced relevant cases into this study, which laid a certain foundation for the analysis of the same business from various aspects and higher-level discussion

(3) Investigation and research method: due to the practical work experience of mechanical and electrical installation and the introduction of cases, I have provided the basis and support for the in-depth study of this paper[15-16].I will adhere to the scientific and rigorous, serious and responsible attitude, go deep into the case enterprises for investigation and research, widely consult the relevant theories and policies[17-18],comprehensively summarize the experience, carefully analyze the problems, and put forward reasonable suggestions, and strive to achieve the conclusion The reasoning is well founded and powerful.

(4) Qualitative comparison method: collect and consult papers, use qualitative comparison method [19-20], compare the existing project management technology and the project management progress technology after the introduction of blockchain model, through careful study of their various characteristics [21],compare the progress management gap before and after the use of blockchain technology, and analyze and draw conclusions.

3. Application Research Experiment of Construction Management Teaching

The purpose of system modeling is to describe something through a certain tool, so in order to describe the information system well and let developers communicate with business personnel, we use rational rose as a modeling tool to describe the system. The above has introduced the system architecture macroscopically, and divided the system into independent subsystems according to the function, and described the relationship between the subsystems. Now from the micro level, we conduct in-depth analysis according to the user needs of each subsystem and the results of business

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research[22-23],and based on the design principle of ease of use, deeply understand the user & apos;s operation process, extract each use case.

Firstly, two prime numbers P and Q are randomly selected and multiplied to obtain an integer n. Next, the two prime numbers are subtracted and multiplied to get f, and then an integer E which is not greater than f and coprime with F is selected. D is obtained from formula 2.1.

$$d'*e^{1}=1 \bmod (f) \tag{1}$$

Where (E,n)is the private key, M is a group of codes of plaintext[24-25],and C is the key.

$$\mathrm{cd}_{\mathrm{n}}^{1}=\mathrm{m}\sqrt{\mathrm{N}}(\mathrm{mod}\ \mathrm{n}) \tag{2}$$

Of course, the above only describes the sub-system of contract subcontracting. As for the other modules of the system, we will not introduce them one by one. In general, we mainly analyze the relationship between users and the business process of users. Only by clarifying these business relationships can we carry out the follow-up system development, shorten the development cycle and improve the software quality [26].For binary tree structure, suppose the total number of nodes is n, the depth of the tree is depth, and N is the number of leaf nodes

$$\mathrm{N}\geq \mathrm{n}+\frac{\mathrm{n}}{2}+\frac{n}{4}+\mathrm{Q}=2\mathrm{n}+\mathrm{M} \tag{3}$$

There are two ways to solve this problem: one is to abandon all the existing application systems and re develop a set of enterprise resource planning information management system which is suitable for construction enterprises [27], has customizable business processes and covers all the businesses of enterprises. The advantage of this method is that all applications run on the same platform, with high stability, fast speed and convenient maintenance. The disadvantage is that the manpower, material and financial resources invested in the early stage are huge, lack of professionals proficient in all business of construction enterprises [28], long development cycle and high failure rate, so it has great risks

$$\log_2 n+1\leq \mathrm{DR}\leq \log_2 \mathrm{n}+2 \tag{4}$$

It can be seen that under the binary tree structure, the total number of nodes and the tree height depth increase linearly with the increase of the number of leaf nodes n

$$\mathrm{DR}=[\log_2 \mathrm{N}]+2+\sin 2\mathrm{n} \tag{5}$$

Therefore, for the Merkle tree generated by N data files divided into blocks, there is the following relationship:

$$2\left[\frac{2}{\mathrm{m}}\right]+\left[\frac{\mathrm{m}^{\mathrm{d}-1}}{2}\right]\leq \mathrm{n}\leq \mathrm{m}^{\mathrm{d}-2}\times \mathrm{n} \tag{6}$$

The depth of Merkle tree is as follows

$$\log_n m\leq \mathrm{DR}\leq \log_{\left[\frac{\mathrm{m}}{2}\right]}\left(\frac{\mathrm{n}}{2}\right)+1 \tag{7}$$

After receiving the evidence [29], the client executes the checkproof algorithm to verify whether the evidence is true

$$\mathrm{Q}(\alpha,\gamma)=\mathrm{Q}\left(\sum_1^{\mathrm{si}}\mathrm{H}(\mathrm{m}||\mathrm{si})\times \mathrm{u}^{\alpha},\mathrm{v}\right) \tag{8}$$

Because the system adopts B/S architecture, the selection of web server and the configuration of running environment are particularly important. After investigation and research, we found that in the actual business operation process of the enterprise, the concurrent amount of user access to the server is about 60-70 person times. Therefore, Tomcat, which is open source and free, is selected as the web server of the system, which can not only meet the actual situation of the enterprise, and it is economical. At the same time, considering the cross platform characteristics of Java language, when the company grows with the increase of business, Weblogic with more concurrency and stronger transactional can be selected as the web server in the future, without changing any Java code, and the enterprise data and actual business will not be affected. This paper first describes the development and application of critical chain project management technology [30], analyzes the research background, current situation and key links of blockchain project management technology, and expounds the research purpose and significance of the paper. Then it introduces the research ideas and main contents to be studied. Finally, it puts forward the research methods to be adopted and the innovation points to be put forward. In short, we need to make full use of these tools in the actual project, to obtain all kinds of accurate data and information, and improve the efficiency of bidding, which is our ultimate goal.

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4. Blockchain Technology in Construction Management

4.1. Experimental Analysis of Project Cost of Blockchain Technology

At present, the method to determine the project cost in China is to calculate the engineering quantity according to the construction drawings, then use the list pricing software combined with the quota group price to get the direct cost of the project, and then calculate the indirect cost according to the measure fee, fees, taxes, etc., and finally summarize the project cost. This shows that the basis of project cost is also based on the construction drawings, so whether the design can control the level is particularly important. But in the process of project construction investment, investors are focusing on the following construction, and directly ignore the impact of design. For example: whether the ratio of reinforcement is the most economical, whether the selection of building materials is economical, whether the design quality and function meet the specification requirements, and avoid the increase of project cost caused by design changes in the construction process. The specific process is shown in Table 1:

Table 1: Analysis of cost management at different stages

	Construction stage	Cost management content	Calculation basis
Investment decision stage	Project proposal, feasibility study and preparation design task book	Prepare investment estimates	Investment estimation indicators, previous similar project cost data
design phase	initial design	Preparation of the overall design budget	Preliminary design drawings, relevant budgetary quotas or budgetary indicators
Bidding stage	Bidding	Compile the block price(mark Bottom)to determine the contract price	Construction drawings, consumption quota and relevant funding standards
construction stage	Contract/Project Implementation	Control cost, stage settlement	Control according to the contract price
Completion acceptance stage	Completion acceptance	Completion settlement/final accounts	Completion settlement(final accounts)and other documents

From the description and analysis of the multi fork Merkle tree, we can see that the depth of the binary Merkle tree constructed with the same number of data blocks is smaller, which means that in theory, the number of nodes visited by the multi fork Merkle tree node in query verification is less than that of the traditional binary Merkle tree, which reduces the system overhead and improves the efficiency of query verification. In order to verify this description, in the experiment, we simulate the data file inspection and obtain the inspection time data. In this process, we need to use cloudsim simulation platform to simulate the remote server. First, initialize cloudsim, compile and run the extension classes and data integrity test related classes in the simulation remote server, and listen to the request data sent by the client. In order to simplify the simulation process, the simulation test of data file correctness test does not include the initialization process of generating homomorphic label set and building multi fork Merkle tree by client. Six programs are written in MATLAB language to realize the buffer setting of critical chain project management technology. The fifth chapter involves monitoring the progress of critical chain project management. Progress tracking is an important part of critical chain management technology.

The main idea is to determine whether to take management measures by analyzing the buffer usage in the process of project implementation, for example, to evaluate the possibility of project delay and ensure that the project is completed on time. On the basis of "two boundary points", this chapter puts forward a new method of tracking progress-"28 method". Buffer usage and project completion are divided into three levels. These two levels are represented by 9 states, which constitute each policy operation of 7 levels (i.e. introducing buffer breakthrough and decision operation diagram).According to the project, determine the degree of completion and check the critical chain in real time to ensure that the project is completed on time. Only consider the process of sending request from client to get

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the verification result of server evidence. Ignoring the data transmission delay and other factors, this process can be simplified into two processes: node search and verification calculation. Therefore, this experiment mainly studies the time cost of these two processes. It can be seen that the two tree structures are inversely related to the size of file blocks, but the multi fork Merkle tree still has better performance. The experimental results are shown in Table 2:

Table 2: Comparison of data file inspection time

Data size(KB)	4	40	400	4000
Total number of files	1621	815	262	263
Multi-forked Merkle tree(ms)	45	24	17	12
Binary Merkle tree(ms)	109	46	39	26

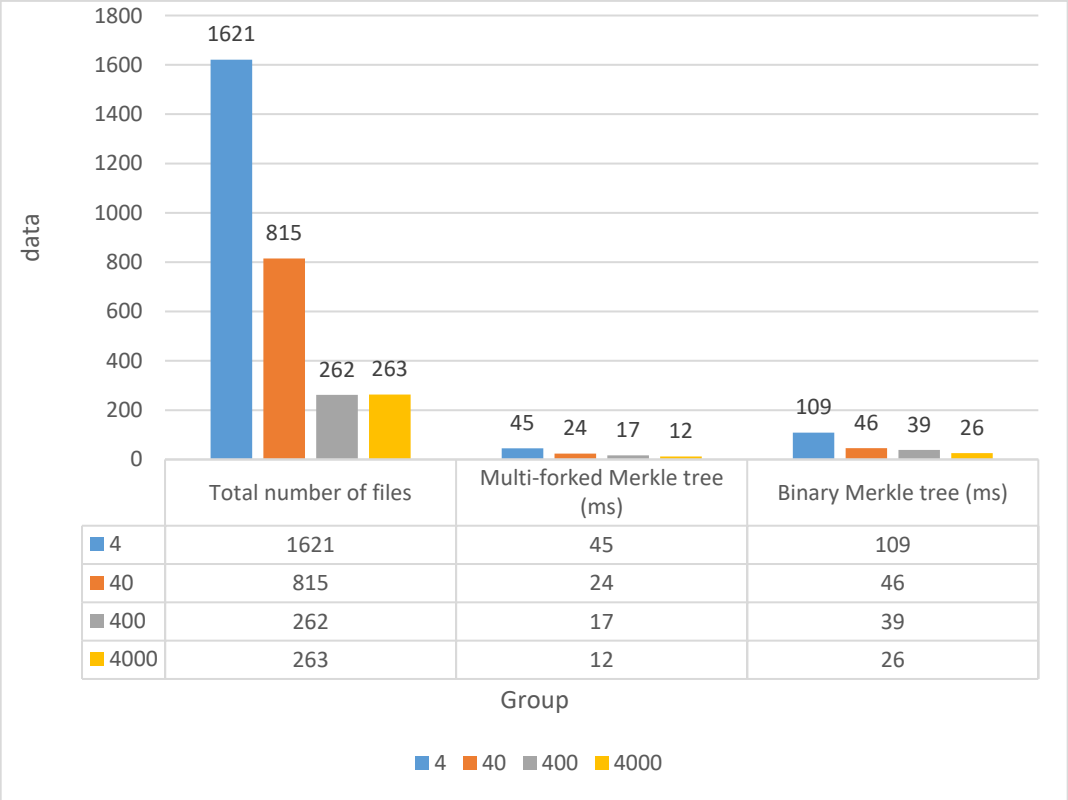

Figure 1: Comparison of data file inspection time

As shown in Figure 1,the research results show that the application of blockchain to construction projects can generate many aspects of income, and all participants in the construction project(such as owners, property management, designers, contractors, material suppliers, etc. can benefit from it, and their income content and degree are also different. Among the owners, blockchain application is one of the most profitable beneficiaries, which is mainly manifested as follows: in the process of project decision-making, the application of blockchain helps to obtain very accurate resource and cost analysis, making the decision-making scheme more stable and reliable; in the process of project design, the visualization of blockchain helps to further improve the rationality of products; in the process of project implementation, blockchain can be used to strictly control the cost Monitor the whole process of construction, product performance and quality, control design changes, so as to reduce the project cost, shorten the construction cycle of the project, and finally increase the investment income of the project. Therefore, the owner is not only the main driving force behind the blockchain application, but also the main decision maker of the construction project implementation. In the initial stage of the project, the technical and financial solutions chosen by the owner lay the foundation for the whole project. Although other participants also benefit from it, they usually do not want to bear the potential redundancy risk caused by the use of blockchain, so the impetus to implement blockchain is insufficient. Because the blockchain application includes every link in the whole construction cycle, once the blockchain is applied, the implementation, design, cost management and other parts of the project will be closely linked with the blockchain. The owner is at the front end of the industry (except

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the construction administrative department and the government),and is the general organizer of the blockchain application, It plays a decisive role in the choice of project work mode and is the "motor" to stimulate the change of construction industry. Many practices also show that in the early stage of project implementation, if the owner can actively or compulsorily require the application of blockchain, it can effectively implement blockchain in the project. For example, during the construction of Shanghai Center Tower project, the owner regards the implementation of block chain as one of the main objectives of project implementation in the initial decision process, and implements the use of block chain in the rating index system. On the inside. All of these have greatly helped the successful implementation of block chain in Shanghai Center Tower construction.

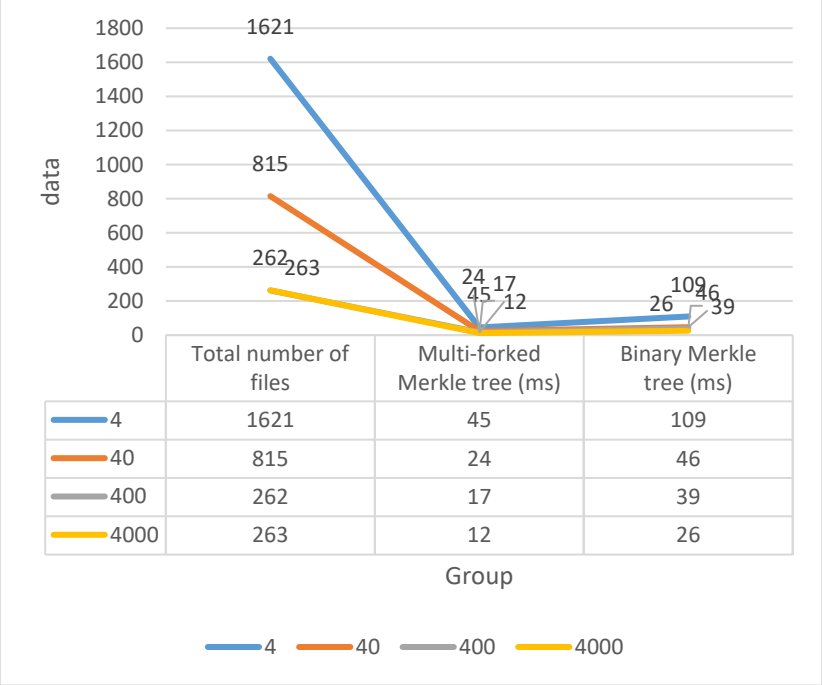

Figure 2: Comparison of data file inspection time

As can be seen from the experimental results in Figure 2, with the increasing number of participants in quorum, the computing time will increase. However, compared with the traditional blockchain scheme, the impact of this scheme on the computing time is greatly reduced in the case of different scales of quorum. Even compared with the optimization scheme in the literature, this scheme has a better effect, which also means that this scheme is more effectiveIt has good scalability.

Based on the existing related achievements, this paper reviews the research status at home and abroad, discusses the theoretical basis and basic ideas of critical chain project management technology, and according to the characteristics of construction projects and the basic methods of critical chain technology, studies the application of critical chain project management technology in construction projects. Due to the use of component and framework technology, it is difficult to use traditional software Engineering method has a great influence, so a new software development method is formed: Framework and component-based development method or development mode. This method supports two life cycle model, and its workflow is shown in Figure 3:

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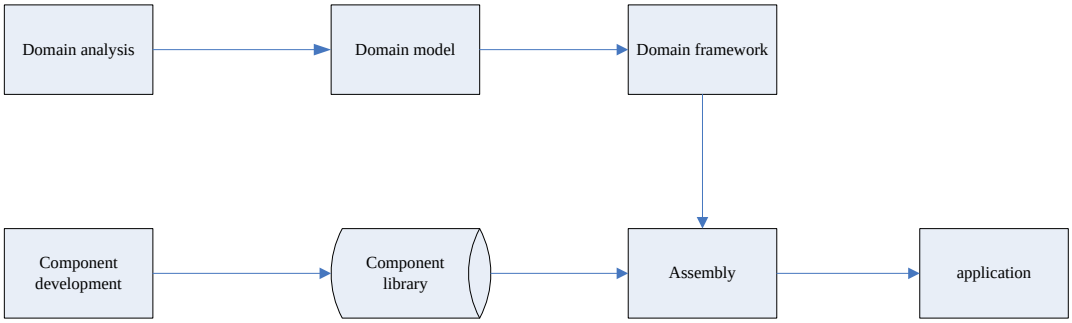

Figure 3: Development flow based on components and framework

4.2. Block Chain Survey Results in Different Regions

At the same time, the government is actively encouraging the popularization and promotion of blockchain, and some states require some large-scale construction projects to adopt blockchain through legislation. In addition, the UK, Australia, Norway, Canada, South Korea, Singapore and Japan have established their own national standards for blockchain, and the popularity is also high. Relatively speaking, China has not yet established a unified national standard for blockchain,such as blockchain application evaluation criteria, blockchain implementation process, blockchain data exchange standards, etc. Moreover, the research on blockchain is only in some efficient blockchain research groups or large design and research institutes, and the research scale is small. The government & apos; s attention to blockchain is not high, and the external environment for popularizing blockchain application is not perfect. Therefore, it is the biggest difficulty for the application and promotion of blockchain in China & apos; s construction industry. The specific data are shown in Table 3:

Table 3: Blockchain adoption rate by region in the U.S and Europe.

	Blockchain promotion and Europe				
area	West coast	Midwest	South	northeast	Canada
U.S Adoption rate	52%	40%	34%	57%	62%
Europe	40%	46%	30%	50%	36%

The satisfaction of both regions is below 70%, which is a new secure multi-party computing scheme based on blockchain. This paper studies the general process of secure multi-party computing scheme and the typical cryptographic algorithms involved, such as secret sharing. This paper studies the scheme of blockchain based on log information, and applies it to the modeling of secure multiparty computing. It uses the consensus mechanism and incentive mechanism of blockchain to achieve a more efficient and scalable secure multiparty computing protocol, but the actual effect still needs to be improved.

As can be seen from Figure 4, blockchain has changed the previous work mode of cost management and project management to a great extent, so it can be called a new work mode in China & apos; s construction industry. However, to adopt this working mode, the company must spend a lot of people, money, materials and time to cultivate blockchain elite talents, purchase relevant technical software and technical talents, and carry out many talent training courses. At present, there is no successful application case in China, which can be referred by many enterprises. If the government does not participate in the support of comprehensive promotion and popularization, the relevant enterprises will not actively change the existing working mode and adopt the block chain with higher cost. In addition, the most important thing is that during the whole construction project, blockchain must use many different technical software such as cost management software, CAD technology software, construction management software and so on to exchange various kinds of information. But this kind of technology software is basically developed by different software developers. If we want to make this kind of technology software realize mutual identification and exchange data, we must establish a unified blockchain data exchange standard.

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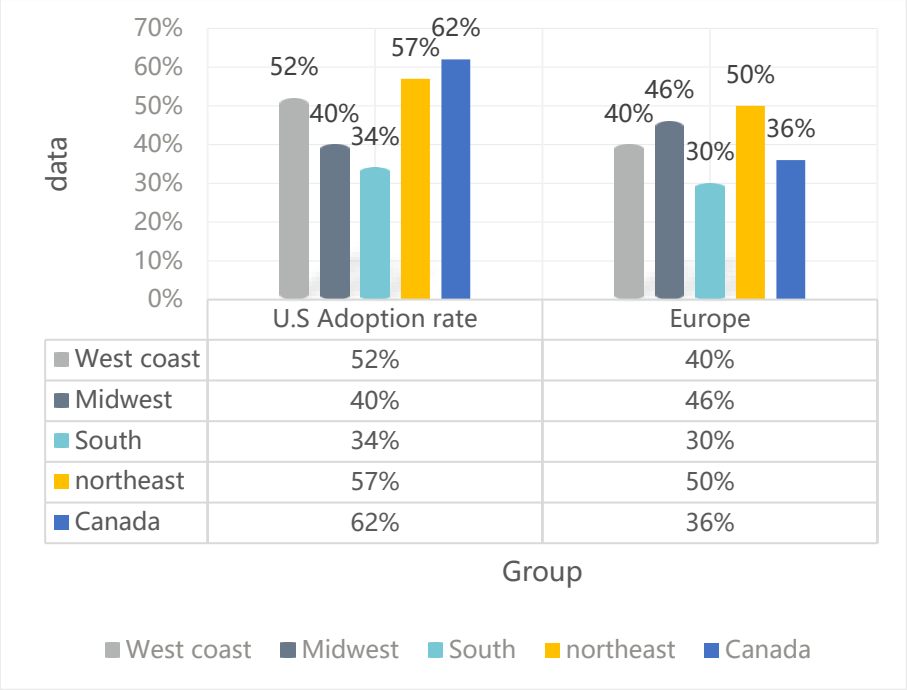

Figure 4: Blockchain adoption rate by region in the U.S and Europe.

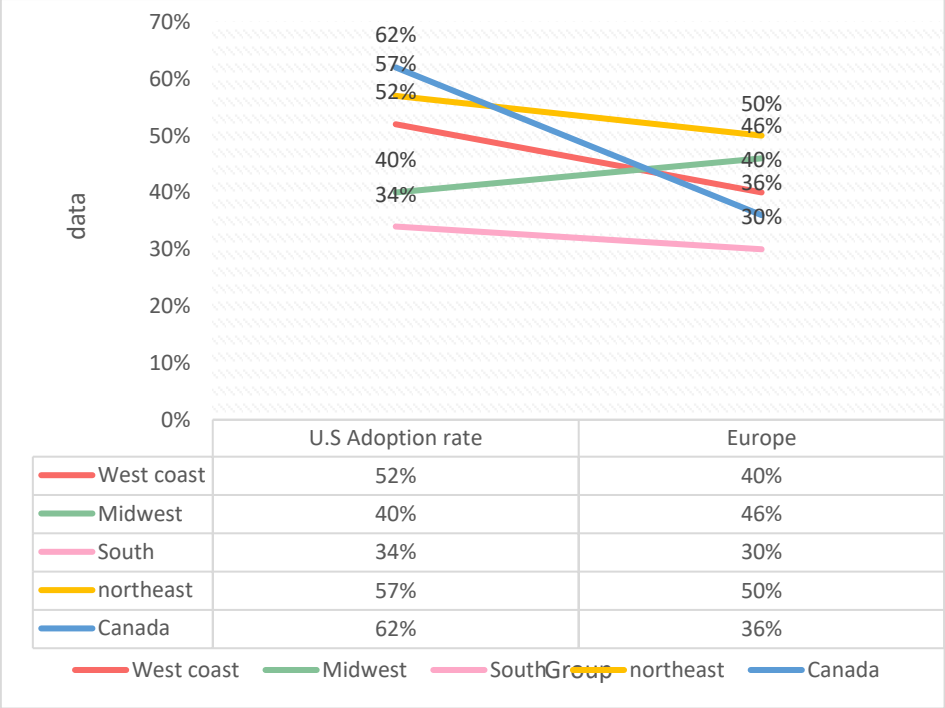

Figure 5: Blockchain adoption rate by region in the U.S and Europe.

It can be seen from Figure 5 that at present, some developed countries have established their own blockchain standards on the basis of the international common data exchange standards. In the analysis and research of 3D building model structure, we can draw the following conclusions: the research of model expansion information is the basic condition for realizing construction simulation. To combine its own conditions with other software or external factors, it is necessary to integrate technology In order to expand other functions, such as cost budget, the elements of management and economy are integrated into the graphic element. The upgraded version of 3D model is 4D building model. The difference between the two lies in the difference of basic information itself and the conditions of external factors, but the systems used are the same. The upgraded condition of 4D model is to combine the basic data of 3D model with construction information, so as to become a complete 4D model and

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realize the function of 4D simulation.

3%to 5%of the project construction cost is caused by avoidable errors.30%of errors are caused by using expensive or outdated designs.60%of the problems in construction projects are related to information exchange. For large construction projects, project changes and errors caused by information sharing account for about 3%to 5%of the total project investment. After the completion of the project, each project participant will have less than 65%of the construction information. In order to prevent the non critical chain process from affecting the development of subsequent critical chain process, the feed buffer (FB) at the entrance of non essential chain is used in the process of non critical chain entering critical chain and core management project management technology. At the end of the process, the project buffer (PB) is set to keep the project delay within the expected range. To protect the duration of the project. Project buffer appears as an activity in the project schedule, but it does not occupy any resources. So as to digest the delay of non critical chain process, to ensure the development of critical chain process. As shown in Figure 6:

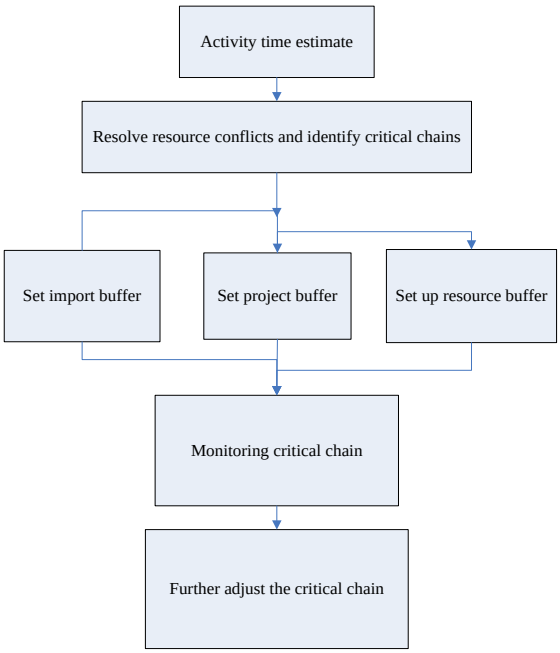

Figure 6: Schematic diagram of the basic steps of critical chain project management technology

This chapter mainly introduces the relevant theoretical basis of the application of critical chain technology, which is divided into the following aspects:

(1)Brief introduction to the theoretical basis of critical chain management technology: constraint theory, critical path method, design introduction technology, collection principle, time statistics.

(2)Organizational behavior includes "student syndrome" and Parkinson & apos; s law.

(3)The basic idea of critical chain project management is put forward: under the condition of resource constraints, the safety time of a single activity is integrated and unified in the project buffer for management based on the starting point of "focusing on overall optimization rather than local optimization". In the process of determining the critical chain, only the processes that restrict the total project duration are considered. A set of these processes is a critical chain. This paper introduces seven basic steps of Critical Chain Project Management: determining activity duration, identifying critical chain, setting three kinds of buffers, monitoring critical chain and further adjusting critical chain.

Block chain technology provides a three-dimensional model integrating the information of construction period, price, contract, change visa, etc., which can share the information of the whole life cycle of construction project in time. In the process of construction, the project participants can update the relevant information in the block chain model according to the real-time progress of the project. In this way, all involved parties can get accurate and reliable information about the project accurately, reliably and at any time, and the relevant personnel can get the corresponding data directly in the block chain information model when checking and summarizing the completed settlement data. In this way, we can obtain effective settlement information and data during settlement, shorten the preparatory work

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of settlement review, and avoid the misleading of invalid information, which not only greatly shortens the settlement time, but also improves the accuracy of settlement. At present, there is no official project management publication in China. This shows that the development status and importance of project management has not yet reached a consensus in the science and technology education circle, and it also shows that the soft and hard environment for the training of project management talents in China is still very backward. At present, China's project management personnel training and qualification accreditation work mostly focus on contractors and supervising engineers, neglecting the training, assessment and qualification accreditation of the owner's project management personnel. Take the content involved in project engineering management and the results achieved after the application of block chain technology as a reference to provide students with a clearer understanding of management learning.

5. Conclusions

The competition of project management companies in the market is becoming increasingly fierce, and with the entry of some well-known foreign project management companies, it is very urgent to cultivate and develop a group of outstanding domestic project management companies. This paper analyzes the problems existing in the project cost management at the present stage in our country: in the process of project cost management in our country, all kinds of relevant information are isolated from each other, which can not allow the project participants to share information in time, cost control is passive, cost related data information is not confirmed by relevant personnel in time, and the cost determination method is static lag, cost control management is backward, limitations and so on. Because of many problems existing in China & apos; s project cost management, the construction industry has gradually become a low profit industry. With the rapid development of society, the traditional project cost management can no longer meet the needs of industry development. For the sustainable development of the construction industry and in order to improve the economic benefits of the construction industry, a new management mode must be adopted. Now it seems that the application of block chain technology in the whole process of cost management is difficult and challenging, but with the development of national block chain technology education in our country, the national block chain technology awareness is deepened, so as to accept the gospel of block chain technology to the construction industry and the whole process cost management to the project cost management. Then, the application of block chain technology in the whole process of cost management is just around the corner.

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