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Research on Problems and Countermeasures of Construction Engineering Management

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Abstract

At present, China's infrastructure engineering has made great achievements, the rapid development of infrastructure engineering has also improved the development speed of China's national economy to a certain extent, and the level of project management is constantly improving, for construction engineering, the effect of project management will directly affect the quality and progress of project construction. Therefore, in the actual management process to establish a sound management system, to take effective management measures, is also a test of the ability and reputation of construction enterprises, so to take effective construction management is very key. In this paper, first of all, a brief introduction to the significance of construction engineering management is presented, combined with the common problems in the current construction engineering management, several effective solutions is discussed, hoping to further improve the level of construction engineering construction, and promoting the sustainable development of the construction industry.

Keywords

Construction Management; Frequently Asked Questions; Effective Measures.

1. Introduction

In the past two decades, the construction industry has developed rapidly and has become a pillar industry of the national economy, playing a vital role in creating social and economic benefits, increasing social jobs and improving people's living standards. According to the data on the construction economy of the 60 years since the founding of the People's Republic of China released by the National Bureau of Statistics, the total output value of Chinese construction industry has exceeded the 20 trillion yuan mark. As can be seen in Fig. 1, since 2010, the proportion of the added value of the construction industry to the total national economy has always been at a very high proportion, and the proportion in 2021 will be the highest in the history, reaching 7.2%.

At the same time of vigorous development, the construction industry has also exposed and derived a series of problems, among which the main problems are the decline of industry profit margins and the problems of construction quality and construction safety. On the one hand, the number of construction projects and the total amount of construction are increasing, and on the other hand, the profit rate of the industry has been declining year by year and the safety and quality problems of construction projects have been eye-catching. In the actual construction process, due to the lack of advanced management concepts and the quality of the construction team, these will affect the overall quality of engineering construction. Some construction companies pay too much attention to economic benefits, while ignoring the durability and reliability of building structures, resulting in huge losses for construction companies. Therefore, in the actual management process, it is necessary to take practical and effective control measures, and combine the actual construction experience to discuss effective measures to improve the construction quality of construction projects. In this article, some

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effective solutions are discussed for common problems in construction management and countermeasures are obtained.

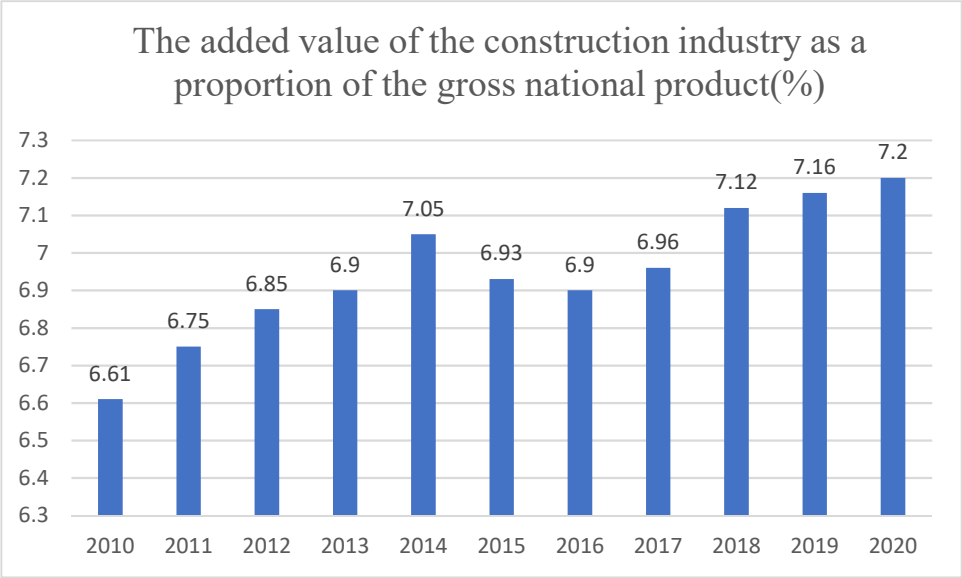

Fig. 1 The added value of the construction industry as a proportion of the gross national product

2. The Significance of Construction Project Management

With the rapid development of the economy, the contradiction of our times has changed from basic material satisfaction to the contradiction of social supply and rising demand. It is the same in construction engineering. People have high requirements for the quality and function of buildings. In this case, the construction industry is facing both challenges and opportunities. In real life, construction projects will have an impact on themselves due to various factors such as quality, safety and cost. Therefore, strengthening construction project management plays an important role in improving the final social benefits of construction projects, and will also push up the entire construction industry.

The significance of construction project management lies in the management of construction content and process in the actual construction process, because the brand quality of construction projects depends on the level of construction project management, and the final economic benefits and social effects of the project also depend on the level of construction management. To improve the management level of construction projects, to ensure that the construction projects can adopt advanced construction technology, to ensure the smooth progress of the construction progress, and ensure that the various departments and procedures on the construction site are coordinated, not only can the construction project save a lot in construction costs, but also can achieve good benefits in creating social effects.

2.1. To Improve Construction Efficiency

The construction management project is not a single division of work, it is a collection of closely linked divisions of labor. Strengthening construction project management can promote an efficient coordination and linkage mechanism within the construction project, ensure coordination between various processes and departments, and improve communication and cooperation between all departments. In the specific construction process, the use of advanced and scientific management methods and modes can quickly improve the efficiency of construction, thereby speeding up the construction progress of the project and better achieving the expected goals.

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2.2. To Reduce Engineering Costs

In the process of construction project management, cost management is an important part of it. Taking effective control measures on the construction site can effectively improve the construction efficiency of the project, save labor costs, and ensure that the project can complete the construction according to the agreed cycle. Through effective management measures, combined with the actual characteristics and technical requirements of the project, pre-job training for different managers and construction personnel, combined with the specific requirements of the project, and properly the construction plan arrangement, can effectively reduce the phenomenon of human resource waste. In addition, by taking effective management measures, the waste of construction materials can also be effectively reduced. On the premise of not affecting the construction quality, the turnover efficiency of materials can be effectively improved and the material loss on the construction site can be reduced. At the same time, the construction machinery and equipment should be effectively carried out, which can reduce the cost of investment in terms of personnel, machinery and materials. By taking effective management measures, it can help construction companies to monitor the progress of construction more accurately, ensure that the project can complete the construction according to the agreed cycle, reduce the impact of accidents on the construction progress, and ensure that the construction project can be completed with higher quality.

2.3. To Ensure Construction Safety and Quality

In any project construction, the two most critical points are quality and safety. In recent years, safety issues have become the focus of attention from all walks of life. Because construction projects are inherently dangerous, and due to the extensive economic growth model, people did not pay enough attention to safety issues. The so-called project management only stays on the surface. The form leads to frequent security issues. The real construction project management is not only the management of reducing costs, but also the management of quality and safety. How to implement the laws, regulations, norms and standards related to quality and safety in all aspects of construction is very important for all participating units, especially the management of the construction party, the supervisory party and the construction party. Quality and safety are the life of the building. Each participating unit is not only the creator of the building's life, but also the guardian of the building's life. Only when all parties have the same philosophy, the same management goals, and each perform their own duties and abilities, can they truly to protect the healthy growth of the building, and to play the proper function of the building. Comprehensive management is not only the comprehensive management of the project construction coverage, but also the comprehensive management of the implementation of strong rules and standards by all parties. The adoption of scientific and effective management measures is a prerequisite for ensuring construction safety. Construction quality is the goal that engineering construction has always pursued and finally achieved. Ensuring the overall quality of engineering construction can effectively improve the safety of the construction site, carry out engineering construction in strict accordance with the design requirements, and minimize the waste of various resources to ensure the overall construction of the engineering project, in order to improve the economic and social benefits of construction enterprises.

2.4. To Enhance the Market Competitiveness of Enterprises

At present, the construction industry is booming and the market share is huge, but at the same time, the number of construction companies is also very large, and the competition is equally fierce. How to be invincible in the brutal and fierce market competition ultimately depends on the brand of the company. Therefore, in the process of building construction, to implement a scientific and efficient management model, to create high-quality projects, to get lessons from the owners and the society, to create a good social effect, and build an excellent and honest

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brand of the unit can enhance the market competitiveness of the unit, which can help maintain their own advantages in the future competition .

3. Problems Existing in Construction ProjectManagement

3.1. Insufficient Government Regulation

Although the construction projects is basically completed by construction enterprises, as a building with social functions, its quality has a huge impact on the whole society, so the government supervision department should give full play to its role to ensure that construction enterprises can ensure the quality of the task.

At present, there are still many deficiencies in our country's legal system for the quality supervision of construction projects. People have high requirements for the quality and function of buildings. The contradiction between construction and residential use is the main contradiction in the construction market in the new era, the old legal system on construction projects has been difficult to fully solve and deal with this contradiction, which requires the government to establish perfect and meticulous construction laws and regulations, and strengthen the management and supervision of construction projects. The current regulatory system for construction engineering management is imperfect. The old laws and regulations are not clear and inaccurate in words, which are easy to cause misunderstandings or cannot solve construction disputes and problems arising from the new situation, and are completely unable to meet the development needs of the current construction market.

As shown in Fig.2, when the staff of a certain unit conducted a survey on the question “whether do you think the current building regulations are comprehensive and detailed?”, Twenty seven of the thirty nine government supervisorsl chose the negative answer, and thirteen chose the passive answer. Seventy four of ninty enterprise project managers chose the answer of no, and sixteen of them chose the answer of yes.

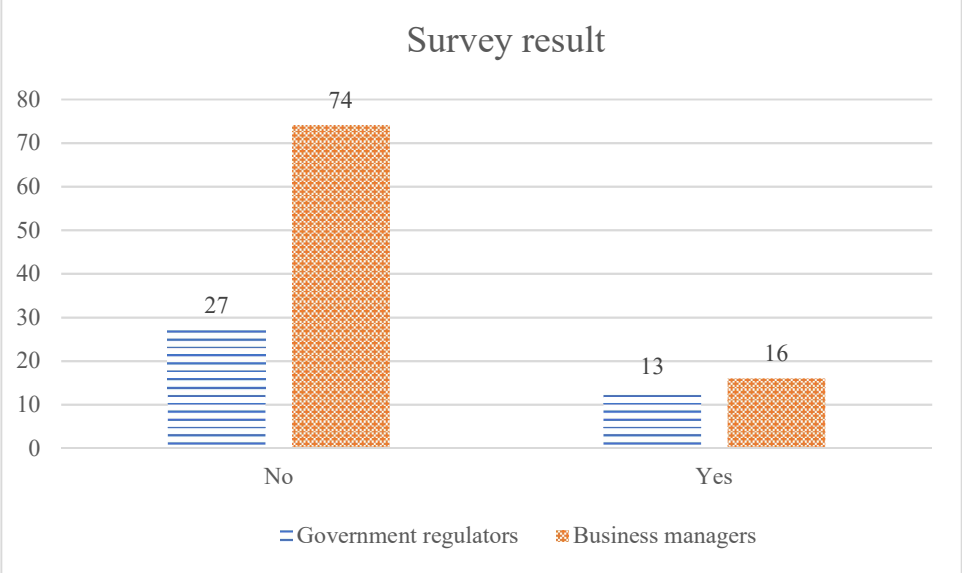

Fig. 2 Survey result

It is difficult for the current building regulations to fully restrict and stipulate the specific construction details in the construction project, which will make the quality assurance of the construction project more transferred to the construction workers, and on the one hand, it is limited by the pressure of the project progress, on the other hand, it is limited to the professional knowledge reserve and on-site management ability of construction personnel,

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which maks it difficult to implement strict quality supervision, and ultimately difficult to effectively improve the construction quality of construction projects.

3.2. Bakward Enterprise Management System

Although the total output value of the domestic construction industry is huge, the profit rate of construction enterprises has been declining year by year in recent years. The main reason for the low profit rate of construction enterprises is the lack of a reasonable enterprise management model. The management mode of the vast majority of construction enterprises in China inherits the management mode of the earliest planned economy. This kind of inheritance is most obvious in many large and medium-sized national brand enterprises. They usually use administrative means and compulsory orders as the management methods of the enterprise, and formulate production plans with a fixed system in construction projects to implement construction. The lack of adaptability to the reality of engineering projects makes it difficult to maximize the optimization of production factors and maximize the utilization of production equipment. Under the new situation, construction production not only requires the ability to better coordinate the cooperation between various professional teams and various production processes in various departments, but also actively exerts the scientific department and rationality of the management model to stimulate the enthusiasm of enterprise employees. Another significant drawback of the current management model is that it imposes serious constraints on the development of enterprise employees, lacks an excellent competition mechanism and a reasonable talent selection mechanism, and the management personnel's standard thinking is flooded, resulting in the lack of space for talented people to exert themselves, and the phenomenon of talent waste is serious. This kind of dampening on the enthusiasm and enterprising spirit of enterprise employees will eventually evolve into a series of problems such as weak enterprise cohesion, low productivity and declining enterprise efficiency.

3.3. Slowly Construction Informatization

The concept of information construction is relatively backward. The concept determines the degree of system construction, and the system construction determines the effect of actual transformation. At the current stage, some construction project managers have seriously insufficient attention to the construction of construction project management informatization.

The level of information management is relatively low. Although many construction projects have adopted information technology as an important means and method to optimize management, informatization is still a vacancy in many management links. Nowadays, many managers of construction projects, under the influence of the inherent work mode, lack the courage and patience to accept information technology, are unwilling to spend time to learn, and cannot use information technology smoothly at work, and still use traditional management methods to supervise and regulation.

Lack of professionals with professional qualities. Talent is the core and focus of all work, and only excellent talents can promote the development of the industry. The construction industry is a traditional industry with a long and long history of development. The management model adopted in the past few decades has occupied a relatively important position among many older practitioners. However, under the new situation, many drawbacks of the traditional model are revealed, and it is urgent to apply information technology in construction project management. At present, the most important problem restricting the construction of construction engineering management informationization is the lack of professional talents. Information technology is a high-end subject application with a short rise time, so there are not many professional talents cultivated now. In addition, the current level of attention to informatization within the enterprise is not enough, and the talent reserve within the enterprise is even more scarce.

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The scientific research is backward. After entering the information age, computer software develops at the speed of light, and almost no industry can be completed independently from the application of computers. Computers can maximize work efficiency in a short time and meet high-intensity load requirements. At present, although many enterprises have promoted the construction of construction management informatization to the work schedule in China, in practice they have not paid enough attention to the application and attention of construction management informatization. One of the manifestations is that enterprises do not invest much in research and development. This is also caused by some objective reasons, such as the slow progress of construction management in construction and the relatively slow income. In this case, construction companies are not willing to invest a lot of financial resources and energy in construction projects. Therefore, for the informatization of construction management, the proportion of scientific research investment is very small compared to other investment.

4. Improvement Measures for Construction Engineering Management

4.1. To Update the Management Mechanism and Converse Employees' Concept

The vast majority of construction enterprises in China are mainly state-owned enterprises. In the process of transitioning from a planned economy to a market economy, not only are there still many problems in the operation and management mode of the enterprises, but even the concept of the employees of the enterprises is still stuck in the original. Under the planned economy model, the viewpoints of cauldron rice, egalitarianism and indifferent to good or bad are still the mainstream. In the market economy, the majority of workers should be guided to establish a concept of competition and efficiency that is in line with the characteristics of the times. On the basis of the innovation concept of the majority of employees, the departmental functions and institutional settings of the enterprise are reformed, and a new project management and operation organization is constructed with the socialist market economic system as the leading factor. In the construction project management organization, the marketing contract department, the engineering technology department and the construction management department are three pillars, each performing their own duties and cooperating with each other to create a new management organization that adapts to the characteristics of the times. The market contract department is mainly responsible for the contract management, planning management, on-site construction management, raw material purchase management and project payment settlement management of construction projects. The main role of the construction management department is to systematically organize and coordinate the quality, safety, process and progress of the construction project site construction according to the signed contract, and can give full play to the role of scientific planning, so as to avoid the previous emphasis on progress and neglect of quality. The engineering technology department is specially responsible for construction technology innovation, production equipment innovation and technological process innovation. In a word, this scientific institutional setting and function definition, the new management system and its operation mechanism can adapt to various challenges of the current market and show strong vitality and vigor.

4.2. To Strengthen Professional Training and Improve Team Building

In any industry, the human element is at the heart of the action, and so is building construction. Therefore, the problem in improving the management of construction projects is that an important part is to strengthen the team building of enterprise employees. With the development of science and technology, scientific research institutions and university research institutes have provided a large number of advanced research results in the construction of the workforce and the improvement of materials and processes. Enterprises can learn from and absorb excellent theoretical results for the construction of enterprise teams. Enterprises can establish joint training courses with many colleges and universities, and improve the

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management knowledge and professional knowledge of the existing project management team through centralized training. Enterprises can also hire domestic and foreign engineering management experts as part-time employees of the enterprise by "inviting in" to provide professional and scientific guidance on project engineering management, so as to find out the gap between the current enterprise and the advanced model. Finally, enterprises can also directly recruit some talents with rich engineering management experience through the method of talent introduction, enhance the team building of the enterprise, improve the talent level of the enterprise, and improve the management level of the enterprise. All in all, construction enterprises should increase investment in the construction of construction engineering management teams according to the requirements of the times, and deepen the construction and reform of engineering management teams, so as to adapt to the current fierce market competition and the rapid development of the construction industry. If construction engineering enterprises want to adapt to the requirements of the construction market and meet international standards, they must increase investment in talent construction and training, improve the comprehensive quality of employees, strengthen their practical ability, and build an excellent management team.

4.3. To Speed up the Information Construction of Enterprise Construction Project Management

For the informatization construction of the construction industry, government departments are the leading force and the driving force for the construction of the industry. Therefore, relevant government departments should issue a normative system for the informatization of construction engineering management. For emerging industries, if there is no clear normative system to guide, the entire industry will inevitably fall into a state of chaos and disorder, which will inevitably hinder the prospects of the industry. Therefore, the government should clarify its identity as a leader, and establish detailed management regulations for the construction of project management informatization according to the development prospects of the market and the characteristics of the construction industry, to ensure that construction project management has systems that can be followed and enforced.

After the government establishes the standards and norms for informatization construction, the informatization construction of construction project management has the framework support for its development, but in terms of specific refinement branches, the government still needs to establish a complete and detailed data system for the industry. If there is no complete and detailed data system, the development of the entire industry will inevitably be a mess, which is not conducive to the development of the industry and the government's later monitoring and management. Therefore, the relevant departments of Municipal Government need to focus on research and development to establish a data system for informatization construction, to uniformly record the management informatization data of construction projects inside and outside one municipal area, and at the same time divide them by category. Inquiries to various construction companies can ensure the authenticity and integrity of the information, and also play a powerful role in supervising the integrity of the company.

With the development of the times, the informatization construction of various industries has also become the key task of the industry, but each industry has its own characteristics, and the informatization construction of different industries is bound to be different from other industries. Therefore, in order to standardize the informatization construction of engineering construction management, relevant departments should formulate industry standards with clear goals and clear positioning according to the characteristics of the construction industry. This specification standard can be interconnected with other industries, so that other domestic industries and construction industry information can be shared with each other. At the same time, the unified formulation of the calculation units and standards in the information

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construction, and the unified requirements for the technical level and qualifications of the practitioners can quickly promote the informatization of construction engineering management.

4.4. To Improve the Government Supervision Mechanism of Construction Project Management

A scientific and reasonable government supervision mechanism is an inevitable requirement of the current construction project management, and it is also a strong guarantee for the development of construction enterprises. From the analysis of the content of the Sichuan construction project government supervision, the main problem of the construction project government supervision is that there are too few supervisors. Therefore, the improvement of the government supervision mechanism for construction projects mainly focuses on optimizing the comprehensive ability of supervisors and improving the employment mechanism, so as to establish and build a government supervision team of excellent universities, and comprehensively improve the effectiveness of municipal government supervision.

5. Conclusion

Through effective and reasonable construction project management, the hidden safety hazards in construction projects can be eliminated to the greatest extent, thereby reducing the safety accidents of construction projects. The slogan of safety first has been implemented in the construction industry for decades. Every construction safety accident means casualties and property losses. Therefore, to implement effective and reasonable construction project management, we can test construction machinery according to the process during the construction process, provide training and education for construction workers, arrange on-site construction reasonably and scientifically, communicate and correct problems in a timely manner before problems occur, and for construction projects, safety management is extremely important.

Through effective and reasonable construction project management, the construction progress and construction quality of construction projects can be guaranteed, and the social effect of enterprises can be improved. Quality is the lifeblood of all projects. In the increasingly competitive market of modern construction companies, every construction project is a pass for future market development. If the construction quality of a project is very bad, it will definitely lose the trust of some owners in the future. Therefore, in the process of construction, the implementation of scientific and efficient management mode can ensure the smooth progress of the construction project in accordance with the scientifically arranged construction plan. At the same time, each process strictly follows the construction management standards, and the submitted projects are carefully inspected, so as to fundamentally ensure the construction quality of the construction project, create a good social effect, and create an excellent brand of integrity for the construction unit, thereby improving its competitiveness.

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