

Application of Construction Engineering Management Methods Under the Background of Information Technology

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Abstract: The rapid development of today's society has led to the development of the construction industry. In order to improve the quality of engineering projects, it is necessary to continuously optimize the construction project management methods and deal with various problems arising from construction projects in a timely and efficient manner, so the use of information technology can be a good solution to this problem. In this paper, we explain the importance of construction engineering management methods in the information age, and then analyze the dilemmas faced by construction engineering management: lack of professionals, imperfect engineering management system, and lack of sufficient supervision of construction projects. Finally, we put forward suggestions to improve the informationization of construction engineering management methods: clarify the goal of engineering management, improve the level of informationization of engineering management methods, create a comprehensive processing platform for information management, and establish a high-level management team, in order to be able to promote the construction industry can be stable development.

Keywords: Construction Engineering; Management Methods; Information Technology

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1. Introduction

In today's era of rapid development of large infrastructures in society, the construction industry has also developed rapidly. As the scale of modern construction is getting larger and faster, the difficulty of project management is gradually rising. The traditional engineering management methods and modes can hardly meet the needs of modern development and greatly reduce the efficiency of engineering management. Construction companies conduct project management focusing on cost control, quality control, and safety control^[1]. Therefore, vigorously exploring the application of engineering management methods in today's information age can improve the quality of the project as a whole, ensure the

benefits of the construction unit of the project itself, and then give full play to the intrinsic value of the construction project and promote the mutual unification of social and economic interests of the construction project to the greatest extent.

2. The importance of construction engineering management methods in the context of information technology

2.1 Reduce engineering construction costs

Construction project engineering construction is large in scale, long in time, involves many construction links, and at the same time requires a large number of human resources, involving the scheduling between

human resources and cooperation between departments. For example, the purchase standard of raw materials, the scheduling of construction staff shifts, and the delivery of construction plans, etc. The overall structure is complex and changeable, and the interaction of information transmission requires the training of relevant staff to ensure that the relevant staff have professional handling strain, which to a certain extent adds a lot of labor costs to the project. The introduction of information technology into engineering management methods can intelligently optimize the complexity of all aspects of management, implement information management of construction contracts^[2], reduce the pressure of management personnel deployment, and moreover save a lot of labor costs for project construction.

2.2 Promoting innovation of engineering management methods

At present, China has entered the era of intelligent information technology, and the introduction of information technology into engineering management is an inevitable trend in the future development of China's engineering management, as well as the future direction of the development of the construction industry. Therefore, construction units should recognize the importance of information-based engineering management, vigorously explore and innovate, combine information-based concepts with engineering management methods, and promote the innovation of engineering management methods. Because information management is more intelligent than manual management and solves the informationization of the project manager from data collection, information processing and sharing to decision target generation^[3], it is not easily disturbed by various external factors. For example, engineering management personnel work continuously and intensively on the site every day, with a high degree of mental tension, inevitably due to the existence of mental laxity when decision-making errors, but serious errors can cause serious economic losses to the construction unit, and even to the safety of the lives of construction personnel caused by the danger.

Therefore, the introduction of information technology

into engineering management can effectively promote the innovation of engineering management methods, effectively articulate the various tasks of engineering management, improve the efficiency of engineering construction, to a large extent, to avoid the economic loss situation caused by the construction unit due to the wrong decision of project management personnel, to accurately arrange the work of various construction personnel, more conducive to help the construction of engineering projects.

3. The dilemma faced by construction engineering management

3.1 Lack of professionals

At present, although China has started to train a large number of engineering management talents and has a profound knowledge reserve for project managers, it has not strengthened the training of project managers on information management. Project personnel have not yet in-depth understanding of project information management, resulting in many managers still use traditional methods of project management, while project managers can not play the advantages of information management appropriate to the location, making the management efficiency can not be significantly improved.

3.2 The project management system is not perfect

The ability to establish a sound engineering management system is the basis for ensuring the efficient operation of management work, and is also an effective way to strengthen project management. When a construction project starts construction, the management of the project must be carried out at the same time, and the construction project will be accounted for separately to promote the project manager to strengthen scientific management and reduce costs^[4]. At the same time, the operation of project management requires a sound management system and scientific decision-making basis as support, as a guide for project management work, to play the role of the main body of engineering project management. At present, the engineering management system of social construction projects is not yet perfect,

and the lack of feedback and improvement seriously hinders the subsequent development and arrangement of engineering projects. Coupled with the fact that some project management leaders have insufficient knowledge of engineering management, they are not able to make timely decisions in the first place, resulting in a serious lag in the management program, which affects the completion date of the project and the quality of the project. In addition, although the construction enterprise has established a set of engineering management system, but in the implementation process there is a situation that can not be specifically implemented, the site of the engineering construction project is complex, the situation is rapidly changing, the system can not be implemented not only affect the cooperation and communication between various departments, but also will have an impact on the subsequent development of the project. The imperfection of the management system at the same time will inevitably result in the lack of clarity of the responsible body, and may even bring economic losses to the project. Engineering project management requires not only the management of construction project personnel, but also the management of project departments to ensure the efficient operation of cooperation and communication between departments, as well as the management and control of the details of each stage of the project to ensure that all personnel in the whole stage of construction are operating and constructing in accordance with national standards, avoiding violations of law and discipline and ensuring the economic and social benefits of the project.

3.3 Lack of adequate supervision of construction works

Due to the long construction period of engineering projects, the wide scope involved and the large investment capital, it makes the construction of the project complex. Most of the problems occurring in current engineering construction projects are related to construction costs, construction schedules, and project quality. Although the current engineering projects are set up with supervisory units, the supervisors' supervision of the projects is relatively lacking, which makes many problems at the

construction site cannot be solved in the first place and lacks supervision of the construction process by the supervisory department^[5]. In addition, it is essential to do a good job of information management in the process of construction of engineering projects. The ability to efficiently handle the feedback information of engineering construction and coordinate the work of various departments will directly affect the construction progress of engineering projects. However, the construction of engineering projects involves many projects and procedures, which will inevitably generate a large amount of data and information, and therefore requires information management for intelligent processing and screening. At present, many construction enterprises have not adopted information management technology and still use traditional engineering management methods, which collect engineering information incomprehensively and with a lag, cannot ensure the validity and accuracy of information, cannot provide a reliable basis for scientific decision-making, and affect the development of engineering project construction.

4. Suggestions on Perfecting the Informatization of Construction Engineering Management Methods

4.1 Clarify project management goals

The project is the basic unit of the construction enterprise and is the main source of profit for the construction enterprise^[6]. Therefore, when carrying out the project construction, first of all, we should clarify what we need to achieve in our own project management, the goal to be accomplished needs to be clear, and then information management, and sort out the various aspects of engineering construction. Ensure that on the basis of information management to ensure that the project can be completed earlier than the specified date, shorten the construction cycle, and at the same time facilitate the communication between the construction unit, the owner unit and the supervision unit to ensure that the construction of the project proceeds smoothly. In the information technology management, information exchange needs to

be established with the help of cloud technology, that is, all the information is stored in the cloud platform, which is convenient to save for inspection, through this way can ensure the improvement of engineering management information level, and at the same time can realize the sharing of experience information of different projects to learn from, so as to reduce the construction cost of engineering projects.

4.2 Improve the Informatization Level of Engineering Management Methods

In construction projects, in order to be able to highlight the role of engineering management, it is necessary to combine the actual situation of construction projects, adopt information technology according to local conditions, and use information technology to deal with complex calculation tasks such as engineering cost and pre-final accounts^[7]. Improve the engineering management system and develop innovation. And we need to progress to improve the level of informationization of engineering management methods, and integrate informationization into all aspects of management, so as to guarantee the quality and completion time of the project. At the same time, project managers need to explore and innovate more when using information technology for management, use information technology reasonably and flexibly, delineate the scope of responsibilities of each project staff, and establish a reward and punishment mechanism. In addition, it is necessary to increase the skills training and moral cultivation of project management personnel, and strengthen the ability of construction personnel to respond to and handle unexpected situations, so that they can handle the situation at the first time and report through the information platform to ensure that the construction is carried out in an orderly manner and guarantee the safety and stability of the project. Construction companies should strengthen the training of internal staff, especially project leaders, recognize the importance of information technology to enhance the engineering management methods, fully coordinate the cooperation and communication between

various departments, avoid mutual shirking between departments, and lay a solid foundation for the successful completion of engineering construction projects.

4.3 Build A comprehensive Information Management Platform

To efficiently process the large amount of information passed through the project and extract the required information in a timely and accurate manner to help project construction managers make efficient scientific and rapid decisions. Construction companies should create a comprehensive processing platform for information management suitable for the development of their enterprises to help the integration of management and technology and the effective integration of information resources^[8]. The platform should be built on the premise of energy saving and environmental protection, high efficiency and speed, and continuous optimization and innovation in practical engineering applications. At the same time the platform should be introduced to the government for supervision, while the relevant government departments give financial funds as much as possible to support enterprises to create a comprehensive processing platform for information management, drive the innovation of engineering management mode, and then promote the organic combination of both information technology and engineering project construction. Therefore, in the actual construction of engineering projects, it is necessary to realize the information sharing of the construction situation and construction progress of different projects with the help of a comprehensive processing platform for information management, through which the platform can realize the organic unification of many kinds of work such as project procurement material types, personnel deployment and technology sharing, which further guarantees the construction progress and resource utilization of construction projects. For example, when a project is suddenly affected by a weather disaster and cannot be constructed, the information platform can be used to transfer the materials and personnel of the project to other projects for construction, so as

to maximize the economic benefits of the enterprise. Therefore, the information platform needs to pay close attention to the construction situation of the project and the progress of the project every day, and combine the comprehensive information management processing platform with the construction site, so as to guarantee the quality of the project.

4.4 Build a high-level management team

In today's era of information technology, the division of labor in all walks of life is becoming more and more detailed. Therefore, in order to implement the combination of information technology and engineering management, we need to strengthen the training of engineering management personnel and improve their own quality. Therefore, for construction enterprises, it is necessary to establish a high-end level enterprise information integration platform based on the existing information management system^[9]. Enterprises should vigorously introduce some highly qualified information technology talents and train them in engineering management, and allow personnel to enter the construction site for exercise, so that their theory and practice are combined to ensure that the introduced talents have rich construction knowledge while still being able to use information technology to guide engineering projects. On the one hand, the enterprise needs to establish a mechanism of superiority, optimize the structure system of salary and treatment, attract excellent comprehensive talents to join the enterprise with higher salary, and eliminate the personnel who fail the assessment, so as to ensure the establishment of a high-quality team; on the other hand, the construction enterprise needs to strengthen the training and learning of the management team, and hold expert lectures to enrich the theoretical knowledge structure of the team members, enhance their information management level, improve the overall quality of the team members, enhance the sense of responsibility of the team members, give full play to the advantages of the management team in the information management of engineering construction, and improve the quality of the project.

5. Summary

To sum up, in the construction of engineering projects, it is necessary to strengthen the innovation of engineering management methods to guarantee the quality of the project. Enterprises use information technology, combined with the trend of the times, to combine engineering management with information technology to provide innovative new directions for engineering management and improve engineering construction standards. At the same time, enterprises allow construction site personnel to use information technology for project management as much as possible, constantly accumulate experience, actively explore new methods of engineering management information technology, further enhance their own management capabilities, protect the quality and economic benefits of the project, and steadily promote the sustainable development of the construction industry.

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