

Exploring the Problems and Countermeasures in Cost Control of Civil Engineering Projects

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Abstract: The lack of an effective management system in the cost control of civil engineering is the main issue affecting the effectiveness of cost control, which not only increases the construction cost of civil engineering but also reduces the economic benefits of participating units. In addition, the imperfect cost management system also affects the effectiveness of engineering cost management. Due to cost control issues in these projects, the increase in construction costs has also affected the economic benefits of construction enterprises. In this regard, this article attempts to take some countermeasures for the problems in cost control of civil engineering projects, mainly from strengthening contract management of civil engineering projects, improving the effectiveness of cost control, and carrying out preparatory work for civil engineering projects. Reasonably utilizing human, material, and financial resources in various engineering construction projects to achieve high investment benefits is of great significance in reducing production costs for civil engineering construction units, improving the quality of civil engineering projects, and expanding the construction market. Increase supervision and inspection efforts, clarify project cost control objectives, and effectively implement control measures.

1. Introduction

Cost control is an important part of civil engineering management in our country. Specifically, it refers to the determination, control, supervision and management of the feasibility study in the early stage of project construction, capital investment decision and all the construction costs required before design, construction and completion before delivery, which can be used to correct deviations at any time in practical project construction management and ensure the realization of project investment objectives [1]. As a civil engineering construction enterprise, the ability of civil engineering cost control determines the ability of enterprise development to a certain extent. As the foundation and premise of enterprise development, the project cost must always be controlled within a reasonable range, so as to realize the profit of the enterprise and promote its continuous growth. Because the project cost control is affected by many unfavorable factors, the overall work quality can not be fully guaranteed, and the project cost involves a huge amount of investment, and the positions of investors and stakeholders are different and changeable. Therefore, in order to effectively ensure the efficient development of the project cost work, it is necessary to make a reasonable analysis of the project cost content [2-3]. The cost control of civil engineering is a continuous and dynamic process, including the cost control of various links such as preparation stage, construction stage and completion settlement stage, aiming at solving the problems of technology and economy, operation and management in the whole process of project construction [4]. Therefore, in all stages of project construction, it is necessary to strengthen the audit of funds and realize strict control over the use of funds. In the overall construction process, we should take the refined management concept as the guide, take the cost management goal as the basis for all work, and take corresponding measures in advance to ensure that the itemized cost goals can be implemented. When the actual cost deviates from the design scheme, the reasons should be found in time, especially the problem of high cost caused by human factors, and corresponding measures should be taken in time to strengthen control and ensure the accuracy of cost accounting. Reasonable use of human, material and financial resources in various construction projects, so as to achieve higher investment benefits, is of great significance to reduce the production cost of civil

engineering construction units, improve the quality of civil engineering and expand the construction market [5]. In view of specific problems, effective control measures should be taken, supervision and inspection should be strengthened, project cost control objectives should be defined, and control countermeasures should be effectively implemented.

2. Problems in the Whole Process Control of Current Civil Engineering Cost

2.1. Preparation stage issues

The project preparation stage includes two links: project design and project bidding, mainly the capital investment of labor cost. Whether the design scheme is reasonable directly affects the execution and decision-making of civil engineering. Inaccurate positioning of the designed project, unreasonable construction standards and inappropriate investment amount may lead to construction changes, which will also change the project cost and increase the difficulty of cost control [6]. The failure to form an effective management system in civil engineering cost control is the main problem affecting the effectiveness of cost control, which not only increases the construction cost of civil engineering, but also reduces the economic benefits of the participating units. In addition, the imperfection of cost management system also affects the effectiveness of project cost management. Because of these engineering cost control problems, it leads to the increase of construction cost and also affects the economic benefits of construction enterprises. The cost control at all stages of the whole project is not comprehensive enough, which leads to the fact that the actual cost control effect is not obvious. In addition, the current standard of cost control is too low, the cost control work is not deep enough, the division of work content and full responsibility is not clear, not detailed and reasonable enough, and there are many loopholes in the management system, which makes the cost control work unable to be carried out in an orderly manner [7-8]. The analysis results will be very different from the actual situation of the project. In the process of bidding, there is also a direct relationship with the project cost. For example, some construction enterprises maliciously reduce the project budget in order to win the bidding project, and the project cost is in an unreasonable range, which leads to the ineffective turnover of subsequent construction funds [9].

2.2. Construction phase issues

During the construction process, due to problems with construction operations, the engineering construction does not match the design drawings, and can only be reworked and rebuilt. This not only causes serious waste of resources and energy, prolongs the construction period, but also leads to financial losses [10]. Many enterprises have unclear division of power and responsibility in cost management. Although there is a detailed division of power and responsibility, there is no effective system or clear standards for division, which makes cost management and construction management work very chaotic and has a negative impact on cost control [11]. Lack of strict control over quantity can lead to waste of raw materials, increase construction costs, and on the other hand, it can easily breed corruption, providing convenience for criminals to "write articles" on raw materials. Problems such as cutting corners and using inferior materials as substitutes often occur.

2.3. Issues during the completion settlement stage

With the expansion of civil engineering scale, in order to ensure that civil engineering projects can be approved, many construction units adopt the method of reducing the estimated cost, which clearly cannot meet the requirements of engineering construction. Additional investment or raising construction standards are inevitable, leading to cost estimation. The scale of investment in civil engineering construction is also increasing, and some construction units intentionally lower the estimated cost to ensure that the project can pass the approval smoothly. However, the estimated cost is clearly not enough, so additional investment or higher construction standards are needed [12]. Some cost control personnel in civil engineering have a unclear understanding of the project and construction situation, and may lack consideration for various internal or external factors in

practical work. In addition, some owners may try to lower the estimated cost or compress the actual funds required for project construction when reporting to ensure the smooth passage of the project, which can easily lead to inadequate engineering budget and final settlement work and increase the difficulty of cost control management. Due to many construction companies only attaching importance to the inspection and acceptance of engineering quality, while neglecting the review of engineering cost, there are significant discrepancies between the engineering book records and the actual bills, and accurate judgments cannot be made on the flow and amount of funds used. Engineering price control is like a mere talk on paper and has not played its due role.

3. Solutions to problems in civil engineering cost control

3.1. Strengthening contract management of civil engineering

For civil engineering, scientific, reasonable and feasible market bidding management is the premise and basic condition for construction units to carry out civil engineering construction, improve the cost consciousness of managers, and create a corporate culture integrating rights, responsibilities and benefits; On the other hand, all participating units need to strengthen financial budget and management, and apply the concept of cost management to all aspects of civil engineering construction to ensure that cost control management measures play a real role and value. Therefore, at this stage, China's construction industry needs to attach importance to and strengthen contract management in order to improve the bidding management level of civil engineering. The specific implementation countermeasures mainly include the following aspects, as shown in Figure 1.

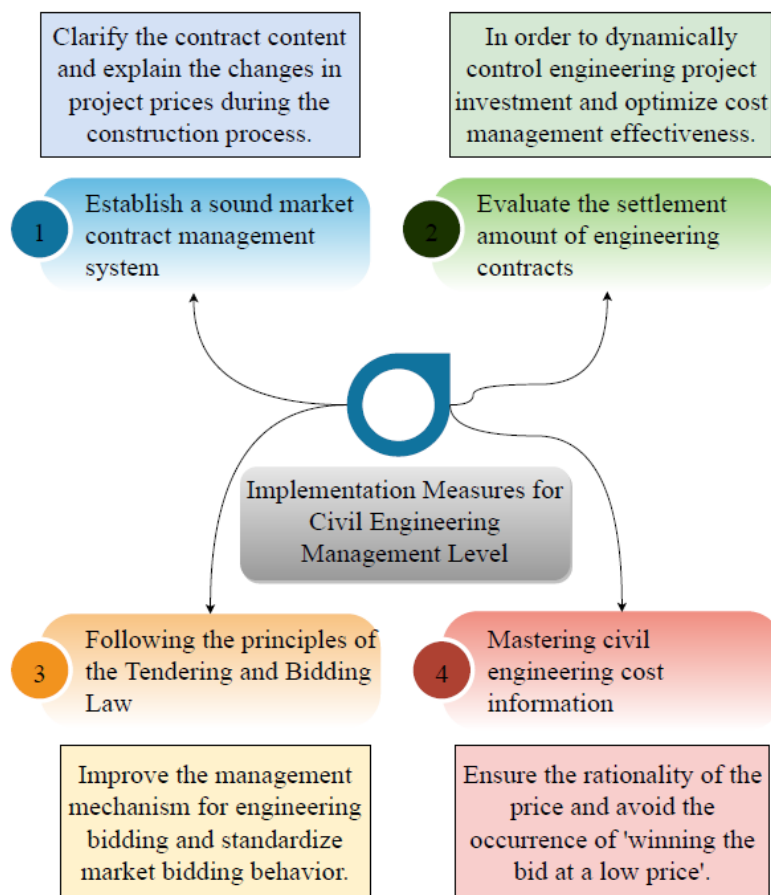


Figure 1 Implementation Measures for Improving the Management Level of Civil Engineering Bidding

Strictly combine the actual construction situation of the project with the actual construction situation, and refer to similar project cost cases in the past, reasonably control the problems that may arise in the future construction process, and handle the cost changes of sudden problems. In

addition, it is necessary to strictly ensure the accuracy and comprehensiveness of the design plan, and develop a rigorous design plan.

3.2. Improving the effectiveness of cost control

Analyze the project from the perspective of economics, objectively evaluate its feasibility and reasonably predict the project investment. In addition, similar projects can be selected from the market to compare the predicted costs, so as to clarify the scope of market economic benefits and social benefits of the project construction and avoid investment mistakes. Only by strengthening the cost control in the whole process of civil engineering construction can we effectively control the project cost and further promote the acquisition of project benefits. Optimizing the cost control of the whole construction project can be implemented from the following four aspects, as shown in Figure 2.

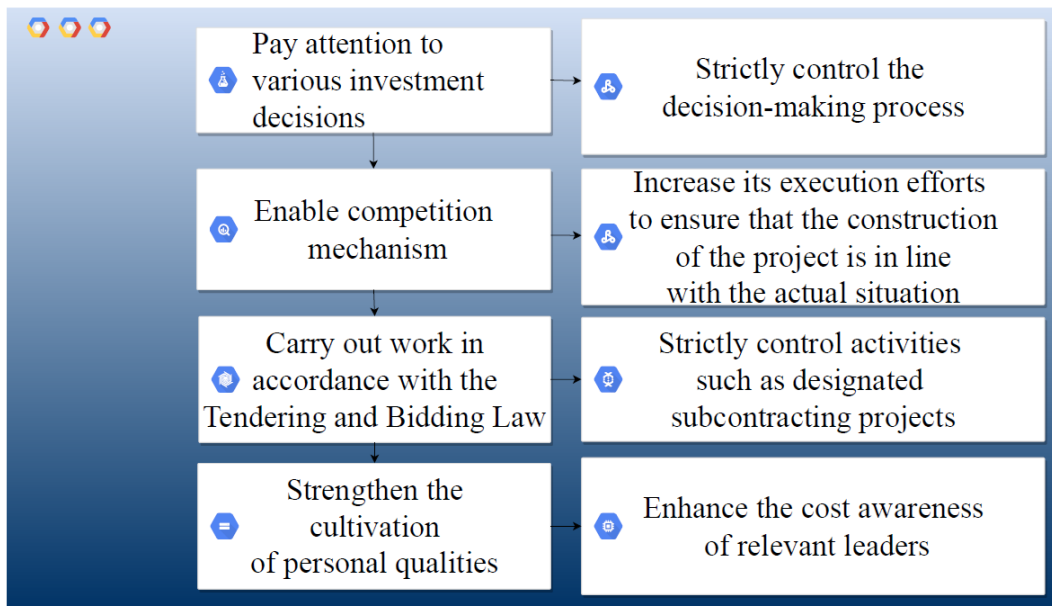


Figure 2 Optimization of Cost Control throughout the Construction Project

Improve the relevant laws and regulations of project bidding, ensure the formal enterprise qualifications of all parties involved in the construction, and ensure that the bidding work is carried out in a fair and orderly manner; Secondly, the government should promote the implementation of supervision and management measures, intensify supervision, and rectify the illegal behavior of enterprises in civil engineering cost. Do well the cost control management in the design stage of civil engineering. Each civil engineering construction unit can choose the best construction design unit by means of design bidding and scheme election, so as to fundamentally improve the quality of engineering design.

3.3. Prepare well for civil engineering projects

The budget and final accounts control scheme of engineering construction should be worked out reasonably, and in the process of practical construction, the predetermined target and the actual implementation of the project should be compared scientifically on a regular basis. If any deviation is found, it should be corrected in time to realize the dynamic cost control of the whole process of the project and ensure that its engineering investment is within the predetermined target limit. The realization of the whole process control of civil engineering cost requires the effective connection of design, construction, acceptance and other links. In actual operation, due to the consideration of economic interests, there is no good connection between various departments, which not only causes the cost control measures to be unable to be implemented in depth, but also has a negative impact on project operation management, which significantly reduces the efficiency of project construction and obviously affects the economic and social benefits of project construction. The cost control management system should clarify the work contents and responsibilities of all

contractors, and balance the relationship between responsibilities and interests reasonably, so as to raise managers' awareness of cost control, make them clear the management objectives of project cost, and on this basis, strengthen the cost control management of cost control management at all stages and improve the financial budget management system. At the same time, in the stage of civil engineering completion and fund settlement, it is necessary to scientifically review the increase and decrease of work cost and actual engineering quantity in detail and seriously to ensure the accurate settlement of engineering funds.

4. Conclusions

In the context of the development of the times, the full process control of civil engineering cost has become a consensus in the industry. As the basic concept guidance for the development of the engineering and construction industry, it must adapt to the requirements of the times for relevant management levels. The content of civil engineering cost control work is tedious and the workload is relatively large. Each participating unit needs to attach importance to cost control work from an ideological perspective, face up to problems such as multiple management system loopholes, unclear division of rights and responsibilities, and incomplete pre settlement work in cost control management, and do a good job in establishing and improving cost management systems, innovating cost management methods, optimizing engineering cost control, and improving engineering cost information systems. The cost control throughout the entire process must be appropriately extended from the construction stage to the project approval, design stage, bidding and other stages, so as to shift project control from focusing on contract price and settlement price control to comprehensive dynamic control. Starting from the entire process of project construction, corresponding cost control measures should be taken for different stages, strengthening fund verification and accounting work, strictly controlling the use of funds, and continuously improving the economic and social benefits of construction enterprises while ensuring project quality and progress. On the basis of ensuring the quality and efficiency of civil engineering construction, we help enterprises achieve maximum economic benefits and promote stable and sustainable development.

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