

Analysis on Cost Control and Management of Road and Bridge Engineering Construction Stage

Hongxi Yu¹

¹Shandong Transport Vocational College, Weifang, China

Abstract: It is needed to control the construction cost of the project strictly at the road and bridge engineering construction stage, to ensure that the engineering construction cost is consistent with the budget cost. This paper takes the cost control and management at the road and bridge engineering construction stage as the main research object, carries out multi-angle, in-depth, comprehensive exploration and elaboration of the cost problems of the road and bridge engineering construction stage, and puts forward a series of effective cost control measures and management suggestions, so as to provide help and support to the construction personnel engaged in relevant fields within their capabilities.

Keywords: road and bridge engineering; construction stage; engineering cost

1. Introduction

With the development and expansion of municipal projects in China, the infrastructure projects represented by road and bridge projects have shown an explosive growth trend. On the one hand, the construction cost control work in the road and bridge engineering needs to be further strengthened and emphasized to improve the supervision effect on the engineering construction cost. On the other hand, systematic and scientific management is required for the road and bridge engineering construction cost to ensure that the project construction cost and construction budget meet the specified control scope, reducing a series of risks and problems such as construction cost exceeding the standard.

2. Practical value of cost control and management at the road and bridge engineering construction stage

The cost control and cost management at the road and bridge engineering construction stage are carried out to create greater economic benefits for construction enterprises, and also improve the core competitiveness of construction enterprises, and expand more space for the development of enterprises. On the one hand, the volume of modern road and bridge engineering is relatively large, and the target amount of construction project covers dozens of divisional projects. Any construction operation content is the main goal of cost control and management of construction enterprises. It is needed to understand the construction process, construction links, construction schemes and other contents of the project through in-depth analysis of the project content, carry out the whole process of project cost management, as shown in Figure 1, and construct with scientific control logic and construction philosophy, to ensure that the project construction can be carried out in accordance with the predetermined way, to ensure that the construction cost is effectively controlled, so as to promote the investment benefit of the project to be fully guaranteed, and improve the rationality and scientificity of the project cost. Therefore, the cost control and management at the construction stage has extremely significant application effects, and is the core control content of the whole project construction operation. It plays an inestimable role and significance to be able to correlate and coordinate all aspects of the bidding process, ensure the stable implementation of the engineering cost management, and ensure that the construction cost of the project can guarantee the construction in accordance with the predetermined objectives.

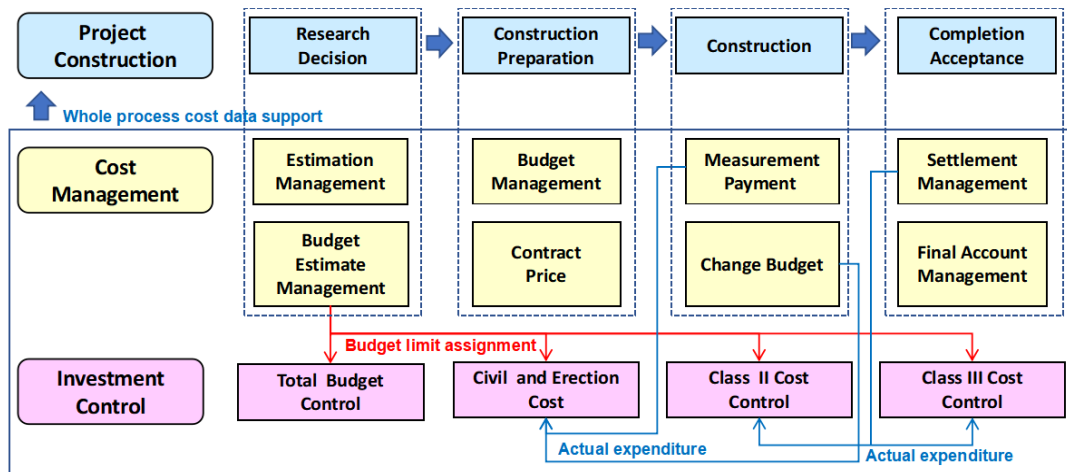


Figure 1: Whole process project cost management

3. Concrete issues on cost control and management at the road and bridge engineering construction stage

3.1. Road and bridge engineering cost system needs to be improved

As the cost system of road and bridge engineering, it has corresponding cost management work, management system and management process, which is the basis and guarantee of scientific management of engineering construction cost. There are management loopholes in the corresponding management system during the engineering construction, which will aggravate the problems related to construction. On the one hand, the lack of scientific and effective management process of construction cost will inevitably increase the construction cost of the project, leading to multiple management risks invisibly. Especially, the construction cost exceeding the standard caused by the ineffective construction cost control during the construction operation will cause unimaginable difficulties and crises to the construction unit. On the other hand, for engineering construction enterprises, there are management loopholes in the construction cost control system, which will also lead to internal contradictions in construction enterprises, and even provide opportunities to some illegal people to carry out benefit transmission by using management loopholes, causing a new cost management crisis.

3.2. The professional skill level of road and bridge project cost management personnel is insufficient

For the road and bridge engineering cost management personnel, the accuracy of their professional skills plays an inestimable role in the orderly construction of the project. Therefore, in case of insufficient professional skill level of road and bridge engineering cost management personnel, it will inevitably delay the engineering cost management progress, and even cause potential interference and impact on the construction operation of the project, causing management problems of construction enterprises. On the one hand, the cost management personnel need to track and record the engineering construction cost in real time, and know the basic cost of the engineering construction operation. On the other hand, it is needed to carry out the final accounting and analysis for the road and bridge engineering based on the data provided by the cost management personnel, so as to realize the scientific confirmation of the total cost of the project construction. In case of insufficient skill level of cost management personnel, there will inevitably be a series of risks such as omission, misstatement and misstatement, which will increase the difficulty of engineering cost management, and cause unimaginable trouble and burden to the subsequent settlement work at the same time, leading to a sharp increase in the pressure of cost management at the end of construction, bringing new contradictions and problems.

3.3. The informatization level of road and bridge project cost management is insufficient

As an important part of the road and bridge engineering, the cost management has extremely special significance and value. Therefore, the cost management needs to be upgraded and integrated with information technology. When the informatization level of project cost management lags behind, cost

personnel are needed to calculate and analyze a large number of project construction costs, which is highly likely to cause a series of risks such as abnormal data or cost exceeding the standard. Moreover, it will also increase the construction burden of the project, even delay the construction progress, and cause irreparable losses and impacts on the subsequent construction of the project. Not only that, with the innovation and development of China's road and bridge engineering informatization construction, the relevant practitioners fail to master the corresponding information technology, which is bound to be eliminated by the market, affecting the construction process of the project, causing concern about the engineering cost.

3.4. The cost management strategy of road and bridge engineering lacks foresight

The cost management strategy of road and bridge engineering fails to effectively improve the effectiveness of construction cost management, and there is a certain lag in relevant management strategies. On the one hand, many cost management works of road and bridge engineering involve a large number of divisional projects, and the corresponding construction teams and construction personnel are numerous and jumbled. Moreover, the construction personnel are highly mobile, and the upgrading and optimization of the management strategy cannot be realized. However, the management strategy with the lag attribute is likely to lead to the emergence of relevant loopholes in the cost management system, thus aggravating the emergence of project construction risks. The cost management personnel need to build a diversified management logic and management thinking, and need to use cutting-edge management strategies to help the scientific management of the construction cost of road and bridge engineering, so as to ensure that the engineering construction cost can be implemented according to the established budget control objectives.

4. Practical strategies to enhance cost control and management at the road and bridge engineering construction stage

4.1. Improve the cost system management system of road and bridge engineering

It is needed to constantly improve and upgrade the management system of the road and bridge project cost management system. On the one hand, with the development of the times and the progress of science, the corresponding management system needs to be constantly upgraded and optimized to effectively deal with the deficiencies and problems in the road and bridge engineering cost management, so as to be able to detect and fill the gaps in the current management content. On the other hand, based on the current management system of the road and bridge engineering cost system, it needs to be further optimized and analyzed, especially the cost management before the construction of the project, during and after the construction, which requires a benign management atmosphere and management process and a management system with efficient management value combined with the current management system, so as to be able to control and position all departments, all links and all personnel, and realize the practical value and management value of cost management. The road and bridge project involves a wide variety of divisional projects. Unpredictable construction cost problems might be caused for any aspect of the project, which are very likely to cause actual problems such as out-of-control costs and missing items in the list. Therefore, it is necessary to conduct in-depth analysis and research on each link, predict the content of problems that may occur, and carry out scientific management of multiple strategies for the cost problems. Referring to the contract contents at different stages such as project planning, bidding and construction operation, it is required to ensure that the control requirements of engineering construction cost meet the corresponding objectives, and ensure that the engineering cost management can be promoted and carried out step by step, ensure that the specific work of project cost can be effectively implemented and executed, and ensure that the engineering cost management problems can be thoroughly solved and sorted out ^[1].

4.2. Improve the professional skill level of road and bridge project cost management personnel

The road and bridge engineering cost management personnel need to have the professional qualifications of cost practitioners, meet the assessment standards and development requirements of construction enterprises, and be able to fully cope with the requirements of road and bridge engineering cost. On the one hand, cost management personnel should not only have rich experience in cost management, but also guide and analyze the potential engineering cost problems in the process of practice to ensure that the engineering cost management can be carried out and implemented. On the

other hand, the cost management personnel should continuously improve and strengthen personal skill level and management strategy, and serve the development and implementation of road and bridge project cost management with the help of improvement of professional skills. Based on the current design problems such as insufficient skill level of road and bridge engineering cost personnel, relevant construction enterprises can carry out targeted training and education. The high-density training for cost management personnel is carried out to improve the skill level of relevant personnel. Moreover, combined with various forms of assessment and screening, a benign competition mode can be formed in the cost personnel system and a cost management team with innovative development concepts will be built, so as to escort the cost control during the engineering construction operation [2].

4.3. Strengthen the informatization level of road and bridge engineering cost management

For the road and bridge engineering cost management, it is needed to continuously integrate information technology to improve the corresponding management effectiveness and quality. On the one hand, with the development and progress of the modern road and bridge engineering cost management, the management mode represented by information technology has become an important trend in the development of the industry. It can improve the control effect of the engineering construction operation cost with the help of a variety of cost management software to ensure the scientific and reasonable cost management work. On the other hand, it can improve the accuracy of the cost work with the help of a large number of cost management software. The special categories in the traditional cost management can be characterized and explained, which can minimize a series of problems that may occur in the engineering construction cost, such as omission and misstatement, and can achieve multiple guarantees for the engineering cost management, and effectively avoid various cost problems and omissions. Moreover, in view of the relatively complex construction work content of some engineering projects, the application of cost management software is urgently needed, which can effectively improve the work efficiency of cost management personnel and improve the accuracy of engineering construction cost data. It is an important sign of the modernization development process of road and bridge engineering cost management, and the concern and attention of relevant management need to be aroused to ensure the corresponding cost control quality [3].

4.4. Construct the cost management strategy of road and bridge engineering that keeps pace with the times

The project cost management strategy is formulated, which needs to ensure that the project conforms to the development and objectives of the current road and bridge field. On the one hand, when formulating the cost control management strategy, it is needed to combine the development trend of the times, especially the development path of informatization, technicalization and high-end in the field of construction engineering in modern society, integrate the development needs of the times, and build a diversified development path. On the other hand, it is needed to build a cost management strategy with certain advanced attributes according to the existing engineering management strategy, and keep relevant contents forward-looking and cutting-edge, be able to predict the problems and omissions in the project cost management, fully consider the impact of price factors, new technology factors and construction scheme factors in the construction operation, consider the actual construction objectives of the construction enterprise, carry out full-cycle price control of the project, and prevent unnecessary expenditures and expenses of the project, build a system-wide cost management strategy with objective, efficient and precise management strategy, effectively balance the interests of each member of the engineering construction operation, control the construction quality of each construction team, build a cost management model with modern construction enterprises, and promote the effective achievement of cost control and cost management objectives with the goal of scientific management, terminal sorting, layer by layer screening, and accurate positioning [4].

5. Conclusion

To sum up, based on the cost control and management work in the construction operation stage of the road and bridge project, it is necessary to carry out systematic sorting and research, especially for the problems in the construction operation process, and understand the links of the cost problems and the possible impact, combined with the experience and strategy of the cost management during the construction operation, put forward management methods with innovative ideas, and carry out scientific management of the specific construction links, ensure that the impact factors of cost risk are

controlled and managed as necessary, lay a solid foundation for the cost management in the subsequent construction operations, ensure the effective achievement of the engineering cost management objectives and control results, and provide important help and support for the smooth completion of the road and bridge engineering.

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