Application and Practice of Computer BIM in Cost Management Control and Cost Coordination Management

Ying Feiyan\textsuperscript{1,}\textsuperscript{*}, Zhao Jie\textsuperscript{1}
\textsuperscript{1}Yunnan Technology and Business University, China, 651700

*Corresponding author e-mail: yingfeiyan@yngsxy.edu.net

Abstract. At present, the scale of China's construction projects is gradually expanding, which has greatly promoted the rapid development of China's economy. Construction engineering is an organic system, which has the function of complexity and variability. Therefore, we must do a good job in cost management control, which can reduce the overall budget of the project. At the same time, we must do a good job in cost management, which can strictly control the consistency between cost and budget. Therefore, through computer BIM, we can control cost management and coordinate cost management, which will improve the management and control of complex projects. First of all, this paper analyzes the difference between project cost management control and project cost. Then, this paper constructs the collaborative management mode of cost management control and project cost. Finally, some suggestions are put forward.

Keywords: Computer BIM, Cost Management Control, Cost Coordination Management

1. Introduction
With the development of social economy, the reform and competition of China's construction market has become increasingly fierce, which will realize the steady development of construction enterprises. By taking effective measures, we can control the cost management of construction projects, which will improve the implementation effect of cost management. Therefore, based on BIM software, this paper takes cost control and cost management as the starting point to study the specific path of implementation, which will guarantee the comprehensive benefits of the project\textsuperscript{[1]}. In engineering projects, I must carry out scientific engineering cost control, which will strictly control cost control. Through cost management, we can effectively control the technical and economic activities of the project\textsuperscript{[2]}. Based on BIM, we can focus on the cost management of engineering projects, which will complete the scientific cost control\textsuperscript{[3]}. Through collaborative management, we can strive to achieve the maximum project economic benefits with the minimum project cost\textsuperscript{[4]}.

2. Differences between project cost management control and project cost management

2.1. Cost management control
The definition of project cost management is mainly as follows. In order to ensure that the cost of the project is within the budget plan, the management work done by the contractor includes prediction, planning, control, adjustment, accounting, analysis and assessment, etc. Project cost management is to complete the operation of the whole project within the approved budget, which mainly includes four processes, such as cost management plan, cost estimation, cost budget and cost control. In the implementation of the whole project, cost management can ensure that the project can complete the work of each stage as well as possible, which needs to be carried out within the approved cost budget. Cost control is a method and means to reduce costs, which is mainly to maximize product benefits. Cost control can significantly improve the income of the project, which will promote the long-term development of the enterprise. Through effective cost control, we can achieve good benefits of the enterprise. Therefore, developers can achieve cost control through a variety of methods. At present, the commonly used cost control methods include value engineering analysis method, target cost method, activity-based cost method, time cost accumulation curve, banana curve, earned value method, etc. As shown in Figure 1. Different project stages have different characteristics. Therefore, we need to choose different cost control methods, which will be applicable to different stages of cost.

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2.2. Cost management

Project cost management is a scientific technology management method. Under the principle of unified objectives, we can ensure the economic benefits of the construction project, which will be a whole process, all-round business behavior and organizational activities in line with the policy and objective laws. Cost management is an important part of project investment. Through BIM software, enterprises can master the market price information, which will realize the system activities of cost control, pricing, pricing and bidding. According to the needs of the government and social economy, we can reasonably manage and regulate prices, which requires legal, economic and administrative means.

BIM is a kind of cost control that can be carried out in the whole process. The project cost of each stage will affect the total cost of the project. As shown in Figure 2. Therefore, we need to correct and adjust the cost deviation in each stage in time, which will guarantee the reasonable utilization of human, material and financial resources. Through BIM software, we can achieve the best investment income, which will realize the whole process control of project cost.
3. BIM based cost management control and cost coordination management deepening

3.1. Construction of enterprise database based on BIM

Through BIM, we can increase the availability of data, which will improve the enterprise information sharing rate. Through BIM, we can build enterprise database, which can share basic data of engineering project. Through cost management, we can achieve unified data cost control for different businesses and managers at different levels, which will realize a unified platform, such as BIM model data, engineering quantity data, human material and machine price data, quota consumption, etc. The framework model of BIM based enterprise database is shown in Figure 3.

4. Measures to reduce project cost

4.1. Enhance the cost control awareness of the whole staff

In the construction of the project, we must form the awareness of cost control of all staff, which requires the following growth. First, we need to train our employees, which will strengthen their awareness of cost control. Second, we need to ensure the rationality of compensation management, which will increase the initiative of cost control of employees. Through the implementation of staff responsibilities, we will complete the reward and punishment of cost loss. Third, we can carry out
cost control competition, which will mobilize the cost control initiative of employees.

4.2. Improve the project cost management system
Based on BIM, we effectively complete the project cost management system, which will continuously improve the comprehensive quality of its management personnel. Through BIM, we can increase the participation of managers, which will improve the establishment and optimization of internal management process. Through BIM, we can manage the project in the whole process of project management, such as safety, progress, project quality, etc. Through BIM, we can better ensure the relationship between cost management control and cost, which will improve the importance of project investment and cost management.

4.3. Reasonable control of project investment
BIM can better complete the design link, which is the key link affecting the whole project investment. Through BIM, we can carry out design scheme and review, which will ensure the scientificity and rationality of the project. By ensuring the advanced nature, safety and environmental protection of the equipment, we can achieve the control of the cost of the non production facilities. By reducing investment, we can improve project implementation. Through BIM, we can comprehensively and scientifically analyze various costs in the engineering stage. By constantly optimizing the design, we can guarantee the quality and progress of the whole construction project.

5. Conclusion
Construction engineering is a systematic and professional project, which needs a lot of investment. Therefore, it needs a long construction period. Based on BIM, we analyze the collaborative management of cost control and cost management, which will improve the cost control and cost management in all stages, such as project decision-making, bidding, design, construction and completion settlement. Through dynamic control, we can achieve project cost control, which will reduce costs and achieve cost control objectives. Practice has proved that through effective cost control and cost management coordination, we can guarantee the overall quality of the project, which will achieve the comprehensive effect of project schedule, project safety and project benefit.

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