A Critical Analysis on the Cost Planning in Building Project Success: A Theoretical Review

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Abstract: The purpose of this article is to discuss how the relationship between project success and cost planning with management techniques. There are three practical ways in cost planning for financial control in this situation: the positive efforts made by cost managers, the cost planning and control process, and practical preventative and corrective actions. The relevant data and information are collated from professional journal publications, lecture notes, reputable web resources, and the reliable experience of construction industry specialists executing cost planning and associated activities. The critical point of this paper is that cost planning can significantly improve the project's financial performance. For instance, cost planning is likely to reduce project variations and corresponding financial savings. It may also contribute to developing investor confidence by effectively managing total project expenditures. In general, this report analyses the topic comprehensively to understand the importance of cost planning and how this approach positively influences project performance, especially for cost management effectiveness. Furthermore, the positive impact of preventative and corrective activities on the project success is analysed.

Keywords: Cost Planning, Cost Manager, Construction Project, Financial Success, Corrective and Preventative Action.

1 INTRODUCTION

In most situations, a project can be seen as a temporary effort undertaken to generate an exceptional outcome[1]. A group of PricewaterhouseCoopers researchers present that over 97% of organisations globally failed to complete their projects correctly during the previous five years. As a result, an increasing number of managers have attempted to develop a practical approach for increasing the probability of project success in recent years. To a large extent, cost planning has been widely recognised and used by cost managers as an effective technique for

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guaranteeing the efficient execution and completion of projects under the estimated plan [1]. The next part of this article examines fundamental construction concepts, such as the essential criterion for the building project success and the primary role of the cost manager. Additionally, the third and fourth parts illustrate the common influences of cost planning in building projects and how this approach considerably boosts the possibility of developing a successful building project. Moreover, the final body section explains the critical repercussions of a corrective and preventative way on the project result and success.

2 GENERAL BACKGROUND INFORMATION

2.1 The Project Success

First, it is necessary to understand the definition and significant project success criteria to ensure satisfying results. According to the Project Management Institute, a successful project should accomplish all proposed project goals and assure product quality while adhering to the estimated budget, timeline, and scope limitations[1]. Under this definition, the fundamental criteria for project success comply with the project scope, budget, schedule, quality, and safety requirements. For one reason, the triple constraints of time, money, and quality are likely to significantly determine the success of a building project[3]. For example, the Titanic construction project could be deemed a failure due to its lengthy delay, higher cost, and inferior product outcomes[4]. Besides, the safety requirement is an indispensable component of project success, especially in the construction industry. If a building project results in death or casualty throughout its operation stage, it is considered a severe project failure. For instance, the Third Water Tunnel project in New York City, the most outstanding infrastructure project of the 1970s, is regarded as a failure due to the 24 deaths during its construction[5].

2.2 Cost Manager And Quantity Surveyors

Both cost managers and quantity surveyors are essential to ensuring the success of a building project. To some extent, the functions of cost managers and quantity surveyors are so similar that they may be utilised interchangeably in a small-scale construction project. On the other hand, cost managers are often assigned more complicated tasks than quantity surveyors, especially on many large-scale construction projects [6]. Consequently, it is critical to understand their roles in building projects. Construction managers often need to provide professional suggestions on building project expenditures to manage and maintain reasonable budgets. It is worth mentioning that they often conduct a range of tasks during a project. For instance, they often assist clients in determining if the expected costs of the intended project are controllable. It probably helps building stakeholders objectively consider multiple alternatives and make the best decisions possible to maximise project benefits [6].

3 IMPORTANCE OF COST PLANNING IN BUILDING PROJECTS

The cost plan document is a significant outcome containing a lot of detailed cost planning considerations and measures. It can effectively support the investors and consumers in grasping the practical financial status and related building timetable [6]. Some building professionals agree that cost planning aims to set up the entire cost parameters and figures accurately and realistically during the project planning stage. As the project progresses, the cost manager regularly updates and reports project expenditures and other financial performance in this document. Cost planning, in general, has been actively used by cost managers in recent decades across different continents [7]. The following three paragraphs illustrate the vital significance of cost planning.

3.1 To Ensure Financial Feasibility

Cost planning is crucial to impact and even impact the project financial performance and success because it focuses on the precise analysis and determination of financial feasibility. For example, many excellent building projects in China and other Asian countries would like to undoubtedly present a set of cost strategies at the project beginning phase by recruiting competent cost managers [6]. One of the primary reasons is that the cost planning process will update and present appropriate information to project owners and financial investors regarding the anticipated and practical costs of the targeted project. This function can provide an acceptable budget baseline for critical stakeholders, enabling them to assess the financial feasibility and pursue the projects objectively in their financial conditions [8]. Based on such practical actions, construction investors, especially for many private building projects, can ascertain the profitability of a planned project, preventing and even eliminating the financial risk before the start of a project.

3.2 To Improve Project Profitability

Secondly, the cost planning process is indispensable for guaranteeing and increasing the profitability of building projects. This technique can scientifically predict the probability and contingency of projected expenses occurring during the building lifecycle. Some supporters agree that cost planning can assist in determining the most opportune time that commences a project and secures essential finance at the suitable building stage early. Hence, the planned project is more profitable, resulting in significant tangible benefits for stakeholders due to the project well-organised timeline [8]. On the other hand, if stakeholders are hesitant to use cost-cutting measures, project owners would enter the proposed ventures blindly, sometimes leading to potential bankruptcy [8]. A typical case is related to the building of the Sydney Opera House, which resulted in a considerable financial loss. Due to the functional manager's inexperience with financial analysis and contingency management strategies, the exorbitant cost plan caused a considerable financial loss. Specifically, the project budget was surpassed by around AUS $97 million [5].

3.3 To Update Financial Information Timely

Finally, cost planning may be a powerful instrument for communicating between building specialists and customers. This strategy enables the proper design of construction project financing and timely updates of the project financial data. In practice, the estimated budget will be adjusted throughout the cost planning process in response to the project's current conditions and expected changes under the scope of work [8]. In other words, the essential building stakeholders have access to current information on the finance and expenditure of the targeted project. The fact is that current information allows many stakeholders in a project to make reasonable contingency management choices. To a certain extent, Building Information Modeling (BIM) is a unique product that originated from the concept of cost planning. It can correctly monitor and inform the present condition of project finance. For instance, this method was utilised to manage the new Royal Adelaide Hospital's construction costs in South Australia. The strategies adopted were generally pragmatic and beneficial for preventing or addressing current project difficulties [6].

4 THE POSITIVE IMPACTS OF COST PLANNING ON THE FINANCIAL SUCCESS OF A BUILDING PROJECT

In many cases, poor cost management is more likely to result in project failures in actual building projects. The Australian Transport Research Forum reports that only 40% of rail projects are finished on schedule and under budget [7]. Fortunately, it is a fact that some cost planning techniques can contribute to the mitigation of financial risks and project success. The following three paragraphs will explain its benefits on financial success from various viewpoints.

4.1 To Decrease The Project Variations For Saving Extra Costs

A successful building development project involves proper market research and the identification of potential dangers prior to initiating the project [9]. That is, meticulous planning can minimise the likelihood of project revisions during the implementation phase. It is worth noting that scope changes during the construction stage will probably cause higher costs, as seen in Figure 1 [6]. Thus, to maintain the project cost within the allotted budget, it is necessary first to assess the market situation and identify potential hazards. Fortunately, this is a significant step involved in the cost planning process. As part of the cost planning control approach, cost managers will acquire the necessary market information for developing a comprehensive risk management strategy for project finance performance. Thus, in real-world building projects, the cost planning technique is often adopted to ensure that scope changes are kept to a minimum during the project lifecycle. It considerably decreases the risk of financial loss throughout the construction and operation phases. As part of the cost planning process, experienced quantity surveyors provide pertinent market information based on the present state of the property market and historical data [10]. Due to the market analysis report, project owners may make educated decisions about land acquisition, development, finance, and contracting with various professionals. It helps developers examine many viability scenarios for a specific site in a development project and choose the most cost-effective one.

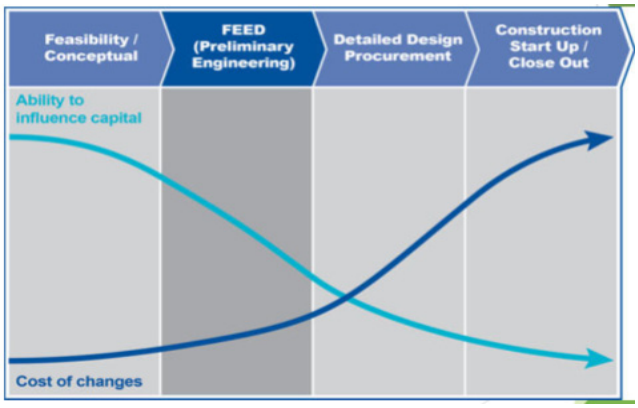

Figure 1. The cost planning graph (Edward 2019, p. 5)

4.2 To Enhance the Confidence of Investors

Sufficient finance is essential for a successful endeavour. Cost planning may also instil a sense of trust for project owners and consumers, encouraging them to engage in and financially support the building projects. This situation is because cost planning assists stakeholders in comprehending technical and financial figures. For consumers unfamiliar with construction and cost management, the easily understandable finance report can assist them in swiftly evaluating the financial position and assessing the project sustainability. This sense of involvement will significantly increase their interest and investment confidence [6]. Dr. Huanyu Wu believes that the cost planning control technique may also assist sponsors and investors in gaining a better understanding of a project's financial status. Consequently, they will feel more secure in taking on or sharing project risks, ensuring that the project finance is sufficient to meet anticipated expenditures during its lifecycle.

4.3 To Control the Total Expenditure Effectively

Additionally, a sensible approach to cost planning allows the cost managers to carefully monitor and manage the project budgets within the customer-established cost cap. Meanwhile, a well-organised cost plan effectively handles contingencies [6]. Consequently, it effectively prevents project delays by addressing most potential risks in advance. On this premise, cost planning may be seen as a critical component of guaranteeing financial success since time equals money in most construction cases. Cost planning can also help keep total expenditures within the final budgets, enhancing financial performance. For example, if the planned project would take longer than 12 months to complete, the cost planning control will consider the cost escalation [11]. Without cost escalation, as occurred with the Sydney Opera House, it is far more likely that the project will run over budgets during the post-construction phase, culminating in a financial catastrophe.

5 IMPACTS THROUGH PREVENTATIVE AND CORRECTIVE MEASURES

Realistic preventive and corrective actions throughout the project life cycle may contribute to the project's success in various aspects. It is clear that corrective and preventive action (CAPA) aims to address the underlying and likely causes of nonconformities and other deficient situations, as shown in Figure 2 [12]. For instance, CAPA should minimise potential dangers and address the fundamental causes of present challenges to ensure building quality [13]. In terms of preventative measures, the building project team should typically develop quality management strategies within the first phase of the construction project. This situation is crucial as the quality plan will include requirements for ensuring that work is directed and performed appropriately. In other words, prior to producing defective items, the project team will specify the product demands and monitor the practical operation. Consequently, it effectively avoids product failure because of pointless labour. On the other hand, if the product has already been finished to inadequate quality, the building team will identify the root causes of the problems and provide a plan for fixing them. For example, if the main problem is a lack of qualified workers, they would acquire experienced personnel to replace the inexperienced operators [13].

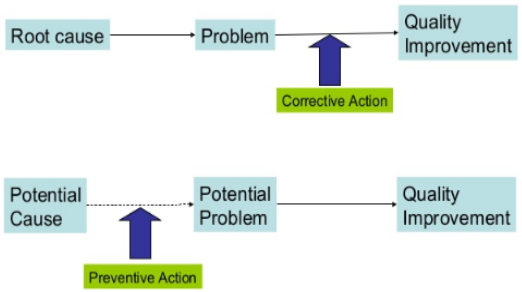

Figure 2. The CAPA measures (Muhammad 2013, p. 3)

6 CONCLUSIONS

To summarise, project success is mainly related to its scope, quality, timeline, cost, and safety. It is vital to incorporate cost managers and quantity surveyors early to develop a successful building project since they have sufficient expertise in construction cost control. Cost planning, specifically, is crucial to financial success since it assures financial viability, project profitability, and the project targeted expenditures during its building lifecycle. Meanwhile, cost planning adds to the financial performance by positively influencing tangible or intangible initiatives. Moreover, building project teams need to adopt suitable preventative and reactive approaches, which considerably increases the likelihood of a successful project. If construction professionals can appropriately apply these principles to real-world projects in the future, the construction industry will experience a rise in the number of successful building projects.

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