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Importance of Proper Cost Management in Construction Industry

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Abstract - *Large construction projects are inherently complex and dynamic. Many projects start with good ideas, big investments and big efforts. However, many of them don't get much success. An important contribution to failed projects is the lack of understanding of scope, time, cost and quality. Projects as powerful strategic weapons when they start to create economic value and competitive advantage. The goal of the research is to explicitly declare the scope of the survey by considering only the scope, time, costs and quality as success parameters of the process and how the cost element would influence the success of the project when everyone else elements or factors other than cost are represented in terms of cost factor together with the conditions of the contract as basic rules or restrictions that determine strategic costs based on the application of the concept of CRASP methodology. The concept of benchmarking would provide the correct meaning of the success of the project by allowing the meaning of the customer's profitability to be distributed to the project suppliers (project owner and contractors).*

***Key Words*: Construction Management, Cost Management (CM), Project Efficiency**

1.INTRODUCTION

Construction companies are the main stakeholders in the construction sector and the main agents to meet the needs of the sector. They carry out the construction of public or private projects, which require efficient management and coordination to maximize resources and ensure the continuity of works and revenues. These companies mainly depend on the results of the projects contracted for their survival, growth, and generation of an adequate amount of profits. Therefore, contractors should focus on various project portfolio management processes to achieve the project goals, of which the project cost management process is the most essential and common problem in the whole construction sector.

However, the management of construction costs has become more complicated with the introduction of new acquisition methods, technologies, resources and various professionals involved in a project, Pereira and Imriyas (2010). Most national contactors are characterized by the lack of an adequate financial management system, and the lack of management of these projects will lead to insolvency which weakens their organizational capacity. The number of contractor failures in the construction sector is known to be much greater than it should be. As the study shows, the high failure rate is not due to the fact that contractors are unfamiliar with construction techniques but have not developed the necessary administrative skills.

In accordance with the guidelines of PMBOOK (2013), the cost management of the project mainly deals with the cost of the resources necessary to complete the planned activities of the project during the execution phase, and this includes the costs of use in the tender's contract, in the construction, maintenance and support of the project results.

Abeselom (2008) stated that construction project cost management is a process that integrates the extensive functions of estimating and tendering, scheduling, cost control and financial control. Consequently, contractors must have a cost management system that goes from the offer to the completion phase, which integrates the estimate, the offer, the budget and the control. Construction cost management is the whole process, which ensures that the contract amount falls within the cost limit of the client's approved budget, Karim Eldash (2012).

The cost performance of the project largely depends on changes in costs, which are known as deviations in the budget or expected costs. The reference point for estimating the change in cost derives from the integral planning phase in which the project, specifications, scope and final cost or award of the contract are developed, which is the final price negotiated and agreed at the beginning of construction

2. Functionality of Cost Management in Construction

The cost of the construction project is decided through a series of steps. In the estimation phase, the estimated cost is offered, and the contract awarded is awarded a proposed price. As described by the various authors, integrated project cost management involves estimating and offering activities, setting the budget or spreading estimated costs and expected revenues and controlling costs by comparing actual costs with estimated costs.

Cost estimation and control applications are not yet satisfactorily used. The current training effort needs to be adapted to improve contractor skills focused on the use of similar and parametric estimates, cost alterations and value gained.

The project cost estimate mainly refers to the cost of resources needed to complete the planned activities of the project and it is the most important aspect of the construction management process that is used to predict the cost of construction activities. While the offer is a process in which an entrepreneur provides cost estimates, he converts it to the amount that will be sent to the customer. If the tender was

issued by the customer and accepted by the contractor, the contractor's offer plans to perform the work and then the bidding process begins. The first decision that contractors must make when they are invited to submit a bid is whether a bid will be submitted or not. If a contractor decides to make an offer, he must also decide the price of the offer.

In a competitive race environment, contractors' desire is to present a bid at the lowest price to win the prize with a comfortable profit margin. The most popular tools that have been accepted in cost estimation and control are similar analyses, detailed estimation, parametric estimation, best approximate estimation, variations, cash flow / S curve and value gained, Nabil The Sawalhi (2004). The accuracy of a cost estimate depends on the time and funds used, despite numerous types of estimates.

3. Current Scenario of CM

Today, the price strategy of the civil construction contracts most commonly used to compete with the offer is the type of measurement contract BOQ / announcement, in which the unit prices are quoted for each activity listed in the BOQ, the quantity of which is reserved. . The offer amount includes an estimate of the costs for the project activities and an allocation of the margin for general expenses and profits. In addition, market-based prices are a promising solution rather than cost-based prices, which can overcome the challenges of marketing construction services in the future and which can maximize the benefits derived from all parties involved in construction projects, found by Serpong, Tangerang (2003). Sahay and Subhashish also suggested that companies that have an activity-based costing system have better awareness for benchmarking and budgeting but have no priority in budgetary targets.

Improperly planned plans can lead to difficulties in using the allocated funds. Most contractors prepare the budget for their projects, but only a few uses it to facilitate the cost control process. The main purpose of a budget is to form a basis against which to compare actual expenses and benefits. Based on the baseline, the cost control system should be able to track and identify activities that indicate a substantial deviation from the planned amounts.

4. Problems occurred in CM

The contractor's cost control scheme pays close attention to the material cost component. The material cost component should receive more attention due to its high proportion and sensitivity to price changes. However, since labor and equipment costs are the components where most of the time it is inefficient, the system should focus more on these elements. In cost control practices, and efficient project cost control system is one that generates information that can improve resource productivity, track and identify activities that suffer from inefficiency and that provide feedback for subsequent estimation, in addition to indicating Only profitability. For many contractors, cost control is not linked to the cost estimation process and does not provide feedback on prices or subsequent offers. Among the main purposes of a cost control system, one is to provide feedback to the estimation process. This is facilitated by creating a database or cost record that maintains actual production costs and productivity standards.

According to Shanmuganathan and Baskar (2016), cost management techniques such as cost flow forecasting cost planning and control and estimates that are of the most relative importance are important for cost control. Furthermore, as discussed by Otim, Nakacwa and Kyakula, the most common cost control techniques used by contractors are programs, budgets, labor inspections, on-site meetings, cost reports, cost monitoring, and performance evaluation, while others do not they had well-defined control techniques, also the management of the value gained is a complete and effective technique for cost control. The value model acquired as a project control technique, can assess the progress of the works by identifying possible delays and cost overruns in a project and provides a quantitative measure of the cost information, which is very useful for controlling the projects based on to what established by Sangyoub and Sangchul (2008). Contractors must prepare the S-curve and the value obtained from the experience of previous similar operations in their company as a means of monitoring and measuring progress.

The factor that mainly influences the cost of the project is the delay in the project and in the material, and the various methods that have been developed and applied to analyze the problems of time and costs can optimize only one parameter, Anuja, and Parag (2015). An inaccurate estimate of the time/duration of the project; plan changes, risks, and uncertainties; the complexity of the works and; The poor performance of subcontractors are the main factors hindering time and cost control in construction practice, Olawale, Y. and Sun M. (2010).

5. Solution in CM

Therefore, to improve existing cost management practice, contractors must follow a detailed examination of all factors relating to the submission of the tender; must have a bid strategy aimed at acquiring sufficient turnover with a sufficient profit level; they are advised to keep track of actual data on material consumption and resource productivity; overhead costs must be identified, quantified and estimated item by item during the cost estimation phase; All potential risks, economic conditions, and political situations should be assessed, predicted, quantified and incorporated into the sum of the offer as much as possible. Furthermore, it is recommended to use other estimation techniques in addition to the standard estimation technique; the cost estimation formats must be integrated with those used for budgeting and cost control; its cost control system should be able to identify activities carried out economically and indicate their causes; they must be used to preparing a budget for each activity, and contractors are strongly recommended to use the project work breakdown to facilitate the cost control and management process.

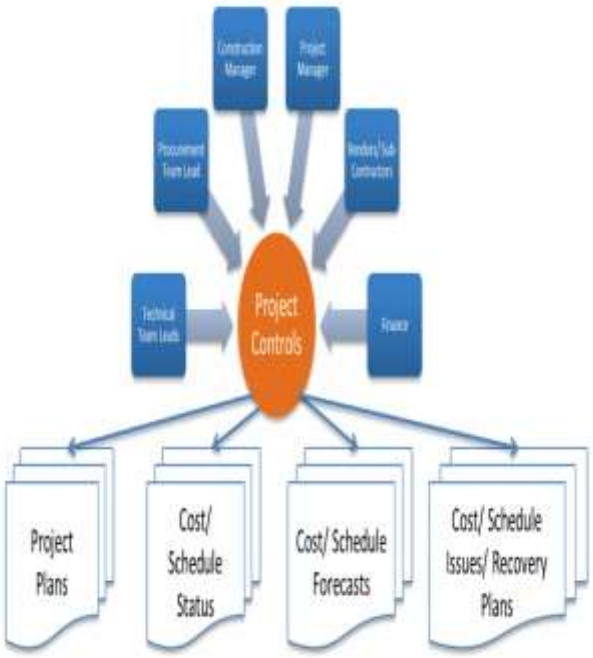

Fig -1: Main Factors to Control Cost at Construction

6. CONCLUSIONS

Since the project's cost management system integrates the extensive cost estimating and offering functions, planning, and programming/budgeting and financial and cost control; Contractors must have a cost management system that integrates estimates, tenders, budgets, and controls.

The main shortcomings of the cost management practice of construction projects can generally be attributed to ineffective approaches to identify, manage and control customer needs, the scope of the project and the cost of the project, incompetent competition in the offer, the Delays in design and materials, rework, changes in design and specifications, changes in the scope, design errors, incomplete

planning, delay in project delivery, contractual complaints, site disputes, and poor project management, price fluctuations, inflation, rising wages and material prices, poor site coordination and poor communication. Furthermore, it was revealed that the problem does not only concern the techniques to be used but the lack of knowledge of the techniques, the poor management of the cost control methods and the poor organization of the site and inadequate supervision. Therefore, contractors should consider cost management functions adequately and in a balanced way.

An integrated project cost management system could be developed using an appropriate acquisition strategy, various low-cost materials, mathematical methods and models based on well-defined software and cost control techniques. If the costs are not accurately estimated during the bidding phase, no matter how efficient the cost control is, the projects will not be satisfactorily realized compared to the profits. Furthermore, if costs are not recorded in the financial statements and adequately controlled/controlled during the construction phase, however accurate the estimates may be, the financial result can be disastrous for contractors. A better understanding of their omnipresence of inaccuracy and risk in decision making is needed to obtain an ideal project cost and to have control over cost deviations.

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