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AN OPTIMIZATION OF COSTING OF BUILDING BY DSR-2016 AND CURRENT MARKET RATE-2016

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ABSTRACT

In the construction project, time and cost are the most important factors to be considered in the planning of every project. The aim of project is to finish the projects on time, within budget and to achieve other project objectives. It is a difficult task undertaken by project managers in practice, which include constantly measuring progress, evaluation of plans, and corrective actions should be taken whenever required. Optimization is a systematic effort made to improve profit margins and obtain the best results under given circumstances. There is a Systematic planning and programming with effective management is necessary for timely completion of the project. there is availability of various tools and techniques for optimization.

Keywords: time, cost, optimization.

I. INTRODUCTION

In the process of construction, there are purchasing, transportation, safekeeping, inventory and other activities of a lot of special mechanical equipment, raw materials, and preliminary products. Considering some characteristics existed in construction projects, such as high investment, large scale, complex, long construction cycle, having an important influence on the development of national economy, and etc, studying the reliability of logistics system in construction project is very necessary. However, the high reliability of the construction project logistics system often means increasing the investment cost. The purpose of research is to make the operation of logistics system of construction to meet the requirements of the corresponding reliability index, at the same time to realize the good investment cost and to guarantee to transport the correct amount of materials and equipment to the right place in the right time.

II. CONSTRUCTION PROJECT LOGISTICS SYSTEM

Characteristics of logistics construction project

The essence of engineering project construction is the materials consumption. The final purpose of the construction project logistics system is transporting the right quantity equipment, raw materials to the right place at the right time to meet the requirements of the project progress and quality. The various characteristics distinguished construction project logistics system from general logistic system include:

- Disposable, just a construction project is exist,
- Uncertainty,
- Supply chain end when the project in completion,
- High risk, the occurrence of risk always lead to serious financial loss,
- System reliability is controllability and complex is weak.

The Structure of logistics construction project

The construction project logistics system is a complex system consisted of project owner, professional subcontractors, the general contractor, design unit, material suppliers, mechanical equipment suppliers by certain contract relations. The owner is an final member of the logistics chain, which plays a leading role.

III. ESTIMATING AND COSTING

Many factors affect the accuracy of building construction projects' estimating and costing which should be considered in the early stage of the estimating process. Some factors can incorrectly increase the estimated costs and the possibility of contractual disputes between the various parties involved. Other factors can help the estimator to decrease the unnecessary cost of an item and hence lead to successful tendering in a very competitive market.

Therefore, accurate estimating requires detailed study of the bidding documents and the environmental situation. It also involves a careful analysis of all projects’ data in order to arrive to the most accurate estimate of the probable cost consistent with the bidding time available and the accuracy and completeness of the information submitted.

The impact of inaccurate cost estimating on construction business is significant. Overestimated cost result in submitting a high tender price by the contractor, which could lead to the tender being unacceptable to client. On the other hand, an underestimated cost may lead to a situation where a contractor incurs losses on the contracts awarded by clients. Contractor needs to identify these factors and assign cost variance related it.

This study is an attempt to identify the main factors affecting the accuracy of cost estimate in building construction. Such factors that the estimator should consider when preparing a cost estimating. Then, developing a model that assesses related cost variance so that it will lead to

- Minimize cost variance that is an indicator of accuracy of cost estimating.
- Avoid the contractor’s submission of an overestimated bid.
- Enhance the effectiveness of the cost control process.

IV. TYPES OF ESTIMATING

There are two types

- Approximate estimate
- Detail estimate

Approximate estimate

- Plinth area method
- Cubical content method
- Service unit method
- Typical bay method
- Approximate quantity method

Detail Estimate

- Revised estimate
- Supplementary estimate
- Revised and Supplementary estimate
- Repair and maintenance estimate

V. DSR (District Schedule Rates)-2016

It is booklet of printed rates of different items, labour etc as per the region. These rates according to locally available materials, labours. For Government contract we have to use DSR rates. The rates given in DSR are revised for every year. DSR are different for different region like Pune, Mumbai, Nagpur, Aurangabad etc.

DSR-2016 is used for project. Schedule of rates prepared for the year 2016-17 is operative from 1st July 2016 and applicable for Pune, Satara, Sangli, Solapur, and Kolhapur district.for other works the increase in rates as all shall be applicable one time only.

Measurement Sheet

This is the standard format which is used for entering different quantities like length, breadth, depth, number etc. Format of measurement sheet:

ItemNo.	Particulars of the item	No.	Length	Breadth	Depth	Quantity	Total Quantity

Abstract Sheet

When measurement sheets are completed or final total quantity of item is known. Then this quantity is entered with unit of measurement in one sheet this sheet is called abstract sheet.

Format of abstract sheet:

Sr. No.	Particulars of the item Excavation	Quantity	Unit	Rate	Unit	Amount

Face Sheet

As the name indicate it is first page of detail estimate. It is also called as general abstract sheet. It consist of the following things

- Name of work –
- Division –
- Estimate prepared by –
- Estimate checked by –

Sr. No.	Particulars	Amount
1.	Estimated cost	-
2.	Water supply and sanitary charges (%)	-
3.	Electrification charges (%)	-
4.	Contingencies - %(3 to 5%)	-
5.	Work charge establishment - %(2%)	-
	Total amount	
	(Addition of above five)	
	Total amount in words	

VI. CONCLUSION

In this paper we reviewed technique for optimization. To minimize the construction cost and time at each phase is important. It is a need to meet the present day requirements and to complete the construction within the estimated cost, time and available resources. Mainly affecting the factor on cost of project is delay material and project. Different low cost material also suggested for optimizing the cost of project along with maintain the quality and strength of the project. Also different mathematical method studied for optimization. Eliminates overhead costs with expert knowledge on construction management.

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