



The Comparison Of Estimation Work In An Organization Which Use Takeoff Software's VS Conventional Method

¹Toprani Kartik Mahesh, ²Patil Satyajit Balaso

¹M.Tech Student, ²Assistant Professor

¹Civil Engineering,

¹Ashokrao Mane Group Of Institutions, Vathar, Kolhapur, India

Abstract: In construction field, an estimate is the anticipated or probable cost of work which is usually prepared prior the construction process. In the present business scenario, the projects are supposed to be delivered & are required to perform under specific constraints. The primary constraints are time, cost, scope, etc. Similarly, there is one such constraint wherein the project managers need to manage that constraint effectively is resources. Hence, it's the responsibility of the individual to ensure the right resources for the project. To do this, an individual must have proper resource evaluation process. When it comes to assess the number of estimators to complete an estimation task in a construction project it can be defined as resource estimation technique. Hence, the phenomenon of predetermining the quantity and quality of resources is known as resource estimation. As we known to the fact that resources are the ones that make the project successful, their productivity will determine the timely delivery of the project. The aim of this paper is to assess the amount of resources for the estimating purpose by employing the resource with the conventional software method (Auto-CAD & Microsoft Excel) and the Construct Connect Software method on the same project.

Index Terms - Resource Evaluation, Quantity Takeoff, Construct Connect, Overhead Cost, Constraints.

I. INTRODUCTION

In construction field, an estimate is the anticipated or probable cost of work which is usually prepared prior the construction process. An estimate is an indeed computations or calculations of different types of engineering work items. This allows the contractor to guarantee a price to an owner, before knowing the actual costs which makes the construction industry to be unique. In order to determine the overall project costs the basic factor which comes into the picture is the project's design. The financial success of a construction project depends upon the accuracy in the initial estimate that accurately assigns the cost of work. Conventionally, the least bidder on a construction project is awarded the project. In the present business scenario, the projects are supposed to be delivered & are required to perform under specific constraints. The primary constraints are time, cost, scope, etc. Similarly, there is one such constraint wherein the project managers need to manage that constraint effectively is resources. Resources are the actuating force behind the success of the project. Hence, it's the responsibility of the individual to ensure the right resources for the project. To do this, an individual must have proper resource evaluation process. When it comes to assess the number of estimators to complete an estimation task in a construction project it can be defined as resource estimation technique. Hence, the phenomenon of predetermining the quantity and quality of resources is known as resource estimation. As we known to the fact that resources are the ones that make the project successful, their productivity will determine the timely delivery of the project. If the estimation of the resource is poorly executed, it will lead to improper resource allocation. Thus, the end result will be suboptimal resource productivity. Therefore, leading to compromised results, dissatisfaction from the client's side, and project cost overruns. The estimators are required to give accurate results and if that happens within shorter time period it can prove to be cost efficient for an organization to employ less number of resources.

1.1 Purpose

In the modern days, the construction industry is getting advanced and hence, the cost estimating tools are developing rigorously. It's the need of an hour to prepare the estimates faster and to minimize the overhead labour costs of an industry. As the complexity of the construction projects are increasing the labour costs overruns for a project if the estimates are prepared through the conventional method. Thus, there is a need to provide solution to the problem that how an industry can prepare the budgets with lower expenditure on labour costs. Work undertaken is to assess/compute the number of resources required to prepare an estimate for a case study project based on time an estimator needs to complete the bid and the accuracy will be judged of the new software approach.

1.2 Problem Statement

The job of quantity take offs requires pain staking efforts and huge time to maintain accuracy. In the present business scenario, the projects are supposed to be delivered & are required to perform under specific constraints. The primary constraints are time, cost, scope, resources, etc. The project managers need to manage these constraints effectively. This task is hard to achieve using conventional estimation methods.

2. METHODOLOGY

The methodology employed for this project will be to evaluate the quantity takeoffs for a project (case study) using conventional method and to compare the effectiveness of the same with a new software approach. The software selected to compute the takeoff is Construct Connect. The set of drawings will be collected to compute the quantities of the project (case study). The computation of the quantities will be done by finding out areas and volumes in the project (case study). The analysis work is going to be divided into 4 stages in logical and coherent order. The 4 stages embrace preliminary stage, reviewing literature, data collection, analysis and conclusion.

The whole project work is to be divided into the four stages, as below:

1. In the first stage the problem in the construction industry is identified, finalize the topic related to the problem statement, deciding the aim & objectives.
2. Second stage of project consists of literature survey to understand the basic concepts & various terminologies related to the project topic. This stage also includes collection & study of various software's required for preparing the estimates.
3. Third phase of the project includes prepare the estimates for a project (case study) by Conventional method and Construct Connect Software method. Along with it also focuses to compute the time required by an estimator to prepare a bid, other factors such as accuracy, quality of the output, etc.
4. The fourth phase consists of analysis of data & determining the results from analyzed data with respect to the number of resources that can be saved based on time an estimator needs to complete the bid, hence, to draw conclusion of the project.

Conclusion

As we know that most of the construction industries incorporate traditional methods to perform the takeoff. But there are various methods which after studying, if incorporated in the same industry can lead to save ample of time as well as the overhead cost which an organization is worried about could possibly be saved.

REFERENCES

- [1] Bettemir, Ö. H. (2018). Development of spreadsheet based quantity take-off and cost estimation application. *Journal of Construction Engineering, Management and Innovation*, 1(3), 108-117.
- [2] Zhao, P. A., & Wang, C. C. (2014). A comparison of using traditional cost estimating software and BIM for construction cost control. In *ICCREM 2014: Smart Construction and Management in the Context of New Technology* (pp. 256-264).
- [3] Alder, M. A. (2006). Comparing time and accuracy of building information modeling to on-screen takeoff for a quantity takeoff of a conceptual estimate, Brigham Young University.
- [4] Hergunsel, M. F. (2011). Benefits of building information modeling for construction managers and BIM based scheduling.
- [5] Adafin, J., Wilkinson, S., Rotimi, J. O., & Odeyinka, H. (2014). Accuracy in design stage cost estimating through risk-contingency analysis: A theoretical exploration. In *Construction Research Congress 2014: Construction in a Global Network* (pp. 1478-1487).
- [6] Monteiro, A., & Martins, J. P. (2013). A survey on modeling guidelines for quantity takeoff-oriented BIM-based design. *Automation in construction*, 35, 238-253.