

Project Cost Management

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Abstract

Construction project are of heavy investment cost and tremendous risk as it proceeds. The project includes proper design, tremendous efforts taken to complete the project. But, due to some reasons, some project stops in middle, some go up to end and few projects complete with respect to time, cost and quality constraints. The research objective of this is to study the parameters like scope, quality, cost and time affecting overall project cost to either project success or failure parameters. The concept behind this study is that how cost is affecting to overall project so it is possible to take preventive action on such parameters which will going to help in long term.

Keywords: Project cost management, Cost constraints, Parameters affecting project cost, Project failure parameters, Project cost control

I. INTRODUCTION

In a project, the sponsor/owner and contractor have same goal of completing project within time and agreed cost but approaches can differ. Construction project are not static in nature. It includes tremendous investment, partially unachievable objectives, scope and feasibility. Due to lack of proper definition, scope, feasibility, estimates project failures. It is common that project fails to achieve its mission and objectives in given cost and time constraints. A welldefined project within the budgeted cost and specified time delivers quality in project to the stakeholders. Traditionally projects were perceived as successful when they meet time, budget and performance goals. Due to revised rules and regulation, updating to current scenario is essential. Meeting goals and objectives within the budgeted cost and specified time is known as Project success. It must complete with higher technical performance, specifies budget and given cost. Project success is the ultimate goal for every project.

A project can be considered to be the achievement of a specific objective, which involves a series of activities and tasks which consume resources. The function of a project management is to define the scope, feasibility, flaws in contract, resources provision, proper management during the execution of work, progress monitoring and controlling, proper closing and handover to stakeholder.

However, in this paper, the definition as mentioned in Project Management Handbook has been adopted, "Project is a high value, time bound, special mission of creating product/facility, with predetermined performance objectives, generally stated in terms of quality specifications, completion time, resources constraints and budgeted cost."

II. LITERATURE REVIEW

A. Feasibility of Project on Success Factor:

The type of project either commercial or residential should be feasible for that area. If there is any commercial sector under development/developed then it is better to create a residential scheme so there are great chances of residential project success. If any township development is taken into consideration, then it is better to place commercial sector or large sector companies in that area for employee rehabilitation in that residential area. It is better to think about requirement of such project according to scope, feasibility study and need analysis. The prevailing cost depends on the location, specifications, resources availability, working conditions and the political environment.

B. Time and Cost Relation on Project Success or Failure Parameter:

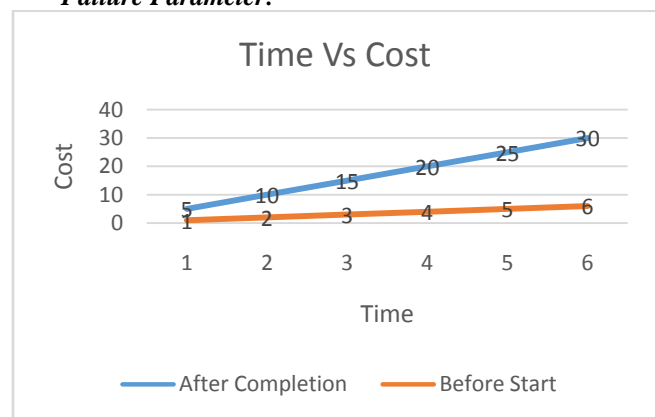


Fig 1: Time Vs. cost Graph

Before starting of project, planned cost is less as compared to after completion cost incurred.

C. Market Survey

Market survey while considering bulk quantities of materials can save tremendous cost. Also loyal parties in construction can save cost in materials. Market survey gives different prices from different dealers for same material. So we can get idea about which dealer gives lesser cost for that material. Bulk quantity at a time for large construction for that material gives higher discounts as compared to other.

Example:

In general, cement constant for 1 sq. ft. is 0.35 cement bag. If we consider 500000 sq. ft. of work. then we require around 175000 bags. The standard rate of cement bag (50 KGs) is INR 300 rupees. As per market survey, such large quantity of cement possibly available for INR 290 rupees instead of INR 300. So, we can save INR 1750000 just because of market analysis.

D. Causes of Project Failure:

It is common to see a project failing to achieve its mission of creating a facility within the specified time and cost. According to ministry of Programme Implementation of India' Report,

- 56% construction project cost overruns
- 49% faced a time overrun between 1 to 157 months

The main factors contributing to project failure are as follows:

- (1) Lack of experience, inadequate feasibility analysis, inadequate project information.
- (2) Unrealistic time and resource plans, poor cost planning
- (3) No proper communication among team members
- (4) Low quality work, delays unsatisfactory organization, inefficient law and order
- (5) Poor site management, improper higher level management decision.

1) Failure costs

Failure costs are resulting from non-adhering to the design and specifications. It can be divided into internal and external cost.

a) Internal Failure Cost

- Wastage of resources
- Cost of re-working on defective product
- Cost of unnecessary repetition of activities
- Correction of same repeated mistakes

b) External failure costs

- Loss of material
- Loyal customers have negative feedback
- Not giving attention to customer complaints
- Poor customer response
- Poor handling of customer claims

E. Project Cost Management and Cost Control

Cost management is concerned with material expenses, labor expenses, land cost, sanction expenses, administrative and services offered costs, etc. It is process of planning and controlling such activities which are directly affecting the project budget. Cost management covers the different phases such as formulation phase, planning phase, execution & control phase and closing phase (DoF, 2009). Cost control is the action taken on various life cycle stages of project to keep control on cost fluctuations to complete project within specified schedule and budget.

The sponsor/owner adjusts the funds depending upon cash outflow and controls budgeted amount using cost estimating method, earned value system, cost breakdown structure, etc. The contractor organizes and control resources utilization to produce plan and control resources cost and manages cash flows and initial investment costs.

The imperative for controlling project cost have a defined objective, scheduled plans, a proper organizational structure and detailed study of cost estimates. This process are interdependent and overlaps.

F. Project Parameters

Time, Quality and scope parameters in terms of cost are explained below.

1) Time:

Time is the period required to complete the project from initiation phase to closing phase of project life cycle. If the activities taking too much time to complete despite of having proper schedule, then it is going to affect the project cost in long term. Not following the project schedule increases the cost and risk of project.

2) Quality:

As per ISO 8402-1986, Quality means, "the totality of features and characteristics of a product or service that bears its ability to satisfy stated or implied needs." Using low quality material as per specifications results into post construction phase of project. Low quality material increases cost anyway for maintaining the building after some years. A good quality construction material reduce maintenance cost over a period of time or also for life time.

3) Scope:

Scope is the process of determining a list of goals, activities, features, function and costs. Properly defined scope, feasibility gives proper input and output to the project. Location, project feasibility, viability, requirement of any specific sector affects cost to the project. Detailed survey of any area can manage cost in upcoming years.

G. Cost management

Cost management is process of planning and controlling budget of a project. The following steps discuss about how to manage the cost.

1) Cost Budgeting:

The budget gives an overview of periodic and total costs of project. The budget allocates the costs over the period of time when the cost will be incurred. A cost baseline is an approved time phased budget that is used as starting point to measure actual performance.

2) Resource Planning:

In the initial phase, the required resources to complete project to be defined. Past projects for comparable study can be used to define resources specifications. If the resource types and quantities are known, then cost can be determined.

3) Cost Estimating:

Several cost estimating methods are available to predict how much it costs to perform the project activities. The uncertainties in estimates can result in additional cost which are going to cover in reserving cost like escalation or contingencies.

4) Cost Control:

Cost control is concerned with measuring variances from the cost baseline and taking action to achieve minimum cost. Cost control software tools used to define cost control procedures, track and apply changes and analyze.

H. Cost Benefit Model

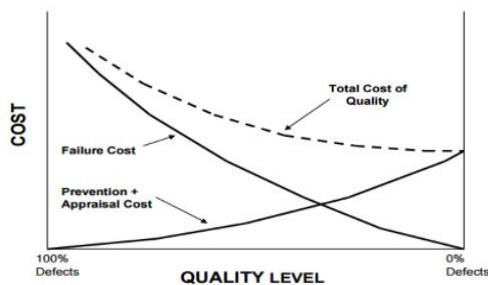


Fig 2: Quality vs. Cost Graph

In a project, the prevention cost and failure cost is inversely proportional. If the prevention cost increases then failure cost decreases. In initial stages, the cost of controlling quality is more than failure cost. But as project proceeds due to better initial management of quality, no. of failures reduces thus resulting in overall project cost. Quality work always stays up to last and long term benefits are more due to this.

CONCLUSION

This study is conducted to investigate the cost overrun and cost control in construction projects which revealed that the average cost overrun in building construction is between 10% to 40%. Due to unstable market conditions, fluctuation in prices of materials, political influence and level of competitors affects the cost overrun. Based on study, following points are suggested.

- Strictly adhering to project plan
- Continuously updating material and labour rates
- Properly defining scope and feasibility of project
- Continuous monitor and track of progress
- Adequate technical skills required
- Periodical training camps for updating knowledge for staff
- Periodical Audits
- Increase in speed of construction activities
- Reduction in wastage and recycling
- Order in bulk quantities of materials saves cost considerably.

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