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Financial Planning in Construction Project

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Abstract - *Project management is the application of knowledge, skills, tools, and techniques to project activities to achieve the project requirements. There are various major and minor processes involved in project management which are directly responsible for the successful project management. Those processes can be categorized into following groups: Initiating process group, Planning process group, Executing process group, Monitoring Control process group, and Closing process group*

***Key Words*: Monitoring, Planning, Techniques, WBS.**

1. INTRODUCTION

Construction industry is an important industry at both the global level and national level. It is second largest sector in India. It provides huge employment to the people and plays very significant role in country economy. Project delay is most common problems in the construction industry. Project overruns due to time and cost result in delays during project execution. In developing countries project overruns is a serious where implementation of project faces many uncertainties. It result in wastage of scare financial resources, delays in providing facilities, development and also make construction costlier. With globalization and technology driven economic growth all over the world, a scientific and systematic approach to project management becomes imperative to ensure that project objectives are attained within the constraints of time and resources.To overcome this, effective project management comes into the picture.

Project must be managed in each phase of project to avoid any delay or cost overrun. Before going in depth about the technique of effective project management,

take a look on concept of Project and Project Management. A project is an attempt temporarily undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. The end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists.

There are various activities involved in Project which may or may not be dependent on each other. Activities are bounded with the time or/and cost or/and resource. The success of any project is directly depending upon the timely completion of activities without over run the cost. This can be achieving by the effective management of project which is a skill.

The aim of this study is about the essential aspects of Project Management and To achieve these aims, the objectives of the study must be identified first;

a).To Study the concept of financial planning for construction project.

b) Factor Affecting on financial planning Or Method used for financial planning for project.

c). Financial planning for Major Construction Project (Case Study).

d) Analysis of Case study data.

2.0 SCOPE OF PROJECT

The analysis of a construction project can be done by different traditional approaches like daily monitoring, weekly management reports, monthly schedules, performance reviews, key performance indicators, project audit reports etc. In traditional project management, the analysis is based on today's date and the actual amount of money spent on the project. Usually there are two data sources in such traditional approaches, the Planned expenditures (Budgeted cost of project) and the actual expenditures (Actual cost of project). The comparison of budget versus actual cost clearly indicates what was planned to be spent on the project versus what was actually spent at any particular stage of the work. And also, how much has been produced. To measure the performance of the project at a particular date, the budgeted cost is compared to the amount of money spent. The main drawback of traditional approach is that there is no way to determine the physical amount of work performed. Traditional approach does not give any idea related to what has actually been produced for the amount of money spent on the project nor does it signify about whether it is being produced.

3.0 METHODOLOGY

a) Study consists of basic concept of project planning, scheduling, monitoring of project, tracking in financial (Cost) aspect. Also include the various aspects given below

i) Literature survey.

ii) Overview on basic study of financial (Cost) planning.

b) Brief study of factor affecting on financial planning

Above study will be by analyzing the data from previous research studies from various national and international journals and research papers. This will help in understanding of basic terminologies and further research work.

c)Prepared a report on Financial planning (Case Study) by the field visits. And hence the data will be collected.

d) Analysis of Case study data.

4.0 LITERATURE REVIEW:

As Earned Value Management is the effective technique for monitoring of project both timely and cost wise, it is considered for the method for further work of this project and hence focus of literature is concentrated on EVM. There have been various studies performed on the Earned Value Management, some of the studies performed in this field are studied and presented in the following literature review.

Anthony Cabri, Mike Griffiths (2004) this paper reviews the concepts of Earned Value Management established in traditional project management, and determines whether and how they can be applied to software development projects following an agile methodology. First the origins and concepts of Earned Value are reviewed, followed by its application in traditional projects. Then the application of Earned Value Management to Agile software projects is investigated. Earned Value is a project management monitoring & reporting technique that has been developed and utilized over the course of the last 100 years in traditional engineering projects. It relies on an

initial task-based baseline plan for measuring progress, and a project with well-defined scope that evolves in a sequential, linear fashion. In agile, projects evolve in an iterative, non-linear fashion, with feedback loops that affect the initial plan. Change is expected and frequent throughout the project lifecycle, thus measuring progress relative to the initial plan will be misleading. While there are issues with attempting to apply Earned Value to Agile projects, agile project management techniques such as burn charts (indicating the amount of functionality outstanding vs. Completed over time, etc.) provide status & progress information very similar to what Earned Value attempts to measure. Costs can be added to the charts to view the information together with rate of feature completion. All of these may be more valuable to the project manager and project stakeholders in monitoring an agile project, rather than attempting to apply traditional Earned Value.

Attila Boydak (2013) this paper shares the author's views, as an adviser and practitioner, on the differences and the underlying reasons for these differences in EVM based project controls applications in four industries: Power, telecommunication, building construction, and transportation. This paper also reviews the influence of ownership structure and project service providers on EVM practice. According to author, it is branded as "EVM," the basic concept of recognition for the work completed is used successfully in many engineering and construction industries. This concept is widely used in the power, telecommunication, and several other industries where participants have higher risk exposure or lower risk tolerance than other industries. Commodity installation curves, craft and labour histograms, and physical percentage complete curves are some of the methods used in the permitting, engineering, and construction phases.

Awad S. Hanna (2012) in this study the author introduces an earned value management system that allows electrical contractors to monitor construction progress, perform forecasts on the project, uncover problems occurring on-site, and respond to problems in the project as early as possible. The goal of this study was to determine how the EVS can best be used in electrical construction and effective implementation of the system and determine the accuracy of different methods for measuring output. The analysis reports for EVS includes the field personnel loading curve, S-curves, performance factor profiles, and work-hour forecasts. Results of this study showed that early determination of probable project outcome is possible. Early warning signs are discussed and explained by the author. Use of EVMS can also help to detect cost overruns and schedule variation in the project, which makes it possible to take corrective measures in a time. Through this project, many contractors were asked about the biggest benefit to implementing and using an earned value system.

Bhosekar Sagar ,Gayatri Vyas, (2012) this study discussed about the main parameters involved in the calculation of Earned Value Analysis (EVA) in the cost management of civil construction projects. Authors have developed Earned Value Analysis software in Visual studio 2008, SQL Server 2005, .Net (C# language). Further, comparison of selected parameters between M.S Project 2007, Primavera P6 and

developed software has been done. The two Projects were analysed using the developed software (in C#, .Net & SQL server) and MS Project 2007 and Primavera P6 based on Earned Value Analysis Method. Planned Value, Actual Value, Earned Value, Cost Variance, Cost Performance Index, Planned Duration, Actual Duration, SV(t) - Schedule Variance respect to time these variables were considered for the comparison. A new parameter SV (t) (Schedule Variances respect to time) was identified and incorporated in developed software which was not in MS Project 2007 and Primavera 6.This comparison shows a strong relation between three software's, with more than 99.5% accuracy. It can be concluded that the software could be used in a wide range of projects for Earned Value Analysis calculation.

Fernando Acebesa, et al. (2013) this paper, proposed an innovative and simple graphical framework for project control and monitoring, to integrate the dimensions of project cost and schedule with risk management, therefore extending the Earned Value methodology (EVM). EVM allows Project managers to know whether the project has overruns (over-costs and/or delays), but project managers do not know when deviations from planned values are so important that corrective actions should be taken or, in case of good performance, sources of improvement can be detected. From the concept of project planned variability, authors build a graphical methodology to know when a project remains "out of control" or "within expected variability" during the project lifecycle. To this aim, authors define and represent new control indexes and new cumulative buffers: the cumulative maximum buffer and the sum of the cumulative minimum buffer and the cumulative maximum buffer. With these new measures, the project manager can determine graphically whether the project is delayed or not and whether the departure from planned values remains within the expected or planned variability (similar reasoning applies to cost). If overruns are higher than the allowed values, corrective actions should be taken in order to drive the project to control. If good performance is achieved, the methodology alerts project managers about possibilities of improvement.

5.0 CONCEPT OF FINANCIAL PLANNING IN CONSTRUCTION PROJECT

Construction is a major capital expenditure. Cost management is the process, which is necessary to ensure that the planned development of a design and procurement of a project is such that the price for its construction provides value for money.

Definition of Financial Planning: Financial Planning is the process of estimating the capital required and determining it's competition. It is the process of framing financial policies in relation to procurement, investment and administration of funds of an enterprise. Financial planning means to prepare the financial plan. A financial plan is also called capital plan. A financial plan is an estimate of the total capital requirements of the company. It selects the most economical sources of finance. It also tells us how to use this finance profitably. Financial plan gives a total picture of the future financial activities of the company.

Objectives of Financial Planning: Financial Planning has got many objectives to look forward to:

a) Determining capital requirements- This will depend upon factors like cost of current and fixed assets, promotional expenses and long- range planning.

Capital requirements have to be looked with both aspects: short- term and long- term requirements.

b) Determining capital structure- The capital structure is the composition of capital, i.e., the relative kind and proportion of capital required in the business. This includes decisions of debt- equity ratio- both short-term and long- term.

c) Framing financial policies with regards to cash control, lending, borrowings, etc.

d) A finance manager ensures that the scarce financial resources are maximally utilized in the best possible manner at least cost in order to get maximum returns on investment.

Importance of Financial Planning: Financial Planning is process of framing objectives, policies, procedures, programmes and budgets regarding the financial activities of a concern. This ensures effective and adequate financial and investment policies. The importance can be outlined as-

a) Adequate funds have to be ensured.

b) Financial Planning helps in ensuring a reasonable balance between outflow and inflow of funds so that stability is maintained.

c) Financial Planning ensures that the suppliers of funds are easily investing in companies which exercise financial planning.

d) Financial Planning helps in making growth and expansion programmers which help in long-run survival of the company.

e) Financial Planning reduces uncertainties with regards to changing market trends which can be faced easily through enough funds.

f) Financial Planning helps in reducing the uncertainties which can be a hindrance to growth of the company.

6.0 COST PLANNING

A cost plan determines the fiscal feasibility of an initiative. This is done by setting the lifecycle budgets and cost controls to manage the delivery and quality of the initiative's outcomes over a set time frame .In the construction industry, a cost plan is used as a way of controlling the estimated costs during the design and construction phases of a project. That means that cost plans are living artefacts, just like project management plans. They must be managed throughout the lifecycle of any initiative in any industry.

The art, or for that matter the science, of where cost estimation migrates into cost planning, relies on sound commercial principles. It requires the right modeling tools and a good dose of experience.

The principles to cost planning are:

a) Time is money.

b) Risk and reward are opposites. The higher the risk, the greater potential for reward. If the risk is unsustainable, there'll be no reward.

c) Appropriate controls to develop, implement and manage cost estimates and cost plans are the key to repeatable quality outcomes and commercial success. Cost estimating and cost planning outcomes provide the framework for cost control through the lifecycle of any initiative. Cost control is making sure you stay within the budget set during the cost estimating and cost planning processes. The execution or implementation of guiding principles comes in many forms and permutations. Most project management knowledge has a chapter on cost estimating and cost

planning, and the need to control this scarce resource. Managing cost sits at the top of project management criteria, along with managing scope, time and quality. I could argue that if costs are not managed then it's likely the other three are not under control either.
So, the capability to develop such financial models is dependent on your commercial intellect and your relevant industry experience. An experienced cost estimator/cost planner must have a multi-disciplined capability to visualize, over time, the cost of designs, materials, effort, risk etc., and apply commercial strategies to

6.1 COST PLANS FOR CONSTRUCTION PROJECTS

There are very many different names given to cost planning documents. Cost plans are generally prepared by cost consultants (often quantitv surveyors). They evolve through the life of the proje developing in detail and accuracy as more informati becomes available about the nature of the design, and then actual prices are provided by specialist contractors, contractors and suppliers:

a) Pre-tender estimate (prepared alongside tender documentation).

b) Tender pricing document (strictly speaking this is not a priced document, but is part of the tender documentation issued to the contractor for pricing).

c) Contract sum (agreed with the contractor during the tender period and adjusted during the construction period).

d) Contract sum analysis (a breakdown of the contract sum prepared by the contractor on design and build projects).

e) Final account (agreed during the defects liability period).

Other than initial cost appraisals, these all relate to the construction cost of the project (rather than wider project costs that the client might incur, which could include; fees, equipment costs, furniture, the cost of moving staff, contracts outside of the main works and so on). It is important that the client makes clear what costs should be monitored by the cost consultant and what will remain within the control of the client organization.

6.2 STANDARD FORMS FOR COST PLANNING & COST CONTROL

There are template forms for the cost planning and cost control of building projects and civil engineering projects. Each form can be used as a template for different cost planning and control functions at different stages in the delivery process of a project.

All of the principal cost-holding categories are established when the Outline Cost Plan is produced. The values in each category then go through a process of being validated every time a new report is produced as the project progresses through its delivery process, up to the completion of Analysis of Outturn Costs report.

The cost planning process consists essentially of three phases:

a) The first of these involves the establishment of a realistic first estimate (Preliminary Approximate Estimate)
b) The second stage plans how this estimate should be spent among the various parts or elements of the project (Cost Plan)
c) The final stage is a checking process to ensure that the actual design details for the various elements can be constructed within the cost plan (Cost Checking)

Benefits of Cost Planning:

a) Greater satisfaction with end results
b) Better value for money
c) Improved building quality and performance
d) Budget and value accountability
e) Improved relationships between all project participants
f) Design problems identified and solved earlier

CONCLUSION

The method of planning construction projects, taking into account risk, cannot be treated as a magic box, which solves all the problems involved in the prediction of potential risks and their influence on project implementation. However, it can be employed as a tool aiding the making of decisions related to planning the implementation of construction projects. A thorough analysis of project risks allows the contractor to assess the overall potential risk and should contribute to the effectiveness of project implementation. Moreover, an appropriate strategy of risk avoid an zero risk reduction can be worked out and the budget and time contingency can be accessed on the basis of such an analysis

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