



# **SNS COLLEGE OF TECHNOLOGY**

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## **DEPARTMENT CIVIL ENGINEERING**

### **19CEB302 - CONSTRUCTION MANAGEMENT**

#### **III YEAR / V SEMESTER**

#### **Unit 4 : COST CONTROL, MONITORING AND ACCOUNTING**

#### **Topic 2 : Forecasting for Activity Cost Control**





# Forecasting for Activity Cost Control



For the purpose of project management and control,

- It is not sufficient to consider **only the past record** of costs and revenues incurred in a project.
- Good managers should **focus upon future revenues**, future costs and technical problems.



# Forecasting for Activity Cost Control



Forecasting used to assess the project status ‘

## **Budgeted Cost**

The budgeted cost is derived from the detailed cost estimate prepared at the start of the project. The factors of cost would be referenced by cost account and by a prose description.

## **Estimated total cost**

The estimated or forecast total cost in each category is the current best estimate of costs based on progress and any changes since the budget was formed. **Estimated total costs** are the **sum of cost to date, commitments and exposure**. Methods for estimating total costs are described below.



# Forecasting for Activity Cost Control



## Cost Committed and Cost Exposure

A committed cost is an investment that a business entity has already made and cannot recover by any means, as well as obligations already made that the business cannot get out of.

**Estimated cost** to completion in each category is divided into firm commitments and estimated additional cost or exposure. Commitments may represent material orders or subcontracts for which firm dollar amounts have been committed.

## Cost to Date

The actual cost incurred to date is recorded in column 6 and can be derived from the financial record keeping accounts.



# Forecasting for Activity Cost Control



Factor	Budgeted Cost	Estimated Total Cost	Cost Committed	Cost Exposure	Cost To Date	Over or (Under)
Labor	99,406	102,342	49,596	---	52,746	2,936
Material	88,499	88,499	42,506	45,993	---	0
Subcontracts	198,458	196,323	83,352	97,832	15,139	(2,135)
Equipment	37,543	37,543	23,623	---	13,920	0
Other	72,693	81,432	49,356	---	32,076	8,739
<b>Total</b>	<b>496,509</b>	<b>506,139</b>	<b>248,433</b>	<b>143,825</b>	<b>113,881</b>	<b>5,950</b>





# Forecasting for Activity Cost Control



There are several possible methods to develop to estimate the work completion or Job Status Report

## Units of Work Completed

For easily measured quantities the actual proportion of completed work amounts can be measured. For example, the linear feet of piping installed can be compared to the required amount of piping to estimate the percentage of piping work completed.





# Forecasting for Activity Cost Control



## Incremental Milestones

Particular activities can be sub-divided or "decomposed" into a series of milestones, and the milestones can be used to indicate the percentage of work complete based on historical averages. For example, the work effort involved with installation of standard piping might be divided into four milestones:

- o Spool in place: 20% of work and 20% of cumulative work.
- o Ends welded: 40% of work and 60% of cumulative work.
- o Hangars and Trim Complete: 30% of work and 90% of cumulative work.
- o Hydrottested and Complete: 10% of work and 100% of cumulative work.

Thus, a pipe section for which the ends have been welded would be reported as 60% complete.



# Forecasting for Activity Cost Control

## Opinion

Subjective judgments of the percentage complete can be prepared by inspectors, supervisors or project managers themselves. Clearly, this estimated technique can be biased by optimism, pessimism or inaccurate observations. Knowledgeable estimators and adequate field observations are required to obtain sufficient accuracy with this method.





# Forecasting for Activity Cost Control



## Cost Ratio

The cost incurred to date can also be used to estimate the work progress. For example, if an activity was budgeted to cost \$20,000 and the cost incurred at a particular date was \$10,000, then the estimated percentage complete under the cost ratio method would be  $10,000/20,000 = 0.5$  or fifty percent. This method provides no independent information on the actual percentage complete or any possible errors in the activity budget: the cost forecast will always be the budgeted amount. Consequently, managers must use the estimated costs to complete an activity derived from the cost ratio method with extreme caution.



# Forecasting for Activity Cost Control



Systematic application of these different estimating methods to the various project activities enables calculation of the percentage complete or the productivity estimates used in preparing job status reports

In some cases, automated data acquisition for work accomplishments might be instituted. . These measurements of actual progress should be stored in a central database and then processed for updating the project schedule.

**Thank you ....**