Managing Works & Costs

Lecture 4

Cost Management - Principles

Objectives of Cost Control

To ensure….

"that no preventable wastage of money or unauthorized increase in costs is allowed"

Depending on which side of the project the PM sits:

- To make sure that a contractors own budget is adhered to.
- To fulfill a responsibility to the project purchaser for project costs

(per Lock)

Objectives of Project Cost Management

In other words:

- Ensure that the **correct costs** are incurred for each cost component
- Ensure that **costs** are **allocated to the correct component**
- Ensure that **costs** are incurred at the **correct time**
- Minimise the occurrence of **fraudulent costs**
- Minimise the costs of waste and other unnecessary costs
- Ensure sufficient funds are available to support project activity
- To help us to track project progress

Basics – Cost Estimating and Budgeting

- **Estimating** the project costs
- **Budgeting** for those costs and
- **Controlling** and **managing** the costs during the lifetime of the project.

Cost control will be the main point considered for this lecture

Additional Cost Factors

- Costs incurred (especially by the client) should be closely monitored, tracked and reported by the PM.
- Contracts which allow for additional undefined costs (e.g. "Cost plus" contracts) may pose a potential ethical issue for the PM.
- In this situation each additional cost may represent additional profit – So the project manager has often a difficult balancing act to perform!

Project Costs – Variable Costs

Variable Costs

- These costs are incurred as a proportion to the rate of working on the project.
- Generally these are 'direct' costs.
- Direct Costs – costs that can be associated directly with project activity.

Examples:

- Labour (working on activities/ managing activities/ project support activities)
- Materials
- Dedicated project equipment costs

Direct project expenses

Project Costs – Fixed Costs

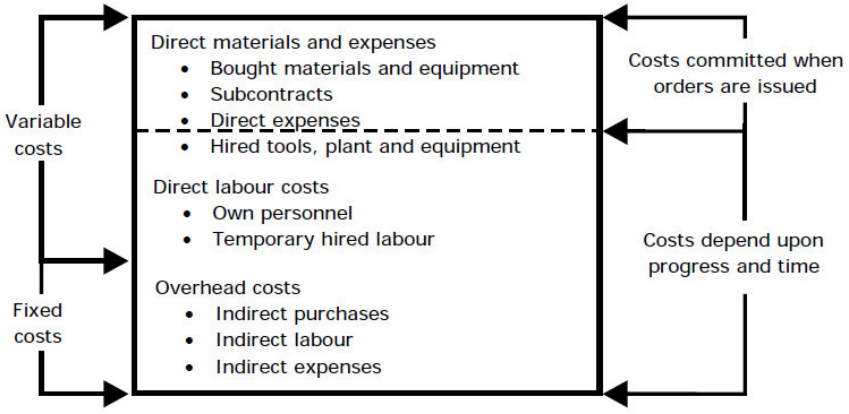
Fixed Costs
Company's overhead or indirect costs.

'Indirect' means that these are costs incurred generally in running the business. Indirect costs cannot be directly associated with projects.

Examples:

- Travel, training, insurance, depreciation etc
- Heat/light
- Accommodation
- Use of photocopiers etc

Variable & Fixed Costs - Graphic



Controlling Variable Costs

Materials and Expenses

- Constitute a large proportion of a project's costs;
- Sensible purchasing strategies can exercise cost control over a project;
- Cost negotiations must be done before the purchase order or contract is signed as at this point it is too late to exercise any influence over this;

Controlling Direct Labour Costs

- Controlling progress
- Ensuring projects run on time - prevent resources being wasted on projects
- Preventing project overruns.

Recovery of Fixed Costs / Overhead Costs

What is 'recovery'?

- The basic aim of any business is to keep Fixed Costs (indirect) as low as possible in proportion to the variable (direct) costs.
- Costs continue to accrue even when no work is taking place on the project. Examples of this??
- The boundary between fixed and variable costs can sometimes be blurred.
- Some contract structures (reimbursable) allow claiming of sundry costs (phones, printing) if these can be proven as project costs. Architects and solicitors can use this to recover costs.
- Simultaneous projects can make this exercise difficult. Being able to charge as many costs as possible (once it is justified).

How can costs be recovered

- Use of a simple requisition system for printing - use of client or cost codes;
- Mandatory use of cost codes on petty cash vouchers and all expense claims forms;
- The installation and proper day-to-day management of an automatic call logging system covering all telephone / fax lines.

Recovering Overhead Costs

Absorption Costs

- €/hr or day multiplied by the chargeable unit (hour / day) works out what's known as 'absorption costs'.
- Calculating the hourly rate and applying a mark up (for overheads and an element profit).
- Overheads % may depend on the type of business the company is operating in.
- Companies who can keep indirect costs to a minimum can enjoy competitive pricing advantage.

Under & Over Recovery

Under Recovery - Where the amount of direct costs falls below what's forecast. Happens where projects do not materialize / over optimism.

Over Recovery - Occurs where direct labour billings exceed what's expected. Can increase profitability but indicate the competitiveness is not very well aligned.

Total Cost Approach

- Treats costs holistically,
- Involves resolving logistical issues or other issues that may impact on costs with a view to making them as minimal as possible.
- The influence or impact on the project design and projects costs.
- Example - A design change that involves more reworks of a design but results in more efficient production / construction methods.

Setting and Resetting Cost Budgets

Budgets - derived from estimate

Budgets before 'below-the-line' allowances (for example contingency) and indirect costs.

These budgets become the maximum authorized level of spend.

WBS & CBS

- These allow costs to be distributed on the sub-project parts.
- This CBS will have been created when defining the scope of the project.
- This source CBS will also be used when planning and controlling other aspects of the project.

Collecting Costs – Bought in Materials & Equipment

These will be collected using the company's procedures - purchasing, accounting and stores. Note the three different methods:

Committed costs

Date when the order is placed. Earliest time which costs of materials can be monitored and most useful for assessing performance against budget

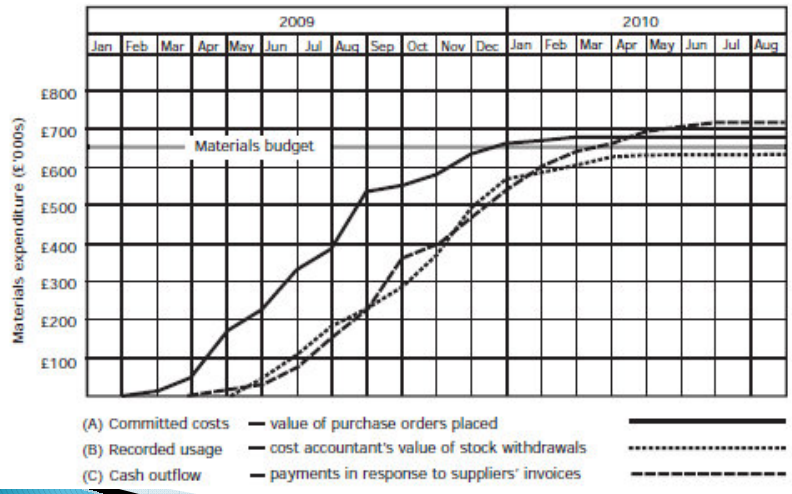
Actual costs

Dated when supplier's costs are to be paid.

Job costing

Depends on stores' feedback on the inventory

Illustration – Materials Purchasing



Collecting Labour Costs

- Timesheets
- Time against work is recorded – approved by a manager / PM
- External staff – sub-contractors – how to record their time?
- Day Works

Drawing and S-Curve

The cost baseline can be represented by a graph
Maps the accumulated cost against project time.
This curve is typically a broad s-shape.
can be used to understanding issues such as cost baseline and cash flow on a project.

We will briefly run through the drawing of an s-curve:

STEP 1 Determine the project activities and total cost (from your Baseline Budget)

Activity	Duration (days)	Total Cost
A	3	150
B	4	160
C	4	320
D	2	100
E	4	60
F	5	300

STEP 2: Determine the Average daily cost of each Activity

Activity	Duration (Days)	Total Cost	Average Daily Cost
A	3	150	50
B	4	160	40
C	4	320	80
D	2	100	50
E	4	60	15
F	5	300	60

STEP 3 – Using your project schedule spread the daily rates across the duration of the activity

SCHEDULE										
Activity	Nov-01	Nov-02	Nov-03	Nov-04	Nov-05	Nov-06	Nov-07	Nov-08	Nov-09	Nov-10
A	50	50	50							
B			40	40	40	40				
C					80	80	80	80		
D					50	50				
E				15	15	15	15			
F						60	60	60	60	60

STEP 4 – Total up the daily costs and then calculate the accumulated costs each day working from left to right.

SCHEDULE										
Activity	Nov-01	Nov-02	Nov-03	Nov-04	Nov-05	Nov-06	Nov-07	Nov-08	Nov-09	Nov-10
A	50	50	50							
B			40	40	40	40				
C					80	80	80	80		
D					50	50				
E				15	15	15	15			
F						60	60	60	60	60
Daily Cost	50	50	90	55	185	245	155	140	60	60
Accumulated Costs	50	100	190	245	430	675	830	970	1030	1090

STEP 5 - Draw a graph plotting the accumulated values against the schedule. Put the schedule on the X-Axis and the Accumulated Costs on the Y-Axis.

This graph represents your budgeted costs over the scheduled duration of the project