CROWN AGENTS
ACCELERATING SELF-SUFFICIENCY & PROSPERITY

FINANCIAL MANAGEMENT OF DEVELOPMENT PROJECTS

13 – 24 May 2019

Programme Introduction

Course Aim

This course provides a detailed look at the financial management components within the project life cycle and provides an overview of the tools available for assessing financial management systems. It covers budgeting, accounting policies, financial management staffing considerations, procurement and contract management, audit and internal controls.

Objectives – by the end of this course, you will be able to:

- Adopt appropriate systems for managing projects and finances
- Assess weaknesses in your own financial systems
- Draw up and maintain financial plans and project financial accounts and reports
- Align financial management of procurement in accordance with international best practice
- Evaluate risks and establish an appropriate financial control environment

Course Time-table – see hand-out

Daily Agenda

Day 9

1. Costing
2. Case Study - Costing
3. Course Visit
4. Action Planning

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Financial Management of Development Projects

23 May 2019

COSTING

Session Introduction

Session Aim

- Highlight and discuss the need for cost identification and allocation for effective financial management

Learning Objectives – by the end of this session you will be able to

- Understand the importance of costing for effective decision-making
- Understand how costs behave and how to use this for accurate cost allocation

Session Agenda

Our Learning Journey – how we will achieve our objectives:

1. Introduce and discuss the importance of cost for management decision-making
2. Discuss and cost behaviour as a basis for cost allocation
3. Describe costing techniques and their uses

Importance of Costing for Management

- Performance monitoring
- Pricing of products or services and proposals
- Evaluating short term plans (e.g. viability of service/ products etc.)
- Appraisal of long term projects / investments

Cost Behaviour

- One of the most important considerations in budgeting is taking account of *how costs change as output volume changes*
- Output volume refers to both the production of economic benefit and the realisation of service potential
- Output refers to production, sales, or any other activity that is appropriate for the entity
  - No of power stations, miles of road
- The behaviour of costs is determined by their **nature** (or type)

Nature of Costs & the Relevant Range

- Variable
  - Vary with output within the relevant range
- Fixed
  - Do not vary with output within the relevant range
- Mixed
  - Display behaviour of both variable and fixed
- Step costs
  - Costs step up when certain milestones reached (e.g. need another premise, shift or machine

Cost Types

	Variable with the level of activity	Fixed for the activity in the short term
Direct Costs	Materials Labour	Machinery Supervision Building
Indirect/Overheads Costs	Transport delivery costs	Administration Rent, rates Audit fees

Contribution

- Is the difference between revenue and the variable costs
  - Revenue £1,000 variable costs £600
  - Contribution is £400

- Contribution generated
  - Covers Fixed Costs first
  - Then contributes to Profit

Contribution Ratio

- This is the relationship between Sales revenue and variable costs e.g.
  - Revenue £10,000
  - Variable costs £ 6,000
  - Contribution £ **4,000**

CONTRIBUTION RATIO = $\frac{£4,000}{£10,000}$ x 100 = **40%**

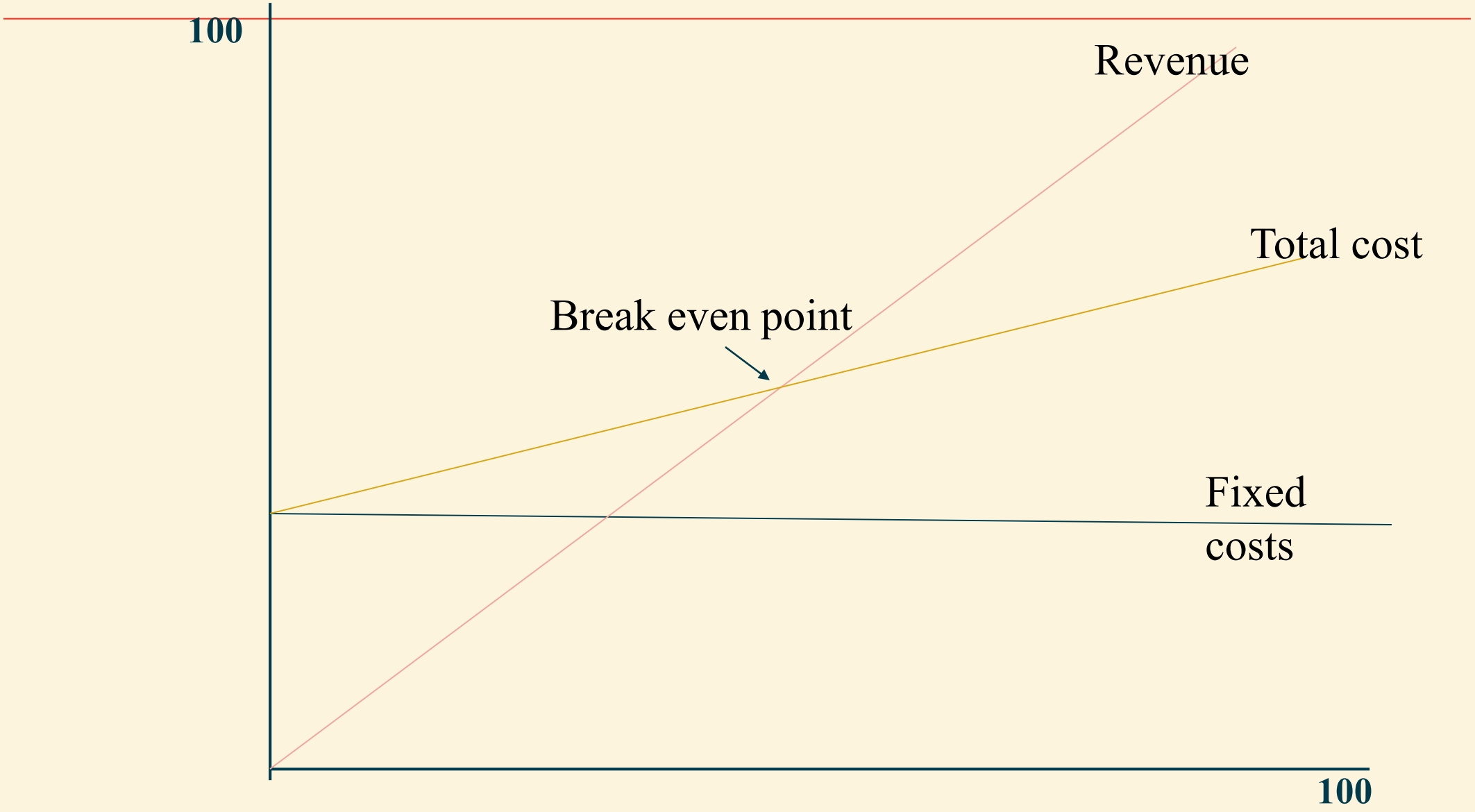
Break Even Analysis

- Break even is the point where total revenue equals total cost
  - i.e. Fixed Cost + Variable Cost = Total Revenue

- Any revenue above this point is profit

- Organisations need to know at which point they will breakeven either by
  - Units of output needed to Breakeven, or
  - Total revenue needed to Breakeven

Break Even Chart



Examples of Breakeven calculation

Income	10,000
Variable costs	6,000
Contribution	4,000
Fixed costs	2,000
Profit	2,000

No. of units 1,000

Contribution = £4 per unit (4,000/1000)

Examples of Breakeven calculations

By number of units to be sold:

$$\frac{\text{Total fixed cost}}{\text{Contribution per unit}} = \frac{£2{,}000}{£4} = 500 \text{ units}$$

By Sales/Revenue

$$\frac{\text{Total fixed cost}}{\text{Contribution ratio}} = \frac{£2{,}000}{40\% \ (0.40)} = £5{,}000$$

Cost Objects

Cost object

- Anything that we need to cost

- Object could be
  - Programme
  - Project
  - Activity
  - Unit or batch of units
  - Operating a department or a factory
  - Cost of conducting an audit
- Costs for individual sub-objects may behave differently

Relevant costs

Relevant costs

- Costs associated with units of product or service accumulated for a particular purpose
- Identification of costs therefore depends on the purpose for which it is required
- A project manager is interested in material input but a personnel manager is more likely to be interested in payroll, training and administration costs
- A project appraisal manager is interested in all relevant incremental costs of the planned project

Cost Driver

Cost driver

- A factor that affects costs
- A change in the cost driver will cause a change in the total cost of the related cost object
- A cost object may have several cost drivers

Cost Driver

Three basic types of cost driver

1. Volume: Based on units of work (miles of road, no of patients). Cost of the activity increases as more units are processed
2. Time: Based on the length of time taken to complete the activity. Cost of the activity increases based on the length of time required to complete the activity
3. Charge: Cost for the entire activity is charged directly to the cost object (project manager salary)

Cost Allocation

- Overhead costs may need to be allocated to more than one department for several purposes
  - Effective pricing
  - Performance measurement
  - Ensuring all overheads are covered

Cost Allocation

Cost allocation

- Assignment of overhead costs to the cost object

Cost allocation base

- Quantitative attribute used to allocate overheads amongst multiple cost objects (projects)
- The allocation base can be a financial measure (variable cost) or a nonfinancial measure (floor space, mileage)

Costing Allocation Process

- Identify the cost object
- Identify the direct costs associated with the cost object
- Identify overheads
- Select the cost allocation base for assigning overhead costs to the cost object
- Develop the overhead rate per unit for allocating overhead to the cost object
- Develop projections based on identified cost objects and related costs

Costs Behaviour Analysis

- Process of assembling and recording all factors that drive costs
- Measuring and analysing
  - To help managers understand which costs influence their entity
  - To provide effective control in achieving objectives
- Important for understanding cost profiles of the entity in order to undertake effective costing

Cost Behaviour Analysis Methods

- Observation – work study, looking at every item of expenditure for a level of output, classifying into cost types; can be time-consuming
- Modelling – using previous experience as basis for predicting expenditure at different levels of output
- Statistical techniques – where a mathematical relationship exists, e.g. through cause and effect such as advertising spend and increased sales
- Use known relationships – with a structured study of significant costs

Service Department Cost Allocation

- Allocating costs of service departments (e.g. vehicle maintenance)
- Applicable to HR and IT departments
- Reasons for allocation:
  - Provide more accurate product cost information
  - Achieve better resource allocation
  - Ration limited resources
- Examples of allocations bases:
  - Allocate vehicle maintenance costs based on mileage
  - Allocate costs of IT support on service delivery
- Activity Based Costing is a development of this approach

Other costing techniques

- Absorption costing: allocation all fixed production costs; now considered old-fashioned
- Activity based costing: costing of identified activities
- Standard costing: refined use of unit production costs in manufacturing (used with extensive variance analysis)

Standard Costing

- Standard costing replaces the actual costs with expected or budgeted costs
- Inventories and costs of goods sold will start by reflecting the expected costs not the actuals
- As there will almost always be variances between expected costs and actual costs these will have to reflected and managed
- The financial accounts have to be based on the actual accounts not the expected ones!
- The elements of the Standard Cost are likely to include:
  - Direct material
  - Direct labour
  - Fixed and variable manufacturing overhead

Standard Costing Variables

There will usually be two variables for each input

Input	Variable (a)	Variable (b)
Direct Material	Price (or cost)	Usage (or quantity)
Direct Labour	Rate (or cost)	Efficiency (or quantity)
Variable Manufacturing Overhead	Spending	Efficiency
Fixed Manufacturing Overhead	Budget	Volume

Lets look at a worked example

Example

- Crude oil price assumption $50 dollars per barrel
- Receive 100 barrels at $55 dollars per barrel
- Accounting entries
  - Dr Materials Inventory $5,000
  - Cr Accounts Payable $5,500
  - Dr Materials Variance $500
  - If the variance is favourable it works the other way round
- Similar entries are done for other cost elements
- Need to monitor the variances during the year
- Often used to give a transfer price to the next part of the organisation that is using the product

Standard Costing

- There can be a relationship between variances
  - Inefficient labour can lead to unfavourable overhead variances
- Reporting on the variances from what was expected can be powerful in identifying reasons for variances from expected performance (good or bad)
- It provides a basis for transfer pricing
- Need to manage the variances carefully:
  - Managers unaware that there are major differences from the standard costing information

Standard Costing in the Public Sector

- Could be used to provide a basis for managing costs in areas such as hospitals
  - Eg standard costs for the provision of consumables, operating theatre time etc
- Potentially used in public sector commercial organisations
- Any possible application in your organisation
- I am unaware of any application in the public sector

Activity Based Costing

- Is an approach to allocate the full actual costs to an activity or product
- Often, alternatively, global assumptions are applied in allocating costs:
  - e.g. % of direct expenditure, per employee, per hour of operation, per sqm
- Assists in identifying processes and activities that are ineffective or uneconomic
- Tends to allocate indirect costs more comprehensively than other approaches
- Seeks to identify cause and effect relationships to objectively assess costs
- Might answer questions such as how much does it actually cost to:
  - Educate a child in a school?
  - Manage a building?
  - Process an invoice?
- Can assist identify true costs of achieving the same outcome by different means
- Originally developed for manufacturing but may be more powerful in service organisations such as governments

The Process

- Identification of activities involved in the process
- Classification of each activity according to the cost hierarchy (i.e. into unit-level, batch-level, product level and facility level)
- Identification and accumulation of total costs of each activity
- Identification of the most appropriate cost driver for each activity
- Calculation of total units of the cost driver relevant to each activity
- Calculation of the activity rate i.e. the cost of each activity per unit of its relevant cost driver
- Application of the cost of each activity to products/services based on its activity usage by the product/service

Traditional Costing versus ABC

- Lets use an example
- Two Education units:
  - Unit 1 is a large dealing with 10,000 technical students studying three different courses
  - Unit 2 is smaller dealing with 1,000 accounting students studying ten different courses
- Traditional costing may allocate the Quality Assurance function costs by student numbers
- But QA identifies the cost driver as being the number of courses not the number of students
- ABC allocates the costs according to the use of QA activity. Consequently, the smaller unit gets a bigger allocation of costs because the activity takes more time, providing a more realistic assessment of costs
- This should assist decision making:
  - For instance the accounting unit may decide to offer fewer courses
- This is a simple example but when extended can provide very useful information

Session close

Let’s wrap up the session:

- Recap of key learning
- Final questions?
- Revisit session objectives – achieved?
- Application of learning – update your action plans
- What’s next?

THANK YOU /

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