

Scottish Plant Hire Association Plant & Equipment Selection

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Chartered Management Accountant

Business Fix Ltd

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Biography

- 1988 - Elected to Associate Membership of CIMA (Chartered Institute of Management Accountants)
- 2007 – Elected to Fellowship of CIMA
- 2004 – Elected to Membership of Inst of Directors

- 1998-2001 Finance Manager, First Glasgow
- 2001-4 Financial Controller, Ops Director, Catering
- 2004-8 Finance Director, The Essentiagroup
- 2008-9 Group Finance Director, E-net Computers
- 2009-10 Freelance Finance Director
- 2010-14 Finance Director, Heliex Power Limited
- 2015- Present, Freelance Finance Director
- 2015- Present, Group Finance Director, SRA Ventures
- 2017- Present, Non-Executive Director, Glasgow Colleges Regional Board


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Content

- Types of costs
- Employing operators and other staff
- Calculation of operating costs for plant
- Pricing, Utilisation & Breakeven
- Appraising capital expenditure
- Options for acquiring plant

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The Balance Sheet



- Also known as Statement of Financial Position
- Snapshot of Position at a FIXED point in time
- Usually at the end of an Accounting Year or Period
- Assets, Liabilities, Shareholders Funds
- Retained Profit Agrees with P&L Account

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Profit & Loss



- Also known as Income Statement
- Covers a Period of Time
- Performance Report
- Revenue
- Cost of Sales
- Overheads – Admin, Selling
- Interest
- Taxation
- Profit - Post-Tax, Pre-tax, EBIT, EBITA, EBITDA, Operating

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Funds Flow



- Reconciles Profit to Cash
- Starts with Profits
- Add Back non-cash items
- Asset Purchase & Disposals
- Funding
- Changes in working capital
- Tax & Interest Payments
- Should Reconcile to
 - Movement in Cash Balances

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Types of Cost



- Types of costs involved in operating plant
 - Variable
 - Operator Labour
 - Fuel, repairs, travelling
 - Semi-variable
 - Supervisory Labour, Periodic servicing
 - Overheads
 - Management, Administration
 - Depreciation

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Staff Costs



- Costs involved in employing operators and other staff
- Headline Pay Rate
- National Insurance
- Pension Contributions
- Industry Levies
- Holiday Pay
- Working, Travelling & Other Hours

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Staff Costs



- Headline Pay Rate
- Gross Rate Per Hour
- National Minimum Wage (from April 2017)
 - 25 and Over £7.50
 - 21 to 24 £7.05
 - 18 to 20 £5.60
 - Under 18 £4.05
- Apprentice £3.50
- Overtime Premium
 - Time & Third / Half
 - Double Time

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Staff Costs



- Industry Working Rule Agreement
- 39 hours per week (excluding breaks)
- Servicing Time
 - Basic Rate
- Midweek overtime up to 4 hours per day
- First 4 hours on a Saturday
 - Time and a Half
- All Other Overtime Hours
 - Double Time
- Exercise
 - Calculate Gross Wages Per Week

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Staff Costs



- National Insurance
- Payable by both Employees & Employer
- Employee NI is deducted from Gross Pay & therefore NOT a cost
- Employer NI is in addition to Gross Pay – it IS a cost of employment
- Current Rates (2017-18)

	EE	ER
• First £157 per week	0 %	0%
• Next £753 per week	12%	13.8%
• All Other Earnings	2%	13.8%
- Exercise – Calculate NI Costs Per Week

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Staff Costs



- Pensions**
- Defined Benefit or Defined Contribution ?
 - Pension Costs
 - Add on to Basic Wage
 - (Usually) does not apply to overtime or bonus
 - Pay Bonus as Pension ?
 - Straight percentage
 - Up to 15%
 - More normally in range of 3-9%

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Staff Costs



Auto-enrolment Pensions

- Employee can opt out
- Employer must keep scheme open and continue to offer membership
- Minimum Contributions

	Employer	Employee
• To 5/4/2018	1%	1%
• 6/4/18 – 5/4/2019	2%	3%
• 6/4/19 onwards	3%	5%

- Exercise – Calculate Pension Costs Per Week



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Staff Costs



Holiday Pay

- European Working Time Directive 1998 & 2003
- Statutory Minimum is now 28 days per annum
- WRA specifies 29 days
- Statutory Requirement is average of previous 12 weeks
- Working days per annum
 - 260 weekdays (5 / 7 x 365 days)
 - Less 29 days holiday
 - Equals 231 working days
- Holiday Pay Accrual Rate = $29 / 231 = 12.5\%$
- National Insurance & Pension Payable during holidays



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Staff Costs



Other Staff Costs

- Insurance Levies – Service & Accident Cover
- Apprenticeship Levy
- CITB Levy
- Training
- Recruitment

- Exercise
- Calculate Holiday Pay Accrual at 12.5%
 - Calculate Total Costs Per Week



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Staff Costs



Working, Travelling & Other Hours

- Hours can be classified as either
 - Chargeable or
 - Non-chargeable
- Reasonable Travelling usually not paid
- Additional travelling may be paid
- Potential for re-charge ?

- Exercise
 - What is the average cost per hour if the 5 hours servicing is not re-chargeable

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Operating Costs



- Travelling
 - Mileage rate
- Fuel
 - Cost usually in MPG or per hour
- Transport
 - Cost for transport on & off site
 - Potential for re-charge ?
 - Dependent on length of hire ?
- Maintenance
 - Cost per mile or per hour
- Calculating a consolidated rate

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Operating Costs



- Exercise
- Bob's Plant Hire
 - Excavator required for 45 hours per week for 6 weeks
 - Hirer will not pay for servicing time
 - Fuel Costs are £5 per operating hour
 - Maintenance costs are £1.50 per operating hour
 - Transport costs from Bill's Transport are £750 each way
- What is the total variable cost for the contract ?
- What is the variable cost per chargeable hour for the contract

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Operating Costs



Operator Cost 6 weeks	£
Fuel Cost	£
Maintenance	£
Transport On	£
Transport Off	£
Total Variable Costs	£
Number of Hours	
Total Variable Cost Per Operated Hour	

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Other Costs




- Semi-direct / stepped costs
 - Do not vary DIRECTLY with activity
 - Has elements of direct cost but stepped
 - E.g. Supervisor 1 for every 5 operators
 - HR staff if employees go above certain number
- Fixed Costs
 - Costs which do NOT vary with activity
 - Head Office Costs
 - Insurance, Audit / Accounts Prep, Workshop Manager

•ALL COSTS ARE VARIABLE COSTS IN THE LONG TERM

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Full Cost



- Fully Absorbed Costs
 - Absorb = including all overheads
 - Variable + Semi-Direct + Direct
- Bob's Plant Hire
 - Bob Operates 10,000 hours per annum
 - Semi-direct Costs are £50,000
 - Fixed & Semi-Fixed Costs are £100,000
- What is the total cost for the year
- What is the fully absorbed cost per chargeable hour

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Bob's Fully Absorbed Cost



Bob's Plant Hire

Total Variable Cost Per Hour

Number of hours per annum

Total Variable Cost

Semi-direct Costs

Fixed Costs

- On that basis what should Bob charge ?
- Is this the minimum that Bob should charge ?

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Pricing



- Methods of Pricing
 - Reference
 - Market
 - Cost plus
 - Marginal
- Plant Utilisation
 - Expected Operating Hours
 - Capacity planning
- Breakeven Analysis

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Market Pricing



- Market Pricing
 - Hirers will check with multiple operators
 - Operators do research to establish market rates
 - Often Operators work within range of prices dependent on type of work
- Advantage
 - maintains market position
- Disadvantage
 - bears no relation to underlying cost base

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Cost Plus Pricing




- **Cost Plus Pricing**
 - Operator establishes cost
 - Will add on a % to cover fixed costs
- **Advantage**
 - Ensures that operating costs are covered
- **Disadvantage**
 - Takes no account of market conditions
 - Can encourages inefficiency
 - What about utilisation
- **Variant is Cost Based Pricing**




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Cost Based Pricing




- **Variant of Cost Plus Pricing**
- **Uses Cost as the starting point / base line**
- **Takes into consideration market conditions**
- **Full cost recovery**
 - Encourages conventional financial investment.
- **Below cost pricing**
 - Constrained demand




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Marginal Pricing



- **Similar to Cost Plus Pricing**
- **Based on Direct Cost rather than full cost**
- **Advantage**
 - Maintains employment for operators
 - Maintains plant utilisation
 - Can facilitate winning market share
- **Disadvantage**
 - Does not cover fixed costs
 - Unsustainable in medium to long term



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Reference Pricing



- Internal reference price is what you expect to pay based on past experience / knowledge;
- Establish a zone of tolerance against which they judge the fairness of a price;
- May not purchase if price goes above or below that range / threshold;
- Suggests - the initial price becomes important ... may become the reference price ... hence care in pricing too low / promotional pricing to attract customers in.



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Reference Pricing(2)

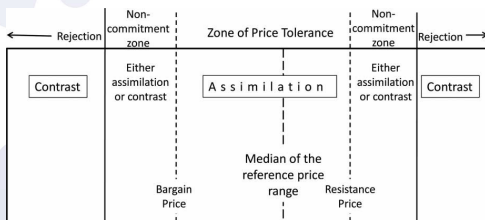


- But ... also think about an external reference price ... at its simplest reduce / discount from a higher price, rather than add surcharges...
- A lot of pricing policy is psychological
 - Hire of Plant costs £30 per hour.
 - Late notice hires are £40.
 - Hire of Plant costs £40 per hour
 - A £10 discount is given for more than 7 days notice




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Reference Pricing(2)




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Bob's Pricing




- Bob is able to achieve an average hire rate of **£45.00** per hour
- What is the Total Hire Income at the following activity levels ?
 - 5,000
 - 10,000
 - 15,000 chargeable hours
- Based on previous cost base, what is the Profit or Loss at these activity levels ?




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Bob's Profit / Loss




Number of hours per annum	5,000	10,000	15,000
Hire Rate Per Hour	£45.00	£45.00	£45.00
Total Variable Cost Per Hour	£28.74	£28.74	£28.74

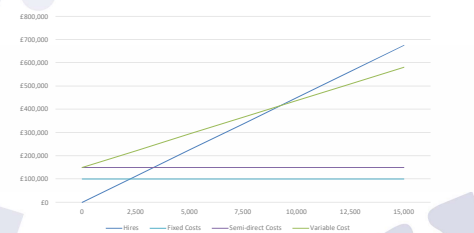
Hires			
Variable Cost			
Semi-direct Costs			
Fixed Costs			
Total Costs			
Profit			




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Bob's Breakeven








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Bob's Breakeven



- Breakeven Point
 - = Fixed Costs / Contribution margin
- Contribution margin is the average revenue minus the average variable cost
 - Fixed Costs **£150,000**
 - Average Hire Rate **£45.00**
 - Variable Cost Per Hour **£28.74**
 - Contribution Margin **£16.26**
- Breakeven Point **£150,000 / 16.26**
 - = Number of Chargeable Hours **9,225 hours**

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Capital Expenditure



- What is Capital Expenditure
- Capital Expenditure Appraisal Process
- Methods of Appraisal
- Building Models
- Making the business case for investment

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Capital Expenditure



- How does an organisation grow?
- Takes on projects that have the potential to generate significant increases in revenue and profit (i.e. 'create value').
- Time scale (> 2 years); Strategic;
- Medium / high level of expenditure;
- Need to consider real, external factors ... interest rates, inflation.

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Capital Expenditure



- Capital expenditure is the use of funds to acquire operational assets that will help the organisation earn future revenues or reduce future costs; e.g. a piece of plant, a new maintenance workshop,
- Involves a large amount of cash, debt or other resources that will be committed over long time periods;
- Requires the commitment of resources today with the expectation of receiving future benefits.

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CAPEX Appraisal



- Capital Expenditure Appraisal (CAPEX Appraisal)
- Also known as "Capital Budgeting" or "Capital Investment Appraisal"
- Allows to Evaluate, compare and select capital projects to achieve the best return on investment over time

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CAPEX Appraisal



- The Process
 - Determine the initial costs of the project
 - Determine the incremental cash flow of a project
 - Select the capital budgeting method
 - Conduct the appraisal
 - Make the investment (if approved !)
 - Ongoing monitoring of actual against predicted performance

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CAPEX Appraisal



- Initial costs of the project
- Should include ALL costs relating to the proposed project
- e.g. delivery, commissioning, training, new software, installation

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Incremental Cash Flow



- Bob's Initial cost of acquisition
- Equipment Cost £500,000
- Installation £ 19,500
- Additional expenses?
- Trade In Value for current equipment £150,000;
- Any tax considerations ?
(assume nil for this example).
- What is Bob's Initial Cost ?

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CAPEX Appraisal



- Incremental Cash Flow (ICF)
- Any cash flow that is incremental to existing cash flow
- Annual Hires with existing Plant £300,000 pa
- Annual Hires with new Plant £365,000 pa.
- Reduction in Maintenance Years 1-3 £ 15,000 pa.
- What is the ICF in Each of Years 1-3
- What is the ICF in Each of Years 4-10

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CAPEX Appraisal



- Select the capital budgeting method
 - Incremental Cash Flow
 - Payback Period
 - Discounted Cash Flow (DCF) / Net Present Value (NPV)
 - Internal Rate of Return (IRR)

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CAPEX Appraisal



- Incremental Cash Flow
 - Total Incremental Inflows
 - LESS Capital Investment
- Advantage
 - Simple Basis for Calculation
- Disadvantage
 - Does not take consideration of time
 - Does not take consideration of inflation & interest
- What is Bob's Incremental Cash Flow ?

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CAPEX Appraisal



- Incremental Cash Flow
 - Total Incremental Inflows
 - LESS Capital Investment
- What is Bob's Incremental Cash Flow ?

• 3 Years (1-3) @ £	pa	£
• 7 years (4-10) @£	pa	£
• Total		£
• Less Capital Investment		£
• Incremental Cash Flow		£

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CAPEX Appraisal



- **Payback Period**
 - Incremental Cash Flow within a specified period
- **Advantage**
 - Simple Basis for Calculation (but more involved than ICF method)
 - Takes consideration of time
- **Disadvantage**
 - Does not take consideration of inflation & interest
- **How many years does Bob's Capex payback in ?**

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	Capex	ICF	Net Cash Flow
Year 0			
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
Year 6			
Year 7			
Year 8			
Year 9			
Year 10			



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CAPEX Appraisal



- **Discounted Cash Flow (DCF) Methods**
 - Net Present Value (NPV)
 - Internal Rate of Return (IRR)
 - Modified internal rate of return
 - Accounting rate of return
 - Adjusted present value

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CAPEX Appraisal



- Discounted Cash Flow (DCF) Methods
- Advantages
 - Analyses cash flows, not earnings / profit;
 - Considers the time value of money (discounting at the cost of capital / money)
- Focuses on wealth generation – projects with a positive NPV will generate wealth.

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CAPEX Appraisal



- Discounted Cash Flow (DCF) Methods
 - Relies on the present value of money

$$1 / (1 + r)^n$$
 - Where r represents the annual rate of interest, expressed in decimal form, and n represents the time period when the cash flow will be received.
 - The interest rate is called the discount rate

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CAPEX Appraisal



Year	Outflow (£369,500)	Inflow	ICF (£369,500)	5% (£369,500)	10% (£369,500)	15% (£369,500)
1		£80,000	£80,000	£76,190	£72,727	£69,565
2		£80,000	£80,000	£72,562	£66,116	£60,491
3		£80,000	£80,000	£69,107	£60,105	£52,601
4		£65,000	£65,000	£53,476	£44,396	£37,164
5		£65,000	£65,000	£50,929	£40,360	£32,316
6		£65,000	£65,000	£48,504	£36,691	£28,101
7		£65,000	£65,000	£46,194	£33,355	£24,436
8		£65,000	£65,000	£43,995	£30,323	£21,249
9		£65,000	£65,000	£41,900	£27,566	£18,477
10		£65,000	£65,000	£39,904	£25,060	£16,067
Total			£325,500	£173,261	£67,200	(£9,032)

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CAPEX Appraisal



- The Process
 - Determine the initial costs of the project
 - Determine the incremental cash flow of a project
 - Select the capital budgeting method
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Funding Options



- Options for acquiring plant
 - Outright purchase
 - Loan Funded
 - Hire purchase
 - Lease
 - Long term hire

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Funding Options



	Outright Purchase	Loan Funded	Hire Purchase	Finance Lease	Operating Lease	Long Term Hire
Ownership	Operator	Operator	Lessor	Funder	Funder	Hirer
Cash Flow Upfront	Large Up front	Part up front ?	3 or 6 months	3 or 6 months	None / 3 months	None
Repayments	None	Bank	Lessor	Lessor	Lessor	Ongoing
Risks	Not utilised	Not utilised	Not utilised	Not utilised	Not utilised	
Options	Quick Disposal	Dispose	Dispose / Pay off HP	Dispose / lease	Dispose / lease	
Maintain	Operator	Operator	Operator	Operator	Operator / Hirer	Hirer
Other		Bank Interest rates	Off Balance Sheet		Off Balance Sheet. Cost	Higher Cost

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