University of BRISTOL

Fundamentals of Financial Management

13/11/18
CENG20008

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Aims for Today

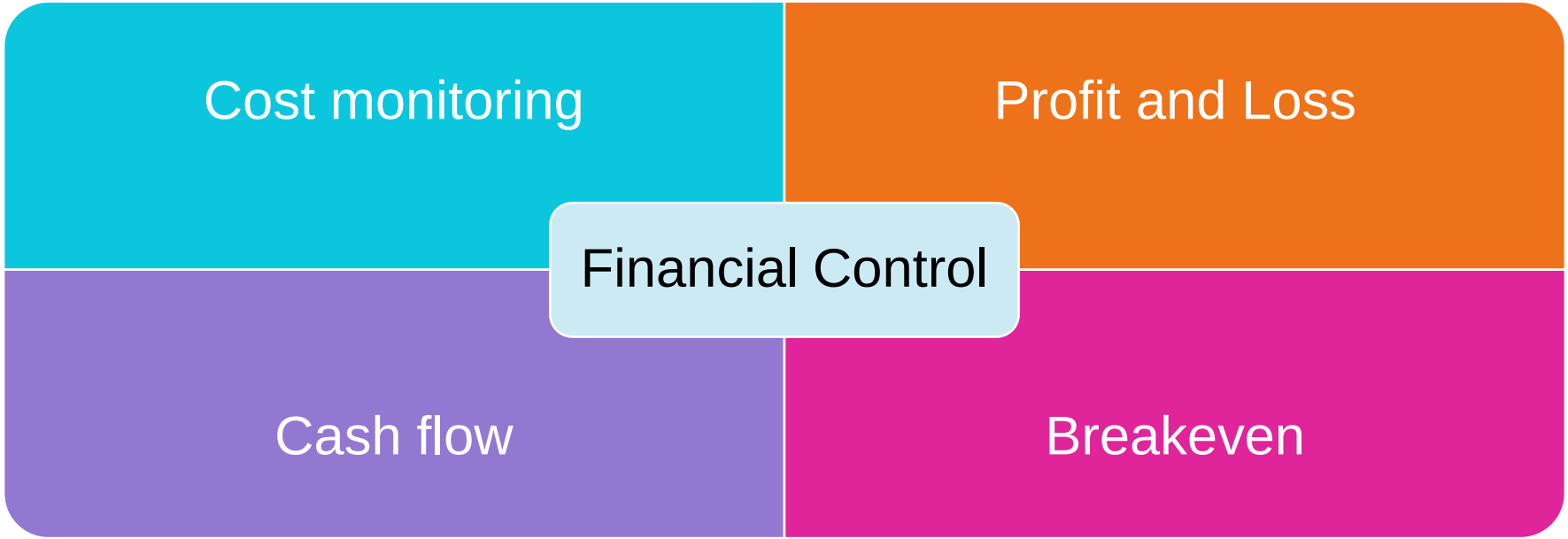
‘Have a knowledge and understanding of the commercial, economic and social context of engineering processes’

- Understand some basic financial accounting tools and the importance of cost monitoring

Why do Engineers need to know about financial management?

- All organisations need money to operate, even charities
- Complex situations have a greater need for good financial control
- Projects normally have a fixed budget
- You will be accountable!

How do we keep financial control?



What is profitability?

- *The degree to which a business or activity yields profit or financial gain*

- Relationship between how much is invested in a business (net capital employed) and how much profit it makes (operating profit)

$$\frac{\text{Operating Profit}}{\text{Net Capital Employed}} \times 100\%$$

Profit and Loss Statement

- P&L statement shows the profitability of a business and its sources
- Gross profits = total revenue – total expenses

- Net profits = Gross profit + other income –
  admin & other costs

- Net profits after tax = Net profit – Corporation tax

Where do costs come from?

Direct Costs	Indirect Costs (overheads)
Materials	Energy and utiliies
Labour	Rent and bills
Parts/Components	Staff training, holiday pay etc
	Advertising
	Insurance
	Interest on loans

Example P&L Statement

	£	£
Sales income		97,400
Less Cost of Sales		
Opening Stock	4,000	
Purchases	68,350	
Subtotal	72,350	
Less Closing Stock	3,000	69,350
Gross Profit		**28,050**
Rent received		2,000
		30,050

Example P&L Statement

	£	£
Less		
Salaries & Wages	10,400	
Rent & Rates	5,000	
Utilities	1,350	
Insurance	750	
Loan Interest	620	
Company vehicle running expenses	1,200	
Depreciation – Company Vehicle	1,500	
		20,820
Net Profit		**9,230**

Balance Sheet

- A statement of an organisations assets and liabilities at a given point in time.
- Gives investors an indication of the companies financial position
- Should be compared with balance sheets from previous accounting periods to give an indication of trends
- They can be used to calculate ratios such as debt : equity ratio

Balance Sheet

Assets		Liabilities	
Current Assets			
Cash	7,000	Accounts Payable	67,000
Pre-paid rent	1,200	Tax	13,500
Stock	23,000	Utility bills	5,500
Total current assets	31,200	Monthly salaries	33,000
Non Current Assets		Fleet vehicles Insurance	10,200
Factory Equipment	83,000	Total Liabilities	129,200
Long Term investments	15,000		
Total non current assets	98,000		
Total Assets	129,200		

Cashflow

- Cashflow is key.
- Even profitable businesses can run out of cash
- Businesses need cash to pay suppliers, employees, lenders, investors and government
- A positive cash flow = more money received than spent.
- A positive cash flow = pay its bills on time.

Cash flow statement

-Cash introduced

-Closing balance from previous period

-From sales

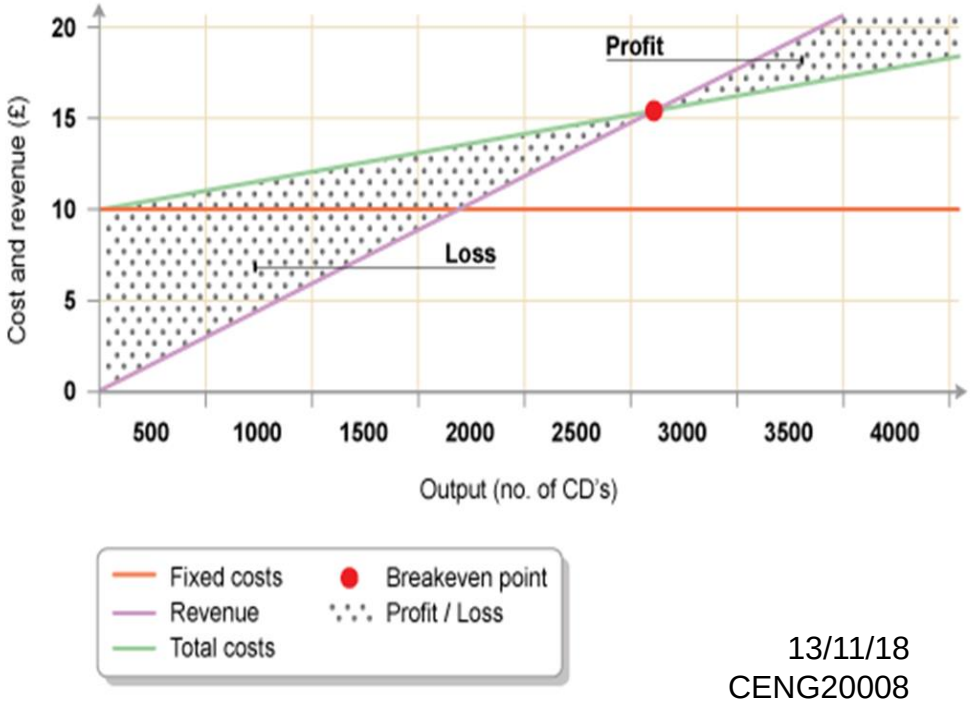
-Materials purchase

Cash flow statement

	£	£
Opening Balance (cash invested)	100	
Add cash from sales	123	
		223
Less cash paid to purchase materials	57	
Less staff wages	98	
		155
Closing balance of cash		68

How do you work out breakeven?

- No profit or loss i.e. the level of sales where your revenue matches your costs



What about cost vs price?

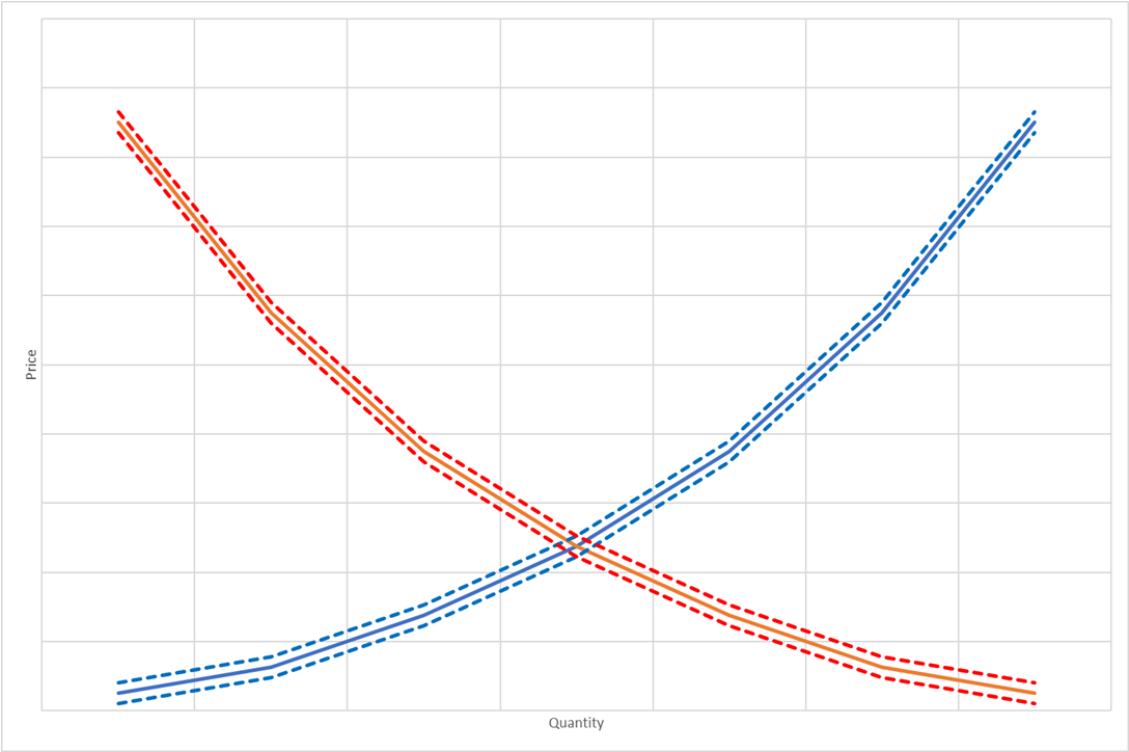
- Cost is not the same as price
- To make a profit, Price = cost (indirect & direct) + margin

- How do you determine how much of a margin you can make?

  What are your customers willing to pay?

  What is the selling price of competing products/services?

Supply and demand?



Return on Investment

- Performance measure used to evaluate the ‘efficiency’ of an investment or compare investments
- Ratio of return : cost of the investment
- Basic indicator of the profitability of an investment
- Doesn’t take account of time

Return on Investment (ROI)

- Invest £1,000 in recycled plastic jewellery business in 2010
- Sell your stock shares for £1,200 1 year later

  ROI = (1,200-1,000) / 1000 = 0.2 or 20%

- Or invest £2,000 in 4Ocean in 2012
- Sell your stock shares for £2,800 in 2015

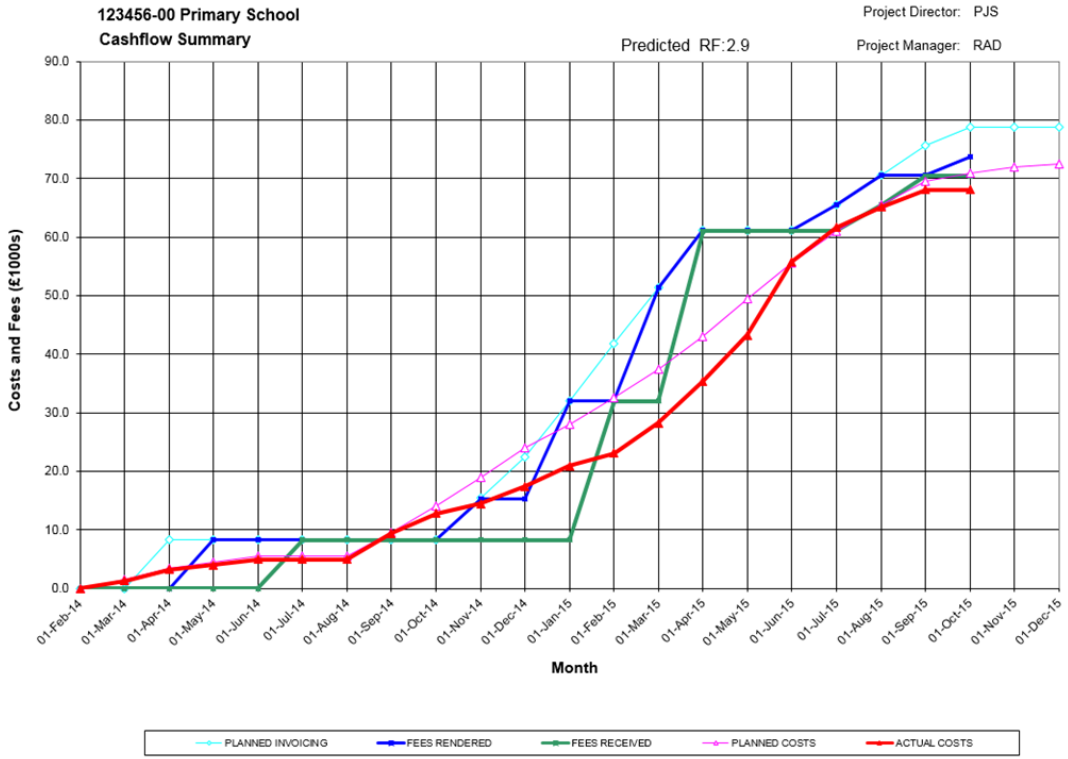
  ROI = (2,800-2,000) / 2000 = 0.4 or 40%

So what should I monitor?

- Engineering often involves project based work
- Projects typically have a fixed budget
- You will need to monitor costs and cash flow

- Know what you expecting to happen so you can identify when things aren't going to plan

Project S-curves



Summary

- Monitoring, managing and controlling costs is key to financial success
- Engineers need to be financially aware as you will be responsible for project finances
- Balance sheet, Profit and Loss and Cashflow statements are key documents which can indicate the financial position of an organisation