ACCOUNTING FOR DECISION MAKING

Diploma Stage
December 2005

MARKING SCHEME

CIPFA

Question 1

This question relates to syllabus objectives A2, A4 and C1 and is covered in Study Sessions 2, 3, 4, 7, 12 and 14.

(a) **Using the information provided by the Quarry Manager calculate the net present values (NPV) of the two proposals. Comment upon the results of your calculations and recommend which option should be adopted. Ignore the possible effects arising out of the formation of a PPP consortium. Choose an appropriate period for your NPV calculation and state clearly any assumptions made.**

Discount rate must be equivalent to real cost of capital
$= (1 + M) \div (1 + I) - 1$ where M is money cost and I is inflation
$= (1 + 0.0865) \div (1 + 0.025) - 1 = 6\%$ *1*

Option 1 – Purchase of three new machines

The capital cost of the machines is £75,000 and there is disposal cost for the old machines of £500, making a total of £75,500 falling in year 0. *½*

Annual savings of £6,000 (£2,000 per machine) will apply from years 1 – 10. *1*

Variable costs are calculated as £100 for each additional 1% of production. This will be £1,500 to apply from years 1 – 10. *½*

The additional income from increased output will be 13,500 x £2.60 = £35,100 for years 1 – 3. This reflects the premium price, as all the output will be sold to the private sector. *1*

After that (years 4 – 10) the income will change as Stonetoss has closed with a loss of output. Current production at Limegate is 100/15 x 13,500 = 90,000 tonnes. This would become 90,000 + 13,500 = 103,500 tonnes. Stonefess production is 10% of the total and is therefore 10/90 x 90,000 = 10,000 tonnes. Of the increased production, 10,000 tonnes will be priced at Council rate and 3,500 at the premium rate. Council rate = 100/130 x 2.60 = £2.00. Income for years 4 – 10 will be 10,000 x 2.00 plus 3,500 x 2.60 = 29,100. *2*

The net value of lost production in years 11 and 12 is £65,000 per annum. These figures should be included, as they are a result of the increased production in years 1 – 10 due to the use of the new machines. *½*

Calculation of NPV (see spreadsheet). *1*

Option 2 – Transfer and use of old machines

Cost of relocating the machines is £12,000 and will fall in year 0. *1*

There are no variable cost implications, as there is expected to be a neutral effect on running costs. *½*

There are no savings with this option.   *½*

The income from the increase in production will be the same over the whole period (years 1 – 10), as Stonecross would be closed immediately. The calculation is the same as for years 4 – 10 above.   *1*

The net value of lost production in years 11 and 12 is £65,000 per annum. These figures should be included, as they are a result of the increased production in years 1 – 10 due to the use of the new machines.   *½*

Calculation of NPV (see spreadsheet).   *1*

Net Present Value (should be calculated over 12 years)

Option 1 – New machines

	0 £	1 £	2 £	3 £	4 £	5 £	6 £	7 £	8 £	9 £	10 £	11 £	12 £
New machinery	75,000												
Disposal of old	500												
Variable costs		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500		
Loss of production												-65,000	-65,000
Savings		6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000		
Add income		35,100	35,100	35,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100		
Total	-75,500	39,600	39,600	39,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	-65,000	-65,000
PV factor	1.0000	0.9434	0.8900	0.8396	0.7921	0.7473	0.7050	0.6651	0.6274	0.5919	0.5584	0.5270	0.4970
PV	-75,500	37,359	35,244	33,248	26,615	25,109	23,688	22,347	21,081	19,888	18,762	-34,255	-32,305

NPV   **121,281**

Option 2 – Old machines

	0	1	2	3	4	5	6	7	8	9	10	11	12
	£	£	£	£	£	£	£	£	£	£	£	£	£
Relocation etc	12,000												
Variable costs		0	0	0	0	0	0	0	0	0	0		
Loss of production												-65,000	-65,000
Savings		0	0	0	0	0	0	0	0	0	0		
Add income		29,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100		
Total	-12,000	29,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100	29,100	-65,000	-65,000
PV factor	1.0000	0.9434	0.8900	0.8396	0.7921	0.7473	0.7050	0.6651	0.6274	0.5919	0.5584	0.5270	0.4970
PV	-12,000	27,453	25,899	24,432	23,050	21,746	20,516	19,354	18,257	17,224	16,249	-34,255	-32,305

NPV **135,620**

Additionally, students may include a cash inflow at year 10 to reflect the cost avoided through early disposal. 1 mark may be awarded subject to the overall maximum not being exceeded.

Comments and assumptions

Both options meet NPV criterion. Both options would be suitable for Boweshire CC. The option of using old machines should be recommended on the basis of this analysis.

A real rate of discount should be used, as cash flows used in the appraisal are not inflated. It is then assumed that cash flows will inflate at the same rate of inflation throughout. It is also assumed that the cost of capital will not change over the period of the appraisal, and that estimates of costs and savings are correct.

1 mark for relevant comments and 1 mark for assumptions

(b)   Discuss three approaches which can be used to take account of risk and uncertainty in the investment appraisal process. Evaluate the sensitivity of your NPV analysis to changes in sales volume. How useful a tool is sensitivity analysis in evaluating project risk?

Investment appraisal involves looking into the future and making judgements and estimates as to likely outcomes. It would be unrealistic to assume that these judgements and estimates will always be exactly correct. A more reasonable assumption is that they will always be incorrect. Risk is present where there are a number of possible outcomes which can be assigned a probability value. Uncertainty is knowing that other outcomes are possible, but not being able to predict them nor assign a probability value to them.

Three approaches that can be taken are:

- Certainty equivalents
- Expected values – probabilities can be assigned to cash flows and/or to NPVs. Weighting of probabilities will allow expected net present values to be calculated.
- Risk-adjusted discount rate – where the project is perceived to be a high risk, a risk premium may be added to the discount rate, which will have the effect usually of reducing the net present value of the project (not appropriate to public sector as capital is risk capital)
- Sensitivity analysis – which is dealt with below.

2 marks for discussion

Sensitivity analysis can be used to identify by how much key variables would have to change in order to change the outcome of the NPV analysis.

Changes in the sales volume are unlikely to impact upon the choice between the two options, as they would both be affected, but the NPV of option 1 would decrease faster than that of option 2. The advantage of option 2 over option 1 would therefore be maintained and probably enhanced.

However, a reduction in sales volume could reduce the NPV to zero or to a negative figure. The question then to be asked is what level of reduction would reduce the NPV of option 2 to zero? (Option 1 would become zero before option 2.)

Each reduction in sales volume of 1,000 tonnes would reduce income by 1,000 x 2 = £2,000. The present value factor of an annuity over 10 years at 6% is 7.36. The NPV would reduce by 7.36 x 2,000 = 14,720 for each 1,000 tonne reduction in sales. The amount of reduction therefore needed to reduce the NPV (135,620) to zero would be 135,620 ÷ 14,720 x 1,000 = 9,213. This would give an increase in sales of 13,500 – 9,213 = 4,287 which is 4.76%.

6 marks for a correct answer, but it is likely that alternative approaches may be taken. For example, students may assess the sensitivity in relation to specific reductions in the sales volume eg 5%, 10% etc. This approach should be regarded as being valid as long as it is properly explained and correctly executed. Marks should be awarded accordingly.

Sensitivity analysis can be a useful tool:

- It helps to measure the effect of individual variables upon projected outcomes and decisions.
- It provides more information upon which to make judgements.
- It can only be used to consider one variable at a time and it may be unrealistic as several variables may change.
- It only assesses the effects of risk, it does not quantify the likelihood of a situation occurring.
- Calculation and presentation of calculations may be complicated and difficult to communicate to decision makers.

1 mark for each valid point subject to a maximum of 2 marks

(c) Discuss the likely effects of the formation and operation of a PPP consortium. How can this risk be dealt with? Is the use of expected values helpful in this situation? (No calculations required.)

The formation and operation of a PPP consortium adds another element of risk to the investment options. The consortium may choose to source their supplies externally. Alternatively they may choose to use the quarry and may even increase demand for supplies. Either way would have detrimental financial effect upon the quarry service. The use of external sources would be disastrous, as the quarry would lose a high proportion of its current demand. If the consortium increased its demand there would also be a financial loss as they have indicated they would not pay the premium and the increased demand could only be accommodated through the loss of income from the private sector.

The balance of probability appears to be that the consortium would not affect the status quo. If the consortium takes all of the production it would reduce the financial position of the quarry and amount of NPV. However, the investment would still be worthwhile.

1 mark for each valid point subject to a maximum of 4 marks

The use of expected value must be treated with caution. The events being considered are mutually exclusive – either the consortium will act in one way or in another, but there is no compromise. However, the expected value will indicate the average result given that it has been possible to assign probabilities to the consortium's likely response.   *2*

(d) Apart from the financial considerations what other factors should be taken into account before reaching a decision on this investment? How might you incorporate these factors into a decision-making model? Overall what course of action would you recommend to Boweshire County Council.

The analysis has concentrated upon financial factors in calculating NPV and payback, but there are other factors which need to be considered.

- The effect upon the sustainability of the quarry and upon future requirements of the council for road repair and maintenance materials.

- The desirability of continuing with old machines and the level of risk that this involves.
- The uncertainty over the future demand for materials due to the reorganisation of the road repair and maintenance service.
- Sustainability of private sector markets and price levels.
- Effect of early closure of Stonefoss and relocation of workforce.
- Problems in forecasting future demand for materials by the council.
- Possible resistance within the quarry service to option 2 which does not have the support of the quarry manager.

1 mark for each valid point subject to a maximum of 4 marks

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These factors could be incorporated into a decision-making model by using some form of weighted benefit analysis. This would involve identifying the key factors to be taken into account in the decision-making process. This would include financial considerations as well as other factors derived from the list above, eg sustainability and compliance with council policy, effect of early closure.

Once these factors have been considered and agreed, each can be given a weighting and then the options can be scored against them. This provides a quantitative approach to weighting of the different factors. The option with the highest score would then be proceeded with.

Other approaches could include cost benefit analysis (CBA) and/or cost effectiveness analysis. (See OLM pages 168-169). CBA values all the benefits of a proposed project and also attempts to value all costs, both tangible and intangible. All costs and benefits are reduced to monetary currency. Cost effectiveness analysis does not go quite as far as this and records intangible costs and benefits in narrative form to be used as part of the input to the investment decision. CBA, in particular, often takes a very long view of the project and in this case the sustainability factor would need to be valued in terms of long term opportunity costs to the council of running out of quarry material.

1 mark for each approach discussed subject to a maximum of 3 marks plus 1 mark for discussion of application of approaches incorporating the use of examples

The final part of the question asks for a reasoned recommendation on the course of action that the council should take. The most obvious recommendation is to go ahead with the investment and to apply option 2 using the old machines. Alternatives would be acceptable as long as a case is made for their acceptance.

1 mark for recommendation plus 1 mark for explanation of reasons for it

(40)

Question 2

This question relates to syllabus objective C2 and is covered in Study Session 12.

(a)   What price should the Centre charge based upon the:

    (i)   Maximax model
    (ii)   Maximin model
    (iii) Minimax regret model?

A payoff table is required to answer this question

State	£40 per day	£50 per day	£60 per day
Pessimistic	33,000 x 22 = 726,000	24,000 x 32 = 768,000	19,000 x 42 = 798,000
Neutral	38,000 x 22 = 836,000	26,000 x 32 = 832,000	21,000 x 42 = 882,000
Optimistic	40,000 x 22 = 880,000	30,000 x 32 = 960,000	22,000 x 42 = 924,000

Maximax looks for the best of the best possible assumption ie which is the best return from the optimistic state = £50 per day (a contribution of £960,000).

Maximin looks for the best possible outcome from the worst possible assumption ie which is the best return from the pessimistic state = £60 per day (a contribution of £798,000).

Minimax regret requires a regret table to be constructed

State	£40 per day	£50 per day	£60 per day
Pessimistic	72,000	30,000	0
Neutral	46,000	50,000	0
Optimistic	80,000	0	36,000
Max. regret	80,000	50,000	36,000

Maximum regret is minimised at £60 per day (£36,000 is the minimum level of maximum regret).

1 mark for each of the tables (1 x 2) plus 1 mark for each correct conclusion (3 x 1)
(5)

(b)   Define and explain the aims of each of the models and compare them with the use of expected values. Calculate expected values for each of the pricing options and compare the outcome with those provided by the models used in part (a). Given the circumstances surrounding the refurbishment and re-launch of the centre and the limited information available to you, what price would you recommend should be adopted and why?

The models allow different approaches to be taken to risk. This reflects the fact that individuals and organisations possess different views with regard to risk taking. This may be due to personality traits and/or it may be enshrined in the culture of an organisation.

The maximax model reflects an optimistic point of view and would be adopted by a risk taker. The aim of the model is to identify the course of action leading to the maximum benefit (in this case contribution).

The maximin model reflects a pessimistic point of view as adopted by a risk avoider. This model aims to identify the course of action where the worst possible state generates the best outcome (contribution).

The minimax regret model considers the opportunity cost (regret) involved with each possible course of action being considered. Regret is defined as the difference between the actual and the best possible payoff for each option and the model will identify the course of action which minimises the maximum regret. It allows you to select the option with the least potential for damage. This also represents a risk averse point of view.

1 mark for definition and explanation of maximax and maximin models and 2 marks for minimax regret model subject to a maximum for 4 marks

Expected values can be used to calculate the average outcome for each option if repeated many times based upon probabilities assigned to key variables. In the scenario probabilities are assigned to the pessimistic, neutral and optimistic states. Expected value will give a clear indication, on the balance of probabilities, as to which of the options should be adopted but it does not identify best and worst case scenarios. This is a risk neutral approach.   *2*

Expected values for each of the options – using information from the payoff table previously calculated.

	£40 per day	£50 per day	£60 per day
Pessimistic	726,000 x 0.3	768,000 x 0.3	798,000 x 0.3
Neutral	836,000 x 0.4	832,000 x 0.4	882,000 x 0.4
Optimistic	880,000 x 0.3	960,000 x 0.3	924,000 x 0.3
Expected value	816,200	851,200	869,400

The option of charging £60 per day has the highest expected value. This is consistent with the outcomes of the maximin and minimax regret models, both of which are regarded as being risk adverse. It is only the maximax model, which is risk seeking, that offers an alternative of charging £50 per day.

2 marks for table/calculation plus 1 mark for comment making comparison between the outcomes (3)

It is most likely that a price of £60 would be recommended. There is pressure on the centre manager to make the centre a financial success and this is almost certain to provoke a risk averse response. There is no evidence to support £40 per day and only an optimistic view would argue for £50 per day.

1 mark for recommendation supported by rationale (alternative view could be taken but would have to be supported) (1)

(c)   What is the difference between risk and uncertainty?   Illustrate your answer with one example of each based upon the scenario.

Risk relates to likely outcomes of a particular decision to which probabilities can be assigned. Risk can, therefore, be quantified. Examples of risks which might affect the Winston Centre would be staff sickness/absences, likelihood of Centre closure due to bad weather, increase in costs of materials etc. They can all be estimated on the basis of past experience. Uncertainty may arise out of political change, changes to the type of training needed by schools, reorganisation of the education service and finances etc. All of these would have an impact but are very difficult to forecast and represent in quantifiable terms.

1 mark for definition of risk and 1 mark for definition of uncertainty plus up to 3 marks for relevant illustrations which are fully explained
(5)

(20)

Question 3

This question relates to syllabus objective B3 and is covered in Study Session 8.

(a) **Calculate the total costs for the Supreme in 2005 and produce a statement which clearly shows profitability per unit. What is the average price being charged during 2005?**

Overheads
ABC –
Procurement would be based on £640,000/80,000 = £8 per order
For Supreme in 2005 this is 50,000 x 8 = £400,000
Quality control would be based on £350,000/70,000 = £5 per hour
For Supreme in 2005 this is 40,000 x 4 = £200,000
Rework would be based upon £200,000/40,000 = £5 per hour
For Supreme in 2005 this is 20,000 x 5 = £100,000

Other –
25% of direct cost = 25% of 7,200,000 = 1,800,000

Supreme – Profitability Statement 2005

	Total (100,000 Supremes) £	Unit (per Supreme) £
Income from sales	12,700,000	127
Direct costs		
Direct materials	4,500,000	45
Direct labour	1,200,000	12
Direct machine costs	1,500,000	15
Indirect manufacturing costs		
Procurement	400,000	4
Quality control	200,000	2
Reworking	100,000	1
Cost of goods sold	7,900,000	79
Operating costs		
Design, marketing and distribution	1,800,000	18
Total product costs	9,700,000	97
Operating profit	3,000,000	30

1 mark for ABC overheads. 1 mark for direct costs, 1 mark for operating costs and 1 mark for unit sales price (4)

(b)   Explain what is meant by cost plus pricing and show the effect of adopting a mark-up of 25%. What are the drawbacks of this method?

Cost plus pricing involves calculating the costs of producing and selling the product and then adding a mark-up to represent a reasonable return. This is essentially a cost based approach.

1 mark for definition

In this case this would mean adding a mark-up of 25% to the total product costs, ie £9,700,000 plus 25% = £12,125,000, a profit of £2,425,000. The selling price would be £121.25.

1 mark for profit and 1 mark for selling price (2)

The main drawback with this approach is that it takes no account of market conditions. The Supreme is likely to come under pressure from Windyvac and a price of £121.25 would not appear to be sufficiently competitive.   *1*

(c)   Explain what is meant by target pricing. Assuming a need to price competitively in comparison with the Windyvac, how would Dustblow go about trying to achieve a target operating profit per unit equivalent to its current level. Outline the steps in the process. (Assume no change in the level of sales.)

Target pricing is market based. It begins with an assessment of what customers are likely to pay, having taken into account knowledge of existing markets and of competitors' likely actions. Once a target price is determined this can be used in conjunction with a target operating cost per unit to determine a target cost per unit. Target cost per unit is derived by subtracting the target operating profit per unit from the target price.

1 mark for explanation

In this case Dustblow will need to price the Supreme to remain competitive with Windyvac's product. This is priced at £115. A target price of £110 per unit would be reasonable (but students may assume other figures). If the target operating profit of £30 per unit were to be achieved this would mean a unit cost of £110 - £30 = £80. This is a significant reduction on current levels of cost and costs would have to be cut by £17 (£97 - £80) per unit.

1 mark for choice of target price,
1 mark for target unit costs
1 mark for reduction required
(3)

The steps in the process are:

1. Develop a product that satisfies the needs of potential customers. The existing success of the Supreme would suggest that the product is in demand and meets customer needs.
2. Choose a target price based on customers' perceived value for the product and the prices competitors charge and a target operating cost per unit. The current price is £127 (although this has been an average), which compares unfavourably with the recently available Windyvac.
3. Derive a target cost per unit by subtracting the target operating profit per unit from the target price.

4. Perform value engineering to achieve target costs. This will involve looking very closely at all current costs to see where reductions can be made. This may begin by looking at the features of the Supreme and judging whether they all contribute to sales. A useful distinction can be made between value added costs and non value added costs. A review of operations can reveal improvement in manufacturing processes which could reduce machine times and labour inputs, and tighter quality control can reduce the need for testing time etc.

1 mark for each of the stages in the process (to include explanation and comment in relation to the Supreme) subject to a maximum for 4 marks

(d) How would you distinguish between value-added and non value-added costs and how might this distinction help Dustblow achieve its target operating profit?

Value-added costs are those that customers perceive as adding value or utility to the product. It is necessary to identify attributes that customers regard as important.   These would probably include cleaning capabilities, design, accessibility (ease of ordering and delivering) and price. The next step is to identify activities that influence these attributes which would include direct manufacturing costs. Design costs might also be important and, if accessibility is a valued attribute, then marketing and distribution could be relevant. Other costs would probably be non value-added, although procurement and quality control might be regarded as being in a 'grey area' between the two where some aspects of cost are seen as adding value.

Value engineering seeks to eliminate or at least reduce non value-added activities and non value-added costs by reducing their cost drivers. It would also look very closely at the nature of costs in the so-called grey areas. The focus on value-added costs is to improve efficiency and achieve the same amount of value for less resource.

3 marks for explaining the distinction and 1 mark for suggesting how this might help Dustblow
(4)

(20)

Question 4

This question relates to syllabus objective A2 and is covered in Study Sessions 2 and 3.

(a) **Calculate the NPV of each of the three projects under consideration. Using the profitability index method rank the schemes in order and suggest what action should be taken by the trust on the basis of your analysis. What are the limitations of this type of analysis? Outline and apply an alternative approach that could be taken. How would your analysis have differed if all the schemes had been divisible.**

NPV of schemes

A - £1.12m
B - £1.25m
C - £1.04m
D - £0.80m

Profitability index = NPV/investment outlay
Profitability index (PI) of A = 1.12/1.7 = 0.66
Profitability index (PI) of B = 1.25/0.8 = 1.56
Profitability index (PI) of C = 1.04/2.4 = 0.43
Profitability index (PI) of D = 0.80/1.15 = 0.70

Or

Profitability index (PI) = PV of future cash flows/investment outlay
Profitability index (PI) of A = 2.82/1.7 = 1.66
Profitability index (PI) of B = 2.05/0.8 = 2.56
Profitability index (PI) of C = 3.44/2.4 = 1.43
Profitability index (PI) of D = 1.95/1.15 = 1.70

(Both methods are used in the OLM.)

The PI analysis gives a ranking of BDAC which differs from the ranking by NPV (BACD).
Adopting BDAC would mean that schemes B, D and A could commence, giving a total outlay of £3.65m and providing a total NPV of £3.17m. This would leave £0.55m unspent allocation. The Trust would be advised to commence schemes B, D and A.

The PI rarely offers optimal solutions as schemes are often not divisible. In this scenario only scheme B is divisible. The PI is also only appropriate when capital rationing is applied to a single period. As the capital allocation covers the period of one year this would be relevant to the decision being taken.

½ mark for each NPV calculation and ½ mark for each PI calculation. 1 mark for rank arising out of the calculation, 1 mark for recommendation, 2 marks for discussion of limitations
(8)

An alternative method would be to identify all the combinations available, relate them to the spending constraint and compare the total NPV's of the viable options.

A, B and C would cost £4.9m
A, C and D would cost £5.25m
Both in excess of the allocation.

A, B and D would cost £3.65m and would have NPV = £3.17m
B, C and D would cost £4.35m and would have NPV = £3.09m
A and C would cost £4.10m and would have NPV = £2.16m

Using this approach a further option could be considered:
A, C and part of B (this is divisible) – NPV = £2.16m + 3/8 of £1.25 (or 1.56 x 0.3) = £2.63m.

This has the advantage of using up all of the capital allocation, but is still not as good an option as A, B and D.

3 marks for calculations related to this approach plus
3 marks for recommendation and comments

If all the schemes had been divisible this would have added further options, all of which would have used up the whole capital allocation.

These would include:
ABD and part C
AC and part B
AC and part D
BCD and part C
AB and part C
BC and part A
AD and part C

Whilst each of these options can be costed individually a better method is to apply the profitability index which indicates that the best return will be gained through investment in the most profitable project first and the least profitable project last, until all of the capital allocation is used up.

This will be ABD and part C with NPV = £3.17m (from above) + 1.04 x 0.55 ÷ 2.4 (PI of C) = £3.408m

1 mark for identification of further options plus 3 marks for choice of best option
with justification and discussion (4)

(b) **Distinguish between hard and soft capital rationing and give an example of how each may occur. Discuss the relevance of the use of capital rationing in the public sector. How could non-financial factors be incorporated into the Trust's decision-making rules?**

Capital rationing arises when there is a budget ceiling or other constraint on the amount of funds which can be invested during a particular period of time. Hard capital rationing refers to externally imposed constraints. Soft capital rationing relates to constraints operating within the organisation and imposed by management. There may, of course, be a link between the two.

1 mark for definition of each term

(2)

Hard rationing may be due to constraints on the amount of funds available due to:
- Limitations of funds supplied by a third party (as may be the case in the public sector).
- Limits on funding sources and particularly on the ability to borrow or access to financial markets.
- Scrutiny of external stakeholders.

Soft rationing may be due to:
- Management-set limits on methods of funding or maximum amounts that can be borrowed etc.
- Ceilings imposed as part of annual budgeting process.
- Risk averse management.

1 mark for each relevant example
(2)

There is a need for capital rationing within the public sector as there are always likely to be more potential investment projects than resources available. The problem may be in finding an appropriate basis for ranking of projects. PI can be useful (subject to limitations already mentioned), but it concentrates on financial return and many public sector projects will not be entered into wholly or even primarily for financial reasons. NPV is often used in the public sector as a way of determining the least cost option and there must be a doubt over the application of PI methods in these cases.

1 mark for each relevant point subject to a maximum of 2 marks

The Trust faces the danger of making decisions purely on financial grounds and ignoring other factors which may have a bearing upon services delivery etc. A major issue here is that on financial grounds the Trust will end up only investing £2.5m when it has a capital allocation of £4.2m and this may result in a lost opportunity in terms of creating non-financial value. The answer would be to identify non-financial criteria (desiderate) against which to asses the investment options and then to weight the financial and non-financial criteria against each other. This could be done through the use of some sort of weighted benefit analysis.

2 marks for discussion of issues and suggestions

(20)

Question 5

This question relates to syllabus objectives D1 and D5 and is covered in Study Sessions 15, 16 and 17.

The question asks for a report for the next meeting of the management board. Answers should be in an appropriate format and style.

1 mark for presentation to be taken from allocation for part (a)

(a) An outline of the nature and content of Balanced Scorecard and Business Excellence and an indication of what you see as the strengths and weaknesses of each approach. Use diagrams as appropriate.

Balanced scorecard

This is outlined on pages 389-390 of the OLM and in the chapter reproduced from Kaplan and Atkinson (1998) which begins at page 399 in the OLM.

Key points:
- Scorecard includes non-financial and financial measures of performance in order to provide a holistic and comprehensive view of the organisation.
- Identifies four distinct but inter-related perspectives, which are:
  - Financial
  - Customer
  - Internal business
  - Innovation and learning
- Major goals are articulated for each perspective which are then translated into specific performance measures.
- Performance is viewed from strategic and operational perspective and in the short and long term.

The framework may be shown in the form of a diagram (see fig 16.1 OLM).
An alternative framework developed for the not-for-profit sector could be outlined (see Fig. 2 OLM). This version, developed by Kaplan and Norton in 2001, could also be outlined. This version reflects better the way that not-for-profit organisations do not see financial objectives as being their primary aim. This framework would be more relevant to Truth and consists of:
- High-level mission category.
- Three high level perspectives concerned with cost/efficiency, value of service provided, and meeting the objectives of the legitimising authorities.
- Internal process and learning and growth which support the high level perspectives.

Answers should stress the strengths and weaknesses of the approach, covering points such as:
- Widening focus of performance measurement.
- Providing basis for improving performance through performance management.
- Can be used flexibly for not-for-profit organisations.
- May be tendency to focus on internal operational excellence.
- Possible over-concentration on financial perspective.

- May still be difficult to measure what is really important to an organisation.

1 mark for each relevant and valid point subject to a maximum of 6 marks.
1 mark may be given for diagram. No more than 3 marks if no overt discussion
of strengths and weaknesses.
(6)

Business excellence

This is outlined on pages 479-481 of the OLM.

Key points:

- Aim is to critically assess whether an organisation is operating effectively across a broad range of criteria.
- Philosophy of "effective leadership inspires staff and targets resources to continuously improve working methods in order to satisfy customers, staff and others and produce excellent results".
- Uses five enabler measures and four result measures.

- Enablers are:
  - Leadership
  - People management
  - Policy and strategy
  - Resource
  - Processes

- Results are:
  - People satisfaction
  - Customer satisfaction
  - Impact on society
  - Business results

- Each of these measures is weighted to give an overall potential score of 100, then scores are assigned to each on the basis of performance.
- Key questions are used to assess performance and scores can be used as benchmarks against previous performance or other organisations (or departments within the same organisation).

The framework may be shown in the form of a diagram (see Fig 17.7 OLM).

Answers should stress the strengths and weaknesses of the approach covering points such as:

- World class model for business excellence as developed by European Foundation for Quality Management.
- Provides fair and objective feedback on the strengths of the organisation and opportunities for improvement.
- A positive tool for performance management.
- Encourages the use of benchmarking.
- Some of the assessment may be seen as subjective, although alternatively this may be viewed as a good approach to qualitative issues.
- Could be quite complicated to set up and may consume significant resources.

1 mark for each relevant and valid point subject to a maximum of 6 marks. 1 mark may be given for diagram. No more than 3 marks if no overt discussion of strengths and weaknesses

(b)   A discussion of the arguments relating to the use of a performance management framework in an organisation such as Truth.

This section requires a general discussion of performance management frameworks as applied to the specifics of the scenario. The points identified below mainly reflect issues raised in study sessions 16 and 17.

Truth is a relatively small not-for-profit organisation which currently does not employ a performance management framework. The organisation also has a very specific purpose and a general approach to performance management may not suit its needs. Both of the frameworks under consideration have been developed with larger organisations in mind. A framework should:

- Fit with the type of organisation.
- Reflect the organisation's goals and objectives.
- Cover all stakeholder groups.
- Be clear, understandable and acceptable to managers.

Both the balanced scorecard and business excellence model can take the emphasis away from the management of financial performance and both models are also concerned with the wider objectives of an organisation.

The problem with Truth is that a formal framework may be too unwieldy and may place too great a call on organisational resources. The culture of the organisation is unlikely to support bureaucratic procedures of the scale needed for the frameworks to be successful. It may be possible to scale down the framework to fit better with Truth's position. Another issue, though, would be expertise and the need for someone able to lead this kind of development and then to cascade the necessary training throughout the organisation. Information systems may also struggle to support the needs of either balanced scorecard or business excellence.

1 mark for each relevant point subject to maximum of 4 marks. This question may encourage quite wide ranging discussion, therefore there is a need for flexibility in the awarding of marks

(c)   An indication of the importance of a financial input into performance management and how that is reflected in the two frameworks under consideration.

There is a danger that the introduction of frameworks that encourage a wider view of performance measurement may lead to the downgrading of financial performance. The organisation will still need to manage its financial resources efficiently and effectively, even though there is no requirement on it to make a profit. Balanced scorecard allows for this through the financial perspective and basic measurement information on budgets and unit costs etc could be used. Business excellence allows for resources to be considered as an enabler and for business results to be considered under results. There would be a need for financial input in both of these areas.

1 mark for each relevant point. Points should, where possible, be related to either or both of the frameworks being considered. Subject to a maximum of 3 marks.

(20)