



# **ACCOUNTING FOR DECISION MAKING**

**Diploma Stage Examination**

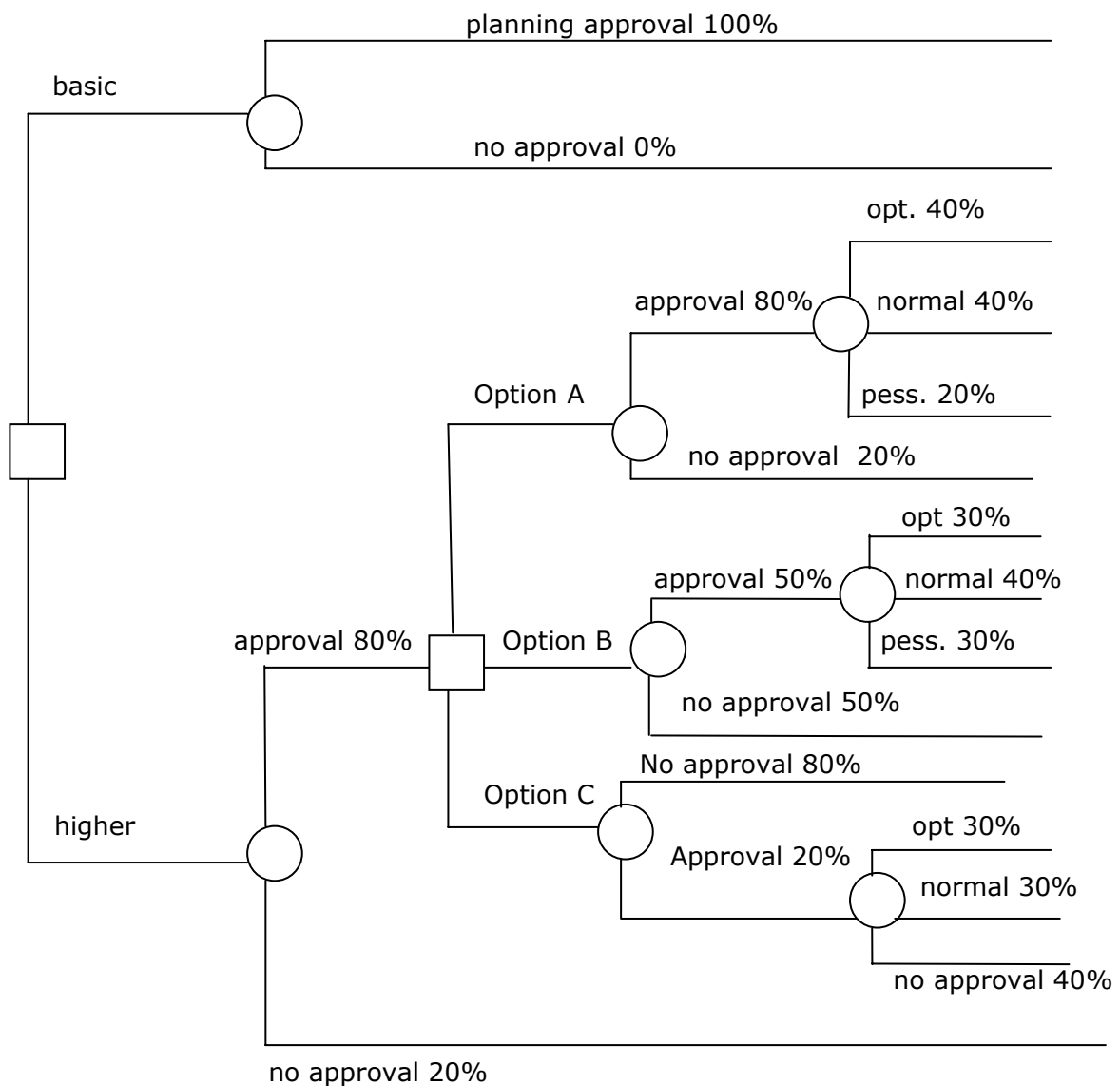
**6 December 2006**

## **MARKING SCHEME**

**Question 1**

This question relates to syllabus objectives C2, A3 and A1 and is covered in Study Sessions 13, 7 and 5.

- (a) Using an appropriate form of analysis, determine the range of options available in respect of the balcony project. Evaluate them and produce your recommendations. Prepare a brief note explaining what you have done and advising upon how the outcomes of the analysis should be used. Your advice should take into account what you see to be the main benefits and potential drawbacks of your methodology.



This is a basic diagram which shows the logic of the decision making process. Present value figures can be included as part of the diagram and the EMVs of decisions can also be incorporated. For the sake of clarity (and the difficulty of drafting it using Word) these are shown below.

The decision tree diagram shows fifteen possible outcomes based upon probabilities and decisions. The outcomes of each are shown below along with the probabilities of each outcome (forming a risk profile)

	£	%
Basic work – planning approval	0	100
Basic work – no planning approval	0	0
Higher spec – approval – Option A –approval – optimistic demand	10,000	25.6
Higher spec – approval – Option A –approval – normal demand	2,000	25.6
Higher spec – approval – Option A –approval – pessimistic demand	-2,000	12.8
Higher spec – approval – Option B–approval – optimistic demand	22,000	12
Higher spec – approval – Option B –approval – normal demand	10,000	16
Higher spec – approval – Option B –approval – pessimistic demand	0	12
Higher spec – approval – Option C –approval – optimistic demand	40,000	4.8
Higher spec – approval – Option C –approval – normal demand	20,000	4.8
Higher spec – approval – Option C –approval – pessimistic demand	10,000	6.4
Higher spec – approval – Option A –no approval	0	16
Higher spec – approval – Option B –no approval	0	40
Higher spec – approval – Option C –no approval	0	64
Higher spec – no approval	0	20

In each case where the higher specification is chosen there would be a deduction of £10,000 cost from the outcome figure. Rolling back the decision tree from the right the first decision is the choice between Options A, B and C. To make this decision it is necessary to calculate the expected monetary value of each option.

EMV Option A

40% of 10,000	4,000
40% of 2,000	800
20% of -2,000	-400
	4,400
80% of 4,400	<b>£3,520</b>

EMV Option B

30% of 22,000	6,600
40% of 10,000	4,000
30% of 0	0
	10,600
50% of 10,600	<b>£5,300</b>

EMV Option C

30% of 40,000	12,000
30% of 20,000	6,000
40% of 10,000	4,000
	22,000
20% of 22,000	<b>£4,400</b>

On this basis Option B should be chosen.

The second decision is whether the basic work or the higher specification should be carried out.

The expected value of the basic work is 0.

The expected value of the higher specification is  
 $5,300 \times 80\% = \text{£}4,240$

The overall decision indicated by this approach is to carry out the initial higher specification and then go on to choose Option B.

This would be the approach of the risk neutral decision maker. Option C offers the possibility of much higher returns but there is much less likelihood of being given approval to proceed. The higher specification is subject to a greater degree of risk all round and success would depend upon two planning applications being accepted. Option A provides the best chance of success (64%) but a risk averse decision maker may settle for the certainty of being successful in carrying out the basic work at no cost to the organisation.

The decision tree analysis should be seen as the starting off point for the decision making process and not the end of it. All the options have been identified and an optimal path based upon risk neutrality has been revealed. But the actual decision will depend upon the decision maker's attitude to risk.

The note should explain the process which has been carried out along with advice on how to interpret and use the results of the analysis. The benefits and drawbacks of the approach can be summarised as being:

- Produces expected values as a basis for decision making.
- Identifies all the options available.
- Helps to make sense of complex series of events.

But:

- Expected values are only averages and represent a risk neutral approach:
- Expected values do not show the best approach.
- Analysis is only as valid as the forecasts of probabilities and the data used for the calculations.
- This may, in turn, give the outcome of the analysis a false validity due to the "psychology of numbers".
- There may be other considerations that should be factored into the decision making process.
- The optimal path approach links decisions together when they might be better taken separately.

Alternate approaches should be marked in accordance with the outcomes produced. All of the marks for this question are available although it is unlikely that they would be awarded.

*Diagram showing correct logic – 4 marks*  
*Risk profile summarising options, outcomes and probabilities – 4 marks*  
*Calculations of EMV – Options A, B and C – 6 marks*  
*Calculations of EMVs basic and higher specifications – 2 marks*  
*Explanation of process (2 marks), advice (2 marks),*  
*Benefits (2 marks) and drawbacks (2 marks) – 8 marks*

(24)

- (b) **The General Manager has asked you to draft a reply to the Treasurer on his behalf.**
- (i) **He would like you to explain what weighted benefit analysis is, how it might be used in this situation and whether the Students' Union could benefit from it. What he said to you was "I don't think we need to be doing this but I'm not an expert. Can you make it clear to me in your note what it would involve and I'm relying on you for a recommendation one way or another. I'd like to get it out of the way so that we can proceed"**

Although the question requires a note in response to the general Manager's request this should be fairly informal and therefore there are no marks specifically for the format.

Weighted benefit analysis is a technique used in the not for profit sector where an organisation has a wide range of objectives and is not simply seeking to maximise profit or meet some other exclusively financial objective. It is often referred to as desiderata as the first stage would be to identify the benefits (or desirable things) which the organisation was seeking from a project. The second stage would be to weight the desiderata and, finally, scores or rankings can be applied. It is important that decisions on identifying benefits, weighting and scoring them are taken by a wide group of interested parties. Delphi technique may be used in an attempt to objectify the process.

The Students' Union could benefit from the use of the technique but not necessarily in this case. Whilst the Union will provide services to students which might result in measurable benefits this project is primarily or even wholly commercial in nature. It could be argued that some of the non financial criteria e.g. relating to the effect of the development on the environment are being taken care of through the planning process.

The starting off point in this scenario would be to identify what objectives were being pursued in carrying out the project and then to question whether the non financial aspects of the objectives were significant enough to overrule or be taken account of alongside the clear financial objectives of maximising financial benefit (cash flow/profit etc).

The overall advice in this case would probably be that whilst the techniques is valid in the not for profit sector it is not so likely to be relevant in this case as the project is overtly commercial in nature and therefore commercial criteria should be used in making a decision.

*Up to 4 marks for explanation of technique and how it might be applied to the Students' Union, plus up to 4 marks for reasoned argument surrounding its application to this scenario. To earn marks candidates must recognise the difference between commercial and non commercial projects irrespective of the over riding motives of the organisation*

(8)

**(ii) He also wants you to deal with the issue of post auditing of investment decisions. How would it work and why might it be of particular benefit to the Students' Union as an organisation?**

The other issue to be covered in the note is post auditing of investment decisions. A good investment decision making process should include a monitoring and control stage. This stage will partially be covered in the implementation stage of the investment but there is also a good case to be made for a review of the investment to be carried out some time after it has been completed.

Essentially the post auditing process will take the form of revisiting the investment some time after it has been completed and comparing the data and assumptions made at the time of the appraisal with actual outcomes. In this case the key areas would be the planning applications and the assumptions made on costs and demand as a result of the developments. The audit should also re-examine the actual process and the techniques used to judge how appropriate they appear to have been given the benefit of hindsight.

The significance of this in the scenario is that it is unlikely that there would be a routine and regular review of major investments as, say, the Audit Commission would carry out for larger public sector organisations. Similarly the size of the organisation would probably preclude internal audit investigation in this area.

The benefits of post audit of investments are that it should help to bring about improvements in the quality of future decision making as well as the tightening of internal control systems. In this case it may be that it would feed in to the two part decision making process and introduce better information on which the second decision could be made. It will help to identify the things which have gone wrong and the things which have gone right so that learning can take place within the organisation as a whole. The particular benefit to the Students' Union is that it would allow for organisational learning in a context where the individuals making decisions are likely to be changing from one year the next. In an organisation such as this it is difficult to build up organisation learning unless this is properly analysed and documented. In this way it can be ensured that organisational learning is not forgotten.

*2 marks for explaining what post audit involves, up to 3 marks for discussion of general benefits and up to 3 marks for specific comments on the Students' Union/ scenario.*

*(8)*

**(40)**

**Question 2**

This question relates to syllabus objectives A 2 and A3 and is covered in Study Sessions 2, 4 and 6.

- (a) Calculate the net present value of the proposed investment after tax using a weighted average cost of capital based upon
- (i) The dividend valuation model
  - (ii) The capital asset pricing model

The weighted average cost of capital (WACC) is to be calculated in two ways.

The dividend valuation model will assume a constant rate of growth of dividend. The formula for the return on equity is

$$r = \frac{d_0 (1 + g)}{MV} + g \text{ (or the basic formula } r = \frac{d}{MV} \text{ may be used)}$$

$d_0$  is the current dividend 15p

$g$  the expected annual growth of dividend 5%

$MV$  is the current ex div market price which is £1.70

$$r = \frac{15 (1 + 0.05)}{170} + 0.05 = \underline{14.26\%} \text{ (or } 15/170 = 8.82\%)$$

1

$$\text{Return on preference shares is } \frac{6}{75} \times 100 = \underline{8\%}$$

1

$$\text{Return on debentures (after tax) is } \frac{12}{133} \times (1 - 0.33) \times 100 = \underline{6.05\%}$$

1

WACC

	Return	Market Value	Proportion	WACC
Equity	14.26	20,400,000	71.0	10.1
Preference	8.00	3,000,000	10.5	0.8
Debentures	6.05	5,320,000	18.5	1.1
				12.0

$$\text{WACC (based on MV) = } \underline{12\%} \text{ (or 8\% rounded based on basic formula)}$$

WACC may also be calculated using book values i.e £12m, £4m and £4m – which gives figures of 11.37% or 7.1%

2

Alternatively the return on equity can be calculated using the capital asset pricing model (CAPM).

Cost of equity ( $K_e$ )

$$K_e = r_f + (r_m - r_f) \times \beta$$

$$= 6\% + (10 - 6) \times 1.1 = \underline{10.4\%}$$

1

WACC

$$\text{is } 71.0\% \text{ of } 10.4 + 0.8 + 1.1 \text{ (from above) = } \underline{9.28\%}$$

1

Calculation of Net present value (NPV)

Candidates should use 12% and 9.28%.

Written down allowance (WDA) at 20% reducing balance

Year	Opening value	WDA	Closing value	Tax benefit
1	2,500	500	2,000	165
2	2,000	400	1,600	132
3	1,600	320	1,280	106
4	1,280	256	1,024	84
5	1,024	205	819	68
6	819	164	655	54
7	655	655	0	
	Less sale proceeds	(50)		
		605		200

Values in £'000s

1 mark for WDAs and one mark for balancing allowance up to a maximum of 2

Cash flows (£'000)

	0	1	2	3	4	5	6	7	8
Acquisition/ disposal	(2,500)							50	
Cash flow		550	550	600	600	600	600	600	
Tax benefit on WDA			165	132	106	84	68	54	200
Tax on cash flow			(182)	(182)	(198)	(198)	(198)	(198)	(198)
Net cash flow	(2,500)	550	534	551	508	486	470	506	2
PV factors									
12%	1.000	0.893	0.797	0.712	0.636	0.567	0.507	0.452	0.404
9.28%	1.000	0.915	0.837	0.766	0.701	0.642	0.587	0.537	0.492
PV at 12%	(2,500)	491	426	392	369	276	238	229	1
PV at 9.28%	(2,500)	503	447	422	356	312	276	272	1

Values in £'000s

(n.b. figures in the above statement have been rounded for ease of presentation.

Allowances will be made in the marking process.)

NPV (12%) using the WACC based upon the dividend valuation model is £(78,000)

NPV (9.28%) using the WACC based upon the CAPM is £89,000

*Calculations based upon 9% will be accepted. 1 mark for acquisition and cash flow; 1 mark for tax benefit; 1 mark for tax on cash flow; 1 mark for correct timing of tax; 1 mark for using correct PV factors; 1 mark for NPV calculations. Maximum 6.*

(15)



**(b) Discuss the merits and limitations of each approach and recommend whether the proposed investment should go ahead.**

Merits and limitations of each approach

Dividend valuation model

- Takes future expectations into account as well as current share values.
- Assumes all shareholders all have the same marginal cost of capital.
- Assumes perfect information.
- Assumes new project will have same level of risk as existing business.

CAPM

- Assumes perfect knowledge, perfect competition and market.
- Assumes future returns will follow pattern of existing returns.
- Only considers systematic risk and assumes stock market equilibrium.

Both models are relatively simple and allow for a valuation of the return on equity which can then be incorporated into the WACC.

*1 mark for each relevant point up to a maximum of 4*

The NPV calculation indicates a negative value using the dividend valuation model and a positive figure using CAPM. Both values are marginal around zero. A recommendation can be made for either acceptance or rejection. In practice it would be prudent to review the calculations and underlying assumptions and assess whether the sensitivity of the outcomes should be tested.

1

(5)

**(20)**

**Question 3**

This question relates to syllabus objectives D1 and D3 and is covered in Study Sessions 16 and 17

The question requires a report.

*1 mark for the use of an appropriate and relevant format  
(taken from allocation for section (d))*

It is important that throughout the answer candidates relate their material to the scenario that is outlined in the question. Answers that do not relate to the circumstances of the theatre should be limited to half marks all round.

**(a) An appropriate benchmarking methodology to meet the needs of the theatre.**

Benchmarking is a systematic and continuous measurement process, continually comparing and measuring an organisation's business processes against business leaders in order to effect an improvement in performance.

The theatre needs to consider and develop an approach appropriate to their own requirements. The starting off point would be to identify what should be benchmarked. It would be wrong to try to cover everything, in which case priority must be given to key areas. Financial performance is obviously a major concern which would mean looking at financial systems and outcomes and could cover areas such as pricing and ticketing to budgeting as well as income and expenditure streams. Other areas which might be covered include marketing and operations.

Once the relevant areas have been chosen some work must be carried out on mapping the activities and processes related to them.

There is then the task of identifying comparable organisations. These may include similar organisations, even competitors if possible. Other organisations in non related areas of activity can also be useful e.g. in comparing ticketing and marketing processes. It may be that other organisations are interested in some form of partnership or in joining a benchmarking group. This might be the case with other local authorities with civic theatre functions.

The methodology then involves data collection. The data can be used for comparisons with best practice. This will allow for performance gaps to be identified and for steps to be devised to improve procedures to close these gaps. Action plans for improvements can be devised leading to implementation and feedback.

Comparisons may lead to the development and use of performance measures and targets.

*Up to 5 marks for a good discussion of methodology, to be awarded either on a points basis or for overall impression.*

(5)

**(b) Suggestions on performance measures which could be used (including five examples covering financial and non financial performance).**

This section requires five examples of performance measures. Examples could include measures related to:

- Theatre attendance and usage
- Budget performance
- Marketing coverage and response
- Amount spent by theatre attendees on additional services e.g. programmes, bar spend etc
- Unit costs of procedures and activities

*1 mark for each example. Other examples will be equally as valid as those referred to above up to a maximum of (5)*

**(c) The main benefits which should accrue from this approach and the potential difficulties of using it.**

The main benefit should be an improvement in performance. But this can come about in a number of ways:

- Could identify new opportunities or ways of doing things
- Might find specific solutions to existing problems
- Identification of best practice
- Can improve understanding of external environment, particularly the marketplace
- Can learn from others successes and failures

This could lead to changing the nature of performances, starting times, bar policy, financial procedures, methods of advertising and marketing etc.

There are potential difficulties with the approach:

- It may be difficult to find appropriate partners either because of the nature of the organisation or because information may be too sensitive. This should not present too many problems in this situation.
- There can be dangers in simply copying other organisations. No two organisations are alike and in this case the history of theatre, its target audience etc is unlikely to be exactly the same as other theatres.
- For benchmarking to work sufficient resources must be committed to it and it will need to have the support of management at all levels.

*1 mark for each benefit or difficulty up to a maximum of 5 (but no more than 3 marks for benefits or difficulties by themselves)*

**(d) The behavioural issues surrounding benchmarking and performance management.**

Performance management will seek to effect change and any form of organisational change will have an effect upon human behaviour. This part of the question may be answered with reference to issues of change management or agency theory (as referred to in the OLM). The OLM also lists a number of potential behavioural issues:

- Conflicting goals of individuals and the organisation.
- Tunnel vision leading to an over concentration on performance measures. In this case this could be an over concentration upon the processes of benchmarking to the detriment of achieving effective improvement.
- Sub optimisation.
- Myopia.
- Fixation on measurement as a goal in its own right.
- Misrepresentation of performance through reporting systems.
- Gaming.
- Ossification.

Most of the above issues could be relevant to this situation. It would not be sufficient for a candidate simply to list the above. The issues need to be explained and also their potential relevance to the situation.

*4 marks for a good discussion of the issues but it must not be a list and it must relate to the situation. Answers that do not meet these requirements will be limited to half marks as a maximum*

(5)

**(20)**

**Question 4**

This question relates to syllabus objective B3 and A2 is covered in Study Sessions 2, 9 and 11.

- (a) Calculate the charge required to meet the council's objectives of reducing road usage by 50%. Determine the charge at which the financial return on the scheme would be maximised.

Current road usage is 8,000 vehicles per day. The target is a reduction of 50% or 4,000 a day.

A charge of £1.50 would achieve a 10% (800) reduction. Thereafter each additional 25p would achieve a further reduction of 5% (400). This would mean that a further 40% reduction would be achieved by an increase of  $8 \times 25p = £2.00$ . This makes a total charge of  $£1.50 + £2.00 = \underline{£3.50}$

The maximum return can be calculated using either the mathematical pricing model or using the tabular method.

The demand curve is given by

$$P = a - bQ$$

At £1.50 the level of usage reduces by 10% (800). The charge which would reduce the level of usage to zero is  $£1.50 + (7200/400 \times 0.25) = £6.00$

$$P = 6 - 0.25/400Q = 6 - 0.000625Q$$

$$MC = 0.30$$

$$R = PQ = 6Q - 0.000625Q^2$$

Differentiate to derive MR

$$MR = 6 - 0.00125Q$$

Set MR = MC to optimise

$$0.30 = 6 - 0.00125Q$$

which rearranges to

$$Q = (6 - 0.30) / 0.00125 = \underline{4,560}$$

The charge for this level of usage is

$$P = 6 - (0.25/400 \times 4560) = \underline{£3.15}$$

2

1

1

1

1

1

1

1

(9)

**Alternatively**

Daily contribution

Price £	Usage	Revenue £	Variable cost £	Contribution £
1.50	7,200	10,800	2,160	8,640
1.75	6,800	11,900	2,040	9,860
2.00	6,400	12,800	1,920	10,880
2.25	6,000	13,500	1,800	11,700
2.50	5,600	14,000	1,680	12,320
2.75	5,200	14,300	1,560	12,740
3.00	4,800	14,400	1,440	12,960
3.25	4,400	14,300	1,320	12,980
3.50	4,000	14,000	1,200	12,800
3.75	3,600	13,500	1,080	12,420
4.00	3,200	12,800	960	11,840
4.25	2,800	11,900	840	11,060

The table shows the optimal charge to be somewhere between £3.00 and £3.25.

*Where this approach only provides an approximation it should be awarded less marks*

(9)

- (b) On the basis of the charges identified above will the scheme meet the requirement to pay for itself within five years? From the information which you have derived from your calculations what charge would you recommend?**

The charge required to meet the objective of 50% reduction in usage would be £3.50. At this level of charges the annual surplus would be  $(365 \times 12,800) - 6,000 = £4,660,000$ . The scheme would easily meet its financial objective.

If the charge were to be rounded to the nearest 25p and the table above were referred to then a charge of £3.25 would produce the best results and would make an annual surplus of  $(365 \times 12,980) - 6,000 = £4,731,700$ . Once again the pay back objective would be easily met. However the objective of a 50% reduction would not be met.

If the optimal charge based on the mathematical model were adopted this would mean a charge of £3.15 and usage of 4,560. The annual revenue would be  $3.15 \times 4,560 \times 365 = £5,242,860$  and variable costs  $4,560 \times 0.30 \times 365 = £499,320$ . Total costs would be £505,320, giving a surplus of £4,737,540.

The amounts involved all meet the payback requirements. Only £3.50 meets the reduction in usage objective.

*Up to a maximum of 3 marks for discussion of each option plus one mark for a reasoned recommendation.*

(4)

- (c) Suggest how you might carry out the full scale scheme review at the end of five years. What additional information would you need to achieve this? What are the limitations on the use of the payback criterion?**

The scheme review should concentrate upon the extent to which the scheme's objectives have been met. The two most obvious objectives which are spelt out in the scenario are

- Reduction in vehicle traffic.
- Pay back of scheme costs.

Other objectives are also important although they are not made so clear in terms of targets. They would relate to

- Safety of pedestrians.
- Reduction in congestion.
- Effects on trade.

Information on the first two would come from monitoring of the amount of traffic using the road and paying the congestion charge, and from routine monitoring of budgets. Additional information would have to be collected on the other areas mentioned above and/or any other issues which might be relevant.

Payback ignores the time value of money and the 5 year period.

*2 marks for discussion of main objectives, 1 mark for suggesting additional objectives.  
1 mark for discussion of payback.*

**(4)**

- (d) How useful is the mathematical pricing model to organisations operating in the not for profit sector?**

The mathematical pricing model is based upon the behaviour of competitive markets. It is only useful where not for profit organisations make use of markets or quasi markets. It assumes that the main objective of the organisation is to make a profit. Although this may not be true of the organisation as a whole some not for profit organisations may possess areas of activity where this will be relevant and/or where they may wish to ration the use or access to services through the market place, as in this example. The model has more general limitations that would apply to its use in all organisations and not just in the not for profit sector. The question does not specifically ask for these.

*3 marks for discussion of the issues*

**(3)**

**(20)**

**Question 5**

This question relates to syllabus objective E3 and is covered in Study Sessions 8 and 20

**Produce a briefing note which responds to the requests made in the email.**

Although the question asks for a response to an email the request is that the response should be in the form of a note. It can be assumed that the note would be quite informal given the circumstances.

*1 mark for an appropriate response, taken from the marks for section (a)*

**(a) Functional analysis**

The issues to be addressed are summed up in the email:

*“What I want to know on this is how the information would be used. Then I need you to rack your brains to think about how we might apply the approach to our business. What would be the main steps, what information would we need and could we establish relevant functions for Tastyfill?”*

The first requirement is to complete the table

Function	Cost £	Value to customers %	Assignment of target cost £	Value ratio
1	4	12	3.6	0.9
2	3	10	3.0	1.0
3	4	8	2.4	0.6
4	3	6	1.8	0.6
5	9	24	7.2	0.8
6	11	40	12.0	1.1
Total	34	100	30	

*2 marks for format plus 2 marks for calculations*

4

The analysis compares the relative value which customers place upon a function with the cost expended upon it. The final column expresses this in the form of a ratio. A figure of less than 1 shows that the resources expended upon a function are greater relatively than the value placed upon the function by customers.

*1 mark for explanation of calculations*

1

The aim of this methodology would be to realign our costs to customer requirements and in so doing redesign our product in line with our perceptions of those requirements. The main steps would be:

- Selection of the object of the analysis. In this case it would be our sandwich products.
- Organisation of a working group drawn from various parts of the organisation e.g. production, finance, marketing and sales etc.



- Assemble information on the product e.g. sales history, competition, competition products, operational management information, product specifications, range of product variations etc.
- Define the functions of the product (see later for discussion of this).
- Draw a functional family tree showing how the functions are linked together. This will identify links and also help to identify supporting functions.
- Evaluate the functions. This is where the information in the table comes in and the aim would be to produce a value ratio for each function.
- Suggest alternative forms of functions involving new product variations e.g. new sandwich fillings, forms of presentation etc.
- Compare alternative forms with target costs.
- Select an alternative form which meets the needs of customers and produces savings
- Review actual results.

In order to do this information would be needed on

- The product in order to identify functions.
- Competitors products.
- Cost of functions.
- Market research into customers value placed upon functions.

It is possible to establish functions for almost any manufactured product and Tastyfill would seem to be no exception. The product needs to taste good, be well presented and have a reasonable shelf life. It may also need to be a healthy food and customers might appreciate a choice of breads and fillings. This could form the basis for the identification of functions.

*1 mark for each step up to a maximum of 4 marks. 2 marks for information needs plus 2 marks for discussion of functions with examples.*

8

(14)

**(b) Customer profitability analysis**

The note also requires information on customer-profitability analysis and specifically a customer-profitability profile.

The first requirement is to present the information provided in the form of a profile based upon revenues and operating profits.

Rank on the basis of customer revenues

Customer code	Revenue £	Cumulative revenue £	% of cumulative revenue to total revenue
A	4.25	4.25	25
E	4.15	8.40	49
D	3.25	11.65	68
C	2.45	14.10	83
B	1.75	15.85	93
F	1.20	17.05	100

Rank on the basis of operating profit

Customer code	Operating profit £	Cumulative operating profit £	% of cumulative operating profit to total operating profit
A	1.50	1.50	38
D	1.00	2.50	63
E	0.60	3.10	78
C	0.45	3.55	89
B	0.25	3.80	95
F	0.20	4.00	100

*Two marks for each table (allowing for some variations in format) up to a maximum of 4*

The analysis highlights a number of points:

- Revenue is heavily dependent upon four main customers (83%).
- Profit is even more highly concentrated with the same four customers contributing 89% of operating profit.
- There is a relationship between turnover and profit. The low turnover customers generate less profit in total and in proportion.
- The exception to this is customer E which is ranked second by revenue but only third by operating profit.
- The position of the company with regard to customers B and F may need to be reviewed.

*1 mark for each point up to a maximum of 2*

*(6)*

**(20)**