Graduateship in Marketing - Stage 4

LOGISTICS MANAGEMENT

FRIDAY, AUGUST 22, 2003. TIME: 9.30 am - 12.30 pm

Please answer the question in Section A, and **ONE** question from each of Sections B, C and D.

(If more than the specified number of questions in Sections B, C and D are attempted, delete those questions you do not wish to have marked. Otherwise the examiner will mark the **FIRST** question in Sections B, C and D.)

Section A carries **40%** of the marks. All other questions carry equal marks.

Do NOT repeat questions in the answers, but show clearly the number of the question attempted on the appropriate page of the Answer Book.

(Note: Marks are awarded for the relevant use of contemporary Irish and international examples of marketing practice)

SECTION A (40%)

1.   **Case: Rochester Foods, Inc.**

   (a)   Outline the main factors which were likely to affect RFI's distribution strategy over the next 5 to 10 years.

   (b)   Estimate the expected effect on logistics costs per carcass of each of the three alternatives.

   (c)   Evaluate the importance of the non-costed issues and of Joseph Brady's conjectures about the future.

   (d)   Recommend and justify which course RFI should take.

SECTION B (20%)

2.   *"More and more retailers are now starting to measure the profitability of their shelf-space."*
   Martin Christopher
   Describe how this can be done well in the context of a rapidly changing market-place.

3.   Discuss how logistics can help with relationship marketing and customer retention.

P.T.O.

SECTION C (20%)

4. The manager of a sports shop, open for 50 weeks each year, holds a regular stock of table tennis balls. Although she purchases these at €4.80 per box containing 12 balls, she is prepared to sell these balls singly. Over the past year she has sold, on average, 12 boxes each week, and considers it likely that this level of sales will continue for the time being.

    The order related cost to the sports shop of each order is €8, made up mainly of administrative costs. The annual cost of storage is estimated at 20% of the value of stock, mainly due to interest costs. The manager sets prices to cover the purchase price and the stock related costs, appropriately allocated, and include a mark up on all the costs of 50%.

    (a) Determine the optimum number of boxes of table tennis balls that the manager should order at a time and the number of orders per year.
    (b) Find the price at which she should sell each ball using the optimum policy.
    (c) Each sale incurs a selling cost of €0.20p. Discuss what would be an appropriate discount rate for sales of a box of table tennis balls.
    (d) Occasionally table tennis clubs buy boxes of table tennis balls by the carton. A carton contains 100 boxes. The clubs expect a discount. What discount would you recommend? Explain your answer.

5. A car hire company has collected data on the demand for cars over the past 25 days. The data are shown summarised below:

Rental Demand	7	8	9	10	11	
Number of days	2	5	8	7	3	Total = 25

    Because the customers drop cars at other locations the car-hire company has only nine cars available currently.

    (a) Use the following seven random numbers to simulate seven days of demand for the car hire company:

    15   48   71   56   90   17   51

    How many rentals does the simulation indicate will be lost due to a shortage of cars?

    (b) What does the simulation indicate would be the average number of cars rented for the seven days? How does this compare with the expected daily demand as calculated using the probability distribution?

    (c) Discuss the procedure you have used, its weaknesses and how to resolve them, if any.

6.   Retail Software Solutions, Ltd. which specialises in producing software packages for retail shops differentiates how it operates its business on the basis of the characteristics of the two regions it serves: Ireland and Great Britain. The main variabilities between the regions are in:

   (i)   Marketing, i.e. the effort required to sell to and to serve customers in the region, and
   (ii)   Logistics, i.e. the effort required to tailor, deliver and install its products.

   The effort (in person-hours) required per software package sold in each region is given below.

	Effort in Person-Hours	
Region	Marketing	Logistics
Ireland	5	2
Great Britain	4	5

   The number of person-hours available per month is 7,200 for marketing and 6,600 for logistics.

   The Irish market is very competitive. Consequently it is believed that at most 800 packages can be sold there in any month, whereas up to 1,500 packages can be sold in Great Britain.

   The average contributions to profit for software packages sold in Ireland and in Great Britain are €800 and €900 respectively.

   (a)   Formulate and solve for the recommended mix of sales to Ireland and Great Britain.

   (b)   If more logistics person-hours could be made available, show where they should be used and how much they would contribute to profit.

   (c)   If more clients could be found in Ireland by reducing the price there by €200, suggest reasons why the company should/should not reduce the price.

7.   A service manager has five customer service operatives on the road and accessible by mobile phone. He has just received requests for immediate service from five customers. Generally each operative is likely to spend the same amount of time with each customer. Consequently, he decides who he should allocate to each job on the basis of the estimated travel time to the location. He can calculate this using routing software and satelite-assisted positioning of the location of his operatives. The times for getting each operative to each job are estimated in minutes as follows:

	Alf	Blanaid	Colm	Donal	Eoin
Job 1	6	14	20	9	17
2	25	18	22	11	14
3	12	22	11	14	6
4	14	8	13	17	9
5	17	14	10	12	15

(a)   Use an assignment algorithm to find the match of service operatives that minimises the total time to the five customers.

(b)   Just after doing the allocation, news arrives from Eoin that his car will not start. Redo the assignment to see should he re-allocate the jobs to the four remaining operatives.