

UNIVERSITY OF BOLTON

**BUSINESS LOGISTICS, INNOVATION AND
SYSTEMS**

MSC SUPPLY CHAIN MANAGEMENT

SEMESTER 1 EXAMINATIONS 2008/2009

PHYSICAL SUPPLY CHAIN MANAGEMENT

MODULE NO: EBU4009

Date: Tuesday 21 January 2009

Time: 6.00 pm-9.00 pm

INSTRUCTIONS TO CANDIDATES:

There are 6 questions on this paper.

Answer 4 questions.

All questions carry equal marks.

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1. WHBrown have an online operation supplying office stationary directly to customers from twelve regional distribution centres in the UK. The company have carried out an analysis on their product portfolio, and they have found that approximately 80% of their revenue comes from around 20% of their product lines.

Explain the significance of this ratio, and suggest ways in which they might go about classifying their products into different categories. **(10 marks)**

Using the categories above, explain ways in which the company might control products differently according to category. Describe how these actions might reduce costs and improve customer service. **(10 Marks)**

The company have decided to pool inventory records centrally, and in certain instances will carry out internal inventory transfers between distribution centres. Explain the advantages of this strategy. **(5 marks)**

2. A supplier of freshly squeezed orange juice advertises a 6 day shelf life to its retail customers, and achieves a 98.7 percent on-time in-full service level.

Describe the factors you would expect to dictate the demand pattern for such a product. Describe the resulting demand patten, justifying your prediction. **(5 Marks)**

Suggest ways in which capacity and inventory might be managed in a supply chain with the demand pattern and shelf life characteristics of this supply chain. Make reference to raw materials, transportation, manufacturing/processing and finished product. **(20 Marks)**

3. An electronics retailer is seeking to reduce its warehousing cost by improving picking efficiency, and save time at it stores by pricing goods at the warehouse.

Describe how voice picking might be used to achieve its aims. **(10 marks)**

Identify who, within the company, should be selected to form a review and implementation team for the new voice picking system. **(5 marks)**

Identify potential barriers or problems (both technical and management) you might expect to encounter when implementing such a system, and how you might overcome them. **(10 marks)**

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4. You are developing a new component and raw material stock control system for Microsmart, a manufacturer of hi-tech automotive systems.

Describe how a range of different replenishment systems work. **(10 marks)**

Say how you would select the most appropriate system. **(5 marks)**

Describe the logic behind Materials Requirements Planning (MRP), and critically evaluate MRP as a means of controlling materials through the supply chain. **(10 marks)**

5. Discuss the causes of the Bullwhip effect in a multi-tier supply chain. **(8 marks)**

What problems can the bullwhip effect cause companies in the supply chain. **(7 marks)**

Describe initiatives that can be taken to reduce the bullwhip effect. **(10 marks)**

6. A milk processing company runs its own fleet of vehicles to distribute raw milk from farms, and to distribute bottled milk to supermarkets.

With detailed reference to this particular product and application, discuss the advantages and disadvantages of owning the fleet. **(12.5 marks)**

In contrast to your answer above, describe the advantages and disadvantages of outsourcing transportation to a third party logistics provider. **(12.5 marks)**

END OF QUESTIONS