



BUS.OP3 Working with suppliers and the supply chain

AQA 8132 • Calculator allowed • about 55 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions in the spaces provided. Show your working for any calculation: method marks are available even if your final answer is wrong. Otterburn Toy Company, used throughout this pack, is a fictional business.

1 Which one of the following best describes a supply chain?

- ☐ A) The sequence of businesses and processes involved in getting a product from raw materials to the final customer
- ☐ B) A list of a business's employees and their job roles
- ☐ C) The route a delivery driver takes on a single day
- ☐ D) A business's total sales for one year

(Total for Question 1 is 1 mark)

2 Which one of the following is a genuine reason a business might choose one supplier over another?

- ☐ A) The supplier's office is the tallest building in the city
- ☐ B) The supplier offers a lower price, better quality or more reliable delivery than its rivals
- ☐ C) The supplier was the first one found in an internet search
- ☐ D) The supplier has the same name as the business's founder

(Total for Question 2 is 1 mark)

3 State two criteria a business should consider when choosing which supplier to use.

(Total for Question 3 is 2 marks)

4 Otterburn Toy Company needs 500 identical plastic wheel-sets for its toy cars. Supplier A charges 3.20 pounds per set; Supplier B charges 3.60 pounds per set.

(a) Calculate the total cost of ordering 500 wheel-sets from Supplier A. (2)

.....
(b) Calculate the total cost of ordering 500 wheel-sets from Supplier B. (2)

.....
(Total for Question 4 is 4 marks)

5 Using your answers to question 4, calculate how much more expensive the order from Supplier B is than the order from Supplier A. Show your working.

(Total for Question 5 is 2 marks)

6 Supplier A's wheel-sets have a 2% defect rate; Supplier B's have a 1% defect rate.

(a) Calculate the number of defective wheel-sets Otterburn would expect from the 500-set order from Supplier A. (2)

.....
(b) Calculate the number of defective wheel-sets Otterburn would expect from the 500-set order from Supplier B. (2)

.....
(Total for Question 6 is 4 marks)

- 7** Each defective wheel-set costs Otterburn 4 pounds to rework. Using your answers to question 6, calculate how much more this reworking costs Otterburn for Supplier A's order than for Supplier B's order. Show your working.

(Total for Question 7 is 2 marks)

- 8** Using your answers to questions 5 and 7, calculate the overall saving to Otterburn of using Supplier A rather than Supplier B for this order, once the price difference and the extra reworking cost are both taken into account. Show your working.

(Total for Question 8 is 2 marks)

- 9** Explain one advantage to Otterburn of using a single supplier for all of its plastic wheel-sets, rather than splitting the order between several suppliers.

(Total for Question 9 is 3 marks)

- 10** Explain one risk to Otterburn of relying on a single supplier for all of its plastic wheel-sets.

(Total for Question 10 is 3 marks)

- 11** State the correct order of the following four stages in Otterburn's supply chain for its toy cars, from the start of the chain to the end: wholesaler, plastics supplier (raw materials), Otterburn (manufacturer), retailer/consumer.

(Total for Question 11 is 2 marks)

- 12** Explain the impact on Otterburn if its plastics supplier suffers a delivery delay of several weeks shortly before the busy pre-Christmas toy-buying period.

(Total for Question 12 is 3 marks)

- 13** State two things Otterburn could do to reduce the risk of a supply chain disruption like the one in question 12.

(Total for Question 13 is 2 marks)

- 14** Using the defect-rate figures from question 6, explain why quality, not just price, matters when Otterburn is choosing between Supplier A and Supplier B.

(Total for Question 14 is 3 marks)

- 15** For the 500-set wheel order, Supplier A is 200 pounds cheaper than Supplier B (question 5) but has a higher defect rate, adding 20 pounds of extra reworking cost (question 7), giving Supplier A a net saving of 180 pounds overall (question 8). However, question 10 shows the risk of relying on a single supplier if something goes wrong.

Recommend which supplier, A or B, Otterburn should use for its plastic wheel-sets. Justify your answer using the figures and points made earlier in this pack.

(Total for Question 15 is 9 marks)

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Question 1

- **B1** A cao
- **Answer: A**

Question 2

- **B1** B cao
- **Answer: B**

Question 3

- **B1** one acceptable criterion, e.g. the price charged per unit
- **B1** a second acceptable criterion, e.g. the quality of the goods, the reliability of delivery times, or the payment terms offered
- **Answer: Any two, e.g. price per unit; quality; reliability of delivery; payment terms.**

Question 4

- (a) **M1** 500 x 3.20 seen
- (a) **A1** 1,600 pounds cao
- **(a) Answer: 1,600 pounds.**
- (b) **M1** 500 x 3.60 seen
- (b) **A1** 1,800 pounds cao
- **(b) Answer: 1,800 pounds.**

Question 5

- **M1** 1,800 - 1,600 seen (ft from question 4)
- **A1** 200 pounds cao
- **Answer: 200 pounds.**

Question 6

- (a) **M1** 500 x 0.02 seen
- (a) **A1** 10 wheel-sets cao
- **(a) Answer: 10 wheel-sets.**
- (b) **M1** 500 x 0.01 seen
- (b) **A1** 5 wheel-sets cao
- **(b) Answer: 5 wheel-sets.**

Question 7

- **M1** (10 - 5) x 4 seen (ft from question 6)
- **A1** 20 pounds cao
- **Answer: 20 pounds.**

Question 8

- **M1** 200 - 20 seen (ft from questions 5 and 7)
- **A1** 180 pounds cao, in favour of Supplier A
- **Answer: 180 pounds saved by using Supplier A.**

Question 9

- **B1** identifies the point, e.g. ordering everything from one supplier means Otterburn can build a closer working relationship and order in larger quantities
- **B1** develops the point, e.g. larger orders from one supplier make Otterburn a more valuable customer, giving it more negotiating power
- **B1** links clearly to an outcome, e.g. this could win Otterburn a bulk-order discount or priority treatment, lowering its costs or improving delivery reliability
- **Answer: Ordering everything from one supplier lets Otterburn build a closer relationship and order in larger quantities, giving it more negotiating power, which could win a bulk-order discount or priority treatment, lowering costs or improving delivery reliability.**

Question 10

- **B1** identifies the point, e.g. if that one supplier has a problem, such as a factory closure, strike or serious quality issue, Otterburn has no alternative source already set up
- **B1** develops the point, e.g. finding and agreeing terms with a new supplier at short notice takes time
- **B1** links clearly to an outcome, e.g. this could halt Otterburn's toy-car production altogether until a new source of wheel-sets is found, causing missed retailer deadlines and lost sales
- **Answer: If Otterburn's single supplier has a problem, such as a closure or serious quality issue, there is no alternative source already in place, and finding a new supplier takes time, which could halt toy-car production and cause missed retailer deadlines and lost sales.**

Question 11

- **B2** correct order: plastics supplier (raw materials) -> Otterburn (manufacturer) -> wholesaler -> retailer/consumer, cao; allow B1 for two or three stages correctly placed relative to each other
- **Answer: Plastics supplier (raw materials) -> Otterburn (manufacturer) -> wholesaler -> retailer/consumer.**

Question 12

- **B1** identifies the point, e.g. without wheel-sets, Otterburn cannot finish making its toy cars
- **B1** develops the point, e.g. this delays deliveries to Otterburn's wholesalers and retailers right before their busiest, most valuable selling period
- **B1** links clearly to an outcome, e.g. Otterburn risks losing these seasonal sales altogether, and retailers may lose confidence and place fewer orders with Otterburn in future
- **Answer: Without wheel-sets Otterburn cannot finish its toy cars, delaying deliveries to wholesalers and retailers right before their busiest selling period, risking lost seasonal sales and retailers placing fewer future orders with Otterburn.**

Question 13

- **B1** one acceptable action, e.g. holding a buffer stock of wheel-sets
- **B1** a second acceptable action, e.g. using more than one supplier, or agreeing clear delivery-time contracts with suppliers
- **Answer: Any two, e.g. hold a buffer stock; use more than one supplier; agree clear delivery-time contracts.**

Question 14

- **B1** identifies the point, e.g. Supplier A's higher 2% defect rate means more of the wheel-sets received (10 out of 500, question 6a) are unusable
- **B1** develops the point, e.g. these defective sets have to be found and reworked, adding extra cost and taking up production time
- **B1** links clearly to an outcome, e.g. a cheaper supplier with poor quality can end up costing more overall once these extra costs are included, as shown by the 20 pound extra reworking cost in question 7
- **Answer: Supplier A's higher 2% defect rate means more wheel-sets (10 out of 500) are unusable and must be reworked at extra cost and time, so a cheaper but lower-quality supplier can end up costing more overall, as shown by the 20 pound extra reworking cost in question 7.**

Question 15

- **Level 1** (1-3): Makes simple, undeveloped comments about the supplier decision, with little or no use of the pack's figures and no clear recommendation.
- **Level 2** (4-6): Gives a developed argument for or against using Supplier A, using some of the pack's figures, but does not fully weigh both sides or reach a clearly justified recommendation.
- **Level 3** (7-9): Weighs the evidence for and against using Supplier A, using the price, defect-rate and net-saving figures from this pack, and reaches a justified recommendation supported by that analysis.
- **Indicative content:**
 - For Supplier A: even after accounting for its higher defect rate, Supplier A still saves Otterburn 180 pounds overall on this order (question 8), so on pure cost grounds it is the better choice for this particular order.
 - For Supplier A: 180 pounds is a meaningful saving that could be reinvested in the business, such as in marketing or new toy designs.
 - Against Supplier A: its 2% defect rate (double Supplier B's) means more reworking, more production delay and potentially more finished toy cars failing quality checks further down the line, beyond just the 20 pound cost already counted.
 - Against Supplier A: question 10 shows the risk of relying on a single supplier; if Otterburn used only Supplier A because it is cheaper, a disruption there (question 12) would be even more damaging with no reliable second source already trusted for quality.
 - Judgement: since the net saving of 180 pounds already accounts for the extra reworking cost, a reasonable recommendation is to use Supplier A for the bulk of the order, but to keep a smaller ongoing order with Supplier B to maintain a second, higher-quality source and reduce the single-supplier risk identified in question 10.