

**University of Bahrain**  
**College of Business Administration**  
**Department of Management and Marketing**

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**MGT 236: Production Management**

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Spring Semester 2014

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**Homework 1: Supply Chain Management**

Student ID: .....

Submission deadline: **7 December 2014**

**Short Answer Questions**

1. Explain the different revenue models used in e-commerce.

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2. Describe the evolution of business-to-business (B2B e-commerce).

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3. For the next item you buy, determine its supply chain.

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4. How do supply chains for service organizations differ from supply chains for manufacturing organizations?

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5. Describe the additional factors that affect global supply chains.

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6. Explain the concept of partnering, including advantages and disadvantages.

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**Problem 1**

Gabriela Manufacturing must decide whether to insource or outsource a new toxic-free miracle carpet cleaner that works with its Miracle Carpet Cleaning Machine. If it decides to insource the product, the process would incur \$300,000 of annual fixed costs and \$1.50 per unit of variable costs. If it is outsourced, a supplier has offered to make it for an annual fixed cost of \$120,000 and a variable cost of \$2.25 per unit in variable costs.

- (a) Given these two alternatives, determine the indifference point (where total costs are equal).
- (b) If the expected demand for the new miracle cleaner is 300,000 units, what would you recommend that Gabriela Manufacturing do?

**Problem 1**

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**Problem 2**

Gabriela Manufacturing was able to find a new supplier that would provide the item for \$1.80 per unit with an annual fixed cost of \$200,000. Should Gabriela Manufacturing insource or outsource the item?

**Problem 2**

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**Problem 3**

Downhill Boards (DB), a producer of snow boards, is evaluating a new process for applying the finish to its snow boards.

Durable Finish Company (DFC) has offered to apply the finish for \$170,000 in fixed costs and a unit variable cost of \$0.65. Downhill Boards currently incurs a fixed annual cost of \$125,000 and has a variable cost of \$0.90 per unit. Annual demand for the snow boards is 160,000.

- (a) Calculate the annual cost of the current process used at Downhill Boards.
- (b) Calculate the annual cost if Durable Finish Company applies the finish.
- (c) Find the indifference point for these two alternatives.
- (d) How much of a change in demand is needed to justify outsourcing the process?

**Problem 3**

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**Problem 4**

Fast Finish, Inc. (FFI) has made a technological breakthrough in snow board finish application. FFI will apply the finish for \$0.23 per unit in variable costs plus a fixed annual cost of \$230,000. Use the cost and demand information given in Problem 3 for Downhill Boards to evaluate this proposal.

- (a) What will it cost Downhill Boards to outsource the finishing process?
- (b) At what demand level does it make sense economically to outsource the finishing process?

**Problem 4**

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