

***Supply Chain Management, 6e (Chopra/Meindl)***  
**Chapter 10 Coordination in a Supply Chain**

10.1 True/False Questions

1) Supply chain coordination requires each stage of the supply chain to take into account the impact its actions have on other stages.

Answer: TRUE

Diff: 1

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

2) A lack of coordination occurs either because different stages of the supply chain have objectives that conflict or because information moving between stages gets delayed and distorted.

Answer: TRUE

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

3) The bullwhip effect enables different stages of the supply chain to have a consistent estimate of what demand looks like.

Answer: FALSE

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

4) *Supply chain coordination* improves if all stages of the chain take actions that are aligned and together increase total supply chain surplus.

Answer: TRUE

Diff: 1

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

5) With an uncoordinated supply chain each stage tries to maximize its own profits, resulting in actions that often diminish total supply chain profits.

Answer: TRUE

Diff: 1

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

6) The bullwhip effect moves a supply chain away from the efficient frontier by increasing cost and decreasing responsiveness.

Answer: TRUE

Diff: 1

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

7) The bullwhip effect reduces the profitability of a supply chain by making it simpler to provide a given level of product availability.

Answer: FALSE

Diff: 1

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

8) Incentive obstacles refer to situations where incentives offered to different stages or participants in a supply chain lead to actions that increase variability and reduce total supply chain profits.

Answer: TRUE

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

9) Improperly structured sales force incentives are a significant obstacle to coordination in the supply chain.

Answer: TRUE

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

10) Measuring performance based on sell-through is often justified on the grounds that the manufacturer's sales force does not control sell-in.

Answer: FALSE

Diff: 3

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

11) The lack of information sharing between the retailer and manufacturer leads to a large fluctuation in manufacturer orders.

Answer: TRUE

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Information technology

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

12) Pricing obstacles refer to situations in which the pricing policies for a product lead to an increase in variability of orders placed.

Answer: TRUE

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

13) Lot size based quantity discounts reduce the bullwhip effect within the supply chain.

Answer: FALSE

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

14) Trade promotions and other short-term discounts offered by a manufacturer result in large orders during the promotion period followed by very small orders after that.

Answer: TRUE

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

15) Behavioral obstacles are often related to the way the supply chain is structured and reduce the bullwhip effect.

Answer: FALSE

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

16) Sharing of POS data helps reduce the bullwhip effect because it allows each stage of the supply chain to use orders from the previous stage to forecast future demand.

Answer: FALSE

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Information technology

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

17) When a single stage controls replenishment decisions for the entire chain, the problem of multiple forecasts is magnified and coordination within the supply chain follows.

Answer: FALSE

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

18) A reduction of lot sizes increases the amount of fluctuation that can accumulate between any pair of stages of a supply chain, thus increasing the bullwhip effect.

Answer: FALSE

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

19) Tying allocation to past sales removes any incentive a retailer may have to inflate orders, as a result dampening the bullwhip effect.

Answer: TRUE

Diff: 1

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

20) Managers can encourage the bullwhip effect by devising pricing strategies that encourage retailers to order in smaller lots and reduce forward buying.

Answer: FALSE

Diff: 1

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

## 10.2 Multiple Choice Questions

- 1) Information distortion is exaggerated by the fact that
- A) supply chains today produce a large amount of product variety.
  - B) supply chains today produce a small amount of product variety.
  - C) the telephone effect is extreme in situations where technology is in use.
  - D) different stages of supply chains send excessive data.

Answer: A

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Information technology

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

- 2) The situation in which fluctuations in orders increase as they move up the supply chain from retailers to wholesalers to manufacturers to suppliers is known as
- A) market fluctuations.
  - B) the whiplash effect.
  - C) the bullwhip effect.
  - D) lack of visibility.

Answer: C

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

- 3) The bullwhip effect causes
- A) maximization of supply chain surplus.
  - B) improved accuracy of demand information within the supply chain.
  - C) different stages of the supply chain to have a very different estimate of what demand looks like.
  - D) less need for aggregate planning.

Answer: C

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

4) The lack of coordination within a supply chain will result in a decrease in

- A) manufacturing cost.
- B) inventory cost.
- C) replenishment lead time.
- D) level of product availability.

Answer: D

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

5) The lack of coordination within a supply chain will result in an increase in

- A) profitability.
- B) inventory accuracy.
- C) replenishment lead time.
- D) level of product availability.

Answer: C

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

6) Long term boom and bust cycles that mimic the bullwhip effect include

- A) calendars and greeting cards.
- B) the length of hemlines.
- C) university textbooks.
- D) memory chips for personal computers.

Answer: D

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

7) The bullwhip effect decreases

- A) product availability.
- B) manufacturing cost.
- C) replenishment lead time.
- D) transportation cost.

Answer: A

Diff: 2

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

8) The bullwhip effect decreases

- A) transportation cost.
- B) profitability.
- C) replenishment lead time.
- D) shipping and receiving cost.

Answer: B

Diff: 2

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

9) The bullwhip effect

- A) positively impacts performance at every stage.
- B) hurts the relationships between different stages of the supply chain.
- C) enhances the relationships between different stages of the supply chain.
- D) results in improved on-time order delivery.

Answer: B

Diff: 2

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

10) The bullwhip effect moves a supply chain

- A) away from the efficient frontier by increasing cost and decreasing responsiveness.
- B) away from the efficient frontier by decreasing cost and increasing responsiveness.
- C) toward the efficient frontier by increasing cost and decreasing responsiveness.
- D) toward the efficient frontier by increasing cost and increasing responsiveness.

Answer: A

Diff: 1

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

11) Situations where incentives offered to different stages or participants in a supply chain lead to actions that increase variability and reduce total supply chain profits are referred to as

- A) incentive obstacles.
- B) information processing obstacles.
- C) operational obstacles.
- D) behavioral obstacles.

Answer: A

Diff: 1

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

12) Incentives that focus only on the local impact of an action result in decisions that

- A) do not maximize total supply chain profits.
- B) maximize total supply chain profits.
- C) minimize total supply chain profits.
- D) minimize total supply chain cost.

Answer: A

Diff: 2

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

13) The lack of supply chain coordination on various measures of performance has costs associated with it. Which of the following is one of these costs?

- A) Quality
- B) Reliability
- C) Manufacturing
- D) Pricing

Answer: C

Diff: 1

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.



14) The lack of supply chain coordination on various measures of performance has costs associated with it. Which of the following is one of these costs?

- A) Inventory
- B) Reliability
- C) Transportation
- D) Quality

Answer: D

Diff: 1

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

15) The impact of the lack of coordination on supply chain processes decreases for the following measure:

- A) manufacturing cost.
- B) level of product availability.
- C) transportation cost.
- D) replenishment lead time.

Answer: B

Diff: 2

Topic: 10.2 The Effect on Performance of Lack of Coordination

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

16) Improperly structured sales force incentives

- A) help create stable demand.
- B) have very little effect on the timing of customer orders.
- C) tend to create spikes in customer orders.
- D) ensure that orders are quickly and accurately entered and communicated to other affected supply chain processes.

Answer: C

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

- 17) The sales typically measured by a manufacturer are  
A) the quantity sold to final customers (sell-through).  
B) the quantity sold to distributors or retailers (sell-in).  
C) the quantity reported by the salesperson.  
D) based on the quantity of supplies purchased from key suppliers.

Answer: B

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

- 18) Situations where demand information is distorted as it moves between different stages of the supply chain, leading to increased variability in orders within the supply chain are referred to as

- A) incentive obstacles.  
B) information processing obstacles.  
C) operational obstacles.  
D) behavioral obstacles.

Answer: B

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Information technology

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

- 19) The fact that each stage in a supply chain forecasts demand based on the stream of orders received from the downstream stage results in

- A) forecasts based on actual consumer demand patterns.  
B) a reduction in demand as we move up the supply chain from the retailer to the manufacturer.  
C) a magnification of fluctuations in demand as we move up the supply chain from the retailer to the manufacturer.  
D) an increase in forecast accuracy.

Answer: C

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

- 20) The lack of information sharing between the retailer and manufacturer

- A) improves supply chain coordination.  
B) minimizes the fluctuation in manufacturer orders.  
C) leads to a large fluctuation in manufacturer orders.  
D) leads to smaller fluctuations in suppliers' orders.

Answer: C

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Information technology

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

21) Actions taken in the course of placing and filling orders that lead to an increase in variability are referred to as

- A) incentive obstacles.
- B) information processing obstacles.
- C) operational obstacles.
- D) pricing obstacles.

Answer: C

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

22) When a firm places orders in lot sizes that are much larger than the lot sizes in which demand arises,

- A) variability of orders is minimized up the supply chain.
- B) variability of orders is magnified up the supply chain.
- C) suppliers gain better visibility of consumer demand.
- D) suppliers gain a more stable demand pattern.

Answer: B

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

23) Situations in which the pricing policies for a product lead to an increase in variability of orders placed are referred to as

- A) incentive obstacles.
- B) information processing obstacles.
- C) operational obstacles.
- D) pricing obstacles.

Answer: D

Diff: 1

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

24) Forward buying results in

- A) a stabilized buying pattern.
- B) small orders during the promotion period followed by very small orders after that.
- C) small orders during the promotion period followed by large orders after that.
- D) large orders during the promotion period followed by very small orders after that.

Answer: D

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

25) Problems in learning within organizations that contribute to the bullwhip effect are referred to as

- A) incentive obstacles.
- B) information processing obstacles.
- C) pricing obstacles.
- D) behavioral obstacles.

Answer: D

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

26) Operational improvements that reduce lot sizes can dampen the bullwhip effect by

- A) decreasing the uncertainty of demand during the lead time.
- B) decreasing the amount of fluctuation that can accumulate between any pair of stages of a supply chain.
- C) discouraging retailers from artificially inflating their orders in the case of a shortage.
- D) allocating the available supply based on past retailer sales.

Answer: B

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

27) Managers can improve coordination within the supply chain by

- A) holding product in inventory but off official inventory records.
- B) listing product in inventory without actually holding the physical goods.
- C) aligning goals and incentives.
- D) decreasing product visibility.

Answer: C

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

28) All transportation decisions should be evaluated based on their effect on

- A) transportation costs.
- B) fuel costs.
- C) total costs.
- D) sales revenue.

Answer: C

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

29) Coordination requires every stage of the supply chain to focus on

- A) the functional revenues for each supply chain member.
- B) the functional profits for each supply chain member.
- C) the functional costs for each supply chain member.
- D) supply chain surplus.

Answer: D

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

30) A manufacturer with significant market power should use

- A) two-part tariffs and volume discounts to achieve coordination.
- B) lot-size-based quantity discounts to achieve coordination.
- C) forward-buying with retail coupons to achieve coordination.
- D) liquidators and reverse-buying to achieve coordination.

Answer: A

Diff: 3

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

31) If demand is uncertain, a manufacturer can incentivize retailers to provide high levels of product availability by using

- A) high fixed costs.
- B) buyback contracts.
- C) low fixed costs.
- D) zero-cost contracts.

Answer: B

Diff: 3

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

32) One appropriate measure to reduce replenishment lead times is to

- A) reduce flexibility.
- B) increase the planning horizon.
- C) order electronically.
- D) average the aggregate plans from each supply chain member.

Answer: C

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Analytical thinking

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

33) Which method would serve to reduce the information distortion in a supply chain consisting of a fabricator, manufacturer, supplier, and a retailer?

A) Make both the fabricator and retailer responsible for all decisions regarding product inventories at the retailer.

B) Make the manufacturer responsible for all decisions regarding product inventories at the retailer.

C) Make the supplier responsible for all decisions regarding product inventories at the retailer.

D) Make the customer responsible for all decisions regarding product inventories at the retailer.

Answer: B

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

34) In a continuous replenishment program, the wholesaler or manufacturer replenishes a retailer regularly based on

A) the POS data of the wholesaler.

B) the forecast of the retailer.

C) the POS data of the retailer.

D) the forecast of the manufacturer.

Answer: C

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

35) In most instances, CRP systems are driven by

A) the withdrawal of inventory from distributor warehouses.

B) the withdrawal of materials from supplier warehouses.

C) the withdrawal of goods customer pantry shelves.

D) the withdrawals of inventory from retailer warehouses.

Answer: D

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

36) The replenishment decision in a VMI system is owned by the

A) manufacturer.

B) retailer.

C) customer.

D) cloud.

Answer: A

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

- 37) Quite often in a VMI system, the inventory is
- A) owned by the retailer before it is shipped by the supplier.
  - B) owned by the supplier until it is sold by the retailer.
  - C) sold by the supplier before it is owned by the retailer.
  - D) sold by the retailer before it is shipped by the supplier.

Answer: B

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

- 38) In a VMI system, the \_\_\_\_\_ must share demand information with the \_\_\_\_\_.

- A) manufacturer, customer
- B) customer, retailer
- C) retailer, manufacturer
- D) manufacturer, designer

Answer: C

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

- 39) If retailers sell products from competing manufacturers in a VMI system,

- A) inventory at the manufacturer will be lower than optimal.
- B) inventory at the manufacturer will be higher than optimal.
- C) sales at the retailer will be lower than optimal.
- D) inventory at the retailer will be higher than optimal.

Answer: D

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

- 40) What is the responsibility of a designated category leader?

- A) The category leader manages replenishment decisions for all suppliers.
- B) The category leader manages purchasing decisions for all retailers.
- C) The category leader manages purchasing decisions for all customers.
- D) The category leader manages replenishment decisions for all retailers.

Answer: A

Diff: 2

Topic: 10.5 Continuous Replenishment and Vendor-Managed Inventories

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

41) A fundamental aspect of successful collaboration is

- A) sharing product designs.
- B) identification and resolution of exceptions.
- C) no stock outs.
- D) complete information sharing.

Answer: B

Diff: 1

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

42) Successful collaborative planning, forecasting and replenishment must be built on a foundation of

- A) a common logistics carrier and data synchronization.
- B) a single forecasting approach and a common logistics carrier.
- C) data synchronization and established standards for exchanging information.
- D) established standards for exchanging information and a single forecasting approach.

Answer: C

Diff: 2

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

43) The most common form of collaboration observed in practice is

- A) store replenishment.
- B) retail event.
- C) collaborative assortment.
- D) distribution center replenishment.

Answer: D

Diff: 2

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.



44) Trading partners collaborate on store-level POS forecasts in

- A) store replenishment collaboration.
- B) DC replenishment collaboration.
- C) retail event collaboration.
- D) collaborative assortment planning.

Answer: A

Diff: 2

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

45) A high fashion retailer should rely on

- A) historical data to forecast next season's demand.
- B) interpretation of industry trends and customer tastes to forecast next season's demand.
- C) store-level POS data to forecast next season's demand.
- D) distribution center withdrawals to forecast next season's demand.

Answer: B

Diff: 2

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

46) The local hominy man is anticipating a bumper crop this year, so he arranges with a chain of grocery stores to stock up on his hominy as part of a *Homina Homina Hominy* campaign to lure customers in to the stores during September for cans of the divinely salty, yet nutritious vegetable. This approach is an example of

- A) DC replenishment collaboration.
- B) store replenishment collaboration.
- C) retail event collaboration.
- D) assortment planning collaboration.

Answer: C

Diff: 2

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

47) Retailers of all sizes can explore CPFR as a strategic option, but in order to be scalable, \_\_\_\_\_ is needed.

- A) a process
- B) labor
- C) money
- D) technology

Answer: D

Diff: 2

Topic: 10.6 Collaborative Planning, Forecasting, and Replenishment (CPFR)

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

48) Mickey the manager reviewed his company's customers' orders for the past year and compared the variability of those orders with the variability of the orders he placed with his suppliers. This comparison allowed him to estimate his own company's contribution to

- A) the forecast.
- B) supply chain surplus.
- C) market demand.
- D) the bullwhip effect.

Answer: D

Diff: 2

Topic: 10.7 Achieving Coordination in Practice

AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

49) One of the best ways to solve coordination problems is

- A) through teams comprised of different members of the supply chain.
- B) through investments in cutting edge information technology.
- C) by institution penalties for supply chain members that don't cooperate.
- D) by implementing a supply chain resource planning module.

Answer: A

Diff: 2

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Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

- 50) The full benefit of coordination is achieved when
- A) all adjacent pairs of supply chain partners are coordinated.
  - B) the entire supply chain network is coordinated.
  - C) the POS data is shared with the manufacturer.
  - D) the POS data is shared with the retailer.

Answer: B

Diff: 1

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AACSB: Application of knowledge

Objective: LO 10.4: Understand the different forms of collaborative planning, forecasting, and replenishment that are possible in a supply chain.

### 10.3 Essay Questions

- 1) What is the bullwhip effect and how does it relate to lack of coordination in the supply chain?

Answer: Many firms have observed the bullwhip effect in which fluctuations in orders increase as they move up the supply chain from retailers to wholesalers to manufacturers to suppliers. The bullwhip effect distorts demand information within the supply chain, with different stages having a very different estimate of what demand looks like. The result is a loss of supply chain coordination. This leads to increased inventories, poorer product availability, and a drop in profits. The bullwhip effect negatively impacts performance at every stage and thus hurts the relationships between different stages of the supply chain. There is the tendency to assign blame to other stages of the supply chain because each stage feels it is doing the best it can. The bullwhip effect thus leads to a loss of trust between different stages of the supply chain and makes any potential coordination efforts more difficult. It follows that the bullwhip effect and the resulting lack of coordination have a significant negative impact on the supply chain's performance. The bullwhip effect moves a supply chain away from the efficient frontier by increasing cost and decreasing responsiveness. The bullwhip effect reduces the profitability of a supply chain by making it more expensive to provide a given level of product availability.

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

2) What is the impact of lack of coordination on the performance of the supply chain?

Answer: A lack of coordination occurs either because different stages of the supply chain have objectives that conflict or because information moving between stages gets delayed and distorted. Different stages of a supply chain may have objectives that conflict if each stage has a different owner. As a result, each stage tries to maximize its own profits, resulting in actions that often diminish total supply chain. Information is distorted as it moves within the supply chain because complete information is not shared between stages. This distortion is exaggerated by the fact that supply chains today produce a large amount of product variety. The lack of supply chain coordination leads to increased inventories, poorer product availability, and a drop in profits.

Diff: 2

Topic: 10.1 Lack of Supply Chain Coordination and the Bullwhip Effect

AACSB: Application of knowledge

Objective: LO 10.1: Describe supply chain coordination and the bullwhip effect, and their impact on supply chain performance.

3) How do improperly structured incentives lead to a lack of coordination in the supply chain?

Answer: Incentive obstacles refer to situations where incentives offered to different stages or participants in a supply chain lead to actions that increase variability and reduce total supply chain profits. Incentives that focus only on the local impact of an action result in decisions that do not maximize total supply chain profits. Buying decisions based on maximizing profits at a single stage of the supply chain lead to ordering policies that do not maximize supply chain profits.

Improperly structured sales force incentives are a significant obstacle to coordination in the supply chain. In many firms, sales force incentives are based on the amount the sales force sells during an evaluation period of a month or a quarter. The sales typically measured by a manufacturer are the quantity sold to distributors or retailers (sell-in), not the quantity sold to final customers (sell-through). Measuring performance based on sell-in is often justified on the grounds that the manufacturer's sales force does not control sell-through. This leads to spikes in orders that do not reflect actual customer needs.

Diff: 2

Topic: 10.4 Managerial Levers to Achieve Coordination

AACSB: Application of knowledge

Objective: LO 10.3: Discuss managerial levers that help achieve coordination in a supply chain.

4) Describe the impact of forecasts based on orders rather than actual customer demand.

Answer: When stages within a supply chain make forecasts that are based on orders they receive, any variability in customer demand is magnified as orders move up the supply chain to manufacturers and suppliers. In supply chains that exhibit the bullwhip effect, the fundamental means of communication between different stages are the orders that are placed. Each stage views its primary role within the supply chain as one of filling orders placed by its downstream partner. Thus, each stage views its demand to be the stream of orders received and produces a forecast based on this information. In such a scenario, a small change in customer demand becomes magnified as it moves up the supply chain in the form of customer orders. Consider the impact of a random increase in customer demand at the retailer. The retailer may interpret part of this random increase to be a growth trend. This interpretation will lead the retailer to order more than the observed increase in demand because the retailer expects growth to continue into the future and thus orders to cover for future anticipated growth. The increase in the order placed with the wholesaler is thus larger than the observed increase in demand at the retailer. Part of the increase is a one-time increase. The wholesaler, however, has no way to interpret the order increase correctly. The wholesaler simply observes a jump in the order size and infers a growth trend. The growth trend inferred by the wholesaler will be larger than that inferred by the retailer (recall that the retailer had increased the order size to account for future growth). The wholesaler will thus place an even larger order with the manufacturer. As we go further up the supply chain, the order size will be magnified. Now assume that periods of random increase are followed by periods of random decrease in demand. Using the same forecasting logic as earlier, the retailer will now anticipate a declining trend and reduce order size. This reduction will also become magnified as we move up the supply chain.

The fact that each stage in a supply chain forecasts demand based on the stream of orders received from the downstream stage results in a magnification of fluctuations in demand as we move up the supply chain from the retailer to the manufacturer.

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

5) Describe the impact of behavioral obstacles on supply chain coordination.

Answer: Behavioral obstacles refer to problems in learning within organizations that contribute to the bullwhip effect. These problems are often related to the way the supply chain is structured and the communication between different stages. Some of the behavioral obstacles are as follows:

1. Each stage of the supply chain views its actions locally and is unable to see the impact of its actions on other stages.
2. Different stages of the supply chain react to the current local situation rather than trying to identify the root causes.
3. Based on local analysis, different stages of the supply chain blame each other for the fluctuations, with successive stages in the supply chain becoming enemies rather than partners.
4. No stage of the supply chain learns from its actions over time because the most significant consequences of the actions any one stage takes occur elsewhere. The result is a vicious cycle where actions taken by a stage create the very problems that the stage blames on others.
5. A lack of trust between supply chain partners causes them to be opportunistic at the expense of overall supply chain performance. The lack of trust also results in significant duplication of effort. More important, information available at different stages is either not shared or is ignored because it is not trusted.

Diff: 2

Topic: 10.3 Obstacles to Coordination in a Supply Chain

AACSB: Application of knowledge

Objective: LO 10.2: Identify obstacles to coordination in a supply chain.

6) How does cooperation and trust improve performance in a supply chain partnership?

Answer: Cooperation and trust within the supply chain help improve performance for the following reasons:

1. A more natural aligning of incentives and objectives is achieved. When stages trust each other, they are more likely to take the other party's objective into consideration when making decisions.
2. Action-oriented managerial levers to achieve coordination become easier to implement. Sharing of information is natural between parties that trust each other. Similarly, operational improvements are easier to implement and appropriate pricing schemes are easier to design if both parties are aiming for the common good.
3. An increase in supply chain productivity results, either by elimination of duplicated effort or by allocating effort to the appropriate stage. For example, a manufacturer receives material from a supplier without inspecting it as long as the supplier shares process control charts.
4. A greater sharing of detailed sales and production information results. This sharing allows the supply chain to coordinate production and distribution decisions. As a result, the supply chain is better able to match supply and demand, resulting in better coordination.

Diff: 2

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