

# Chapter One

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## Discussion Questions

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1. Define the term supply chain management in your own words, and list its most important activities.

Ans.: The Supply-Chain Council's definition of supply chain management is *"[m]anaging supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer."*

These are also the most important activities, however integration of key supply chain processes might also be included in there.

2. Can a small business like a local sandwich or bicycle shop benefit from practicing supply chain management? What should they concentrate on?

Ans.: Yes, any organization can implement at least some of the important concepts. A good place to start is the rationalization or reduction of the supply base. Small businesses might also want to concentrate on customers as a starting point.

3. Describe and draw a supply chain for a bicycle repair shop.

Ans.: This will probably vary from student to student, but should include for instance parts suppliers, bicycle suppliers and other suppliers (ie, helmet suppliers) as 1<sup>st</sup>-tier suppliers and bicycle owners as 1<sup>st</sup>-tier customers.

4. What roles do "collaboration" and "trust" play in the practice of supply chain management?

Ans.: This is essential for process integration. Sharing information and determining joint strategies is part of the integration/collaboration process, and to do this, trust must be present between the customer/focal firm/supplier.

5. What are the four foundation elements of supply chain management? Describe some activities within each element.

Ans.: Purchasing—supplier assessment, supply base reduction, supplier management.  
Operations—forecasting, JIT, quality, inventory management, information system design.

Distribution—delivery network, transportation mode, warehousing, customer service.

Integration—internal and external process integration, performance measurement.

6. What does the bullwhip effect refer to and what causes it? How then, would you try to reduce the bullwhip effect?

Ans.: The magnification of safety stock and erratic buying behavior as customers along the supply chain forecast demand and add safety stock to their forecasts and production schedules causes the bullwhip effect. As we move further back up the supply chain then, more and more of the output is in the form of safety stocks.

Reducing the need to forecast (by agreeing on a future purchase quantity or using CPFR) is one way to reduce the bullwhip effect.

7. What are the benefits of supply chain management?

Ans.: Reduction of the bullwhip effect, better buyer/supplier relationships, better quality, lower costs, better customer service, higher demand, more profits.

8. Can nonprofit, educational, or government organizations benefit from supply chain management? How?

Ans.: Yes. All services and organizations can benefit in terms of at least better customer service, better inventory management, and cheaper purchase prices.

9. What does the term, “third-tier supplier” mean? What about “third-tier customer”? What about the “focal firm”? Provide examples.

Ans.: First-tier suppliers are the focal firm’s direct suppliers. 2<sup>nd</sup>-tier suppliers are the focal firm’s suppliers’ direct suppliers. 3<sup>rd</sup>-tier suppliers are the focal firm’s suppliers’ suppliers. Company A sells wood to Company B. Company B sells furniture to Company C. Company C sells the furniture to Wal-Mart. Company A is Wal-Mart’s 3<sup>rd</sup>-tier supplier. Similarly, the focal firm’s customers’ customers’ customers are their 3<sup>rd</sup>-tier customers. The focal firm just refers to the firm in question, or in the topic of discussion.

10. Could a firm have more than one supply chain? Explain.

Ans.: Yes. Each product manufactured or sold by a firm can potentially belong to a separate set of supply chain trading partners. Wal-Mart has thousands of supply chains.

11. When did the idea and term, supply chain management, first begin to be thought about and discussed?

Ans.: The general idea of supply chain management had been discussed for many years prior to the chain of events shown in Table 1.1. Back in 1915, Arch W. Shaw of the Harvard Business School wrote the textbook, *Some Problems in Market Distribution*, considered by many to be the first on the topic of what we now refer to as supply chain management. The text included discussions of how best to purchase raw materials, transport products, locate facilities, and analyze productivity and waste. According to C. John Langley, Jr., professor of supply chain management at the Georgia Institute of Technology, “The idea that companies ought to work together and coordinate activities has always been around, but ask people today what one of the biggest problems with supply chains are today, and they say companies don’t work very well together.”

The 1980s were the breakout years for supply chain management. One of the first widely recorded uses of the term *supply chain management* came about in a paper published in 1982. Intense global competition beginning in the 1980s (and continuing today) provided an incentive for U.S. manufacturers to offer lower-cost, higher-quality products along with higher levels of customer service. Manufacturers utilized just-in-time (JIT) and total quality management (TQM) strategies to improve quality, manufacturing efficiency, and delivery times. In a JIT manufacturing environment with little inventory to cushion scheduling and/or production problems, firms began to realize the potential benefits and importance of strategic and cooperative supplier-buyer-customer relationships. The concept of these partnerships or alliances emerged as manufacturers experimented with JIT and TQM.

12. Do you think supply chain management is simply the latest trend in management thinking and will die out in a few years? Why or why not?

Ans.: This answer will vary because it was not specifically discussed, however, considering that the ideas of SCM have been around for many, many years makes one think that the practice is here to stay.

13. Is the use of a large number of suppliers a good idea? Why?

Ans.: This somewhat depends. Certainly SCM suggests fewer suppliers and longer-term relationships, however there can always be exceptions to this rule. Purchasing a widely available common product like soap or tissue paper might be better done with a large number of suppliers competing for this business. But this works against ever creating trusting and lasting supply chain partnerships. In most cases though, use of a few key suppliers for an item is considered a good idea, since it means larger supply quantities, leading to lower prices and better service.

14. Do you think the proper way to choose a supplier is to always find the one that will give you the lowest price? When might this not be a good idea?

Ans.: Absolutely not. Low price is sometimes fine, if quality or service is not an issue, as in buying some MRO items. But when quality and service matter, price should only be one of the purchase criteria.

15. Why don't firms just buy out their suppliers and industrial customers, forming conglomerates, instead of practicing supply chain management?

Ans.: This is the "old way"—to control the supply chain. This is probably not a good idea any longer, since it detracts and takes time away from what the firm does best. Since competition is continually increasing, this would be an unwise strategy, unless it was the ONLY way to assure a continued source of supply for instance.

16. What is the difference between an MRP system and an ERP system?

Ans.: MRP systems are the older materials management system software applications, and are used for essentially basic assembly and purchase decisions. ERP systems came about a number of years later and tied all of a company's geographically distant units together by having one central database to track system inventories.

17. What role do information systems play in supply chain management? Give some examples.

Ans.: Information systems play very important roles in most supply chains. They give supply chain members information visibility, tracking capabilities, and quick communication capabilities.

18. Briefly describe the terms *lean* and *Six Sigma systems*.

Ans.: Lean refers to low waste and inventories and used to be referred to as JIT. Six Sigma originated at Motorola and refers to a quality management philosophy.

19. What are 3PLs and what role do they play in SCM?

Ans.: Third-party logistics service providers; These allow firms to concentrate more on their capabilities while allowing 3PLs to perform logistics activities like delivery and storage.

20. What does *process integration* mean and what does this have to do with SCM?

Ans.: This refers to collaborations which occur between suppliers and buyers in a supply chain. Working together is what allows supply chains to be effective.

## APPENDIX 1.1

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# The Beer Game

### QUESTIONS AND EXERCISES

1. All players but the retailer should answer this question. What do you think the retailer's customer demand pattern looked like? How did your customer orders vary throughout the game?

Ans.: Varies. Hopefully, their guesses will be nothing like the relatively constant demand pattern actually experienced by the retailer.

2. What happened to the current inventory levels as we move backward, up the supply chain from retailer to manufacturer? Why?

Ans.: The inventory levels should magnify or explode as we go back up the supply chain, as members try to fill ever-increasing orders from customers. This is due to the bullwhip effect.

3. How could the supply chain members reduce total inventory and back order costs in the future?

Ans.: Through closer, more timely and accurate communications.

4. Go to <http://beergame.mit.edu> and try playing the Internet version of the game from MIT. Report on your experiences playing the game.

Ans.: Students may have difficulty downloading the software necessary to play the game. If possible, try playing it first prior to assigning this question to the class.

27. What are the five process categories of the SCOR model and which one do you think is most important?

Ans.: The SCOR model separates supply chain operations into five process categories—plan, source, make, deliver, and return. Debatable as to which is most important—possibly make?

28. Describe what happens as a firm progresses through the standardized levels of process detail in the SCOR model.

Ans.: At Level 1, users select appropriate process categories from the SCOR configuration toolkit to represent their supply chain and select from 13 performance attributes as shown in Table 14.2. In Level 2, the SCOR processes are further described by process type. Within each process type are process categories that users specify. The process types and categories are shown in Table 14.3. In Level 3, process flow diagrams are defined with process elements or specific tasks for each of the process categories established in Level 2, showing inputs, process elements, and outputs. Additionally, specific performance measures are identified for each of the process elements within the flow diagrams. Some example measures are shown in Table 14.4. Best practices can also be identified at this level. Finally, implementation of supply chain management practices within the company occurs at Level 4 and beyond.

29. Which model do you think is best suited to measure supply chain performance—the Balanced Scorecard or the SCOR? Why?

Ans.: The SCOR model is designed specifically for supply chains, while the BSC is more firm-oriented.

30. What are the latest extensions of the SCOR model, and why are they used?

Ans.: Customer Chain Operations Reference model (CCOR) and the Design Chain Operations Reference model (DCOR). Part of the difficulty of using the SCOR model is that it does not address the processes of sales and marketing, some aspects of service and support processes like human resources and technology development. In response to this, the CCOR model defines the customer part of the supply chain as the integration of Plan, Relate, Sell, Contract, Service and Enable processes. Further, the DCOR model defines the design portion of the supply chain as the integration of Plan, Research, Design, Integrate, Amend and Enable processes. SCORmark is the newest tool of the Supply-Chain Council, which allows member firms to benchmark performance against selected peer companies using a benchmarking portal at the Supply-Chain Council's website. Benchmark data is supplied by the American Productivity and Quality Center, a Houston-based nonprofit research organization.