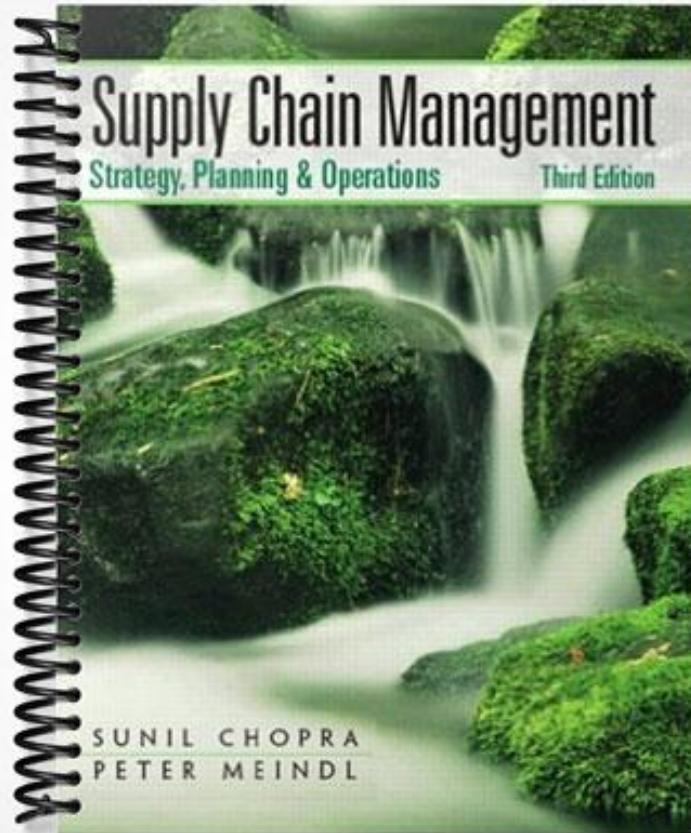


SOLUTIONS MANUAL



Supply Chain Management

Strategy, Planning & Operations

Third Edition

SUNIL CHOPRA
PETER MEINDL

Online Resources

Online resources related to the book can be accessed at

www.prenhall.com/chopra

Instructors will need a userid and password to access solutions to exercises and cases. The userid and password can be obtained from your Prentice Hall rep. The various materials available online are:

- Instructors Manual
- Instructors Solution Manual
- Excel files containing solutions to exercises at the end of chapters
- PowerPoint files containing overheads
- Some sample syllabi from Northwestern, Michigan State University, and Michigan

SAMPLE SYLLABUS

<i>Session</i>	<i>Date</i>	<i>Readings</i>	<i>Submission</i>
1	Sep. 21	<ul style="list-style-type: none"> ▪ Seven Eleven Japan ▪ Chapters 1 – 3 in <i>C&M</i> 	
2	Sep. 28	<ul style="list-style-type: none"> ▪ Chapter 7, 8 in <i>C&M</i> 	<i>Distrigas Corporation</i>
3	Oct. 4	<ul style="list-style-type: none"> ▪ Chapter 9, 10 in <i>C&M</i> 	<i>Specialty Packaging Corporation, Part B</i>
4	Oct. 11	<ul style="list-style-type: none"> ▪ Chapter 11 in <i>C&M</i> 	Project Proposal
5	Oct. 18	<ul style="list-style-type: none"> ▪ Chapter 12 in <i>C&M</i> 	<i>ALKO Incorporated</i>
6	Oct. 25	<ul style="list-style-type: none"> ▪ Chapter 14 in <i>C&M</i> ▪ Merloni Elettrodomestici 	<i>Sport Obermeyer</i>
7	Nov. 1	<ul style="list-style-type: none"> ▪ Chapter 4, 5, 6 in <i>C&M</i> ▪ Applichem(A) 	<i>Llenroc Plastics</i>
8	Nov. 8	<ul style="list-style-type: none"> ▪ Chapters 16, 17 in <i>C&M</i> ▪ i2 Technologies 	
9	Nov. 15	<ul style="list-style-type: none"> ▪ Chapter 18 in <i>C&M</i> ▪ Ford Motor Company 	
10	Nov. 29	<ul style="list-style-type: none"> ▪ Project Presentations 	Project Report
11	Dec. 6	FINAL EXAM	

Other sample syllabi may be obtained under instructor resources from the prentice Hall web site

www.prenhall.com/chopra

1. Course Description and Objectives

Logistics and supply chain management is unique and, to some degree, represents a paradox because it is concerned with one of the oldest and also the most newly discovered activities of business. Supply chain system activities - communication, inventory management, warehousing, transportation, and facility location - have been performed since the start of commercial activity. It is difficult to visualize any product that could reach a customer without logistical support. Yet it is only over the last few years that firms have started focusing on logistics and supply chain management as a source of competitive advantage. There is a realization that no company can do any better than its logistics system. This becomes even more important given that product life cycles are shrinking and competition is intense. Logistics and supply chain management today represents a great challenge as well as a tremendous opportunity for most firms.

Another term that has appeared in the business jargon recently is *demand chain*. From our perspective we will use the phrases logistics management, supply chain management and demand chain management interchangeably.

In this course we will view the supply chain from the point of view of a general manager. Logistics and supply chain management is all about managing the hand-offs in a supply chain - hand-offs of either information or product. The design of a logistics system is critically linked to the objectives of the supply chain. Our goal in this course is to understand how logistical decisions impact the performance of the firm as well as the entire supply chain. The key will be to understand the link between supply chain structures and logistical capabilities in a firm or supply chain.

2. Grading

There will be five case write-ups due during the quarter. This will account for 50 % of the grade. Each case write up is due in groups. Please keep group sizes to at most five. Please read the short note on case reports and try to structure case reports accordingly. 20 % of the grade will be for an in class final exam and 25 % for a final project. 5% of the grade will be for electronic class participation on the newsgroup. Details of the project will be given on the first day of class. As most of the work is in groups, individual grades will take into account a peer review from each group member of other members in the group. **It is extremely important and part of the honor code that each member of a group contributes to the case analysis by the group. If any individual has not contributed for a particular week, (s)he should not append his/her name to the case report but submit a separate report on their own.** It will also be the group's responsibility to ensure that this happens. Only one written report will be due per group. However, as I have stressed, each member must contribute to the analysis leading to the report. The final exam will consist of a series of short conceptual questions. The primary objective is for you to review all concepts in class one last time. Each group will be assigned a week on which they have to make a posting on to the newsgroup. The posting must be a practical example where supply chain related concepts either apply or should have been applied.

3. Text and Other Readings

The textbook is titled Supply Chain Management: Strategy, Planning, and Operations by S. Chopra and P. Meindl(C&M).

All cases must be read before the class they are to be discussed in (whether a submission is required or not). Chapters from this book have been assigned as background reading with the material being covered. Lectures will follow the book. The book is best read right after the lecture to reinforce the concepts discussed. The book also provides technical details that may not be discussed in class. *Any feedback on the book will be much appreciated.* Please send me feedback either by e-mail or directly. All other readings can be read as time allows. They further elaborate on ideas that will be discussed in class but need not be read before class.

Some other text books on the subject that may be of interest are as follows:

1. Strategic Logistics Management by D.M. Lambert and J.R. Stock.
2. The Management of Business Logistics by J.J Coyle, E.J. Bardi and C.J. Langley.
3. Logistical Management by D.J. Bowersox, D.J. Closs, O.K. Helferich.
4. Business logistics Management by Ronald H. Ballou
5. Inventory Management and Production Planning and Scheduling by Edward A. Silver, David F. Pyke, and Rein Peterson

Other books that will be of interest to students taking this course include

1. Clock Speed by Charles H. Fine
2. Mass Customization by B. Joseph Pine
3. Markets of One by James H. Gilmore and B. Joseph Pine
4. Towards a Better Supply Chain by Charles C. Poirier
5. Time Based Competition by Joseph D. Blackburn
6. Competing Against Time by George Stalk, Jr. and Thomas H. Hout

Detailed Course Syllabus

For each week the case to be covered and the readings are specified. The readings that are **bold** should be read before class. The others are accompanying readings and provide information related to the ideas discussed in class. You will find it useful to read them as we go along but they can be read at your convenience.

Week 1

In this session we will discuss supply chain management and its importance to the success of a firm. We will discuss different ways to view a supply chain. We will also raise a variety of supply chain related questions that need to be answered by any firm. We will provide a framework within which supply chain drivers may be analyzed and appropriate tradeoffs considered.

We will define key performance measures for a supply chain and establish initial links to logistical drivers that a supply chain designer or manager may control.

We will consider the changing environment and look at some of the key challenges for logistics today. We will discuss the notion of *Tailored Logistics* and its importance in today's environment. This will be an important concept that we will refine in the context of different logistical drivers in the course of the quarter. We start discussion on how a firm can manage inventories to ensure a fit between strategic supply chain objectives and inventory management.

We will illustrate the strategic framework for supply chain decisions in the context of the Seven Eleven Japan case. Please read the case before class.

Readings

1. *Get Leverage from Logistics*, Harvard Business Review, May-June 1984 (#84313).
2. *Tailored Logistics: The Next Advantage*, Harvard Business Review, May-June 1993 (#93305).
3. *The Power of Virtual Integration: An Interview with Michael Dell*, Harvard Business Review, March-April 1998 (#98208)
4. Kellogg case *Seven Eleven Japan*
5. Chapters 1-3 in *C&M*

Week 2

This session will start with a discussion of the Distrigas case to bring up issues involved in designing a supply chain. We will then discuss demand planning in a supply chain illustrating basic methodologies for forecasting and aggregate planning.

Case: *Distrigas Corporation* (HBS 9-371-280). Use the following questions when preparing your case report.

- [1] Assume that the utility pays a base commodity charge, as suggested in the case, plus a peak usage (or "demand") charge based on a \$4.63 per Mcf per month rate times the total demand during the maximum take day in the last 12 months. Suppose the daily peak in December 1967 had been 240 MMcf. What would the Boston gas bill for 1968 have been? Assume that the total demand over 12 months is 30.7 Bcf. What is the average cost per Mcf? What savings would have resulted if the peak demand was equal to the average demand?

[2] In the spreadsheet DISTDEM.XLS you are given the daily demand at a utility for the months of December, January and February. In each of the other months assume that the daily sendout does not exceed 120 MMcf. Assume that the total demand over 12 months is 30.7 Bcf. With cost data as given in [1] and the case (assume that the utility wants Distrigas to store the LNG until the beginning of the peak season and that the utility is located within 75 miles), how much LNG should the utility purchase from Distrigas? How should the utility use this LNG (which days)? What is the annual cost of such a policy?

In general the utility will have to make decisions based on forecasts. How would you suggest the utility decide the purchase and use of LNG from Distrigas?

[3] What do the utilities gain from the existence of Distrigas? What would be a suitable business strategy for Distrigas? By this strategy, what should Distrigas be able to do particularly well,