

THE UNIVERSITY OF SOUTHERN CALIFORNIA
Marshall School of Business
IOM 581 – Supply Chain Management – Fall 2007

Time: Thursdays, 6:30-9:30 pm

Room: JKP 204

Instructor: Dr. Greys SOSIC

Office: Bridge Hall 401S

E-mail: sosic@marshall.usc.edu

Telephone: (213) 821-3632

Office hours: Tuesdays and Thursdays, 4:00-5:00 pm

COURSE SCOPE AND OBJECTIVES

This course will be valuable for someone pursuing a career in consulting or a position in the operations, marketing or finance function in a manufacturing or a distribution firm. The course focuses on the management and improvement of supply chain processes and performance. We explore important supply chain metrics, the primary tradeoffs in making supply chain decisions, and the basic tools for effective and efficient supply chain management, production planning and inventory control, order fulfillment and supply chain coordination. Several recent and influential innovations such as vendor managed inventories, revenue sharing, radio frequency identification and supply chain software solutions will be discussed. We also investigate topics such as global supply chain design, logistics, e-commerce and outsourcing.

The class format includes lectures, case discussions, guest speakers, movie clips, simulation games, etc. The content covers both quantitative and qualitative materials. The cases will feature high-tech companies such as SAP and Netflix as well as firms in more traditional industries such as car manufacture, appliances, and food.

GETTING TO KNOW YOU

At the beginning of the second class, please hand in a one page personal summary with your name, the program and the specialization you are currently enrolled in, and a copy of your picture. Please also indicate why are you taking this course and any prior exposure or related practical experience.

Please also bring a name tent (an 8.5x11" sheet folded in half lengthways, with your first and last name) and place it on your desk during each class.

COURSE MATERIALS

Required: *Course Reader* (CR) – Package of cases and readings available at USC bookstore. In the syllabus, a number such as CR#5 refers to 5th article in sequence in the course reader.

Handouts (HO): Handouts distributed in class.

Recommended: *Supply Chain Management* by S. Chopra and P. Meindl, Prentice Hall, 2006.

Handouts and some other files will be posted on the Blackboard.

COURSE POLICIES

This course covers both quantitative and qualitative materials, and uses many cases for discussion of issues and illustration of approaches. Active participation in class is important throughout the course.

GROUP CASE REPORTS

Please form teams of two to four persons within the first two weeks. You will be working in these teams for the case write-ups.

The cases are to be discussed within your team and you can submit (as a team) a written report. This Syllabus provides some suggested questions that you should address. Each team is required to submit a written report on four case studies (Barilla on 9/27, Merloni Elettrodomestici on 11/1, Aggregate Planning on 11/22, and Amango on 12/6). Case write-ups should be at most 4 pages and single-spaced (11 or 12 point font), with appendices attached. The write-up should begin with an executive summary and be organized as follows:

1. **Brief** description of the company and its environment
2. **Brief** description of the problems and issues to be addressed.
3. Recommendations and implementation plan.
4. Analysis that discusses why the recommendations will solve the problems identified.

You may choose to organize the report differently; however, please ensure that the above aspects are covered and the report is well organized with clear section and sub-section headers. Please avoid repetition of case facts and long expositions. General solutions to specific problems will get you little credit. Consider what and why you believe are the most important factors. Both **quantitative** and **qualitative** analyses are important. Creativity in analysis and suggestions that are grounded in case facts will be given high credit. Please state any assumptions made clearly.

The report for the aggregate planning case does not have to follow the above guidelines. It has to include the **complete description of the model** (variables, objective function, constraints), and answers to the questions posted in the case (as your model is based on the forecasted demand, it would be useful to include some sensitivity analysis of your results). Please include the printout of your spreadsheets, and submit the excel file along with your write-up.

INDIVIDUAL SUBMISSIONS

In addition to the cases for which you are required to submit group reports, we will be discussing several cases and articles. You should be prepared for class discussion, and this Syllabus provides some suggested questions that you should address. For the individual submissions, please prepare a short write-up (less than one page) answering the question(s) listed on p. 4. The objective of this short submission is to ensure that you prepare the case. For that reason, **no late submissions** will be accepted. If you are not able to attend the class, you can leave your submission in the Digital Dropbox **before** the class. As long as your answer shows that you have given sufficient thought to the analysis, you will get full credit. I will **not** provide feedback on these submissions (unless your work is not satisfactory).

ON-LINE SUBMISSIONS

Some of your assignments will require you to send me files showing your work. The names of the files should contain your name(s) and assignment number. For instance, if you are submitting the file for group assignment #3 and your group members are Black, Brown, Green and White, the file should be called BlackBrownGreenWhite_3.xls. All on-line submissions should be made through the Blackboard, Digital Dropbox option.

EXAM

There will be two exams (midterm and final). Each exam will consist of two parts. The first part will be qualitative and closed-book, while the second part will be quantitative and open-book.

According to the USC Final Exam Schedule, the second (final) exam is scheduled for December 13, at 7 pm. Please take this into account when scheduling your trips!

CLASS PARTICIPATION

Class participation requires that you do the assigned readings, analyze the cases based on the questions given and participate actively in class. I prefer substantive comments based on good analysis rather than brief, general comments that add little to the discussion and learning. If you are reluctant to talk in class but would like to show your preparation, please provide me with your analysis before class (Please send it through the Digital Dropbox). Be prepared to defend your suggestions or solutions with careful and thoughtful analysis!

GRADING

Group case reports (4)	36%
Individual submissions (8)	16%
Tests (2)	40%
Class participation	8%

NOTICE ON ACADEMIC INTEGRITY

The use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tensions accompanying examinations. Where a clear violation has occurred, however, the instructor may disqualify the student's work as unacceptable and assign a failing mark on the paper.

FOR STUDENTS WITH DISABILITIES

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Course plan at a glance

	Date	Topic	Readings	Cases	Submission
1	8/30	Introduction to Supply Chain Management Key Supply Chain Concepts	The Seven Principles of Supply Chain Management (CR#1)		
2	9/6	Supply chain strategy Inventory management	Note on Inventory Models (CR#3)	Wal-Mart (CR#2)	short #1 – Wal-Mart (answer q.#1)
3	9/13	<i>Distribution game</i> Inventory management	Note on Inventory Models (CR#3)		
4	9/20	Newsvendor model Supply chain coordination	Note on Inventory Models (CR#3)	Video Vault (CR#4)	short #2 –Video Vault (answer q.#1-3)
5	9/27	Supply chain coordination The Bullwhip Effect; VMI <i>Guest speaker (Avery Dennison)</i>	The Bullwhip Effect in Supply Chains (CR#5) Note on the "Retail inventory and pricing game" (HO)	Barilla SpA (A) (CR#6)	group #1 - Barilla
6	10/4	<i>Inventory and pricing game</i> Product design and variety			short #3 –Mass customization (answer q.#1)
7	10/11	Supplier management Outsourcing	Li and Fung (CR#8) Outsourcing And Its Perils (CR#9) Why Outsourcing Is In (CR#10)	Metalcraft (CR#7)	short #4 –Li and Fung (answer q.#1)
8	10/18	Global sourcing Logistics	Tailored Logistics: The Next Advantage (CR#13) Note on Logistics in the Information Age (CR#14)	Kodak (CR#11)	short #5 –Kodak (answer q.#3) short #6 –Logistics (answer q.#3)
9	10/25	MIDTERM (weeks 1-7)			
10	11/1	Logistics Forecasting	Note on forecasting (CR#15)	Merloni Elettrodomestici (CR#12)	group #2 - Merloni Elettrodomestici
11	11/8	Forecasting <i>Lamson game</i>	Note on forecasting (CR#15)	SPC Part A (CR #16)	
12	11/15	Aggregate planning <i>Guest speaker (Adexa)</i>	Aggregate planning (CR #17)		
13	11/22	Thanksgiving Day – no classes			group #3 - Aggregate planning – SPC Part B (CR #18)
14	11/29	<i>Supply chain management exercise</i> Enterprise resource planning	Otogel – Supply Chain Management exercise	SAP (CR #19)	short #7 –SAP (answer q.#3)
15	12/6	IT in supply chains and e-commerce SCM: Opportunities and challenges		The Amango Project (CR #20)	short #8 –E-commerce (answer q.#3) group #4 - The Amango Project
	12/13	FINAL EXAM			

Detailed course plan

Week 1 Introduction to Supply Chain Management and Key Supply Chain Concepts

Readings:

- *The Seven Principles of Supply Chain Management*, D.L. Anderson, F.F. Britt, D.J. Favre, *Supply chain management review*, 1997

Week 2 Supply chain strategy: Inventory management

Case study: (Ivey case #9B07D001): Supply Chain Management at Wal-Mart

Discussion Questions:

1. *What is your analysis of Wal-Mart supply chain? Are the company's supply chain capabilities still a source of competitive advantage? Why or why not?*
2. How would you evaluate Remix and RFID initiatives?
3. Is the company's target of maintaining inventory growth at a rate of 50% of sales growth reasonable?
4. Why has Wal-Mart not been as successful in Europe as it has in North America?

Readings:

- *Note on Inventory Models*

Week 3 Inventory management

Distribution game (Bring your laptops to class. Please download the files from the Blackboard before the class)

Readings:

- *Note on Inventory Models*

Week 4 :Newsvendor model ; Supply chain coordination

Case study: (HBS #9-102-070): Supply chain close-up: the Video Vault

Discussion Questions:

1. Video Vault needs to decide how many copies of the movie "Spiderman 3" to purchase. They have the following forecast of rentals for this movie:

Number of tapes purchased	Expected number of rentals
1	80
2	130
3	155
4	170
5	177
6	180

Thus, if they purchase 3 tapes, then they expect the total number of rentals (for all three tapes) to be 155. As the number of tapes increases, they observe more rentals, but each additional tape generates fewer incremental rentals than the previous one. Suppose Video Vault can purchase each tape for \$65 and they charge \$3 per rental. How many tapes should Video Vault purchase?

2. What is the Video Vault's supplier's profit if the supplier's production, handling and distribution cost per tape is \$10?
3. Suppose that Universal considers offering Video Vault a revenue sharing contract. In other words, Universal will sell each tape to Video Vault at price w and receive a certain fraction f of Video Vault's revenue. What values of w and f should Universal offer to Video Vault?
4. Who benefits from revenue sharing? What are the potential concerns with the implementation of revenue sharing?

Readings:

- *Note on Inventory Models*

Week 5 The Bullwhip effect; VMI; Supply chain coordination ; Guest Speaker from AveryDennison**Readings:**

- *The Bullwhip Effect in Supply Chains*, H.L. Lee, P. Padmanabhan, S. Whang, *Sloan Management Review*, Spring 1997, pp. 93-102.

Case study: (HBS 9-694-046): Barilla SpA (A)

Discussion Questions:

1. Diagnose the underlying causes of the difficulties that the JITD program was created to solve. What are the benefits and drawbacks of this program?
2. What conflicts or barriers internal to Barilla does the JITD program create? What causes these conflicts? As Giorgio Maggiali, how would you deal with these?
3. As one of Barilla's customers, what would your response to JITD be? Why?
4. In the environment Barilla faced in 1990, would JITD or a similar program be feasible and effective? If so, which customers would you target next? How would you convince them that JITD is worth trying? If not, what alternatives would you suggest to combat the difficulties faced by Barilla's operating system?

Case study report on Barilla due at the beginning of class

Week 6 Inventory and pricing game;Product design and variety

Retail inventory and pricing game (Bring your laptops to class)

Mass customization assignment:

Visit and explore two different mass customization websites for customized shoes, Nike iD (nikeid.nike.com) and mi adidas (www.adidas.com/products/miadidas/content).

Discussion Questions:

1. *What are the main differences between the two approaches to mass customization? Which model is more difficult to implement and why?*
2. What are the main difficulties/issues that mass customization imposes on supply chains designed for mass production?

Week 7 Supplier management; Outsourcing**Readings:**

- *Outsourcing And Its Perils*, B. Lakenan, D. Boyd, E. Frey, *Strategy + Business* (3rd Quarter 2001)
- *Why Outsourcing Is In*, A. Chung, T. Jackson, T. Laseter, *Strategy + Business* (3rd Quarter 2002)

Discussion Questions:

1. Why do firms outsource?
 2. What part of a firm's operations should be outsourced and why?
 3. What is your assessment of the "network" model pioneered by Cisco Systems?
 4. What are the pros and cons of outsourcing operations globally?
- (HBR #98507) *Li and Fung*

Discussion Questions:

1. *Why does Li and Fung "break up the value chain and rationalize where they do things"? How does this add value to the supply chain?*
2. How does Li and Fung make the supply chain more responsive (i.e. reduce response time)?
3. What is the role of the "little John Waynes"?

Case study: (HBS #9-102-047): Metalcraft supplier scorecard

Discussion Questions:

1. What is the purpose of the supplier scorecard at Metalcraft? Is it achieving that goal?
2. What are the strengths and weaknesses of the supplier scorecard at Metalcraft?
3. How are the incentives of the various participants in the procurement process at Metalcraft influencing the use of the scorecard?
4. How would you improve the scorecard at Metalcraft and the managerial process surrounding its use?

Week 8 Global sourcing; Logistics

Case study: (HBS #9-693-043) Kodak Business Imaging Systems Division

Discussion Questions:

1. Compare the approach Keith and Andy took to evaluate Kodak's international manufacturing location decision with that usually taken by Kodak BSID managers.
2. Why are Kodak managers considering moving the manufacturing of their microfilm readers and printers abroad?
3. *Keith and Andy considered several important strategic issues before making their recommendation to Kodak managers. They concluded that Kodak should not transfer the manufacturing of the microfilm readers and printers away from Rochester. Do you agree? Why or why not? On what issues would your recommendation rest? What questions would you raise if you were a manager at Kodak?*

Readings:

- *Tailored Logistics: The Next Advantage*, Harvard Business Review (#93305)
- *Note on Logistics in the Information Age*, Stanford case #GS19

Discussion Questions:

1. What are the major issues and trade-offs faced by firms in making logistics decisions?
2. What are the major trends in logistics?
3. *What is third-party logistics (3PL) and what are the forces leading to growth in 3PL providers? What are the major reasons firms are outsourcing logistics? What impact will this have on supply chain performance?*

Week 9 MIDTERM**Week 10 Logistics; Forecasting**

Case study: (HBS 9-690-003) Merloni Elettrodomestici SpA: *The Transit Point Experiment*

Discussion Questions:

1. What are the costs and benefits of Merloni's current distribution system?
2. What are the costs and benefits of the transit-point-based distribution system?
3. Should Merloni replace its network of regional warehouses with transit points? If so, what contingency plans and support systems are necessary to support the new logistics network? If not, what changes, if any, would you recommend Merloni make to its distribution system?

In your analysis, be sure to evaluate the impact of your decisions on Merloni's plants, central and regional DC operations, transportation services used by Merloni, their retailers, and the final customers. Evaluate the impact on inventories and service levels.

- *Note on forecasting*

Discussion Questions:

1. What are key variables that need to be forecasted from an operations perspective and why?
2. What forecasting methods are used?
3. When would time-series models versus other models (e.g. causal models) be used?
4. What are the operational implications of fluctuations in demand and forecast errors?

Case study report on Merloni Elettrodomestici SpA due at the beginning of class

Week 11 Forecasting; Lamson game

(Bring your laptops to class. Please download the files for the forecasting example and for the Lamson game from the Blackboard before the class)

Readings:

- *Note on forecasting*
- Handouts to be provided for the simulation game

Case study: SPC(A): *Demand Forecasting*

Week 12 : Aggregate planning; Guest speaker: Cyrus Hadavi (Adexa)**Readings:**

- Chapter 8 *Aggregate Planning* (pp. 203-227) in *Supply Chain Management: Strategy, Planning, and Operation* by S. Chopra and P. Meindl, Prentice Hall, Second Edition, 2004

Discussion Questions:

1. What is the main purpose of aggregate planning?
2. What are the main strategies used for aggregate planning? What are their main differences?
3. How can you solve aggregate planning problems?

Week 13 No classes – Thanksgiving Day

Case study: SPC (B): Aggregate Production Planning

Report on Report on Specialty Packaging Corporation, Part B due through the Blackboard by 6:30 pm

Week 14 Supply chain management exercise; E-commerce

Otogel – Supply chain management exercise

Readings:

- Handouts to be provided for the simulation game

Case study: (HKU564): SAP's Platform Strategy in 2006

Discussion Questions:

1. What are the changes faced by SAP?
2. What are the main differences between the SAP's previous and current strategies?
3. What are the main features of the SAP's new business design and strategy?
4. What are the SAP's key competitors? How can it compete with them?

Week 15 IT in supply chains and e-commerce; Supply chain management***E-commerce assignment:***

Visit and explore three different e-commerce websites: buying groceries at von's.com, buying books at amazon.com, and buying personal computers at dell.com.

Discussion Questions:

1. What are the main benefits of e-commerce for supply chains?
2. What are the main challenges that e-commerce imposes on supply chains?
3. ***Which of the three websites offers products that are most suitable for e-commerce? Which offers products that are least suitable for e-commerce? Why?***

Case study: (IES157): The Amango Project: Taking Online DVD Rental to Germany

Discussion Questions:

1. What are the key elements of Netflix business model? How does it manage demand and what is the impact of this demand management?
2. How should Netflix determine the necessary copy depth? Suppose that the cumulative demand for a title is given by $D=300,000*(1-\exp(-0.08t))$, where t is measured in days since the movie is released to the Netflix. Suppose that a customer will keep the movie an average of 5 days. How many copies should they purchase if they want the average waiting time to be 7 days? 10 days?
3. Why is revenue sharing important in rental industry? What are the pros and cons for the retailer, the studio, and the channel as a whole?
4. How should Amango procure new DVDs? Should they use the same approach for all DVDs?
5. What are the key trends in the movie industry and how do they affect rentalers? What are the changes in technology and how do they affect rentalers?
6. What are the key differences between Amango and Netflix? What do you think about the future of Amango?

Case study report on Amango due at the beginning of class

Student Information Form

1. Name:
2. E-mail address:
3. Program/Specialization:
4. What are your main objectives in taking this course?

1. What is your prior relevant experience?

2. Photo: