



# OM 367: Strategic Supply Chain Management

Professor Stephen M. Gilbert

Classroom: CBA 4.348

Class Meeting Time: TTH 12:30-2:00

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## **COURSE DESCRIPTION**

Supply Chain Management involves the flows of materials and information among all of the firms that contribute value to a product, from the source of raw materials to end customers. We will integrate issues from marketing (channels of distribution), logistics, and operations management to develop a broad understanding of a supply chain. By taking a strategic perspective, we will focus on relatively long term decisions involving the investment in productive resources, configuration of processes, product designs, and development of partnerships with suppliers and channels of distribution.

Although the development of analytical tools is not one of the primary objectives of the course, students should be comfortable with quantitative analysis. By the end of the course, you should have developed an appreciation for the major strategic issues trade-offs in supply chain management as well as the ability to use conceptual frameworks to make decisions.

## **TEACHING/LEARNING METHODOLOGY**

The detailed course outline starting on page 6 lists, for every class session, the reading(s), case(s), assignment(s), and anything else of importance. Please read this outline carefully before every session.

Because class time is our most precious and inelastic resource, **please come to every class prepared.**

**Essential preparation includes reading the assigned readings and cases and doing the assignments.**

**Recommended Text Book**<sup>1</sup> (VM) Van Mieghem, Jan, *Operations Strategy: Principles and Practice*, Dynamic Ideas, Charlestown, MA, 2008.

**Optional Reference** Chopra, Sunil and Peter Meindl, *Supply Chain Management*, Third Edition, Person Education, Inc., Upper Saddle River, NJ, 2006.

**Required Course Pack** Additional reading materials for the course are contained in a bulk pack that should be available for purchase at the McCombs Copy Center.

**Course Notes** To support the lectures and case discussions, I will occasionally post notes on the web page. These notes are intended to help you when you are reviewing the material that has been covered in class. They are not intended to be a substitute for attending class.

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<sup>1</sup> For a number of the class sessions, I list specific chapters from the Van Meighem (VM) text. It provides an excellent complement to what we cover in class, but to keep the cost of course materials down, I do not require it. Students will not be responsible for anything in the text that is not discussed in class.

**Teamwork** An important element of this class is teamwork. Several of the assignments will be prepared in groups. In addition, I encourage the formation of study groups to maximize learning.

**Class Participation** To foster a productive learning environment, it is important that everyone come to class prepared and willing to contribute to discussion. Ideally, you will make concise, insightful, and eloquent comments in every class. However, I also recognize the importance of making smaller contributions, including asking good questions. I believe that the learning environment is best when the discussion is not dominated by a few, but moved along incrementally by all of us. Do not be afraid to make points that you may regard as minor, ask clarifying questions, or otherwise contribute in small ways.

**Laptops in Class** Unless explicitly stated otherwise at the beginning of class, the use of laptop computers during class is prohibited.

**Feedback** Your informal feedback is very important to me. Please let me know throughout the semester if there is anything I can do to make this class better for you.

## **PERFORMANCE EVALUATION**

The performance criteria are weighted as follows:

In Class Quizzes (2)	25%
Final Exam	25%
Individual Homework	20%
Executive Summaries	15%
Global Supply Chain Game	5%
Class Participation	10%

Based on past experience, most students receive grades between A and B-. Grades lower than B- will be assigned on a case by case basis. Typically fewer than 5% of students earn grades lower than B-.

### **In-Class Quizzes**

There will be two in-class quizzes that take up the entire class period. These are closed-book, but students are permitted a single page of notes.

### **Individual Homework**

Individual homework assignments serve one of two purposes. Either they are intended to provide an opportunity to use one of the analytical frameworks from class, or they are intended to help you to prepare for a class discussion of a case. Some credit is always awarded for evidence of effort.

### **Executive Summaries**

For several of the cases, I will assign an executive summary (ES), in which you will be asked to work in groups of 3-4 students to analyze a specific issue and make a recommendation. In general, an ES should accomplish the following:

- Articulate the operational problem in terms of how it affects important measures of the firm's performance.
- Identify and analyze the major alternatives.
- Present a persuasive argument for a particular course of action.

For each ES, I will provide several questions that are intended to guide your analysis / thought process. However, although the ES that you submit should reflect your consideration of the assignment questions, it should not be just of list of answers to these questions. Instead, it should be a logical and persuasive recommendation for action. A brief description of an ES and a couple of examples are provided at the end of this document. Please restrict yourselves to **one page** of text (additional pages may be attached for exhibits). You may use single-spacing, but please use a reasonable font size, i.e. at least 11 pt.

**Global Supply Chain Game:** One of the assignments is for you to work in a group of 3-4 students to operate a computer simulation of a supply chain. To play, you will need to log on to the simulation and pay a fee of \$12.50 (per group) with a credit card. Specific instructions for the exercise will be provided. Grades will be based on both your write-up and your performance in the game.

### **Individual and Group Work**

Each student is to prepare his own paper for each individual homework. My philosophy is that the process of composing the paper is a valuable part of the learning process. (In fact, for the executive summaries, one of the skills that I want for you to develop is that of organizing your thoughts so that you can present a concise, logical analysis that leads to a recommended course of action.) However, I also believe that students can learn a lot from one another. Therefore, I encourage you to discuss the homework assignments with one another before you sit down individually to prepare the paper that you will submit. Note that submission of exact copies would not be consistent with this.

### **Grading**

Individual homework and executive summaries will be graded on scales of 0-4 and 0-10 respectively. Please turn in all assignments prior to the beginning of the class session listed on the schedule. Solutions to the homework assignments will be distributed in class or on the web-page. Please study each solution carefully even if you received full credit on the assignment. For the executive summaries, I will try to provide hard copies of exemplary papers. **I do not accept the submission of assignments after class on the day that they are due.** However, I do allow students to drop one individual homework grade.

### **HONOR CODE**

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the Policy Statement on Scholastic Dishonesty for the McCombs School of Business. By teaching this course, I have agreed to observe all of the faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all of the student responsibilities described in that document. If the application of that Policy Statement to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification. Policy on Scholastic Dishonesty: Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> or the General Information Catalog to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

**Please do not use any materials (packet of overheads, homeworks, course notes, handouts, exams, homework solutions, case summaries) from previous semesters or from other sections of the course being offered in this semester unless the same has been made available by me to every one of your fellow students in this class.** If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification.

**STUDENT PRIVACY**

Password-protected class sites will be available for all accredited courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, class e-mail rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1. For information on restricting directory information see:

<http://www.utexas.edu/student/registrar/catalogs/gi02-03/app/appc09.html>.

**STUDENTS WITH DISABILITIES**

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. If you have a condition (e.g. learning disability, chronic medical condition, etc.), of holiday that needs accommodation, please see me early in the semester so that we can take appropriate step. For additional information about the University's policies, contact the Office of the Dean of Students at 471-6259 or 471-4641.

**The following is a summary of the sessions in the course. A detailed outline follows.**

## Schedule

No.	Day	Date	Topic	Case / Other Info.	Assignments Due
1	T	1/15	Intro to Supply Chain Management		
2	TH	1/17	Competitive Cost Analysis	American Connector	
3	T	1/22	Capacity Sizing		
4	TH	1/24	Capacity Sizing		
5	T	1/29	Capacity and Inventory Planning		IH#1
6	TH	1/31	Capacity and Inventory Planning		IH #2
7	T	2/5	Sales and Operations Planning	Cross River	IH #3
8	TH	2/7	Capacity Timing	Align Tech	ES #1
9	T	2/12	Drivers of Inventory and Inventory Policy		
10	TH	2/14	Drivers of Inventory and Inventory Policy		IH #4
11	T	2/19	Quiz #1		
12	TH	2/21	Capacity Types and Flexibility		
13	T	2/26	Complementary Capacity – Oper. Hedging	Seagate	IH#5
14	TH	2/28	Hedging through Product Design	Hewlett-Packard UPS	
15	T	3/5	Hedging through Product Design	Hewlett-Packard UPS	IH #6
16	TH	3/7	Scenario Based Capacity Plannig		
17	T	3/19	Capacity Location and Logistical Design		
18	TH	3/21	Capacity Location and Logistical Design	Dollar Tree Logistics	IH #7
19	T	3/26	Capacity Location and Logistical Design	China Mexico Dual Sourcing	
20	TH	3/28	Capacity Location and Logistical Design	China Mexico Dual Sourcing	ES#2
21	T	4/2	Coordination and Incentives	Johnson Elevator	IH#8
22	TH	4/4	Coordination and incentives		
23	T	4/9	Coordination and incentives		
24	TH	4/11	Quiz #2		
25	T	4/16	Social Responsibilities in SCs	Ikea in India	
26	TH	4/18	Guest Speaker		
27	T	4/23	Global Supply Chain Game		GSG write-up
28	TH	4/25	The Outsourcing Game	Meet in GSB 5.130	
29	T	4/30	The Outsourcing Game	Meet in GSB 5.130	
30	TH	5/2	Review		

## **OM 367: DETAILED COURSE OUTLINE**

<b>SESSION 1 (T, Jan. 15)</b> Reading	<b>Introduction to Supply Chain &amp; Ops Strategy</b> Van Mieghem (VM): Chapters 1 & 2
<b>SESSION 2 (TH, Jan. 17)</b> Reading	<b>Competitive Cost Analysis</b> American Connector
<b>SESSION 3 (T, Jan. 22)</b> Readings	<b>Capacity Sizing</b> VM Chapter 3, Appendix B: Newsvendor Review (as necessary)
<b>SESSION 4 (TH, Jan. 24)</b>	<b>Capacity Sizing</b>
<b>SESSION 5 (T, Jan. 29)</b> Homework Submitted	<b>Capacity and Inventory Planning</b> IH#1
<b>SESSION 6 (TH, Jan. 31)</b> Homework Submitted	<b>Capacity and Inventory Planning</b> IH #2
<b>SESSION 7 (T, Feb. 5)</b> Case Homework Submitted	<b>Sales and Operations Planning</b> Cross River Products IH #3
<b>SESSION 8 (TH, Feb. 7)</b> Reading Case Group ES Submitted	<b>Capacity Timing</b> VM, Chapter 4 Align Technology ES#1
<b>SESSION 9 (T, Feb. 12)</b>	<b>Drivers of Inventory and Inventory Policy</b>
<b>SESSION 10 (TH, Feb. 14)</b> Homework Submitted	<b>Drivers of Inventory and Inventory Policy</b> IH #4
<b>SESSION 11 (T, Feb. 19)</b>	<b>Quiz #1</b>
<b>SESSION 12 (TH, Feb. 21)</b> Read	<b>Capacity Types and Flexibility</b> VM, Chapter 5 Principles on the Benefits of Manufacturing Process Flexibility
<b>SESSION 13 (T, Feb. 26)</b> Case Homework Submitted	<b>Complementary Capacity – Operational Hedging</b> Seagate IH#5
<b>SESSION 14 (TH, Feb. 28)</b> Case	<b>Product Design to Hedge Demand Risk</b> HP Universality
<b>Session 15 (T, Mar. 5)</b> Hoework Submitted	<b>Product Design to Hedge Demand Risk</b> IH#6

<b>SESSION 16 (TH, Mar. 7)</b>	<b>Scenario Based Capacity Planning</b>
<b>SESSION 17 (T, Mar. 19)</b> Reading	<b>Capacity Location &amp; Logistical Design</b> VM, Chapter 6
<b>SESSION 18 (TH, Mar. 21)</b> Case Homework Submitted	<b>Capacity Location &amp; Logistical Design</b> Dollar Tree Logistics IH #7
<b>SESSION 19 (T, Mar. 26)</b> Case	<b>Capacity Location and Logistical Design</b> China Mexico Dual Sourcing
<b>SESSION 20 (TH, Mar. 31)</b> Case Group ES Submitted	<b>Capacity Location and Logistical Design</b> China Mexico Dual Sourcing ES #2
<b>SESSION 21 (T, April 2)</b> Case Homework Submitted	<b>Pricing for Supply Chain Coordination</b> Johnson Elevator IH#8
<b>SESSION 22 (TH, April 4)</b>	<b>Coordination of Channels of Distribution</b>
<b>SESSION 23 (T, April 9)</b>	<b>Coordination of Channels of Distribution</b>
<b>SESSION 24 (TH, April 11)</b>	<b>Quiz #2</b>
<b>SESSION 25 (T, April 16)</b> Case	<b>Social Responsibility in Supplier Management</b> Ikea's Global Sourcing Challenge
<b>SESSION 26 (TH, April 18)</b>	<b>Guest Speaker – Ray Archer</b>
<b>SESSION 27 (T, April 23)</b> Group write-up submitted	<b>Global Supply Chain Game De-brief</b> Write-up for Global Supply Chain Game
<b>SESSION 28 (TH, April 25)</b>  Read	<b>The Outsourcing Game</b> <b>Meet in GSB 5.130</b> Pre-Read: Decision-Making in an Outsourced Supply Chain
<b>SESSION 29 (T, April 30)</b>	<b>The Outsourcing Game</b> <b>Meet in GSB 5.130</b>
<b>Session 30 (TH, May 5)</b>	<b>Course Review</b>

## Executive Summary

Typically, an executive summary is a short synopsis of a longer report. However, for the purposes of this course, your *entire* report will be a single-paged executive summary, the objective of which is to describe and justify a specific course of action as concisely as possible. My intention, in limiting you to a single page of text, is to force you to focus on the most compelling arguments for the course of action that you are advocating. Although you are restricted to a single page of text to present your recommendation, you may attach additional pages as exhibits. For example, it would be appropriate to include details of any quantitative or financial analysis as an exhibit. However, you should make sure that any exhibits are well documented, and you should certainly not include an exhibit that does not merit specific reference in the text of your executive summary.

### STRUCTURE

Although executive summaries can be written in different forms, it is important that you open with a statement that sets the tone and context for the recommendation that you will be presenting. Avoid starting off with a bland summary of the case. Instead, try to begin telling a story that leads to your recommendation by emphasizing the facts that are most relevant. (See the example on the following page.)

Following the opening statement, there are two main approaches that can be adopted. The first is to lead off with the recommendation, and then provide the rationale for it. Alternatively, one can adopt a more linear approach by presenting the analysis that leads logically to the recommendation. Depending upon the situation, either of these two approaches can be effective.

As you write your executive summary, you may want to consider the following:

- The recommendation should be sufficiently operationally specific that it can be acted upon. Avoid wishy-washy phrases like, "They should consider..."; "They might want to..."; etc.
- Explain why you have rejected any reasonable alternatives to the course of action that you are advocating.
- Recognize any significant risks that might be associated with the course of action that you are recommending and suggest how they might be mitigated.
- To the extent that it is possible, quantify the benefits / costs associated with your recommendation. Details of any quantitative analysis can be attached (and appropriately referenced) as exhibits.

When writing an executive summary it is important to focus on important data, conclusions, and recommendations that are specific to the case. Avoid including excessive background and detail that are not pertinent to the recommendation, and avoid making generic recommendations that are not specifically actionable, e.g. "they should improve their relationships with suppliers". One approach developing your executive summary is to imagine that you need to present your recommendation to the CEO of your company while you are with her on an elevator. You need to capture the significance of the issue and make a logical, compelling case for your recommendation in a very short amount of time. Therefore, you cannot afford to waste time on minor points or on summarizing information that is not directly relevant for justifying your recommendation.

**Example**

## EXECUTIVE SUMMARY

**Introduction:** BMW and other luxury car manufacturers face a threat from the Japanese entry into the high end segment of the automobile market. Although BMW's share has not yet been affected, it soon will be if BMW fails to respond to the lower prices, better quality and shorter lead times for new product introductions of the Japanese OEMs. While BMW needs to refine its design process to be able to introduce new models more frequently, it could be a mistake to mimic the approach that is taken by the Japanese OEMs. For at least portions of the vehicle design, it is important that BMW retain some of its flexibility to make last minute design changes.

**Analysis:** The Japanese OEM's are able to cut two years off of BMW's development time for a new model, largely because they focus on incremental improvements and require design decisions to be locked in 12 months prior to each prototype to ensure high quality at launch. BMW's current prototyping approach affords maximum flexibility in the design process because it allows major design changes relatively late in the design cycle. Not only does this allow them to respond to the changing tastes of the market, it also allows them to incorporate technological breakthroughs into their products, enhancing their reputation as a technological leader. However, this unbounded flexibility also prevents BMW from being able to refine production grade tooling in order to have a high level of conformance quality at product launch. This flexibility can be valuable, e.g., to incorporate late design changes in parts of the vehicle where technology breakthroughs are anticipated, but it is not required throughout the vehicle.

BMW needs to find the right balance between retaining the flexibility where it truly has value, and using an approach that is closer to that of the Japanese OEMs elsewhere. In particular, they should identify major subsystems of the vehicle for which they can adopt the following practices:

- Use actual materials bought from actual suppliers..
- Use production grade tooling earlier in the prototype process to discover tooling or parts' problems earlier.
- Use parts from the eventual suppliers earlier in the prototype process to identify incompatibility issues earlier.
- Use regular plant workers for the final prototype to more closely approximate the actual assembly line operations.

The new approach will speed up the ramp-up and pilot processes due to production problems being identified earlier, and it will allow them time for fine tuning the process before product launch.

**Recommendations:** In adopting the new prototyping approach BMW will have to trade off flexibility and vehicle quality.

While the ability to make design changes later is important to keep up with changing consumer demands, the higher quality levels of the Japanese vehicles are a bigger threat. BMW can balance both these issues by doing the following:

- For now, use the new approach for the cockpit design. Since the cockpit seems to be the area where design and manufacturing quality matter the most, it would benefit from the new approach. They should use this opportunity to evaluate the costs and benefit of the new approach.
- However, in general they should adopt this approach only in the last one or two batches of the prototype development cycle rather than adopting it from the first batch of prototypes. This would minimize the investment needed in pre-production tools and still offer enough opportunities to identify problems before the pilot stage.
- They should assess each of the 30 major subsystems regarding the relative importance of design flexibility versus conformance quality at launch. The new approach should be used only for those subsystems in which conformance quality is judged to be more important than design flexibility.

Although there is incremental investment required for the new prototyping approach, the overall savings from all 3 stages (Prototyping, Pilot and Ramp-up) will more than justify these investments.

**Reading List for OM 367 - Spring 2013**  
**Strategic Supply Chain Management, Unique No 04235**  
Professor Stephen M. Gilbert

- 1) “American Connector Company (A), HBS case 9-693-035.
- 2) “Cross River Products”, HBS case 9-676-086.
- 3) “Align Technology, Inc.”, HBS case 9-603-058.
- 4) Jordan, W. and S. Graves, “Principles on the Benefits of Manufacturing Process Flexibility,” Management Science, V. 41, N. 4, April 1995, pp. 577-594.
- 5) “Seagate Technologies: Operational Hedging.” Contact: VanMiegem@kellogg.northwestern.edu.
- 6) “Hewlett-Packard Company: Network Printer Design for Universality”, Stanford Global Supply Chain Management Forum Case Study. Contact: [https://gsbapps.stanford.edu/cases/detail1.asp?Document\\_ID=1311](https://gsbapps.stanford.edu/cases/detail1.asp?Document_ID=1311)
- 7) Kopczak, Laura, Hau Lee, and Jin Whang, “Note on Logistics in the Information Age”, Case Study GS19, Stanford University, distributed via HBS Publishing.
- 8) “Dollar Tree Logistics,” Darden Business Publishing, University of Virginia, UVA-OM-1180.
- 9) “Mexico or China? Managing a Global Network.” Contact: VanMiegem@kellogg.northwestern.edu.
- 10) Gilbert, Stephen M., “Johnson Elevators,” Case Study, The University of Texas at Austin.
- 11) “IKEA’s Global Sourcing Challenge: Indian Rugs and Child Labor” (A), HBS case 9-906-414.
- 12) “Pre-Read: Decision-Making in an Outsourced Supply Chain,” Emeraldwise, LLC. jason@emeraldwise.com.

**Changes since 2011 (04005)**