

Supply Chain Management (POM 6420)

Syllabus for Winter Semester 2018

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Course Level: Graduate

Prerequisite: POM 521

Classroom: Mathematics and Science Center, Room 187

Class Times: Tuesdays, 6:30 pm ~ 9:20 pm

Office hours: Tuesdays and Thursdays 12:00 noon ~ 12:45 pm; Tuesdays, 5:45 pm ~ 6:15 pm; and by appointment.

Recommended Course-Text (Not Required): Designing and Managing the Supply Chain: Concepts, Cases, and Strategies, by David Simchi-Levi, Philip Kaminsky, and Edith Simchi-Levi, 2008, 3rd Edition, McGraw Hill.

Course Description and Goals

A supply chain is the set of links connecting all the entities involved in the transformation of inputs, leading to goods and/or services for the final consumer. These entities are usually made up of manufacturers, suppliers, wholesalers, retailers, logistic service providers, etc. Supply chains are typically characterized by flows of information, goods and/or services, and money.

Supply chain management is that field of business that is concerned with the efficient and effective planning and control of processes both within and across various organizations, aimed at creating value for the final consumer as well as all other entities in the chain. The growing importance of supply chain management is underscored by a number of contemporary situations that both pose challenges and opportunities to firms. Let us briefly examine a few of these issues.

First, many companies have reached their limits in terms of improvements that they can achieve within their internal systems, and have come to the realization that they need improvements in activity coordination in order to be more competitive. Indeed, competition in many industries is shifting from firm versus firm to supply chain versus supply chain. Second, many companies serve global markets, procure their materials and components from foreign countries, and rely on expertise as well as low-cost labor from other countries. Third, in contrast with the situation that prevailed in most countries about 20 years ago, customers have become increasingly demanding: many want items that suit their specific needs, very quickly, and at a low price.

The key question that firms today are asking then is; how can we provide the best value to our customers in an efficient and effective manner given several challenges that

we face? Some of these challenges include logistics, government policies, currency fluctuations, terrorist threats, and cultural diversity, etc. The answer to this question is not always straightforward and easy, and this no doubt requires balancing several costs, including monetary and social costs. Specifically, in a post-9-11 world, security has become a very important issue for most firms. How can we balance the costs of holding inventory against the cost of loss in capacity arising from plant shutdown in the event of a terrorist action? How should we respond to unanticipated natural disasters such as the SARS epidemic that ravaged much of Asia about 15 years ago, the 2011 *Tsunami* (Quake tidal waves) in Japan that led to great loss of lives and property and impacted global supply of certain parts, or hurricane *Katrina* that wrecked havoc in New Orleans about 14 years ago and yet another one in Louisiana in 2016 that led to 13 deaths and more than 100,000 damaged homes? How should firms deal with financial meltdowns such as the one experienced here in the United States in particular and also in the global economy starting from around 2008 until around 2013?

In this course, we will explore some key aspects of supply chain management and learn how some world-class firms have been able to leverage their supply chains to gain competitive advantage. For example, how has Toyota Motor Corporation been able to maintain good relationships with their suppliers? How has Dell Computer Company been able to promptly respond to its customers, while maintaining relatively low inventory levels and thus generating high inventory turns? How does Wal-Mart sustain its “Every Day Low Price (EDLP)” doctrine, outperforming most of its competitors in the retail business? How has Amazon been able to weather the storm to become a retail giant that is acknowledged even by Wal-Mart (the largest retailer in the world) and many related companies across the globe?

At the end of this course you are expected to:

- (1) Understand the characteristics and scope of supply chains and supply chain management
- (2) Understand the strategic implications of supply chain management in fostering a firm’s competitiveness in a global environment
- (3) Understand the importance of partnerships, coordination, and integration among entities in a supply chain
- (4) Understand the basic sources of risks in supply chains and how to manage them.
- (5) Understand the role information technology plays in the effective management of supply chains
- (6) Be able to critically assess supply chains, or parts thereof, with a view to suggesting appropriate improvements

- (7) Be able to position an innovative business venture in its appropriate supply chain, considering all relevant issues necessary for it to be successful.

Course Format

The course will involve lectures, case discussions, experiential exercise, video clip and a term project. The instructor will provide several reading materials for each topic. Some of them are required while others are optional. Going over the readings before the corresponding class meeting will greatly facilitate class discussions as well as your understanding of the course concepts. It is important to emphasize that participation is a very crucial part of this class; and therefore, the instructor encourages you to be very actively involved in the various aspects of the class.

You will find it useful to prepare a “reflection note” for the assigned reading materials and bring it to class for discussion purposes. There is no set format for the reflection notes, but they could be as follows. After having read the material, identify a couple of issues that are of particular interest to you, and put them in the context of your current or previous job. For example, questions such as these could be asked and addressed. How applicable is this concept to the company in which I am (was) employed? What are the pros and cons of implementing this policy or framework? In what ways do the approaches used by this individual or firm differ from what obtains in the company in which I am (was) employed and why? As a basic rule, the instructor will seek voluntary contributions from students. Sometimes, however, “cold calls” by the instructor may be inevitable if contributions disproportionately emanate from a few students.

The instructor will make PowerPoint lecture outlines available each week through the OU Moodle.

CLASS SCHEDULE
<p>Week 1: January 9</p> <p>Course Requirements & Preliminaries/Introduction to Supply Chain Management</p> <p>Video: Arnold Palmer Hospital’s Supply Chain</p> <p>Group Discussion 1: Impact of Protectionism on Supply Chains (the article below will be distributed in class)</p> <p><i>Industry Week (September 14, 2017): “Buy American, Hire American, How Renewed Protectionism is Reshaping Supply Chains”</i></p>

Week 2: January 16

Introduction to Supply Chain Management cont'd./Procurement and Supply Chains

Group Discussion 2: Come prepared for group discussion of the *SCMR* article below

Required Reading: *SCMR article*: “The Customer-centric Supply Chain”

Also, please search for job advertisements in newspapers, magazines, etc., and come prepared to discuss, in class, supply chain management job positions and their requirements and benefits.

(* Week 3: January 23

Procurement and Supply Chains cont'd.

Mini-Case 1: Supplier Development at Deere and Company

Required/Recommended Readings: Chapters 1 & 8 of SKS (*Recommended*);
HBR article: The New, Improved *Keiretsu*

Quiz 1 (Based on the required *HBR article* reading for January 23)

Optional Readings: *HBR article*: Building Deep Supplier Relationships
SMR article – Rethinking Procurement in the Era of Globalization

Week 4: January 30

Procurement and Supply Chains cont'd.

Harvard Business School Case: Domino’s Pizza (512004-PDF-ENG)

Homework Exercise 1 is due: Supply chain mapping exercise (See page 13 for details)

(Group case report and presentation by group A; individual case report is due for members of other groups)

Video: Ford Supplier Organization

Recommended Reading: Chapter 9 of SKS; Prepare above case

Optional Readings: *HBR article* – How to negotiate with powerful suppliers
SMR article – What happens when you outsource too much

Week 5: February 6

Planning and Design for Supply Chains

Required/Recommended Readings: Chapter 11 of SKS (*Recommended*);

HBR article: What is the right supply chain for your product?

Quiz 2 (Based on the required *HBR article* reading for February 6)

Optional Readings: *Michigan Academician Journal article:* Organizing Supply Chains for Japanese Automotive Transplants in the US; *European Journal of Operational Research article:* An Assessment of the Effect of Mass Customization on Suppliers Inventory Levels in JIT Supply Chain

Week 6: February 13

Planning and Design for Supply Chains cont'd.

Required/Recommended Reading: Chapter 2 of SKS (*Recommended*);

Prepare above case

Assignment Due: TSC Stores Case Problem Report

Optional Reading: *HBR article:* Rocket science retailing is almost here – Are you ready?

Important Note: Abstract of the term project is due by Friday, February 16th – please send it to the instructor by e-mail

Week 7: February 20

Winter Recess – No class

Week 8: February 27

Distribution in Supply Chains

Required Reading: *HBR article:* Fast, global, and entrepreneurial: supply chain management, Hong Kong style

Quiz 3 (Based on the required *HBR article* reading for February 27)

Review for Examination 1

(*) Week 9: March 6

Examination 1 (In-class Examination[@])

Remaining part of class time can be spent on the term project

Week 10: March 13

Distribution in Supply Chains cont'd.

Harvard Business School Case: Exel plc – Supply Chain Management at Haus Mart
(605080-PDF-ENG)

(Group case report and presentation by group B; individual case report is due for members of other groups)

Video: Logistics and Customer Service at FedEx

Recommended Reading: Chapter 7 of SKS; Prepare above case

Optional Reading: *BH article:* From garbage to goods

Week 11: March 20

Technology, E-business, and Supply Chains

Homework Exercise 2 is due: The Applichem case (To be provided by the instructor)

Required/Recommended Readings: Chapter 14 of SKS (*Recommended*)

SCMR article: Disruptive Technologies Enabling Supply Chain Evolution

BH article: Online Reverse Auctions: Common myths versus evolving reality

Quiz 4 (Based on the required article readings for March 20 – the *BH* and *SCMR* articles)

Optional Reading: *Production Planning and Control Journal article:* Electronic markets in support of procurement processes along the automotive supply chain

(*) Week 11: March 27

Supply Chain Collaboration, Integration, and Evaluation

Recommended Reading: Chapters 5 of SKS; Prepare the above case

Optional Reading: *HBR article* -- The Power of Virtual Integration: An interview with Dell Computer's Michael Dell.

Week 12: April 3

Supply Chain Collaboration, Integration, and Evaluation cont'd.

Game: Production/Distribution (Beer) Game

Assignment Due: Al-Kadi Commerce and Industry Case Problem Report

Required Reading: Chapter 6 of SKS (*Recommended*) and The Beer Game handout

Week 13: April 10

Global, Environmental, and Social Issues in Supply Chain Management

Also, Debrief of the Beer Game

Video: Green Manufacturing at Xerox

Harvard Business School Case: Renesas Electronics and the Automotive Microprocessor Supply Chain (A) [612071-PDF-ENG]

(Group case report and presentation by group C; individual case report is due for members of other groups)

Required Readings: *BH article:* Supply Chain Lessons from the Catastrophic Natural Disaster in Japan
Japanese Management and International Studies article: Green Economies and Green Processes and their Implications for Supply Chains.

Optional Reading: From superstorms to factory fires: Managing unpredictable supply-chain disruptions.

Week 14: April 17

Project Presentations

Also, Catch up and Final Review

Week 15:

Final Examination (In-class Examination)

[Exam date and venue according to OU schedule – Please confirm the date]

Notes:

- (1) *BH* stands for Business Horizon and *HBR* stands for Harvard Business Review. *SMR* is MIT's Sloan Management Review, while *SCMR* is Supply Chain Management Review. *SKS* stands for the recommended course text by Simchi-Levi, Kaminsky, and Simchi-Levi (Reading sections from *SKS* are recommended – not required)
- (2) The *BH*, *HBR*, *SCMR* and *SMR* articles will be made available in electronic form as course reserve materials through Krege library or through course website in Moodle. The instructor will also make available copies of articles not available through Krege library.
- (3) There are a total of five (5) cases that you will need for the course. For 3 of the cases, you will be presenting group and individual case reports, depending on whether your group is designated to make a presentation of the case on a given day. The group that presents provides a group report whereas each member of the other groups provides an individual report. The remaining two are case problems, which you should work together on as a group. These cases are all available from Harvard Business School Publishing. The instructor will send you information (possibly a link) in due course. This will enable you purchase the cases at a discounted price. Please arrange to obtain these cases **immediately**, so that you will not encounter difficulties when you need them for preparing your case reports.
- (4) You are to submit to the instructor, by e-mail, about one page abstract describing the supply chain you plan to study (or the business venture for project type II) and highlights of issues you would like to examine. Names of members undertaking the project should be indicated. (Due by Friday, February 16, 2018.)
- (5) (*) These dates relate to an alternative class arrangement. The instructor will discuss this with you on the first day of class. (@) There is the possibility of the examination been split, with a portion done at home and brought to class and the other portion done in class.

Evaluation for the Course

(1) Quizzes

Four (4) quizzes will be administered under closed-book/closed note format on the days shown in the schedule. The focus of the quizzes is the **required** article readings. The article(s) the quizzes are based on are as indicated in the class schedule. A quiz will last for about 10 minutes. It will be made up of true/false and/or multiple choice questions and/or short description-type questions. The essence of this component of the evaluation is to assure that you read and benefit from these articles.

(2) Examinations

There will be two examinations. Both of them will be closed-book, in-class examinations. While the first one covers all material preceding it, the second one covers all material studied in the course. You will be allowed to bring in 2-pages of handwritten notes (that is, notes written on two sides of a regular 8.5 inch by 11 inch paper) for the **second (final) examination**. Examinations comprise a mix of true/false, multiple-choice, short question-and-answer type questions, and mini-case analysis. There will be no computational problems.

(3) Case Analyses

There will be 3 assigned case analyses for which you need to provide individual and group case reports. These cases require your full participation. In general, the cases will be conducted at three levels. This format is meant to enrich the learning experience from each case.

First, each one of you (except those whose groups are designated to present the case of the day) is expected to prepare the case before the class it is scheduled for discussion. You are to come to class prepared to discuss the case, with a summary of your input, which should be 1-page in length (See guidelines below). One copy of your analysis, which will be graded, should be submitted to the instructor at the beginning of class. You are to retain one copy to facilitate discussion in your group.

Second, the class breaks out into the groups to further examine the case. The instructor *may* assign questions to facilitate your discussions. A summary report from each group will be submitted to the instructor at the end of the group discussions. This summary report should not contain all materials in the individual reports. Rather, it should contain new issues arising from the discussions, amplifications of major issues identified, as well as arguments and counter-arguments that were generated during the discussions within your group. This phase is meant to generate discussions from which members of the group will benefit and learn from each other. Therefore, you should highlight related issues in your company (or companies where you have worked previously). The report should include the similarities and differences between the issues in the case and a related one you encountered previously. How were the issues addressed in your place of work? Summary of these examples mentioned in the group discussion should be documented in the group report.

Finally, members of the group designated to make presentation of a given case are not required to provide individual case reports. Rather, the groups will each submit a more detailed case report to the instructor. Also, they will present the case to the entire class. The group making the presentation should summarize their analysis and recommendations (preferably 2 to 3 Powerpoint slides) as they present the case to the class. This group should plan on making the presentation within about 5-10 minutes. Other members of the class not belonging to the group presenting on that day will be given an opportunity to rate the designated groups based on content and presentation. These ratings will be used as a component for the grade for the group case (15% of the grade).

There is no such thing as “the right answer” to a case analysis. Nevertheless, it is extremely important that you provide compelling reasons to back your position. Reasons to back your position as well as related real-world encounters you have had (or examples you have read about in journals or newspapers, etc.), will be the main criteria for the evaluation of the group case reports. For the individual case reports, the evaluation will be based on the items in (a) below.

Guidelines for preparing the case reports

First, skim through the introductory paragraph, concluding paragraph, parts of the body of the case, as well as the case exhibits. Where applicable, attempt to identify the decision maker(s) (Who), the main issues involved (What), reasons for these issues (Why), the importance, and the degree of urgency in resolving them (When). Second, read the case more carefully. The issues would now have been reasonably well identified. Please note that a case may be largely descriptive in nature without any clear decision maker. It is still important to identify the key issues in the case. In addition to your report to be submitted to the instructor, you may also want to summarize additional information you gathered from the case that you would like to share with members of your group or with the class. (This additional part need not be submitted to the instructor).

(a) Individual Case Report (For groups not designated to present case on a given day)

Your individual case report should be focused. You need to do the following:

- (1) Identify the key persons (decision makers) in the case **[10 points]**
- (2) Outline the key issues that need to be addressed **[15 points]**
- (3) Identify information in the case exhibits that will facilitate decision making and briefly explain how **[15 points]**
- (4) State which issue(s) you consider to need urgent attention and why you think so. (If you think no issues need urgent attention, justify why you think so) **[10 points]**
- (5) Briefly describe how you -- as a manager -- will deal with the most important issue in the case and explain why you would use that approach **[20 points]**
- (6) State the most important lesson about Supply Chain Management that you learned from the case **[15 points]**
- (7) Error-free write-up that adheres to the prescribed format **[15 points]**

The format of the report should be 1-page (Single line spacing with Times New Roman 12 point font, and 1-inch margin on all sides). Your report will be graded on the basis of how well you have addressed the above questions; conformance to the format requirement as well as spelling and grammar. While 85% of the grade is for this individual case report, the remainder will be for the group report presented in the second phase when all members of your group discuss the case in class (This applies to all cases, except when time does not allow for group discussion in class).

(b) Group Case Report (For the group designated to present the case on a given day)

In writing the group report, please take the following into consideration. Provide a brief outline of the major issues (maximum of two) of the case. Attempt to put the case in your own context as a manager in the same setting. How would you address the issues and why? Is there information you need that is not provided? It is fine to make reasonable assumptions about such information -- you need to clearly state that they are assumptions. Relate the case to your previous or current experiences in your job, issues you became aware of through the print and broadcast media, etc. Avoid the temptation of merely repeating what has been written or said in the case. Plan the use of the 3-page (single line spacing with Times New Roman 12 point font, and 1-inch margin on all sides) wisely, including as much useful information as possible. You can include exhibits of your analysis to your report beyond the required 3 pages -- These should be referred to in the body of the report. Your report will be judged based on: understanding of the case, analysis, how compelling you have been in your perspectives, application, format, as well as presentation in class. Detailed explanations for these items are provided in Appendix A on pages 21 and 22. Your peers not belonging to your group will also evaluate your presentation. Weights of grade for this report are 80% and 20% for instructor and peers, respectively.

The rubric for grading the group case report is as follows: Understanding (**15 points**), Analysis (**20 points**), Perspectives (**25 points**), Application (**25 points**), Format (**15 points**).

(4) *Group Case Problems [To be submitted as a group]*

There are two case problems here that mirror actual experiences of two companies – one is based in Canada and the other is based in Saudi Arabia. These case problems should be worked on as a group.

(a) TSC Stores: Supply Chain Management for profitable growth

TSC Stores is a retail establishment with many stores in Canada and it seeks to develop a supply chain strategy to enhance its position in the market. The issues addressed in this case cover supply chain strategy, capacity planning, distribution planning, 3rd party logistics, and outsourcing, among others. The company has a distribution center that is segmented on the basis of the types of items that it can hold. It carries a broad range of stock-keeping units (SKU) items for which data is provided in the case exhibits. These data pertain to, among other things, the segmentation of the SKU's by nature of product (seasonal or otherwise), sections of the DC that they can be stored, as well as capacity analysis for various months over a 4-year period, 2007 to 2010.

Please note that there is not ONLY one correct solution to this problem. It is important that you come up with your own solution as a group and provide justification based on the analysis of pertinent data that is available. Identify possible alternatives and come up with valid reasons why your chosen approach is preferred. Here are some things to bear in mind. The company seeks to expand its operations in the next few years. How will this plan impact your decisions?

Should the company build more warehouses and if so, where should they be located? Should they use a 3rd party Logistics Firm (Outsourcing)? What benefits, if any, would they provide?

It is recommended that each member of the group first take a look at the problem and then develop some strategies for solving the problem. Thereafter, the group will come together to discuss and synthesize their results. Your deliverable for this assignment is a 4 to 5 page report detailing the major issues identified in the case, and how you have approached them. Times New Roman 12 point font should be used in preparing the report and there should be 1-inch margins on all sides. You can add as many exhibits of supporting graphs and tables as you deem appropriate, but these need to be identified and labelled consecutively in your report. Clearly describe possible alternatives and explain, based on analysis of pertinent data, which approach is best. If you feel that some data required for your analysis is missing, use reasonable estimates for your analysis (clearly stating that they are estimates and sources of information, where applicable). The report will be graded using the following rubric: Identification of pertinent issues in the case **(20%)**, Discussion of alternative solutions **(20%)**, Analysis of pertinent data **(20%)**, Justifications for your chosen approach and the impact it would have on the company **(25%)**; Grammar, Spellings, Flow and proper formatting of the report **(15%)**.

(b) Al-Kadi Commerce and Industry: Truck and Trailer Parts Division (Saudi Arabia)

This company which is based in Saudi Arabia manages a wide range of parts that it makes available to clients throughout the Gulf region. The company is currently facing some operations and supply chain challenges that border on inventory, warehousing, distribution matters, etc. It feels that its current strategy is not in the best interest of the company. As is typical with many companies, this company has competitors, and it naturally wants to stay ahead in the industry.

The company executives want you to assess their situation and help decide whether to use a centralized or decentralized strategy and to justify why you are recommending either one.

This is a multi-media case of a real world problem and it was prepared by some faculty members at IE business school based in Madrid, Spain (It is one of the leading Business Schools in Europe). It includes a pdf document of the case information as well as video that describes the scenario for the company. It also provides you with a map of Saudi Arabia that includes the pertinent information for the case analysis as well as animations for orders that are received from different countries. After reviewing all of these materials, you are provided with an opportunity to make your decision. As part of making the decision, several questions are asked along the way for which you need to provide answers and justifications. The system allows you to go through this process a number of times by clicking on the “restart” button. When you are completely done, you can click on the “print” button in order to print out your results.

Each member of the group should independently do this assignment. Thereafter, you should come together as a group to discuss your answers and then synthesize your results. Your synthesis should be a write-up that is 4-5 pages long

and that discusses your rationale for your decisions on centralization and decentralization, in particular, as well as in different areas. Even though the exercise allows only two possibilities, you can come up with a hybrid strategy that includes both – in this case, you need to clearly explain how this would be operationalized. The write-up should be double-spaced and in 12 points Times New Roman Font, with 1-inch margins on all sides. Please attach to your synthesis report, the printed report of each member of your group. The entire report will be graded by using the following rubric. Identification of pertinent issues in the case **(20%)**, Analysis of information provided **(20%)**, Brief Description of alternative approaches **(10%)**, Justifications for your chosen approach **(25%)**, Completeness of Attached reports for Individual Group Members **(10%)**; Grammar, Spellings, Flow and proper formatting of the report **(15%)**.

(5) Individual Homework Exercises [No collaboration is permitted]

(a) Supply Chain Mapping Exercise (HMEX1)

Map out any supply chain with which you are familiar. The supply chain may comprise manufacturing, service, for-profit, or not-for-profit organizations. In your map, depict the various entities and tiers, the flows of information, money, and goods/services. Your mapping will involve drawing, using suitable software or it may be done neatly by hand. Please provide brief comments either as an attachment or in the drawing itself. Also, indicate clearly if it is a supply chain that you have mapped out yourself or if you got it from a company report or document. Please identify all references. Grade would be based on quality, clarity, and completeness in line with the stipulated requirements provided here.

(b) Transportation Exercise (HMEX2)

This is a quantitative problem that describes the issue that Applichem experiences as part of a global supply chain network. Do the relevant calculations and present your analysis as well as answers to the questions provided for the case. Please refer to the Excel manual (Transportation Problem) that is provided through the course website to see how Microsoft Excel is used to address similar problems. Please refer to the last page of this syllabus for a statement of the problem and what needs to be done. This exercise should be done by yourself alone (No collaboration with classmates is allowed).

(6) Term Project

(A) Objective

- (1) To develop a deeper understanding of supply chain issues and the ramifications of their impact on supply chain performance

- (2) Propose recommendations for dealing with problem(s) or anticipated problems in supply chains and thus making them more competitive.

(B) Requirements

The instructor will require you to work in your designated group on a project throughout the semester. Some part of class time (about 30 minutes during 2 or 3 class sessions) will be allocated to enable you work on the project with other members of your group.

Your group may choose from one of the following two project options.

(I) Analysis of an actual (existing) supply chain segment

Here you will be conducting field research on an actual supply chain. Since most supply chains are very complex, comprising several links, it is sufficient to base your study on a portion of the chain. You are required to examine two or more inter-company links in the chosen supply chain. Examples include a Supplier/OEM/Distributor system, an OEM/Distributor/Retailer system, a Tier-2-Supplier/Tier-1-Supplier/OEM system, etc. These are some of the issues you should address (This listing is not exhaustive – please include other relevant issues as you deem appropriate):

- The characteristics of the product(s) and where the supply chain fits in “Fisher’s Supply Chain Grid”
- Map out this supply chain segment showing flows of information, goods/services, and money
- The nature of relationships among entities in the supply chain. Are they appropriate given the specific situations in the company/industry and nature of the products?
- What impact would coordination, collaboration, or integration have and what are some challenges to this being realized?
- What logistic strategy is currently adopted? Is there room for changes that could positively impact the supply chain?
- How does the supply chain respond to unanticipated events? Do you consider it to be resilient? If not, what might be done to make it resilient?
- How is the issue of outsourcing, offshoring, or reshoring currently addressed? Are there better approaches to dealing with them, and what are the ramifications?
- What metrics are currently used to assess performance? Are they appropriate or adequate? What suggestions do you have?
- Provide estimates of cost reduction or increase in revenue/profits that you anticipate from suggestions you make for improving the supply chain

Consider yourselves as consultants who will be providing expert advice. The study will require interviews with appropriate personnel in a manufacturing plant, retail store, or logistic service provider; e.g., plant manager, supply chain manager, procurement manager, etc. Your findings from the interviews should be documented in the appendix of your report. (If confidentiality is a concern, you may choose to use arbitrary names for

the companies.) A one-page abstract describing the supply chain segment you plan to study should be submitted to the instructor on the date indicated in the class schedule.

(II) Proposing an innovative business venture that will provide goods and/or services and addressing pertinent supply chain issues

Your team needs to come up with a business venture that will provide customers with a specific good and/or service. It is important that the venture be innovative and one that will capture a niche market. (Similar goods/ and or services may currently be in the market). You would need to provide justification in this respect by including pertinent information – based on data from public sources – suggesting that the business idea will not only survive but that it will flourish. Then position this business venture in its pertinent supply chain, indicating flows of information, goods and/or services, and money. Identify and explain the challenges you expect the supply chain to face. Discuss the supply chain in relation to pertinent topics covered in our supply chain management course. Specific items that should be addressed include (This is not an exhaustive listing – please include other relevant items as you deem appropriate):

- Provide a mission statement and clearly indicate the value proposition of the venture
- How will you address the issue of outsourcing, offshoring, or reshoring? Which aspects would you outsource or maintain and why?
- Indicate actual companies with which the venture will be connected in both the downstream and upstream sides of the supply chain, where applicable.
- What type of information technology will you use and how will it create competitive advantage for the supply chain?
- What metrics do you consider appropriate for assessing performance of the associated supply chain?
- How will you ensure that the supply chain is capable of responding to unanticipated events? Consider how to balance this against the cost of providing excess capacity.
- Describe plans of action and how and when they will be rolled out. Explain any assumptions you make and discuss contingency plans if anticipated plans of action do not materialize.

(C) Write-up

As far as format is concerned, you need to provide brief background information about the companies in the segment you are studying, including the products and processes. The article should be clearly and concisely written. (15 pages in length with 1.5 line spacing using Times New Roman 12 point font, 1-inch margin on all sides, not counting exhibits, illustrations, and questionnaire) There are no restrictions as to the number and title of sections, other than that the report should have an “Introduction” section, a “Recommendation” section (or Business case for providing the good and/or service for project type II), and relevant references. There should be two cover pages. The first one should have the names of the companies in the supply chain studied (or business venture for project type II) as well as the names of the authors. The second cover page should be

about 150-word executive summary that highlights what is addressed as well as the group's main recommendations (or business case for project type II).

(D) Presentation

You will be required to make a PowerPoint presentation (about 15 minutes) to the class on the date scheduled in the syllabus. It is highly desirable that one person makes the presentation on behalf of members of the group. If more people are making the presentation, please ensure that there is seamless flow during the presentation. The instructor and members of the class will ask you questions about your presentation. Any member of the group making the presentation is free to provide the answers.

(E) Assessment

Grades for this project will comprise the instructor's component (80%), within-group peer evaluation component (10%) and outside-group peer evaluation component (10%). The within-group peer evaluation is derived from peer assessment of contribution to the work while the outside-group peer evaluation and instructor's evaluation will be based on items such as: the design and execution of your study, analysis and recommendations for improving the supply chain studied (or for project type II, the innovativeness of the proposed business venture and how well pertinent supply chain issues are addressed), the oral presentation and answers to questions posed to the group. The instructor will provide a detailed template for these evaluations in due course.

Note: Please send the executive summary of your project report by e-mail to the instructor by 6:00 pm, Friday, April 13, 2018. The instructor will upload them to the course website. You can then download the executive summaries for all groups from that website and go over them before the day of the presentation. This arrangement is meant to facilitate evaluation of your project by other members of the class not belonging to your group. Please plan to arrive in class with your PowerPoint files by 6:15 pm on Tuesday, April 17, 2018. Hard copy version of the project report is also due at the beginning of class on Tuesday, April 17, 2018.

(6) *Class Participation*

Participation includes assigned in-class activities as well as your contribution to in-class discussions. Sometimes, the instructor may ask you to do an assignment in class or to investigate an issue and provide a report during the next class meeting. Points awarded for such activities will count toward class participation and there will be no make-up for them.

Towards the end of the semester, the instructor will ask you to name *at most* 3 of your colleagues whom you consider to have made the best contributions to the class discussions during the semester. Furthermore, you will be asked to rate members of your group on their contributions to group discussions throughout the semester. In addition to his own assessment, the instructor will make use of these pieces of information from peers when determining the class participation grade for each student. In order to ensure

integrity in peer assessment, the instructor will ask you to provide explanation for the points you award to a fellow student.

The weights of the various components for the evaluation are as follows:

Quizzes: 3 x 30 points = 90 points (Grades for the best 3 out of the 4 quizzes)

Examinations: (Exam 1 = 160, Exam 2 = 250) = 410 points

Case Analyses (Group): 30 x 1 = 30 points

Case Analyses (Individual): 30 x 2 = 60 points

Case Problems (Group): 45 x 2 = 90 points

Individual Homework Exercises: *Exercise 1* (20 points), *Exercises 2* (60 points)

[Total = 80 points]

Term Project: 120 points

Class Participation: 120 points

Total Number of points = 1000 points

As you can see above, examinations and quizzes comprise a total of 50% of the overall grade. This is the standard (Scheme A) that will be applied to all students. However, the instructor will allow each student to opt for one of FOUR other possible schemes. You could choose scheme B, C, D, or E with weights of 30%, 40%, 60%, and 70% respectively for examinations and quizzes, while the remainder would be for all other evaluation items. The student needs to inform the instructor in writing no later than February 6, 2018, indicating which scheme he/she desires to be used instead of Scheme A, the standard scheme. The instructor is offering this flexibility in grade weighting structure in order to accommodate students who have different strengths. For example, some students believe that they can do better on the written examinations and quizzes as compared to some of the other items – such as cases – for which appropriate work experience is valuable. On the other hand, others believe that they have significant relevant work experience, and thus would prefer to be weighted less on the examinations and quizzes. Again, please note that the standard scheme A will be used for any student who does not respond by February 6, 2018. Final Grade Points will be determined using the adjusted OU grade system shown below. My understanding is that OU is working on a new grading system. When that one is approved, that would supersede this one. The instructor will inform you promptly, as appropriate.

Grade Point	Score	Grade Point	Score
4.0	945.0 and above	2.4	720.0 –729.9
3.9	935.0 – 944.9	2.3	710.0 –719.9
3.8	918.0 – 934.9	2.2	700.0 –709.9
3.7	899.0 – 917.9	2.1	690.0–699.9
3.6	883.0 – 898.9	2.0	680.0 –689.9
3.5	867.0 – 882.9	1.9	670.0 –679.9
3.4	850.0 – 866.9	1.8	660.0 –669.9
3.3	825.0 – 849.9	1.7	650.0 – 659.9
3.2	810.0 – 824.9	1.6	640.0 – 649.9
3.1	795.0 – 809.9	1.5	630.0 – 639.9
3.0	780.0 – 794.9	1.4	620.0 – 629.9
2.9	770.0 – 779.9	1.3	610.0 – 619.9
2.8	760.0 – 769.9	1.2	600.0 – 609.9
2.7	750.0 –759.9	1.1	590.0 – 599.9
2.6	740.0 –749.9	1.0	580.0 – 589.9
2.5	730.0 –739.9	0.0	Below 580.0

Class Administration Issues

- (1) The instructor considers class attendance and active participation to be very important. Participation, which includes doing in-class exercises and contribution to in-class discussions, will be graded. I recognize that, as graduate students, many of you work for companies, who sometimes send you out on job-related trips. Such absences are not helpful to you as far as this class is concerned. Therefore, please discuss with your employers so that you can keep those to a minimum during the course of the semester. If, while you are away, an assignment is due, please send it to me by e-mail, so that it fulfills the due-date requirement. You are only allowed one excused absence for activities done in class while you are away for such trips.

If you are absent because you are sick or as a result of an emergency in your family (such as death), please let me know (provide appropriate documentation such as doctor's note). The instructor will on that basis of the documentation give you a make-up test or excuse you for that class. That is, there will be no penalty for missed in-class activity. However, assignments that have pre-determined due dates are typically not excused. The reason is that you can plan ahead of time, complete the assignment, and send it by e-mail to the instructor by the due-date.

- (2) Please take full advantage of the office hours. You may arrange alternative times with the instructor if the designated times are not suitable for you.
- (3) If you have any concerns, please feel free to send an e-mail or arrange to discuss with the instructor. Also, if you have questions about your grades, arrange to discuss with the instructor outside class time.

- (4) Anyone with disabilities requiring special accommodation should inform the instructor as soon as possible.
- (5) The term-project and assignments should be turned in at their due-dates. Except for cases of illness or emergencies, grade penalty will apply. An assignment turned in late will suffer “*grade decay*” at the rate of 20% loss for every day it is late. Late submission is not allowed for the case reports since they would be discussed in class on the same day. If you know you would be absent from class on a day when an assignment is due, then send it by e-mail to the instructor as a record that you met the deadline.
- (6) The examinations and before-class case preparation reports should be strictly individual work. You may meet with others to discuss the cases, but your report should be unique, and it should show that you understand the cases and how to address the issues.
- (7) Oakland University’s policy on academic misconduct will be enforced. Please be familiar with the terms. Cheating, plagiarism, and submitting portions of a paper (or all parts of a paper) meant for, or already used for another class or previous semester for this class, are some examples of acts that are prohibited. A student involved in academic misconduct will earn a failing grade for the course. This is in addition to any penalties that will be imposed by OU’s Academic Conduct Committee.
- (8) We operate in an academic environment where it is especially important for freedom of expression of your thoughts as they pertain to the materials being discussed. In light of this, you do not need to agree with the professor’s opinion or those of your classmates. Nevertheless, it goes without saying that in order to create an environment that is conducive for learning, caution should be exercised to ensure that you show respect to your professor and fellow classmates, even if you do not agree with their points of view.

Some Useful Reference Books

- (1) Principles of Supply Chain Management: A balanced approach, 2005, by Joel Wisner, Keong Leong, and Keah-Choon Tan (Thomson).
- (2) The Toyota Way: 14 Management Principles from the World’s Greatest Manufacturer, 2004, by Jeffrey Liker (McGraw Hill).
- (3) Streamlined: 14 Principles for Building and Managing the Lean Supply Chain, 2004, by Mandyam Srinivasan (Thomson).
- (4) Supply Chain Redesign: Transforming Supply Chains into Integrated Value Systems, 2002, by Robert Handfield and Ernest Nichols (Prentice Hall).

- (5) Supercharging Supply Chains: New Ways to Increase Value Through Global Operational Excellence, 1998, by Gene Tyndall, Christopher Gopal, Wolfgang Partsch, and John Kamauff (Wiley).
- (6) The Machine that Changed the World, 1991, by James P. Womack, Daniel T. Jones, and Daniel Roos (Harper-Collins, New York.)

Some Useful Web links

- (1) Industry Week: <http://www.industryweek.com/>
 - (2) Stanford Global Supply Chain Forum: <http://www.stanford.edu/group/scforum/>
 - (3) Supply Chain Management Review: <http://www.scmr.com/>
 - (4) Supply Chain Brain: <http://www.supplychainbrain.com/content/index.php>
- Vyas, N. (2016). Disruptive technologies enabling supply chain evolution. *Supply Chain Management Review*, 20(1), 36-41.

Listing of Required and Optional Readings for the Course

- (1) DiGregorio, C. (2017). Buy American, hire American: How renewed protectionism is reshaping supply chains. *Industry Week*, September.
- (2) Melnyk, S. A., & Stanton, D. J. (2017). The customer-centric supply chain. *Supply Chain Management Review*, 21(7), 28-37.
- (3) Vyas, N. (2016). Disruptive technologies enabling supply chain evolution. *Supply Chain Management Review*, 20(1), 36-41.
- (4) Paranikas, P., Whiteford, G., Tevelson, B, and Dan, B. (2015) “How to Negotitate with Powerful Suppliers, *Harvard Business Review*, July-August.
- (5) Simchi-Levi, D., Schmidt, W., & Wei, Y. (2014). From superstorms to factory fires: Managing unpredictable supply-chain disruptions. *Harvard Business Review*, 92, 96-101.
- (6) Aoki, K., & Thomas, T. L. (2013). The new, improved keiretsu. *Harvard Business Review*, 91, 109-113.
- (7) Park, Y., Hong, P., and Roh, J. (2013) “Supply Chain Lessons from the Catastrophic Natural Disaster in Japan” *Business Horizons*, 56, pp. 75-85.

- (8) Aigbedo, H. (2011) "Green Economies and Green Processes and their Implications for Supply Chains" *Japanese Management and International Studies*, pp. 139-154.
- (9) Zirpoli, F. and Becker, M. (2011) "What Happens When You Outsource Too Much?" *Sloan Management Review*, January, pp. 60-64.
- (10) Butter, F. and Linse, K. (2008) "Rethinking Procurement in the Era of Globalization" *Sloan Management Review*, Fall, Vol.50 (1), pp. 76-80.
- (11) Aigbedo, H. (2007) "An Assessment of the Effect of Mass Customization on Suppliers Inventory Levels in a JIT Supply Chain" *European Journal of Operational Research*, Vol. 181, pp. 704-715.
- (12) Senter, R. and Flynn, M. (2007) "Organizing Supply Chains for Japanese Automotive Transplants in the United States" *Michigan Academician*, Vol. 38 (1-3), Spring, pp. 93-115.
- (13) Schoenherr, T. and Mabert, V. (2007) "Online Reverse Auctions: Common myths versus evolving reality" *Business Horizons*, Vol. 50, pp. 373-384.
- (14) Aigbedo, H. and Tanniru, M. (2004) "Electronic markets in support of procurement processes along the automotive supply chain," *Production Planning and Control*, October, 15(7), pp. 688-695.
- (15) Liker, J. and Choi, T. (2004) "Building deep supplier relationships," *Harvard Business Review*, December, 82(12), pp. 104-113.
- (16) Ferrer, G. and Whybark, D. (2000) "From garbage to goods: successful remanufacturing systems and skills," *Business Horizons*, November-December, 43(6), pp.55-64.
- (17) Fisher, M., Raman, A., and McClelland, A (2000) "Rocket science retailing is here: are you ready?," *Harvard Business Review*, July-August, 78(4), pp.115-124.
- (18) Fung, V. and Magretta, J. (1998)"Fast, global, and entrepreneurial: supply chain management, Hong Kong style, An Interview with Victor Fung," *Harvard Business Review*, September-October, 76(5), pp. 102-114.
- (19) Dell, M. and Magretta, J. (1998) "The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell" *Harvard Business Review*, Vol. 76 (2), pp. 72-84.
- (20) Fisher, M. (1997) "What is the right supply chain for your product?" *Harvard Business Review*, March-April, 75 (2), pp. 105-116

Appendix A

Case Report Items (Group Case Reports)

Understanding

From the information presented in the report, the instructor attempts to find out to what extent the group understands the issues presented in the case. If the group portrays the case as saying something different from what it actually says, then that will negatively impact the grade. It is perfectly fine to make reasonable assumptions about information not provided in the case, but the fact that they are assumptions should be made clear. Here, you need to also demonstrate what you have learned about Supply Chains and Supply Chain Management from the case.

Analysis

This aspect relates to how you break down or pull together different aspects of the case. For example, it includes your assessment of qualitative and/or quantitative information in discussing the case (e.g., income statements, organizational chart, etc.). The degree of importance of the issues and the urgency in resolving them should also be noted.

Perspective

In some cases, there is a key figure (figures) that need(s) to make the decision(s). How would you as a manager in that situation act given the circumstances presented in the case? You should also briefly provide explanation as to why you would act that way. In cases where there is no clear key figure, select an issue that you consider to be very important and provide your own perspective on that issue. (As long as the perspective is logical, there is no right or wrong answer here. The emphasis is on the extent to which you have been persuasive about your approach.)

Application

Relate any aspect of the case to an issue you have encountered in the companies where you currently work (or previous companies where you have worked). How were the problems addressed and why? In cases where no member of the group has directly encountered the issue in their workplace, then application would be based on something similar read about in reputable magazines/business periodicals or heard about in the broadcast media.

Format

This aspect relates to the extent to which the prescribed format has been followed. This includes font type, page length, margins, and grammar. A simple spelling mistake is usually not penalized, except if there are several in the report.

Note

The report does not need to have the above points presented in a particular order -- it is desirable to first present the main issues of the case before other aspects. Sometimes, the instructor finds that students weave multiple aspects together while discussing the case. This is perfectly acceptable because he does not want to stifle creativity in writing by being rigid about the order in which they are discussed. When they are weaved together it takes a little more effort on his part to assess to what extent the different aspects have been addressed – This is however not a problem at all.

I should mention that grading case reports does have subjective elements. The above guideline is an attempt to help the instructor to be more objective and to provide fair grades to students. Please feel free to contact me if you have any questions regarding any of the above points.

CASE: APPLICHEM—THE TRANSPORTATION PROBLEM

Applichem management is faced with the difficult problem of allocating to its customers the capacity of manufacturing plants that are located around the world. Management has long recognized that the manufacturing plants differ greatly in efficiency but has had little success in improving the operations of the inefficient plants. At this time, management has decided to focus on how best to use the capacity of its plants given the differences in manufacturing costs that currently exist. They recognize that this study may result in the significant reduction of output or possibly the shutting down of one or more of the existing plants.

Applichem makes a product called Release-ease. Plastics molding manufacturers use this chemical product. Plastic parts are made by injecting hot plastic into a mold made in the shape of the part. After the plastic has sufficiently cooled, the fresh part is removed from the mold and the mold is then reused to make subsequent parts. Release-ease is a dry powder, applied as part of the manufacturing process, that makes it easy to remove the part from the mold.

Applichem has made the product since the early 1950s, and demand has been consistent over time. A recent study by Applichem's market research team has indicated that demand for Release-ease should be fairly steady for the next five years. Although Applichem does have some competition, particularly in the European markets, management feels that as long as they can provide a quality product at a competitive cost, customers should stick with Applichem. Release-ease sells at an average price of \$1.00 per pound.

The company owns plants capable of making Release-ease in the following cities: Gary, Indiana; Windsor, Ontario, Canada; Frankfurt, Germany; Mexico City, Mexico; Caracas, Venezuela; and Osaka, Japan. Although the plants are focused on meeting demand for the immediate surrounding regions, there is considerable exporting and importing of product for various reasons. The following table contains data on how demand has been met during the past year:

PRODUCT MADE AND SHIPPED DURING PAST YEAR (× 100,000 POUNDS)

FROM/TO	MEXICO	CANADA	VENEZUELA	EUROPE	UNITED STATES	JAPAN
Mexico City	3.0		6.3			7.9
Windsor, Ontario		2.6				
Caracas			4.1			
Frankfurt			5.6	20.0	12.4	
Gary					14.0	
Osaka						4.0

Differences in the technologies used in the plants and in local raw material and labor costs created significant differences in the cost to produce Release-ease in the various locations. These costs may change dramatically due to currency valuation and labor law changes in some of the countries. This is especially true in Mexico and Venezuela. The capacity of each plant also differs at each location, and management has no interest in increasing capacity anywhere at this time. The following table gives details on the costs to produce and capacity of each plant:

PLANT PRODUCTION COSTS AND CAPACITY

PLANT	PRODUCTION COST (PER 1,000 LBS)	PLANT CAPACITY (× 100,000 LBS)
Mexico City	95.01	22.0
Windsor, Ontario	97.35	3.7
Caracas	116.34	4.5
Frankfurt	76.69	47.0
Gary	102.93	18.5
Osaka	153.80	5.0

In considering how best to use the capacity of its plants, Applichem management needs to consider the cost of shipping product from one customer region to another. Applichem now commonly ships product in bulk around the world, but it is expensive. The costs involved are not only the transportation costs but also import duties that are assessed by customs in some countries. Applichem is committed to meeting demand, though, and sometimes this is done even though profit might not be made on all orders.

The following table details the demand in each country, the cost to transport product from each plant to each country, and the current import duty rate levied by each country. (These percentages do not reflect current duties.) Import duty is calculated on the approximate production plus transportation cost of product brought into the country. (For example, if the production and shipping cost for 1,000 pounds of Release-ease shipped into Venezuela were \$100, the import duty would be $\$100 \times .5 = \50 .)

TRANSPORTATION COST (PER 1,000 LBS), IMPORT DUTIES, AND DEMANDS FOR RELEASE-EASE

PLANT/COUNTRY	MEXICO	CANADA	VENEZUELA	EUROPE	UNITED STATES	JAPAN
Mexico City	0	11.40	7.00	11.00	11.00	14.00
Windsor, Ontario	11.00	0	9.00	11.50	6.00	13.00
Caracas	7.00	10.00	0	13.00	10.40	14.30
Frankfurt	10.00	11.50	12.50	0	11.20	13.30
Gary	10.00	6.00	11.00	10.00	0	12.50
Osaka	14.00	13.00	12.50	14.20	13.00	0
Total demand (×100,000 lbs)	3.0	2.60	16.0	20.0	26.4	11.9
Import duty	0.0%	0.0%	50.0%	9.5%	4.5%	6.0%

QUESTIONS

Given all these data, set up a spreadsheet (Applichem is a start) and answer the following questions for management:

- 1 Evaluate the cost associated with the way Applichem's plant capacity is currently being used.
- 2 Determine the optimal use of Applichem's plant capacity using the Solver in Excel.
- 3 What would you recommend that Applichem management do? Why?