INTRODUCTION TO OPERATIONS MANAGEMENT
Improving Competitiveness in Organizations

Business Management 630
Winter Quarter 2006
Tuesday/Thursday 5:30 pm – 7:18 pm
Schoenbaum Hall (SB) 0230

INSTRUCTOR:   Steven Dickstein
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PHONE:   (614) 292-4600
E-MAIL:   dickstein_2@cob.osu.edu
OFFICE HOURS:    Tuesday and Thursday 3:30 to 5:00; Wednesday afternoon by appointment

TEXTS


Supplementary Course Packet, available at Copez at Tuttle Park Place (2055 Millikin Way) next to the Parking Garage and OSU bookstore. The packet contains class notes, exercises, and cases. This packet is an essential aid for the lectures and preparing for the exams.

Learning to See: Rother and Shook, The Lean Enterprise Institute, (ISBN # 0-9667843-0-8).

Course web address: http://fisher.osu.edu/departments/management-sciences/courses/bm630

COURSE OBJECTIVES

Operations management is an effective competitive weapon that when used in conjunction with well-conceived marketing and financial plans creates value for customers. The core competency of many world-class organizations such as Federal Express, General Electric, Ritz-Carlton, and Wal-Mart is superior operations and logistics management. This course is designed to address the key operations and logistical issues in service and manufacturing organizations that have strategic as well as tactical implications. The specific objectives include:

1. To understand the role of operations management in the overall business strategy of the firm.
2. To understand the interdependence of the operating system with other key functional areas of the firm.
3. To identify and evaluate the key factors and the interdependence of these factors in the design of effective operating processes and systems.
4. To identify and evaluate a range of tools appropriate for analysis of operating systems of the firm.
5. To understand the application of operations management policies and techniques to service sector as well as manufacturing firms.

The sessions are designed to promote student participation through the discussion of current events in the business world as they relate to operations management and in-class case analysis.
DISABILITY ACCOMMODATION

If you need an accommodation based on the impact of a disability, please arrange an appointment with me as soon as possible. We need to discuss the course format and explore potential accommodations. I rely on the Office for Disability Services for assistance in verifying need and developing accommodation strategies. You should start the verification process as soon as possible.

EVALUATION

Your course grade will be determined in the following way:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Group Case 1</td>
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<tr>
<td>Midterm Exam</td>
<td>30%</td>
<td>February 8th</td>
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<tr>
<td>Group Case 2</td>
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<tr>
<td>Final Exam</td>
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<td>March 15th</td>
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<td>Class Participation</td>
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<td>Organization Meetings*</td>
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<td><strong>Total</strong></td>
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An important part of the course is the effectiveness of your individual participation in class discussions. While we expect a minimum level of participation by every member of the class, we will place primary emphasis on the quality of the classroom contributions. In grading class performance, we will give very little emphasis to redundant or extraneous contributions. Contributions that add new insights into case issues or class discussions or which build on the work of others in advancing the discussion will be rewarded.

*Extra Points*: Students have the opportunity to earn a maximum of 3 additional percentage points towards their final course grade by attending meetings of either the OSU Purchasing and Supply Management Association (http://www.osupsma.com) or the American Production and Inventory Control Society (http://www.apics.org/default.htm). You will be awarded 1 point for each meeting that you attend. It is absolutely the student’s responsibility to ensure that the professor is provided with proper documentation of their attendance at the meetings.

EXAMINATIONS

- The exams are closed book, closed notes.
- Formula sheets (included in the student course packet) are given on the exams.
- Each exam will be a combination of conceptual questions and problem solving. The material could be based on anything covered in the lecture, text, other assigned readings, video, or guest presentations.
- Each student must bring their own calculator and writing instruments. Sharing of materials is prohibited.
- **NO MAKE-UP, LATE OR EARLY EXAMS WILL BE GIVEN**, except in the case of medical emergency. Business related absences are not excused. Students should make arrangements now to avoid time conflicts.
- Each exam is **100 minutes** in length. Each exam covers about ten classes and the exams are NOT comprehensive.
- The exams are to represent only the work of the individual student. No outside assistance (discussion with peers, cheat sheets, etc.) is permitted. See below for discussion on academic misconduct.
ACADEMIC MISCONDUCT

Any material submitted for course credit must be your own work if it is an individual-based assignment or the work of your team if it is a group-based assignment. Students are not permitted to discuss, read, etc. the work, thoughts, and ideas regarding the case or exams with other students (or another team for case work). If outside references are used, they must be properly referenced. Also, with the case work, it is recommended that you take action to protect your work, such as collecting your materials from the lab printers and disposing of rough drafts at home. Case write-ups that are similar to current or past case write-ups may initiate serious disciplinary action, so please do your own work as an individual or, when required, as a team.

Academic misconduct is a serious threat to the integrity and value of your degree.

Procedures:
1. Suspected cases of academic misconduct will be reported to the University Academic Misconduct Committee.
2. Typical penalties include an E in the course and disciplinary probation for a first offense and dismissal from the University for a second offense.

COURSE OUTLINE

INTRODUCTION TO OPERATIONS MANAGEMENT AND OPERATIONS STRATEGY

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Text Book References</th>
<th>Supplementary Packet</th>
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<tbody>
<tr>
<td>01/03</td>
<td>Course Introduction, Operations Management, and the Role of the Operations Manager</td>
<td>Managing Operations (Terry Hill Ch. 1)</td>
<td>Supplementary Packet (SP)</td>
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<td>Video: The Goal</td>
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<td>Review Syllabus and Course Requirements</td>
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<td>01/05</td>
<td>Manufacturing Process Choice</td>
<td>Designing Manufacturing Processes</td>
<td>Supplementary Packet (SP)</td>
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<td>(Terry Hill, Ch. 6 &amp; Ch. 2)</td>
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<td>Video King Soopers Bakery</td>
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<td>01/10</td>
<td>Operations Strategy Framework</td>
<td>Operations Strategy (Terry Hill, Ch. 2)</td>
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<td>Case: Min Yo Garment Co.</td>
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<td>01/12</td>
<td>Service Delivery Systems</td>
<td>Designing Service Delivery Systems</td>
<td>Supplementary Packet (SP)</td>
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<td>(Terry Hill, Ch. 5)</td>
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<td>Case: McDonald’s</td>
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<td>01/17</td>
<td>No class scheduled – Martin Luther King Day</td>
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PROCESS ANALYSIS AND IMPROVEMENT

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<tr>
<td>01/19</td>
<td>Value Stream Mapping – Current State Map and Takt Time</td>
<td>Getting Started and Current State Map</td>
<td>Learning to See, Parts 1, 2, &amp; 3(pp. 41-44)</td>
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<td>Case: The Case of the Pencil Pushing Process (A)</td>
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<td>Supplementary Packet (SP)</td>
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01/24  Implementing Lean Processes and the Future State Map
 Lean Value Stream Learning to See, Part 3 & 4
 Video: Implementation of JIT at Tri-State Supplementary Packet (SP)
 Case The Case of the Pencil Pushing Process (B)

01/26  Mapping Business Processes
 Class Reading: Industrial Strength – Lean Services Supplementary Packet (SP)
 Case The Case of the Pencil Pushing Process (B)

01/31  Process Management and Improvement
 Class Reading: The Lean Service Machine Supplementary Packet (SP)
 Group Case 1 Due: Process Mgt & Improvement Exercise Supplementary Packet (SP)

QUALITY IMPROVEMENT

02/02  Total Quality Management
 Managing Quality Custom Text Ch. 1
 Quality Control and Improvement Custom Text Ch. 2
 Video: Quality at Honda Supplementary Packet (SP)
 Case: Jose’s Authentic Mexican Restaurant Supplementary Packet (SP)

02/07 No regularly scheduled class

02/08  Common Midterm Exam – To cover material from 1/03 through 1/31, 7:30 pm – 9:18 pm
 Location: TBA

02/09 No regularly scheduled class

02/14  Statistical Process Control – Tools
 Midterm Post Review Custom Text Ch. 2
 Quality Control and Improvement Custom Text Ch. 2
 Video: SPC at Honda Custom Text Ch. 2
 Homework: 11, 13

02/16  Statistical Process Control - Application
 Class Reading: Decoding the DNA of the TPS Supplementary Packet (SP)
 Group Case 2 Due: Amore Frozen Foods Supplementary Packet (SP)

PROJECT MANAGEMENT

02/21  Project Management
 Project Management Custom Text Ch. 3
 Class Reading: New You Beverage Company Supplementary Packet (SP)
 Class Exercise: Scheduling the Project Activities (Case 2) Supplementary Packet (SP)
 Homework: 4b and 5b Supplementary Packet (SP)
 ** For Homework Problems, use the AON format**
## SUPPLY CHAIN MANAGEMENT IN OPERATIONS

<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Reading/Exercise</th>
<th>Notes</th>
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<tbody>
<tr>
<td>02/23</td>
<td>Supply Chain Management Overview</td>
<td>Supply Chain Management</td>
<td>Custom Text Ch. 4</td>
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<td>Class Reading: What is the Right Supply Chain for For Your Product?</td>
<td>Supplementary Packet (SP)</td>
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<td>Video: Inventory and Textbooks</td>
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<td>Case: Zara</td>
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<td>Supplementary Packet (SP)</td>
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<td>02/28</td>
<td>Inventory Management in Supply Chains I</td>
<td>Inventory Management- Types of Inventory</td>
<td>Custom Text Ch. 5</td>
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<td>Class Exercise: The Gaming Company</td>
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<td>Supplementary Packet (SP)</td>
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<tr>
<td>03/02</td>
<td>Inventory Management in Supply Chains II</td>
<td>Inventory Management- EOQ, Continuous Review</td>
<td>Custom Text Ch. 5</td>
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<tr>
<td></td>
<td>Homework: Problems 8, 11, 12</td>
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<td>Custom Text Ch. 5</td>
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<tr>
<td>03/07</td>
<td>Supply Chain Systems Improvement</td>
<td>Class Reading: Inventory Driven Costs</td>
<td>Supplementary Packet (SP)</td>
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<td>Group Case 3 Due: Norton Auto Supply</td>
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<td>Supplementary Packet (SP)</td>
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<td>03/09</td>
<td>Sourcing – Buyer / Supplier Relationships</td>
<td>Class Reading: Buyer/Supplier Relationships</td>
<td>Supplementary Packet (SP)</td>
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<td>Group Case 4 Due: Spin Master Toys (A)</td>
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<td>Supplementary Packet (SP)</td>
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<td>ALSO DUE: Peer Evaluation of your group (team) turned in to instructor.</td>
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<tr>
<td>03/15</td>
<td>Common Final Exam: To cover material from 02/02 through 03/09; 7:30 pm – 9:18 pm</td>
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<td>Location: TBA</td>
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**Note:**
Syllabus subject to minor changes at the instructor’s discretion.

### GUIDELINES FOR THE CASE ANALYSES

The purpose of the case assignments is to provide the student with an opportunity 1) to communicate their analysis of a situation in a clear and professional manner, 2) to learn effective team-working skills to analyze and solve a business problem.

**Strategic Guidelines for the content of the paper:**

- Assume that the reader knows the basic facts of the case. They do not need to be repeated.
- Apply what you have learned in this course. Consider ideas from the lectures, textbook, and supplementary packet.
- Address each question in the text of the paper. Suggestions on how to address each question:
  1) Understand the problem
  2) Brainstorm for alternatives
  3) Analyze the alternatives from both a quantitative and a qualitative point of view
  4) Develop recommendation(s) and support it.
You may also want to discuss the alternatives you did not chose and why.

NOTE: There are many benefits to debating with your team regarding the various viewpoints of the case. Work with the different viewpoints to develop a more comprehensive analysis.

- Exhibits are strongly encouraged. Be creative. The benefits are:
  1. They help students organize their thoughts,
  2. They permit students to apply what they have learned in class,
  3. They quickly provide the instructor with an overview of the students’ level of understanding, and
  4. They permit the students to concisely provide details of their analysis without detracting from the main message of their report.

- Teamwork can be challenging. Recognize that each individual will bring different strengths to the team. Use it to your advantage.

**Technical Guidelines:**

- Each group should consist of approximately 4 students.
- Each group will submit **2 case analyses from the 4 possible group cases.**
- Each group will submit to the Instructor by the end of the first week of class their selection of which 2 cases they would like to do. The Instructors will distribute assigned cases by the end of the second week.
- **NO LATE REPORTS WILL BE ACCEPTED.** They are due at the **beginning** of the class.
- Papers are to be concise, grammatically correct and free of spelling errors.
- Papers should be composed on word processing software and printed in an easily readable form.
- Each report should be a **MAXIMUM OF 3 PAGES**, double spaced, 12-point font with normal margins. A maximum of 5 exhibits may be appended and should be referred to within the text.
- Exhibits based on mathematical calculation should include a footnote with the formula(s).
- Discussion of assignments with any student either in your class or not in your class, with the exception of students in your case study group, constitutes two types of academic misconduct: (1) unauthorized collaboration; (2) giving and/or receiving aid in an unauthorized manner. See section on Academic Misconduct for further discussion.
- Memos should begin with a heading similar to the following:

  Date: Due date  
  From: Name of students in group/team (alphabetical order)  
  To: Instructor's name  
  Subject: Case title, e.g., XYZ, Inc.

**CASE ASSIGNMENT QUESTIONS**

- **McDonald’s** (SP)
  1. What are the key order winners and order qualifiers for the markets served by McDonald’s?
  2. Analyze the key steps in McDonald’s service delivery process. Classify each aspect of the process as front office or back office activity.
  3. What impact will the “Made for You” change have on the existing service delivery system?
  4. What, if any, changes would need to be made to the existing service delivery process in order to effectively support the “Made for You” initiative?

- **Min-Yo Garment Company** (SP)
  1. Describe and discuss the market requirements in each of the markets served by the firm.
  2. Describe and discuss the current manufacturing strategy adopted by the firm.
  3. Discuss any strategic issues that you think the firm faces in its market(s). Use case facts and data to support your arguments.
• **Case of the Pencil Pushing Process A (SP) – Current State**

Answer Questions at the end of the case

• **Case of the Pencil Pushing Process B (SP)**

Answer Questions at the end of the case

• **Case of the Pencil Pushing Process C (SP)**

Answer Questions at the end of the case

• **Case of the Pencil Pushing Process D (SP)**

Answer Questions at the end of the case

• **The Lean Service Machine (SP)**

1. What were the motivations driving Jefferson Pilot to the lean methodologies?
2. Identify the key lean principles used by JPF to improve their business processes.
3. What were the key elements to JPF’s roll-out plan?
4. What benefits were achieved via their lean initiative?

• **Process Management and Improvement Exercise (SP)**

1. Pick an important process from your business or personal experiences. This process is one that you and your group members believe should be targeted for a major process improvement initiative. Please describe the process, the key suppliers, and the key customers.
2. Identify process improvements that would significantly reduce either the cost or time of completing the production or service process.
3. Identify any non-value-added steps that could be eliminated and discuss ways to eliminate them.
4. Draw a current state map of the process.
5. Draw a future state map that identifies your vision of how the process ideally should be operated.
6. What steps do you recommend be implemented in order to make these improvements?

• **Jose’s Authentic Mexican Restaurant (Textbook)**

Answer Questions at the end of the case

• **Decoding the DNA of the Toyota Production System (SP)**

1. Why is Toyota so difficult to imitate despite being very open in allowing others to observe their practices?
2. What are the “things” that Toyota does and the “ways” that they do them that makes them so effective?
3. How does such rigid standardization of processes actually make them more flexible?
• **Amore Frozen Foods (SP)**

1. Describe the cost tradeoff that Amore Frozen Foods is facing with respect to their macaroni and cheese pie weights.

2. Review the steps involved in the process of producing the macaroni and cheese pies. At which steps would quality inspection be appropriate? Explain your answer.

3. You have been appointed as the manager of the Quality Control Department. Do an SPC analysis to determine the key filling issues in macaroni and cheese pie weights. At a minimum, be sure to address the following:
   a. Is the process in control? Please analyze the process using control charts.
   b. Discuss the results of your control charts including a description of the common and assignable causes of variation.
   1. List ways that the possible assignable causes of variation could be eliminated.
   2. What types of factors affect the presence of assignable causes?
   3. What is the major problem that Amore is facing with their filling process that is apparent in the control chart data.
   c. At the current centering of 8.44 ounces, how many 20-minute batches will fail to meet the FDA-approved standard because the **five sample pies average** is less than 8 ounces per pie?
   d. If the fill target is lowered to 8.22 ounces, how many 20-minute batches will fail to meet the FDA-approved standard because the **five sample pies average** is less than 8 ounces per pie?
   e. Based on your analysis in parts c and d, where would you recommend centering the process? Please describe the cost savings of your recommendation.

4. How could adopting a lean production approach to manufacturing help Amore Frozen Foods to solve some of their problems relating to quality?

5. From a lean perspective, would filling above the required weight “just-in-case” be an acceptable practice?

• **What is the Right Supply Chain for Your Product?**

1. With so much attention and investment being directed toward supply chain management, why do so many supply chains continue to perform below expectations?

2. What are the key differences between functional and innovative products?

3. How do these differences impact the appropriate supply chain design decisions?

• **Zara (SP)**

1. What are the order winners and qualifiers for the markets in which Zara is competing for business?

2. Identify and evaluate the key elements of Zara’s supply chain.

3. How well does the production and distribution system allow them to meet the needs of the market?

• **Inventory-Driven Costs (SP)**

1. Why was HP not profitable in 1997 despite revenue gains and maintaining market share?

2. Describe the key inventory-driven costs (IDC) discussed in the article.

3. What were the key elements of HP’s turnaround?

4. Describe how the various inventory-driven costs impact a firm’s return on net assets.
1. Assume that there are 52 operating weeks per year and that the data in Exhibit 3 represents the “average” of the 20 RDC’s. What is the most economical order quantity at the CDC for each of the parts listed in Exhibit 3?
2. Based on this analysis, does the current ordering policy at the CDC seem appropriate? Explain your answer.
3. How much safety stock should be held for each of the products in Exhibit 3 to achieve the currently stated goal of 98% service level at the RDC’s?
4. What does this reveal about the decision to hold two weeks of safety stock for each part at the RDC’s?
5. Which of the parts in Exhibit 3 would you recommend a 96% service level from stock and using overnight shipments if a shortage occurs on another 3%?
6. What would your recommendations be for safety stock at the RDC’s for each of the items listed in Exhibit 3?
7. What are the cost implications of your proposal?

**Buyer-Supplier Relationships (SP)**

1. What type of relationships do you think is the best approach to buyer-supplier relationships? Why?
2. In which direction do you expect buyer-supplier relationships to move in the future?
3. What factors determine buyer-supplier relationships?

**Spin Master Toys (SP)**

1. What are the order winners and qualifiers for the markets in which Spin Master Toys is competing for business?
2. What type of supply chain is needed to support the markets in which Spin Toys is competing for business? Why would you choose this type of supply chain?
3. As Alex Perez, which of the two potential suppliers would you choose? Why would you make this choice?
4. What would you do to implement your decision? What will your involvement be in the next six months?
PEER EVALUATION - GROUP PROJECTS

Your group has been given $10,000 for each case paper as a consulting fee. Divide the money among your group based on the quality and effort of each team member’s contribution. **This evaluation is due to the instructor during the last class** and will be used to adjust case grades. Please justify your response.

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<th>Case 1</th>
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$10,000   $10,000

Discussion: