PLEASE READ THIS MEMORANDUM OF UNDERSTANDING (MU) THOROUGHLY BY JANUARY 15TH, 2014 AND BE PREPARED TO DISCUSS THE ASSIGNED READING MATERIAL FOR THE FIRST CLASS SESSION

COURSE NUMBER: MBA 708-51
COURSE TITLE: OPERATIONS FOR COMPETITIVE ADVANTAGE
SEMESTER: SPRING 2014

MEMORANDUM OF UNDERSTANDING (MU)

PLACE

Class sessions will be held in 204 Joseph M. Bryan School of Business and Economics.

TIME

2:00 p.m. to 4:50 p.m. on Wednesdays.

FACULTY MEMBER

Larry R. Taube
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Department of Information Systems and Supply Chain Management
Joseph M. Bryan School of Business and Economics Room 421
Phone Numbers: (336) 334-4987 (Work) (336) 334-5580 (Fax) (336) 852-0772 (Home)

APPOINTMENT TIME

3:30-5:00 on Mondays, and Noon-1:30 on Wednesdays. You are encouraged to stop in during office hours to talk about any problems or suggestions you may have concerning the course, careers, benefits of advanced courses in operations management, or things in general. If you want to talk to the professor and find the appointment hours to be inconvenient, feel free to schedule other appointment times.

CATALOG DESCRIPTION OF THE COURSE

The course examines design, operation, and control of organizations for gaining and maintaining competitive advantage in the market place. Strategic and tactical issues will be integrated with a systems approach.

DESCRIPTION OF THE COURSE

The course begins with an introduction to the managerial processes underlying operations in both service-providing and goods-producing organizations. In the initial phase of the course, specific topics to be covered include process design, capacity planning, facilities location and design, application of forecasting in operations, aggregate planning, inventory management, project management, and quality management. Later the course will focus on the development and implementation of production/operations strategy and the integration of this strategy with other functions of the organization. Topics in the latter half of the course include alternative production/operations strategies, choice of process, operations strategy selection and implementation, selection and adoption of new technologies (such as enterprise-wide resource planning systems), and the integration of information, quality, and productivity into the operations function. A global theme will run through the entire course. The course is fairly intensive and extensive with the integration of the strategic and tactical
issues with case studies, an organization-based assignment, and an in-class interactive exam with a guest speaker presentation. To the extent relevant and feasible, the material to be presented will include ethical, environmental, and sustainability issues, the influence of political, social, legal and regulatory, and technological issues, and the impact of demographic diversity with respect to the strategic role of operations.

READING MATERIALS

Text Book

Cases

The text book can be purchased at the UNCG Bookstore (at the Elliott University Center). The cases can be purchased from [www.hbr.org](http://www.hbr.org). In addition, a set of articles (posted in the Course Documents section on Blackboard) is required reading for the course. Students should read the required materials prior to attending each class session. Students should have the appropriate reading materials available for each class session.

PRE-REQUISITE AND CO-REQUISITE COURSES

MBA 705 (Processes, Information Systems, and Business Value) and MBA 706 (Marketing Management) are the co-requisite courses. It is possible that MBA 705 and MBA 706 courses could have been taken prior to the MBA 708 course. MBA 701 (Quantitative Analysis for Decision Making) and MBA 702 (Financial and Managerial Accounting) are the prerequisite courses. For a student to do well in the MBA 708 course, it is not just adequate if the student has taken the MBA 701 and MBA 702 courses. It is more important that the student be thorough with the content (Probability, Normal Distribution, Optimization Techniques, Risk and Decision Analysis, Balance Sheets, Profit and Loss Statements, Fixed and Variable Costs, etc.), be able to analyze, integrate, synthesize, and communicate well in written and oral form. It is the responsibility of the student to prepare himself/herself adequately in these areas. The concepts and principles covered as part of the MBA 701 and MBA 702 courses will not be covered in MBA 708 course. There will be quantitative applications (in the form of statistical analysis, optimization techniques, and risk and decision analysis) and qualitative analysis exercises (in the form of written case analysis and in-class discussions) in the MBA 708 course. The students will be expected to learn new vocabulary related to the operations (and on occasion in the areas of marketing; and processes, information systems, and business value) early on in the first eight weeks and then apply the concepts in the latter half of the course.

WITHDRAWAL DATE

The last date to drop the course without receiving academic penalty is March 7th, 2014 (Friday).
FACULTY-STUDENT GUIDELINES

The faculty and students in the course are expected to adhere to the faculty student guidelines stated at the following web page: http://www.uncg.edu/bae/faculty_student_guidelines.pdf

GRADING

The course grade is based on two in-class written exams, an in-depth case analysis, a topic paper, an ACID Test (in-class interactive written exam), and class contribution. Grades are based on the following "absolute" scale (i.e., there will be limited "curving").

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<thead>
<tr>
<th>Points</th>
<th>Date</th>
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<tbody>
<tr>
<td>75</td>
<td>February 19th, 2014 (75 minutes)</td>
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<td>75</td>
<td>March 26th, 2014 (75 minutes)</td>
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<td>100</td>
<td>April 2nd, 2014 (Due)</td>
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<td>100</td>
<td>April 23rd, 2014 (Due)</td>
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<td>100</td>
<td>May 7th, 2014 at 3PM</td>
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<td>TOTAL</td>
<td>500</td>
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A ≥ 465; A- ≥ 450; B+ ≥ 440; B ≥ 415; B- ≥ 400; C+ ≥ 390; C ≥ 365; F < 365.

IN-CLASS WRITTEN EXAMS

Each in-class written exam (of 75 minutes duration) will include five short answer questions (i.e., multiple choice, true/false, and brief discussion questions) and two problems (which will involve computations). The exam content will be drawn from the text book, vignettes, video films, and class discussions using the objectives listed in the schedule of sessions as a general guideline. The in-class exam is closed-book and closed-notes.

RE-EXAMINATION POLICY

As a rule, re-examinations will not be held. Absence from the in-class written examinations due to illness, summons to jury duty, or any other compelling reason should be backed by the appropriate documents (e.g., medical certificate, etc.) in order to qualify for a re-examination. If possible, meet/talk with the professor before missing the examination to discuss the circumstances.

HONOR POLICY

Students are expected to comply with the UNCG Honor Policy described at the following web page: http://sa.uncg.edu/handbook/academic-integrity-policy/ (You may have to cut and paste.)
TOPIC PAPER

The topic paper assignment will be carried out by the student as a member of a team of two students. The names of students will be randomly chosen by the faculty member at 3:30 p.m. on January 15th, 2014. By the end of the first class session on January 15th, 2014, the student teams will be assigned one of the following topics to be related to Caterpillar in Winston-Salem, NC:

1) Plant Level Performance Measures
2) Managing Kaizen Projects
3) Quality Management
4) Product Design
5) Managing Technology
6) Long Range Capacity Planning
7) Facility Layout
8) Work Design (Machine and Human Interaction)
9) Assembly Line Balancing
10) Supply Chain Management
11) Inventory Management
12) Aggregate (Medium Range Capacity) Planning
13) Master Scheduling and Materials Requirements Planning
14) Lean (Just-in-Time) Systems

Special Topics at Caterpillar: Product Flow Scheduling
Kitting Process Purchasing Buffer Stocks
Time Studies Buffer Strategies (for Planned and Unplanned Variances)

For facilitating a better understanding of the subject matter being studied, a plant tour to the Caterpillar facility (in Winston-Salem, North Carolina) is being arranged from on February 21st, 2014 (Friday). The topic paper would entail a good review of the literature (at least 8 to 10 relevant articles and books) on that subject and an analysis of that aspect as it relates to that organization. The review of the literature could be based on articles published in Production and Inventory Management Journal, Journal of Operations Management, International Journal of Operations & Production Management, Quality Progress, Industrial Management & Data Systems, and other relevant journals. A one-paragraph abstract (which includes the title of the paper, specific topic from the course, how the topic relates to Caterpillar and a short bibliography) should be submitted to the faculty member at the beginning of the class period on January 29th, 2014. A list of questions/issues for the visit should be submitted to the professor at the beginning of the class period on February 5th, 2014. For preparing the set of issues/questions, feel free to obtain some information about Caterpillar from their website. The following outline should be used for the term paper: Abstract, Introduction, Review of the Literature (including a summary/framework of how you plan to relate the subject matter to Gallins Foods in the fifth section of the paper), Details of the Organization, Findings (as they relate to the framework presented in the third section of the paper), Conclusions, and References. In addition to analyzing the topic as it exists in the organization, the paper should make recommendations for improvement in the concluding section. In general, the paper should be written for a reader who is not too familiar with the principles, concepts, decision/problem areas, and techniques of managing operations (at the level of MBA 708) but is comfortable in reading articles in the English language.

Each student team is encouraged to develop the outline of each section of the paper as we progress through the course. This approach will not only reinforce your learning in preparation for exams, but also distribute the work associated with the topic paper more evenly over the semester. Feel free to
discuss your topic paper with the faculty member as it is being developed. The paper should be typed (maximum 12 point size lettering), and double-spaced on 8.5" by 11" paper. No minimum or maximum length is specified, although the papers are typically 15 to 25 pages long. Cover the topics thoroughly, but efficiently. Do not add verbiage for the sake of length. Include diagrams, photos, sketches, or other types of illustrations that will clarify your presentation. Citations should appropriately referenced at the end of the paper, and pages, tables, figures should be appropriately numbered.

The topic paper will be graded on organization, thoroughness, insight of analysis/recommendations, and written communication skill. It is highly recommended that a project management approach be taken for ensuring the timely completion of the paper. The topic paper is to be submitted at the beginning of the session on April 2nd, 2014. Late submissions will not be accepted. Each student/member of the group should attest to the statement that "I/WE HAVE ABIDED BY THE ACADEMIC HONOR POLICY ON THIS ASSIGNMENT" on a separate cover page of the topic project assignment. The cover page should also include the number and title of the course, title of the paper, and name(s) of student(s).

IN-DEPTH CASE ANALYSIS

Each student must carry out an in-depth analysis of the “Le Petit Chef” case. The individual should take on the role of a manager who has been assigned to review the issue(s) of concern or interest to the firm. The written analysis is his/her report and recommendations on that/those issue(s). The issues have been presented in the "schedule of sessions" section in this memorandum of understanding (MU). Much of the grade beyond a "passing score" depends on the student's ability to go beyond the "average" solution/answer, integrate the material from the course, and provide innovative perspectives, approaches, or solutions. Feel free to use the all the tools and the frameworks discussed in this course (and other courses) to substantiate the analysis. If you need to make assumptions to accomplish this, feel free to do so and appropriately incorporate them in your written analysis. Discuss the issues in detail.

The professor will facilitate the discussion for the case. There will not be any formal presentations of the case. Students should work on this written analysis on an individual basis (not in groups). Individuals should neither seek nor receive help from friends and family in completing this written analysis. The written analysis should be typed, and double-spaced on 8.5" by 11" paper. No minimum or maximum length is specified, although the written analysis (not counting the appendices) should not typically exceed 15 pages in length. Individuals are requested to refrain from repeating the details provided in the case (just to fill up space) in their written analysis. That is, individuals are requested to cover the topics thoroughly, but efficiently. Do not add verbiage for the sake of length. Feel free to include diagrams, or other types of illustrations in your written analysis. Oversized charts or drawings should be folded to the 8.5 " by 11" format. In preparing the written analysis, write from an objective view, in third person. Do not use the words "I", "We", or "You". Use subheadings to correspond with specific issues posed for the individual case. It should be noted that appropriate credit will be given for those individuals who are in a position to integrate their analysis with readings presented outside the case.

The written analysis will be graded on organization, thoroughness, insight of analysis, and written communication skill. While working on the numerical analysis, students must ensure the following: (1) identify all the uncertain aspects of the decision environment; (2) define decision alternatives and output measures; (3) Calculate possible outcomes of all decisions; (4) calculate statistical estimates (if applicable) of output measures of interest; (5) assess the statistical precision of all
output measures (if applicable); and (6) incorporate risk into the decision making process. In writing the report, students must ensure the following: (1) communicate the conclusion clearly; (2) explain the logic behind the analysis and conclusion; (3) demonstrate effective organization; (4) employ proper spelling, punctuation, and grammar; (5) include an appropriate amount of information and discussion; and (6) support analysis with clearly identified tables and/or figures.

The individual written analysis is to be submitted at 6:30 p.m. on April 23rd, 2014. Late submissions will not be accepted. Each student should attest (with a signature) that “I HAVE ABIDED BY THE ACADEMIC HONOR POLICY ON THIS ASSIGNMENT” on the cover page of the in-depth case analysis. The cover page should also include name of the student, title of the assignment, and course name and number.

ACID TEST (IN CLASS INTERACTIVE WRITTEN CASE EXAM)

The in-class written exam will be held on May 7th, 2014 at 3PM. This exam, popularly called the ACID Test (ACID is an acronym for Analysis and Application, Content and Conceptualization, Integration and Implementation, and Decision making and Discrimination), will be a “live”/interactive/guest speaker presentation/final examination on the operations for competitive advantage at Caterpillar.

A plant tour will be conducted at Caterpillar. At 3:00 p.m. on May 7th, 2014 a comprehensive (essay) question (or a set of questions) on that case will be given to the students. Then the guest speaker will present for about twenty (20) minutes. The next forty (40) minutes will be devoted to a question/answer session. Students should refrain from asking any questions while the speaker is making his formal presentation. The guest speaker will leave the class room at 7:30 p.m. Then the students can begin writing the answer(s) to the final exam question(s) so as to finish by 9:20 p.m. The in-class written exam is “closed book and closed notes”. The only items to be brought to the final exam are the case on Caterpillar (with any comments that the students might have noted from the plant tour or from the company web site), blank sheets of paper for writing the answer(s), and a calculator. Students may choose to type the answers on a lap top computer or using one of the computers (if the labs are open at that time) in the Bryan School.

CLASS PARTICIPATION AND CONTRIBUTION

Each student should be prepared for an insightful discussion of all aspects of the material assigned for each class session, be it text/articles/supplementary material and/or cases. Students should be prepared to answer questions and raise issues when called upon to do so in the class. Students will be evaluated at each session on the quality (not quantity) of their participation/contribution. Class contribution/participation points will be accumulated based on how perceptively a student analyzes the situation being studied, the usefulness of the observations and suggestions made by the student, and the student's ability to put across ideas with clarity and conviction. Class attendance alone will not directly count towards the points to be accumulated through class participation/contribution. However, poor attendance will dramatically reflect in a student's participation/contribution grade. That is, a student cannot participate/contribute if absent from the class. As a further consideration, material obtained from class discussions could be used for answering question(s) for the assignments/exams.

PEDAGOGIC APPROACH
Lectures, cases, video films, and situation vignettes will be used. The "lecture" sessions will rely on the “Socratic” method to the extent possible. All students are expected to attend each class session. If a student misses a specific class session, it is her/his responsibility to cover the topics so missed. Material covered in a previous class will not be repeated in a subsequent class. The schedule of sessions on the memorandum of understanding (MU) contains a listing of topics and assignments to be covered in the respective sessions. For a better understanding of the course content, each student should prepare for the topics and assignments (listed in the MU) and view the relevant any video films prior to the appropriate class session. Class time will not be devoted to view the video films; however discussion on the video films will be carried out in the class sessions. Each student should be prepared to discuss the assigned readings for each class session. On an individual basis, each student must work on the problems and questions. That would improve the effectiveness and efficiency of your learning process over the entire semester. This would also certainly assist you in preparing better for the course and exams. The assigned questions given in the MU are only representative of the content that can be expected on the exams. The list of questions is not an exhaustive one. The MU is a general plan for the course; deviations may be necessary.

TECHNOLOGY APPLICATIONS
There would be some coverage of technological advances relating to the operations function in the course.

ETHICAL PERSPECTIVES
There would be some coverage of the ethical issues as they relate to the course.

GLOBAL PERSPECTIVES
The global environment and its impact on operations is being felt more and more in the current economy. There would be a good amount of coverage of these global perspectives in this course.

POLITICAL, SOCIAL, LEGAL, ENVIRONMENTAL, AND REGULATORY ISSUES
Political, social, legal, environmental, and regulatory issues, to the extent applicable, will be covered in this course. It is anticipated that there would be some coverage of these issues in the course.

IMPACT OF DEMOGRAPHIC DIVERSITY
There would be minimal coverage of this issue in the course.

BIOGRAPHIC SKETCH OF FACULTY MEMBER
Larry R. Taube, CPIM is an Associate Professor in the Department of Information Systems and Operations Management Department in the Joseph M. Bryan School of Business and Economics at the University of North Carolina at Greensboro. Dr. Taube is also the Director of the Undergraduate Program in the Bryan School. He holds a bachelor's degree in Chemical Engineering and a Master's Degree in Industrial Management from Clarkson University in New York, and a Ph.D. in Business Administration (with concentrations in Operations Management) from The University of North Carolina at Chapel Hill. Prior to UNCG, Dr. Taube has taught at Clarkson University, The University of North Carolina at Chapel Hill, Bowling Green State University, and Duke University. His teaching and research interests include Supply Chain Management, Production Planning and Control, Global Operations Strategy, and Enterprise Resource Planning Systems. He has published in journals such as European Journal of Operations Research, International Journal of Production Research, MIS Quarterly Executive, Omega, Industrial Management & Data Systems, Case Research Journal, etc.
Dr. Taube is active with APICS (The Association for Operations Management) at the Society, Regional and Local levels. He has been certified in Production and Inventory Management (CPIM), and has taught supply chain certification courses for APICS chapters and companies (including Ciba, Syngenta, New Breed, VF Corporation and other Fortune 500 companies).

COGNITIVE COURSE OBJECTIVES

Upon completing the course, the student should be able to:

1) Differentiate between productivity, effectiveness, efficiency, and other performance measures for operations management in manufacturing and service organizations.
2) Use project management techniques to execute a project.
3) Develop and use a process control chart for managing quality.
4) Explain the role played by total quality management (along with all its facets and tools) in enhancing the performance in organizations.
5) Elaborate on the financial implications of long range, intermediate range, and short range capacity planning in managing operations.
6) Explain the factors that influence the location of service and manufacturing facilities.
7) Describe the important aspects and issues related to facility design decisions in manufacturing and service organizations.
8) Critique the role of forecasting in the operations of an organization.
9) Describe the typical objectives and constraints in medium range (aggregate) planning related to both manufacturing and service organizations.
10) Differentiate the inventory management concerns between dependent demand items and independent demand items in manufacturing and service organizations.
11) Compare and contrast a Manufacturing Resource Planning ("MRP II" or "Push") system and a Just-In-Time/Total Quality Management ("JIT/TQM" or "Pull") system.
13) Differentiate and relate strategic and tactical decisions in operations for gaining and sustaining competitive advantage.
14) For a given service or manufacturing organization, differentiate between alternate methods of securing a competitive advantage with the operations function focusing on the appropriate order winner(s) and qualifiers.
15) Select appropriate production/operations systems for different types of product mixes (i.e., high volume standardized products vs. low volume specialty products) for different markets.
16) Elaborate on the role of product and process design as a “strategic weapon” for gaining a competitive advantage.
17) Critique the role of a "product profiling" exercise in achieving “focused” operations for both manufacturing and service organizations.
18) Elaborate on the strategic implications of "vertical integration", horizontal integration, and information technology in the value chain.
19) Evaluate the operations strategy of an organization.
20) Demonstrate a thorough understanding of the tactical and strategic role of the operations function and its inter-relationship with other functional areas (such as marketing, finance, etc.) in order to effectively lead a multi-functional task force in building a global organization.
21) Elaborate on and develop opportunities for sustainable operations in both services (logistics, banking, warehousing, transportation, retail, etc.) and manufacturing environments,
### SCHEDULE OF SESSIONS

<table>
<thead>
<tr>
<th>SESSION #</th>
<th>DATE</th>
<th>TOPICS AND ASSIGNMENTS</th>
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<tbody>
<tr>
<td>1</td>
<td>1/15</td>
<td><strong>DISCUSSION OF THE MEMORANDUM OF UNDERSTANDING</strong></td>
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<td>INTRODUCTION TO OPERATIONS FOR COMPETITIVE ADVANTAGE</td>
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<td>Chapter 1 (Operations and Supply Chain Management).</td>
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<td>Chapter 2 (Strategy and Sustainability): Questions 3, 7, 9, and 10 and Problem 5.</td>
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<td>Chapter 6 (Production Processes): Questions 1-4 and Problems 6 and 7.</td>
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<td>1) Describe the main elements of an “Operations Systems” model.</td>
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<td>2) What are the primary differences between manufacturing and service operations?</td>
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<td><strong>WORK ON YOUR OWN!</strong></td>
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<td>4) Compare and contrast the different conversion processes (i.e., project, job shop, mass production/assembly line, and continuous process).</td>
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<td><strong>WORK ON YOUR OWN!</strong></td>
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<td>5) What is the most simple and general form of the &quot;productivity&quot; formula?</td>
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<td><strong>WORK ON YOUR OWN!</strong></td>
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<td>6) Differentiate between a partial measure of productivity and total factor productivity.</td>
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<td>7) Explain the difference between productivity, effectiveness, and efficiency.</td>
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<td>8) Briefly describe the “Journey to Excellence” Model.</td>
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<td><strong>WORK ON YOUR OWN!</strong></td>
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<td>9) How might one construct a productivity index for the Joseph M. Bryan School of Business and Economics?</td>
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<td><strong>WORK ON YOUR OWN!</strong></td>
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<td>10) Be prepared to calculate the break-even volume for a process.</td>
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<td>11) Evaluate strategies on their ability to be sustainable.</td>
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<td>SESSION #</td>
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<td>TOPICS AND ASSIGNMENTS</td>
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<td>2</td>
<td>1/22</td>
<td><strong>PROJECT MANAGEMENT</strong></td>
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<td>Chapter 10 (Projects): Questions 2 and 6. Problems 9, 10, 11, 13, and 14. Case: The Campus Wedding (A)</td>
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<tr>
<td>WORK ON YOUR OWN!</td>
<td>1) Identify the three fundamental objectives in managing projects.</td>
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<td>WORK ON YOUR OWN!</td>
<td>2) Differentiate between Gantt charts and networks.</td>
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<td>WORK ON YOUR OWN!</td>
<td>3) What is the difference between Activity-On-Node and Activity-On-Arrow networks.</td>
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<td>WORK ON YOUR OWN!</td>
<td>4) Given the requisite information, be prepared to develop an Activity on Node or Activity on Arrow network, identify the critical path(s) for a project, and discuss mechanisms for “crashing” a project.</td>
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<td><strong>QUALITY MANAGEMENT</strong></td>
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<td>Chapter 9 (Six Sigma Quality): Questions 2, 3, 4, 6, and 7.</td>
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<td>WORK ON YOUR OWN!</td>
<td>1) How would you define the quality for a product and/or a service?</td>
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<td>WORK ON YOUR OWN!</td>
<td>2) Describe the tenets/facets of Total Quality Management.</td>
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<td>WORK ON YOUR OWN!</td>
<td>3) Discuss the elements of Cost of Quality (COQ).</td>
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<td>WORK ON YOUR OWN!</td>
<td>4) Distinguish between the ISO 9000 certification process and the Malcolm Baldrige National Quality Award.</td>
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<td>WORK ON YOUR OWN!</td>
<td>5) Discuss the roles of cause/effect diagrams, Pareto Charts, Process Flowcharts and other tools for continuous improvement.</td>
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### SESSION # | DATE | TOPICS AND ASSIGNMENTS
---|---|---
3 | 1/29 | SUBMISSION OF ABSTRACT OF TOPIC PAPER

**CONTINUOUS IMPROVEMENT**

**WORK ON YOUR OWN!**
1) Describe acceptance sampling. Why is it used? Could it be used in services?
2) Describe Statistical Process Control. Why is it used? How can it be used in services?
3) Be prepared to develop process control charts for attributes and variable measurements and understand the situations under which further investigation is required.

**PRODUCT, SERVICE, AND PROCESS DESIGN**
1) Identify Core Competencies (pages 40-42).
2) Apply generic product development process to Manufacturers (Exhibit 3.1 and pages 42-46)
3) Compare and Contrast hamburger processing at Burger King and Wendy's (pages 113-115).
4) Analysis methods used to reduce process flow time (Exh 5.6, pg 126-8).
5) Understand and be able to Discuss the Service-System Design Matrix (Exhibit 7.3 and pages 222-3).

**DEMAND MANAGEMENT AND FORECASTING**
Chapter 15 (Demand Management and Forecasting): Questions 7 and 9. Problems 2, 3, 12, 13 and 24.

**WORK ON YOUR OWN!**
1) Discuss the role of marketing and the sales function in developing a forecast.
2) Distinguish between strategic forecasts and tactical forecasts.
3) Describe simple moving average, weighted moving average, simple exponential smoothing, and regression analysis methods of forecasting.
4) Describe time series analysis.
5) Be prepared to use simple moving average, weighted moving average, simple exponential smoothing, and regression analysis methods of forecasting and assess the effectiveness of each technique.
6) Understand and calculate Forecast Accuracy Measures (MAD and TS).
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<th>SESSION #</th>
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<th>TOPICS AND ASSIGNMENTS</th>
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<tbody>
<tr>
<td>4</td>
<td>2/5</td>
<td>NO ACTUAL MEETING!!</td>
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FOCUS ON PROBLEM SOLVING FOR THESE TOPICS

TWO OF THESE THREE TOPICS WILL BE ON EXAM 1!

PROJECT MANAGEMENT
Chapter 10 (Projects): Questions 2 and 6. Problems 9, 10, 11, 13, and 14. Case: The Campus Wedding (A)

4) Given the requisite information, be prepared to develop an Activity on Node or Activity on Arrow network, identify the critical path(s) for a project, and discuss mechanisms for “crashing” a project.

CONTINUOUS IMPROVEMENT

3) Be prepared to develop process control charts for X-bar and R charts and understand the situations under which further investigation is required.

DEMAND MANAGEMENT AND FORECASTING
Chapter 15 (Demand Management and Forecasting): Questions 7 and 9. Problems 2, 3, 12, 13 and 24.

5) Be prepared to use simple moving average, weighted moving average, simple exponential smoothing, and regression analysis methods of forecasting and assess the effectiveness of each technique.

6) Understand and calculate Forecast Accuracy Measures (MAD and TS).
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| 5         | 2/12 | **LONG RANGE CAPACITY PLANNING**  
Chapter 4 (Strategic Capacity Management): Questions 2, 3, 4, and 5.  

**WORK ON YOUR OWN!**  
1) What is the definition of capacity? Differentiate between output and capacity.  
2) Distinguish between short range, medium range, and long range capacity planning.  
3) Describe the concepts of a focused factory and a Plant within a Plant.  
4) Understand the process of decision tree models and their application to solve a long-range capacity planning problem.  

**FACILITY LOCATION**  
Chapter 12 (Location, Logistics, and Distribution): Questions 1, 2, 3 and 5.  
Problems 8.  

1) What are factors that would influence the facility location (macro level factors) and site selection (micro level factors) of a bank, and a paper mill?  

**WORK ON YOUR OWN!**  
2) Be prepared to solve facility location problem using the Transportation Method of Linear Programming. This method has been covered in the “Quantitative Analysis for Decision Making” (MBA 701) course.  
3) Be prepared to solve facility location problem using the Centroid Method.
SESSION # | DATE | TOPICS AND ASSIGNMENTS
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6 | 2/19 | FIRST IN-CLASS WRITTEN EXAM (75 Minutes)

**FACILITY LAYOUT**
Chapter 6A (Facility Layout): Questions 1, 2, 3, 7, and 8. Problems 3, 4, 7 and 14 (use LOT and SOT only).

**WORK ON YOUR OWN!**
1) Differentiate between product (flow shop) and process (functional) layout.
2) What are the primary advantages and disadvantages of a cellular layout?
3) What is cycle time? What is its role in designing an assembly line?
4) Understand the relationship between the production rate and cycle time.
5) Be prepared to develop a precedence diagram, balance a line, and compute its cycle time.

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**Tour | 2/21!!** **FACILITY TOUR OF CATERPILLAR**
(Road Trip to 2950 Temple School Road in Winston-Salem NC!!)

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7 | 2/26 | SUBMISSION OF MINI-CASE ANALYSIS

**AGGREGATE PLANNING/SALES AND OPERATIONS PLANNING**
Chapter 16 (Sales and Operations Planning): Questions 1, 2, 3, and 5. Problems 2 and 3, Refrigerator Handout (use Chase and Level only).

**WORK ON YOUR OWN!**
1) How are forecasting, aggregate planning, master scheduling, materials requirements planning, and operations control tied together?
2) What is the objective function in the aggregate planning problem? Why does the problem exist? What is the typical planning period and planning horizon used in the aggregate planning problem?
3) Is the aggregate planning problem long range, medium range, or short range in nature? Please give an explanation for your conclusion.
4) What are the three typical strategies available for a manager in developing an aggregate production plan, i.e., what are the controllable variables?
5) What are the typical costs affected by the aggregate production plan?
6) What are the specific characteristics of industries where the three extreme strategies could be applied?
7) Be prepared to develop an SOP. Also, be prepared to compute the total cost using both chase and level strategies for a given aggregate planning problem.
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| 8         | 3/5  | **INVENTORY MANAGEMENT SYSTEMS FOR INDEPENDENT DEMAND**  
Chapter 17 (Inventory Control): Questions 1, 2, 5, and 6. Problems 3, 4, 8 (a only), 9, 10, 13 and 21. |

**WORK ON YOUR OWN!**

1) What are the two fundamental questions in developing an inventory policy?
2) What are safety stock and service level? How are they related?
3) What are cycle counting and physical inventory? What purpose do they serve?
4) Given the required data, be prepared to compute the Economic Order Quantity, the Reorder Point, and Total Cost in a perpetual ordering system.
5) Given the required data, be prepared to compute the Economic Order Interval (i.e., the time between orders), and the quantity to be ordered at a given point in time in a periodic ordering system.
6) Under what assumptions would a fixed order quantity system be chosen over a fixed order interval system, i.e., what practical considerations would encourage the use of a fixed order quantity system over the use of a fixed order interval system?

| 3/12 | SPRING BREAK!! |
SESSION # | DATE | TOPICS AND ASSIGNMENTS
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9 | 3/19 | INVENTORY MANAGEMENT SYSTEMS FOR DEPENDENT DEMAND (MATERIAL REQUIREMENTS PLANNING --- MRP)
Chapter 12 (Material Requirements Planning): Questions 1, 2, 3, and 5. Problems 4-8.

WORK ON YOUR OWN!
1) Differentiate between independent and dependent demand inventory.

WORK ON YOUR OWN!
2) What is a Material Requirements Planning (MRP) system?

WORK ON YOUR OWN!
3) What are the primary inputs and outputs in a MRP analysis? What are the objectives of a MRP system?
4) Discuss the role of Master Production Scheduling in developing the MRP.
5) What is the significance of low level coding in developing an MRP.
6) Be prepared to develop a Material Requirements Plan.

SCHEDULING
Chapter 19 (Scheduling): Questions 1 and 3. Problem 6.

1) Describe any four rules that can be used for scheduling jobs at a work center.

2) What would be a good scheduling rule to use for a waiting line for teller services at a bank? Substantiate your response with a detailed explanation.

3) Elaborate on four performance measures that can be used for a work/service center.

10 | 3/26 | SECOND IN-CLASS WRITTEN EXAM (75 MINUTES)
TWO OF THESE TYPES OF PROBLEMS WILL BE ON THE EXAM:
LINE BALANCING, SOP, EOQ/ROP, MRP

GLOBAL SOURCING, LEAN AND SUSTAINABLE SYSTEMS, AND SUPPLY CHAIN MANAGEMENT
Chapter 11 (Global Sourcing and Procurement): Questions 1 through 5.
Chapter 13 (Lean and Sustainable Supply Chains): Questions 1 and 2.

1) Discuss the challenges in managing global supply chains.


3) Discuss the impact of the Green emphasis on Supply Chains.

4) Describe the impact of sustainable and lean on the ability of firms to compete in different customer environments and competitive dimensions.
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<td>4/2</td>
<td>SUBMISSION OF TOPIC PAPER</td>
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<td>OPERATIONS FOR COMPETITIVE ADVANTAGE</td>
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<td>Video Films: GM Plant Closings (8 minutes), and Japanese Cars: Really Better? (8 minutes).</td>
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<td>Parable: A Tale of Two Countries (attached to this MU).</td>
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1) Identify the two countries described in "A tale of two countries".
2) Making use of the facts presented in the video films, identify the primary causes for the GM plant closings and the success of the Japanese manufacturers.
3) Describe the framework developed in linking operations strategy, marketing strategy, and order winning criteria/qualifiers, in meeting corporate objectives.
ENTERPRISE-WIDE RESOURCE PLANNING SYSTEMS IN GLOBAL OPERATIONS STRATEGY


1) Discuss the salient features of the Enterprise-wide Resource Planning (ERP) systems for global operations at VF Corporation, Inc.

2) Discuss the features of Enterprise-wide Resource Planning Systems in global operations. Elaborate on the functionality of vendor information in light of order winners and qualifiers.

INTERNATIONAL EXPANSION AND OPERATIONS STRATEGY


1) Using the "Netcare's International Expansion” case, be prepared to detail the following:

   a) Draw up a time table of the major events described in the case study.
   b) Analyze the success of Netcare in the United Kingdom. Be as specific as possible.
   c) What can the firm do internationally in the future? Substantiate your answer with detailed explanations.
SUBMISSION OF IN-DEPTH CASE ANALYSIS

FOCUS REGRESSION AND FOCUS PROGRESSION


1) Discuss product profiling and its strategic implications.
2) Elaborate how product profiling aids in the process of developing a global operations strategy.


1) “Mass customization could lead to regression in facilities focus”. Comment on this statement.
2) Based on the “Le Petit Chef” case, be prepared to discuss the following issues:
   a) Evaluate the operations strategy of Le Petit Chef. Discuss in as much detail as possible.
   b) What should Brigitte Gagné do? Specifically, which projects should she fund and why? How should she handle the executive meeting? Substantiate your answers with detailed analyses.
   c) What factors explain Le Petit Chef’s poor performance? What actions would you recommend to remedy the situation? Substantiate your response with detailed explanations.
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| 14        | 4/23   | CONNECTING THE DOTS AND “CHEWING THE CUD”!  
Video Film: Motorola (10 minutes)  
Video Film: Federal Express (12 minutes)  
1) Discuss the mechanisms by which operations can enhance competitiveness.  
2) Based on the "Motorola” and “Federal Express” video films, discuss how the firms’ operations lead the way to competitive advantage.  
“ACID TEST” COMMENCES WITH THE DISTRIBUTION OF THE CASE NOTE. |
| 15        | 5/7 at 3PM | ACID TEST (IN-CLASS INTERACTIVE WRITTEN CASE EXAM)  
OPERATIONS FOR COMPETITIVE ADVANTAGE AT A GLOBAL FIRM  
Caterpillar Presentation and Exam |
STUDYING AND LEARNING FROM CASES

The cases featured in this course are representative of real-world problems that managers in different organizations have to face and resolve. Although designed principally for use in classroom discussions, many of these cases can offer valuable insights to the individual reader.

The comments that follow are directed primarily at participants in courses and seminars who have been assigned one or more of these cases to prepare for subsequent class discussion. Unlike methods of instruction that use lectures and textbooks, the case method of instruction does not present students with a body of tried and true knowledge about how to be a successful manager. Instead, it provides an opportunity for students to learn by doing.

As a student, you may find that dealing with cases is very much like working with the actual problems that people encounter in their jobs as managers. In most instances, you’ll be identifying and clarifying problems facing the management of a company or non-business organization, analyzing qualitative information and quantitative data, evaluating alternative courses of action, and then making decisions about what strategy to pursue for the future. You may enjoy the process more—and will probably learn more—if you accept the role of an involved participant rather than that of a disinterested observer who has no stake, or interest, in resolving the problems in question.

The goal of case analysis is not to develop a set of “correct” facts but to learn to reason well with available data. Cases mirror the uncertainty of the real-world managerial environment in that the information they present is often imprecise and ambiguous. You may perhaps be frustrated that there is no one right answer or correct solution to any given case. Instead, there may be a number of feasible strategies management might adopt, each with somewhat different implications for the future of the organization, and each involving different trade-offs.

In this course, you’ll be exposed to a wide range of different management situations within a relatively short time. As a result, the cases presented in this course will collectively provide a much broader exposure to global operations strategy issues than most managers experience in many years on the job.

CASES AND THE REAL WORLD

Recognizing that managerial problems are not unique to a particular institution (or even to a specific industry) forms a basis for developing a professional approach to management.

It’s important to recognize that even though case writers try to build realism into their cases, these cases differ from real-world management situations in several important respects. First, the information is prepackaged in written form. By contrast, managers accumulate their information through memoranda, meetings, chance conversations, research studies, observations, news reports, and other externally published materials—and, of course, by rumor.

Second, cases tend to be selective in their reporting because most of them are designed with specific teaching objectives in mind. Each must fit a relatively short class period and focus attention on a defined category of management problem within a given subject area. To provide such a focus—and to keep the length and complexity of the case within reasonable bounds—the writers may need to omit information on problems, data, or personnel that are peripheral to the central issue in the case.
In the real world, management problems are usually dynamic in nature. They call for some immediate action, with future analysis and major decisions being delayed until some later time. Managers are rarely able to wrap up their problems, put them away, and go on to the next “case.” In contrast, discussing a case in class or writing an analysis of a case is more like examining a snapshot taken at a particular point in time—although sometimes a sequel case provides a sense of continuity and poses the need for future decisions within the same organization.

A third, and final, contrast between case analyses and real-world management is that participants in case discussions and authors of written case reports aren’t responsible for implementing their decisions, nor do they have to live with the consequences. However, this doesn’t mean you can be frivolous when making recommendations. Professors and students are likely to be critical of contributions that aren’t based on careful analysis and interpretation of the facts.

**PREPARING A CASE**

Just as there is no one right solution to a case, there is also no single correct way of preparing a case. However, the broad guidelines outlined in “Preparing a Case” may help familiarize you with the job of case preparation. With practice, you should be able to establish a working style with which you feel comfortable. The guidelines on initial analysis and on developing recommendations should also serve you well for preparing written case reports or case-based exams.

First, it’s important to gain a feel for the overall situation by skimming quickly through the case. Ask yourself:
- What sort of organization does the case concern?
- What problems does management appear to be facing?

### Preparing a Case: A Brief Outline

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**I. Initial fast reading**
- No notes
- Get a feel for what’s going on
  - Think about major problems and forces present

**II. A second careful reading**
- Make notes identifying:
  - Organizational objectives
  - Nature of problem(s)
  - Key facts
  - Key decisions
- Evaluate and analyze case data

**III. Development of specific issues**
- Identify alternative courses of action to meet objectives
- Consider implications of each action
- Provide recommendations, supported by analysis
An initial fast reading, without making notes or underlining, should provide a sense for what is going on and what information is being presented for analysis. Then you'll be ready to make a very careful second reading of the case. This time, seek to identify key facts so that you can develop a situation analysis and clarify the nature of the problems facing management. As you go along, try to make notes in response to such questions as:

- What decisions need to be made, and who will be responsible for making them?
- What are the objectives of the organization itself and of each of the key players in the case? Are these objectives compatible? If not, can the problem be reconciled, or will it be necessary to redefine the objectives?
- What resources and constraints are present that may help or hinder attempts by the organization to meet its objectives?

You should make a particular effort to establish the significance of any quantitative data presented in the text of the case or, more often, in the exhibits. See if new insights may be gained by combining and manipulating data presented in different parts of the case. But don’t accept the data blindly. In the cases, as in real life, not all information is equally reliable or equally relevant. On the other hand, case writers won’t deliberately misrepresent data or facts to trick you.

**Developing courses of action on specific issues**

At this point in the analysis, you should be in a position to summarize your evaluation of the situation and to develop some recommendations for management. First, identify the alternative courses of action that the organization might have. Next, consider the implications of each alternative, including possible undesirable outcomes, such as provoking responses from stronger competitors. Ask yourself how short-term tactics fit with longer-term strategies. Relate each alternative to the objectives of the organization (as defined or implied in the case, or as redefined by you). Then, develop a set of recommendations for future action, making sure that these recommendations are supported by your analysis of the case data. Specific issues to be considered for each case are provided under the appropriate class session in the “schedule of sessions” section in the memorandum of understanding.

Your recommendations won’t be complete unless you give some thought to how the proposed strategy should be implemented:

* What resources—human, financial, or other—will be required?

* Who should be responsible for implementation?

* What time frame should be established for the various actions proposed?

* How should subsequent performance be measured?

**CLASS DISCUSSION**

Courses taught by the case method emphasize inductive learning, with conceptual frameworks and strategic guidelines developed from the analysis of a variety of real-world situations. This
approach contrasts sharply with the deductive approach to learning used in lectures where the concepts are presented first and must then be applied to actual situations.

**Role of the Professor**

In class, you may find that the role played by a professor using the case method usually differs significantly from that of a lecturer. The professor’s role in case discussions is often similar to that of a moderator—calling on students, guiding the discussion, asking questions, and periodically synthesizing previous comments. Teaching styles vary, of course, from one case professor to another.

Many professors like to begin the class by asking a student to “lay out” the case, which may involve your being asked to identify key problems and opportunities, to present some preliminary data analysis, and perhaps to outline a possible plan of action.

Some professors, as in the current course, assign study questions in advance to help students with their case preparation; but others feel it is more realistic (albeit more demanding) to let students define for themselves how they should approach each new case.

**Responsibilities of Participants**

Instead of being a passive note-taker, as in lecture classes, you’ll be expected to become and active participant in class discussions. Indeed, it’s essential that you participate, for if nobody participates, there can be no discussion! If you never join in the debate, you’ll be denying other participants the insights that you may have to offer. Moreover, there’s significant learning involved in presenting your own analysis and recommendations and debating them with your classmates—who may hold differing views or else seek to build on your presentation. But don’t be so eager to participate that you ignore what others have to say. Learning to be a good listener is also an important element in developing managerial skills.

Occasionally, it may happen that you are personally familiar with the organization depicted in a case. Perhaps you are privy to additional information not contained in the case, or perhaps you know what has happened since the time of the case decision point. If so, keep this information to yourself unless, and until, the professor requests it. (This advice also holds true for written reports and case exams.) There are no prizes for 20/20 hindsight; injecting extra information that nobody else has is more likely to spoil a class discussion than to enhance it.

Learning comes through discussion and controversy. In the case method of instruction, participants must assume responsibility not only for their own learning but also for that of others in the class. Thus, it’s important for students to be well prepared, willing to commit themselves to a well-reasoned set of analyses and recommendations, and receptive to constructive criticism. Students unwilling to accept this challenge are likely to find the case method aimless and confusing. On the other hand, if you do accept it, you’ll experience in the classroom that sense of excitement, challenge, and even, exasperation that comes with being a manager in the real-world situation.
A TALE OF TWO COUNTRIES®

There once was an economic power that dominated the world’s industrial production. This country was the world’s leading manufacturer and its predominant exporter of goods. Much of its success was based on its basic research, its ability to invent, and its unparalleled technological leadership. A time came, however, when it began to decline relative to its international competitors and was challenged by another country whose ships, filled with new products, arrived with increasing frequency.

Several decades earlier, the two nations had been engaged in a bitter war, but they had become allies. Some time after the war, the upstart country focused on its manufacturing prowess, eventually gaining renown for its new and unique production processes that turned out goods of high quality.

At first the dominant country had no fear of its lowly ally, which focused only on low-end products with small profit margins. It was not known for its quality, and all its products were basically limitations; inventiveness or creativity was not its strong suit. But the upstart country kept plugging away, improving its manufacturing processes, quality, exports, and market share in a number of industries.

As the number of industries in which the upstart country challenged the dominant one grew, people began to examine how and why this was happening. Articles were written, reports were commissioned and books were published to explain the new and powerful manufacturing process of the upstart country and to recommend how it could best be emulated. Many factors were identified to explain its success, including:

- A focused, orderly, and systematic manufacturing process that depended on the combination of highly skilled workers, automated machinery, and an new way for moving materials and good through the factory.
- Strong and continual gains in productivity and quality, thanks to the involvement of workers in improving the process.
- Highly skilled and well-educated workers who maintained clean work environments and had high marks for attendance.
- Continual, incremental technological innovations.
- A high level of cooperation among national competitors, which helped the rapid diffusion of process innovations.
- A high degree of reliance on subcontractors for innovations and production skills.
- A strong education system.
- A culture that was unique and relatively homogeneous.

Thoughtful individuals in the dominant country warned of dire consequences if the nation as a whole did not change its ways and rise to the challenge. But the nation’s business leaders did not know quite how to respond. As the upstart country continued its march toward larger and larger market share, fears arose that it would eventually overwhelm its bigger ally and the rest of the world with its exports, putting domestic firms and even entire industries out of business. The dominant country was faced with the prospect of losing the economic superiority it had held for so long. Time appeared to be running out.