

MGT 360: APPLIED OPERATIONAL METHODS

FALL 2008

INSTRUCTOR: DR. TATHAGATA DASGUPTA
CLASS VENUE: TBD
CLASS TIME: 7:00 PM – 10:00 PM;
MONDAY
SEPTEMBER 2 THROUGH DECEMBER 13, 2008

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COURSE DESCRIPTION

(This is a quantitative course with qualitative insights)

A Strategic Management Angle

Operations Management is concerned with the production and delivery of goods and services to meet customers' demands. It is one of the central functions of every business, government agency, and non-profit organizations. Sound and creative operations management can provide an important competitive advantage for firms to succeed in today's marketplace. Successful companies need to have the capability of delivering high-quality products and services to meet their ever-changing customer demands in a timely and cost-effective manner. It has also been realized that the Operations function must integrate into the overall corporate planning and strategy to achieve such an advantage. Therefore, an understanding of operations management is essential for all managers, and a working knowledge about the Operational processes within a firm is an integral part of your MBA education.

Finance, Accounting, Marketing, Human Resources, and Organization behavior students work closely with Operations these days, particularly due to the new direction the industry is heading toward, where manufacturing is increasingly being outsourced, and the two key roles left for American companies are Intellectual Property Innovation, and delivering goods and services to customers. Also, since the implementation of Sarbanes-Oxley act due to SEC regulations, many divisions are forced to learn how to work together. Furthermore, no business leader can have a complete grasp of their business without a balanced understanding of Operations. A perspective on Operations Strategy and Supply Chain Management will help them see the inner workings of their colleagues in Operations and will appreciate the planning and execution processes that directly affect their responsibilities.

The objective of this course is to develop a general managerial perspective on the role of operations management in the function of a firm, at both the tactical and strategic levels. The course will offer a broad survey of quantitative tools, concepts and techniques in managing operations, with particular emphasis on a number of major operations management issues that can significantly affect the competitive position of a firm in the marketplace. Through the discussions of these issues, the students can also develop a good understanding about how operations should interact with other functional areas such as marketing and finance.

The Supply Chain Management Angle

Operations Management as a discipline has recently focused heavily on the end-to-end Value Chain, extending itself to include financial measurements applied to the Supply Chain paradigm. Matching supply with demand is a primary challenge for a firm: excess supply is too costly, inadequate supply irritates customers. Matching supply to demand is easiest when a firm has a flexible supply process, but flexibility is generally expensive. In this course, therefore, we will also discuss how to assess the appropriate level of supply flexibility for an organization and explore strategies for economically increasing a company's supply flexibility.

We will study coordination and incentives across multiple groups or players in a supply chain. While tactical models and decisions are part of this course, the emphasis is on the qualitative insights needed by general managers or management consultants. We will demonstrate that companies can use (and have used) the principles from this course to significantly enhance their competitiveness.

MODUS OPERANDI OF THE COURSE

This course judiciously distributes lectures, discussions, videos, group activity, an online game, participation, assignments, exams, case study discussions, team presentations, and a final project to weigh performance in the above areas.

Much of this course will be conducted in the Harvard Business School Case Study format. Prior preparation on each case with thoughts and input on the case are essential before the class when it will be discussed. Additionally, some academic papers will be reviewed in class to glean out attempts to solve focused problems.

Teams will be assigned to "present" certain papers to in the classroom during these sessions. At the beginning of the second session, I will show you how to glean through the most pertinent material from a paper, summarize learning, draw parallels to your experience or business, and prepare a short deck (5-10 slides) to be presented to the other attendees. Over the 14 weeks, each team will get at least one chance to present their thoughts on an article or paper that relates to the material.

Finally, central to this course is a team project that will be built through ongoing efforts throughout the 10 weeks and presented in the last session in the class.

GROUP WORK

I strongly recommend forming yourselves into groups to study together outside of class on a regular basis. Sharing ideas and discussing issues in a group frequently produces insights that a person would not gain by studying alone. Further, the case reports (described below) will be turned in and graded on a group basis, thus, it behooves you to work with your group throughout the course.

Groups have the potential for great good and great destruction. I stridently advise against parceling out pieces of an assignment to various group members. The better model is for each group member to do the work separately, then to meet together to form the common document. Remember that you will be graded individually on the exams so skipping part of the work because another group member has responsibility can only harm your overall performance. Feel free to report any free-riding to me and I will have a discussion with that person/group.

COURSE MATERIALS

- ❑ Required: Course packet (articles and cases) on sale at Huntley Bookstore
- ❑ Recommended: 1. Operations Management, 2007, 3rd ed. Reid, Dan, & Sanders, Nada, Wiley, ISBN 0-471-79448-6
- ❑ Required: 2. The Goal – by Eliyahu Goldratt
- ❑ Reference Books (not required):
 1. *Supply Chain Management: Strategy, Planning, and Operation*: Sunil Chopra and Peter Meindl, McGraw Hill

CASE PREPARATION

This course has an equitable distribution in case studies. You should thoroughly read the assigned articles and cases before class. Effective preparation of those materials by every member of the class is essential for both individual and collective learning, as well as earning grades in participation. In your preparation you may work in study groups. However, group preparation of a case should enhance, not substitute for, individual preparation.

GRADING

- ❑ Midterm 25%
- ❑ Final 25%
- ❑ Class Participation 25%
- ❑ Course Project 25%

MIDTERM AND FINAL EXAMINATIONS (50%)

The midterm and final examinations are designed to test your understanding of the concepts covered in the course. The midterm will cover the materials addressed in the first four weeks of class (i.e., up to and including the class discussion of *The Goal*), and the final will cover the remainder of the course (i.e., from Inventory Management to Supply Chains). Exams are multiple choice. You may have a one page (two sides) handwritten cheat sheet for the midterm and final. You are allowed to use a cheat sheet prepared by yourself. No photocopies or hand-written copies of cheat sheet prepared by another student would be allowed.

PROBLEM SETS (NOT GRADED)

Problem sets and sample exams will be provided to you for your own practice, but will not be collected or graded. Before the midterm and final, the TA will walk you through the solutions, and they will be posted in WFS. It is very important that you individually attempt all the homework problems for your benefit and you will do better on exams if you do it without help.

PARTICIPATION (25%)

You are expected to actively and constructively participate in class, *especially* during case discussion sessions. Discussion topics and associated reading materials are provided here in this course schedule, and you are expected to read these materials *before* class to facilitate comprehension and discussion.

The case discussions are essential in our learning process. You should read each case thoroughly before class to understand fully the situation, the pertinent facts, and the central issues. Several specific case questions are provided, and you are encouraged to discuss these case questions with the fellow classmates in your study group before class. We shall discuss these cases together in class, and you more than likely will be called upon to share your opinion during the case discussions. Insightful, concisely stated and clearly justified comments during the discussion will be rewarded. Rambling, combative, unjustified and self-promoting statements will all be penalized (and met with a disapproving glare).

We have a scheduled class discussion of the book "The Goal." This book is an operations management textbook disguised as a novel. It is an easy and entertaining book to read, yet it clearly communicates several crucial operations management concepts. I expect that everyone will have read the book and thought about the study questions ***before*** that week in preparation for the class discussion. Attendance and participation in the class discussion of the book is required and counts heavily toward total grade.

In another week, we have scheduled the beer distribution game. This game is designed to enable students to understand the dynamics of a supply chain. **All students are required to participate in the game, and participation in the game will count toward your total grade.** Details about the beer distribution game will be provided later in class.

Please note that the class discussion of The Goal and participation in the Beer Game cannot be "made up," so please make every effort to be in attendance at those events.

Your participation grade would be based on the following rough guideline:

- **100%** for High and Contributory participation – asks questions, responds to questions, participates in class discussions, brings up additional information to share with others
- **75%** for Asking Questions that add to the discussion, but not really contributing additional insights to the topic
- **50%** for answering questions but not asking nor discussing the topic,
- **25%** for minimal comments with no answering questions or adding to the discussion, and
- **0%** for neither asking nor responding or discussing the topic covered in the class. Does not come prepared in class.

COURSE PROJECT (25%)

Each group will be required to conduct a hands-on project that involves both a written portion to be turned in and an in-class presentation. This project will require that you identify, document, analyze, attempt to improve, and report on a business process from your experience. Each group is required to submit a one-page project proposal by the end of Week 4. A Final written report is then due in class in Week 14. To help you stay on course, updates on project findings are required on weeks 10 and 12. The report should include, but not be limited to, the following:

1. What are the competitive priorities of the underlying operations/business?
2. What are key performance measures of the underlying process to support the above competitive priorities? Provide a process flow diagram.
3. What are the major managing levers that can affect the above key performance measures?
4. Provide a critique of the existing process and its performance.
5. Provide any ideas that can help improve the process and discuss any potential difficulties in implementations these ideas.

Your report will be graded for its professionalism, in addition to its content. It must be clear, concise, and well-organized. Provide a title page with the report title with full names of each team members, and include a half-page executive summary summarizing the project and the accomplishments. The main body of the report should be limited to no more than 20 pages, plus exhibits. Make good use of exhibits such as tables and figures to support your analysis wherever appropriate. The written report will be worth 65% of your grade for the project. Your written project grade is based on four components:

(15 points) for breadth and depth of research (not necessarily quantitative),
(15 points) for quality of analysis,
(10 points) for quality of writing, and
(10 points) for presentation.

Each group will be required to make a 20 minute presentation in class. The presentation will consist of a video (not to exceed 5 minutes in length) that shows the basic steps of the process your group is analyzing. The rest of the presentation will consist an overview of your analysis, improvements, and results.

COURSE OUTLINE

Session	Theme and Topic(s)	Events	Case study	Student Team Presentation
1 MON. SEPT 8	The Heritage of Operations Management <u>The OM function:</u> relationship with Marketing and Finance and Accounting	Course Overview Video: Michael Dell and Fred Smith discuss Operations Strategy		Team Formation
2 MON. SEPT. 15	Manufacturing and Production Processes	Video: King Sooper's Bakery to illustrate three types of basic processes		
3 MON. SEPT. 22	Process and Capacity Management and Analysis		The Great Nuclear Fizzle at old B&W: a case of Operations Strategy	Ignore Operations at your peril: HBS Series. Paper 1: "Deep Change: How Operations Innovation can Transform your company" TEAM A
4 MON. SEPT. 29	Managing Variability in Processes: Basics of Queuing	Capacity Problem Solving		Ignore Operations at your peril: HBS Series. Paper 2: "How process enterprises really work" TEAM B
5 MON. OCT. 6	Manufacturing Process Analysis	Queuing Problem Solving	Kristen's Cookie Company: a study in Production and Capacity Planning	Ignore Operations at your peril: HBS Series. Paper 2: "Super-efficient Company" TEAM C
6 MON. OCT.13	Throughput and Bottlenecks	The Goal	University Health Services walk-in Clinic: a case of Service Management Principles	A Note on Process Analysis HBS 9-689-032 TEAM D
7 MON. OCT. 20	MID-TERM EXAM (25%)	MID-TERM EXAM (25%)	MID-TERM EXAM (25%)	MID-TERM EXAM (25%)
8 MON. OCT. 27	Inventory Theory - I	1. EOQ Concepts and Cycle Time Problems		
9 MON. NOV. 3	Inventory Theory – II	1. Newsvendor Problem 2. P-System and Q-system problems		Inventory – a HBS Note by David Hawkins TEAM E
10 MON. NOV. 10	MRP and JIT	Video: Stockless Production to illustrate JIT principles		Fast, Global, and Entrepreneurial: SCM, Hong Kong Style (HBR 98507) TEAM F
11 MON. NOV. 17	ERP, APS and MIS		Barilla spA: a study of JIT applications	Aligning Supply Chain Strategy with Demand Uncertainty Team G
12 MON. NOV.24	Supply Chain Management (SCM) Principles	Online Beer Game to illustrate Supply Chain Principles		
13 MON. DEC.1	Student Project Presentations (25%)	Student Project Presentations (25%)	Student Project Presentations (25%)	Student Project Presentations (25%)
14 MON. DEC.8	FINAL EXAM (25%)	FINAL EXAM (25%)	FINAL EXAM (25%)	FINAL EXAM (25%)