



Sofaer International MBA

Introduction to Value Creation – 1238.2412

Prerequisites: none

Module 3 – 2016/17

Course Section Details

Day	Hour	Classroom	Lecturer	Email	Office
Thursday	9:45-12:30	Dan David, Room 303	Prof. Yossi Aviv	yaviv@tau.ac.il	03-640-8084

Teaching Assistant (TA): Yaniv Grosman, yanivgro@gmail.com

Office Hours: By appointment

Course Units

Course Units: 1 cu

4 ECTS (European Credit Transfer and Accumulation System) = 1 course unit

By making higher education comparable across Europe, ECTS makes teaching and learning in higher education more transparent and facilitates the recognition of all studies.

Course Description

This course considers the subject of value creation from an operations (process) management perspective, where operations are broadly defined as the processes by which firms create and deliver value. Operations Management is concerned with the production and delivery of goods and services. It encompasses the design of products and processes, the planning and execution of production, and acquisition and deployment of resources. Successful crafting and execution of operations strategy can provide organizations with strong and sustainable competitive advantage.

This course provides a rigorous introduction to the design and management of business processes; its scope is therefore relevant to all types of organizations.

Course Objectives

Upon completion of the course, students will be able to:

1. Appreciate the importance of achieving proper alignment between operations management and the organizations' strategy, and the challenge of coordination in complex operational environments.
2. Conduct basic analyses of processes to evaluate improvement strategies.
3. Identify and manage bottleneck resources, using the Theory of Constraints (TOC) methodology.
4. Explain key concepts in capacity planning and resource utilization in service settings, and utilize basic waiting-line theory.
5. Explain the cost of uncertainty and the value of actionable information in operational environments via fundamental theory, and propose practical ways for creating real options in such settings.
6. Explain key principles in quality management, and anticipate some of the key challenges in implementing strategic quality management programs.
7. Understand the underlying logic behind the lean management philosophy.

Assessment and Grade Distribution

Percentage	Assignment	Date	Group Size/Comments
10%	Active class presence and contribution		Individual
15%	Natural Blends case	The beginning of session #2 (March 23)	In groups of 3-4 students
15%	HP DeskJet case	The beginning of session #4 (April 20)	In groups of 3-4 students
60%	Final exam	May 11, 14:00	Individual

*According to University regulations, a student must be present in every lesson (Article 5).

* The lecturer reserves the right to have a student removed from a course if the student is absent from a class with mandatory participation or did not actively participate in class. (The student will remain financially responsible for the course irrespective of his/her removal from the course)

Course Assignments

(1) Class participation will consist mainly of voluntary contributions, although I may call upon students to encourage broader participation. Grades in this category will be assigned on a basis of a "bin system", with those contributing the most receiving 10 points, and the rest receiving 8 points, 6 points, 4 points, or 0 points.

(2) Two case reports are required during the course, and must be submitted prior to the beginning of the class session in which the cases are discussed. The work on the cases can be done in groups of 3-4 students only. The case questions are provided in the detailed course outline below. Late submission will not be accepted! Further guidelines, such as page limits, etc., will be provided in advance.

(3) Information about the location and time of the final exam will be provided at the very beginning of the course.

Should a student become unable to complete an assignment or course requirement, s/he must notify the TA of the course in advance via email

Grading Policy

As of the 2008/9 academic year the Faculty has implemented a grading policy for all graduate level courses. This policy applies to all graduate courses in the Faculty, and will be reflected in the final course grade. Accordingly, the final average of the class for this course (which is a core course) will fall between 78-82%.

Additional information regarding this policy can be found on the Faculty website.

Please note: In order to register for advanced elective courses in Operations Strategy, your grade in this course must be at least 78%.

Evaluation of the Course by Student

Following completion of the course students will participate in a teaching survey in order to evaluate the instructor and the course for the benefit of the students and the university.

Course Site (Moodle)

The Moodle course site will be the primary tool used to communicate messages and material to students. It is therefore recommended to periodically check the course site in general, prior to each session, and at end of the course. Presentation slides will be available on the course site in a pdf format. Links to recommended readings will also be posted on Moodle.

Course Outline*

Week	Date	Topic(s)	Required Reading**	Submission
1	March 13	The Process Perspective and Operations Strategy	Southwest Airlines MSD 1, 2, (6)	
2	March 23	Process Flow Analysis and Constraint Management	Natural Blends MSD 3, 7, (4), (5)	Group Case Analysis is due at the beginning of this class
3	March 30	Capacity Deployment in Service Systems	Baria Solutions MSD 8, (9)	
4	April 20	Real Options to Utilize Actionable Information	HP DeskJet MSD 12, 13, 14, 15, (16)	Group Case Analysis is due at the beginning of this class
5	April 27	Competing through Quality	The Ritz-Carlton MSD 10 Note on p-charts	
6	May 4	The Core Principles of the Lean Management Philosophy	Toyota Motor Manufacturing MSD 11	

*Subject to change

** MSD refers to the mandatory book, and chapters denoted in brackets are optional.

Required Reading

(1) The mandatory book for this course is: Matching Supply with Demand, by Christian Terwiesch & Gerard Cachon, 3rd Edition, McGraw-Hill, 2013.

The required and recommended chapters for each session are listed in the detailed course outline below.

(2) Cases: six cases will be discussed in the course (one per session). Except for the first case (Southwest Airlines) which you need to skim through only, you must thoroughly read all other cases and be ready to discuss them in class.

Recommended Reading

See detailed course outline below.

Detailed Course Outline

Session 1: The Process Perspective and Operations Strategy (Case: Southwest Airlines)

The objective of the first session is to define the scope of process (operations) management, and characterize the operational capabilities of business processes and their links to strategic success. Using a case study from the airline industry, we will examine the challenge of coordination in complex operations environments.

Session Outline:

- Introduction and brief course overview
- Value creation: A process perspective
- Process complexity
- Process design: strategic fit

Required Reading:

- MSD Chapter 1 (Introduction) 2 (The Process View of the Organization)
- **Case: Southwest Airlines in Baltimore**

Optional Reading:

- MSD Chapter 6 (The Link between Operations and Finance)
- See links to optional articles on Moodle.

Assignment:

The number of connecting passengers through Southwest Airlines' Baltimore station has grown substantially since 1997. Originally designed as a point-to-point network, this load of connecting passengers has been stressing Baltimore ground operations, resulting in an erosion of service quality and difficulties in achieving fast plane turnarounds – one of the key elements of Southwest's low-cost strategy.

Preparation: Skim through the Southwest Airlines case. It is not necessary to get in depth, but think of the following points while reading the case:

- How would you characterize the operations strategy of Southwest Airlines (SWA)? What are SWA's advantages and disadvantages relative to other airlines?
- Why is the operational performance at Baltimore eroding?
- What issues do you identify that require action? What would you recommend Matt Hafner do?

Session 2: Process Flow Analysis and Constraint Management (Case: Natural Blends, Inc.)

In this session, we will review basic principles of process analysis, and appreciate their potential use for process design and improvement. We will also learn how to identify and manage process bottlenecks.

Session Outline:

- Productivity, capacity utilization and bottlenecks
- Process flow analysis
- Drum-Buffer-Rope
- Theory of Constraints

Required Reading:

- MSD Chapter 3 (Understanding the Supply Process...) 7 (Batching and Other Flow Interruptions...)
- **Case: Natural Blends, Inc.**

Optional Reading:

- MSD Chapter 4 (Estimating and Reducing Labor Costs) 5 (Project Management)
- See links to optional articles on Moodle.

Assignment:

The Natural Blends case (exercise) describes the continuous flow process used to generate orange juice concentrate. Production involves several tightly coupled process steps with varying production rates and setup times. Given production constraints and customer requirements, management choices must be made to maximize the greatest contribution.

Group assignment: Your assignment is to analyze Natural Blends' operations, answering the questions provided in the body of the case. Keep the following in mind:

- Part A: Note that in this part you are considering the operations under the assumption that only one orange size is processed (this means that you do not need to setup the extractor).
- Part B: There are several possible answers to question 4. Altogether, once you get the idea, it is not a hard question. Please chart (on a graph or a table) the schedule of operations over a 6-day period of time.
- Part C: **(You do not need to answer questions 6-7 in this part)** Question #5 is an easy start. For question #6, keep in mind you can pick any feasible combination of contracts A-D. With the remaining time, see how many 24K standard orders (S-type) you can fit. This question is an optimization problem where you try to maximize the total contribution per week, given the capacity constraints in the system. A spreadsheet model can be very helpful. Note that there is a typo in question 7 part C – it should read: “Reducing the filtration setup time from 30 minutes to 15 minutes at a cost of \$20,000.”

Session 3: Capacity Deployment in Service Systems (Case: Baria Solutions)

In this session we will discuss the causes for delays in business processes, and understand the challenges of capacity planning and resource utilization in service settings. We will gain familiarity with basic time-performance analysis techniques and waiting-line theory, and explore the benefits of resource pooling, cross-training and scheduling flexibility.

Session Outline:

- Reasons for delays in processes
- Waiting line theory: The Erlang model.
- How much capacity to deploy? Lessons from theory and practice
- Resource pooling

Required Reading:

- MSD Chapter 8 (Variability and Its Impact on Process Performance: Waiting Time Problems)
- **Case: Baria Planning Solutions, Inc.: Fixing the Sales Process**

Optional Reading:

- MSD Chapter 9 (The Impact of Variability ... Throughput Losses)
- See links to optional articles on Moodle.

Assignment:

Baria Planning Solutions (BPS) is a consulting firm that specializes in using spend-analysis to help companies identify savings through reduced procurement costs and improved supplier performance. Management is concerned about the disappointing performance of the sales team in attaining new clients and renewing existing ones. The consulting industry is becoming increasingly competitive and inefficiencies in the sales process at BPS may interfere with the company's ability to win new business.

Preparation: Read the case in depth, and be ready to discuss the following questions:

- What are Baria's organizational and operational problems?
- What factors contributed to the company's decision to organize the Sales team by industry? What factors contributed to the company's decision to organize the Sales Support group in a hybrid structure? What aspects of the sales process are most valued by customers?
- What alternatives are available for dealing with the problems in the Sales Support group? How did you evaluate the alternatives? What actions should Christy Connor propose to Brandon Ali?

Session 4: Real Options to Utilize Actionable Information (Case: HP DeskJet)

The objective of this session is to discuss operational strategies that enable organizations to act in face of uncertainty.

Session Outline:

- The cost of uncertainty in operations
- Value of information
- The Newsvendor model
- Risk pooling
- Postponement strategies
- Flexibility

Required Reading:

- MSD Chapter 12 (Betting on Uncertain Demand...) 13 (... Quick Response with Reactive Capacity) 14 (Service Levels and Lead Time....) 15 (Risk-Pooling Strategies...)
- **Case: Hewlett-Packard Co.: DeskJet Printer Supply Chain (A)**

Optional Reading:

- MSD 16 (Revenue Management with Capacity Controls)
- See links to optional articles on Moodle.

Assignment:

Hewlett-Packard's (HP) Vancouver Division faced a challenge in 1990. Although its new inkjet printers were selling well, inventory levels worldwide were rising as sales rose. In Europe, high product variety was making inventory levels especially high. HP considered several ways to address the inventory issue: air-freighting printers to Europe, developing more formalized inventory planning processes, or building a factory in Europe.

Group assignment: In your report, address the following discussion questions.

- What is the "Inventory/Service Crisis" that HP faces?
- What are the possible root-causes for it?
- Considering the time of the case, how could HP effectively deal with the crisis?
- What challenges would you anticipate in implementing your solution? How would you deal with these challenges?

Session 5: Competing through Quality (Case: The Ritz-Carlton Hotel Company)

The objective of this session is to discuss fundamental concepts in quality management, and the challenges involved in the implementation of strategic quality management programs.

Session Outline:

- Motivation and historical perspective
- Management responsibility, and the Red Bead Experiment
- What is quality? The voice of the customer.
- Measuring quality
- Costs of quality
- Process capability and statistical process control

Required Reading:

- MSD Chapter 10 (Quality Management)
- Note on p-charts
- **Case: The Ritz-Carlton Hotel Company: The Quest for Service Excellence**

Optional Reading:

- See links to optional articles on Moodle.

Assignment:

While reading the Ritz Carlton case, think of the following questions and be ready to discuss them in class:

- What is Ritz-Carlton's business strategy, e.g., who are their primary customers?
- Among consumers, what accounts for Ritz-Carlton's reputation as a high-quality hotel? How is quality defined by customers?
- How is quality defined within Ritz-Carlton? Does the DQPR data in the ritz.xls spreadsheet indicate any significant quality problems?
- If you were to select a category of defect to address from the DQPR data, which category would you address first? Why?
- For the defect category you selected, consider the process that generates the defects. Construct a p-chart to assess whether or not the process is in control. Identify the day(s) on which some assignable cause of added defects arose.
- Using the results of your analysis, as well as other relevant tools of quality and your common-sense knowledge of hotel operations, generate hypotheses about the possible root causes of the defect category that you selected.

Session 6: The Core Principles of the Lean Management Philosophy (Case: Toyota Motor Manufacturing)

In this class session we will use the popular case “Toyota Motor Manufacturing” to introduce and critically evaluate some of the key principles of Lean Manufacturing.

Session Outline:

- Waste elimination
- Types of waste
- The Toyota Production System (TPS)
- Just-in-Time Production
- Jidoka
- Kaizen and the human factor

Required Reading:

- MSD Chapter 11 (Lean Operations and the Toyota Production System)
- **Case: Toyota Motor Manufacturing**

Optional Reading:

- See links to optional articles on Moodle.

Assignment:

The Toyota case describes a problem with the seats installed in the plant's sole product -- Camry. While we will talk about this issue in class, this will not be the center of our discussion. Rather, the main objective is to discuss the principles of the Toyota Production System (TPS).

Preparation: Read the case in depth, and be prepared to discuss the following questions:

- What are the key principles and main components of the Toyota Production System ?
- What should Doug Friesen do in order to address the seat problem ?
- Where, if at all, does the current routine for handling defective seats deviate from the principles of the Toyota Production System ?
- What are the underlying causes of the problems facing Doug Friesen?