

Course Description

OPIM 224: Service Operations Management (Fall 2010)

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Class Room and Schedule

JMHH F-94

Monday/Wednesday 1:30 pm – 3:00 pm

Course Overview

The service sector represents the largest segment of most industrial economies. In the U.S., for example, it accounts for approximately 70% of GDP and 80% of employment. In addition to this "pure" service sector, the competitiveness of many manufacturing firms increasingly is based on their service processes and capabilities. Indeed consumers today care little about the distinction between manufacturing and service. Rather, they simply want their specific needs to be fulfilled through a combination of physical goods, intangible services and information, provided not only at the moment of placing a demand, but also throughout the life-cycle of product acquisition, use and disposal. This has blurred the traditional distinction between 'manufacturing' and 'service' firms. Today's firms must provide what the customer needs, and frequently that is a bundle of services and physical goods that generate value.

While operational excellence is critical for success in most industries today, this is particularly true for the production and delivery of services. For example, industries such as banking, transportation, health care, and communications all face intensified competition and customer expectations based on the performance of their operations. At the same time, the rapid evolution of information technology and the internet has enabled firms to operate in a fashion – and to offer a level of service – that has not been previously possible.

Elements common to most services make the management of their operations complex, however. In particular, services are intangible, not storable or transportable, and often highly variable. Frequently their delivery involves distributed operations with a significant amount of customer contact. All of these factors make service operations end up looking quite a bit different than manufacturing operations, and thus the task of achieving excellence in them requires particular strategies and analysis methods.

Therefore, the understanding and effective management of service operations requires specialized analytical frameworks and tools. This course covers a mix of topics with an emphasis on quantitative methods and strategic frameworks. The class will introduce simple models and basic concepts that support analysis of tradeoffs in a variety of common service processes.

Students also will have the opportunity to apply the ideas and analytical models developed in the course to a particular service industry. They will do so by conducting a guided, application group project which includes opportunities for in-depth analysis of a particular service process and field work.

The course will cover the following topics:

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- The design of service –delivery processes
- Capacity management for services
- Demand/Revenue management
- After-Sales service support for mission critical products
- Customer relationship management and retention/loyalty
- Service quality management

In class, we will apply these tools and ideas to examples from service industries such as:

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|----------------------------------|---------------------|
| - Financial Services and Banking | - Consulting |
| - Health Care | - Hospitality/Hotel |
| - Transportation and Logistics | - Gaming |
| - Entertainment | - Sports |
| - Restaurants | - Education |

We will also discuss how the material covered in the course is relevant to customer focused, service delivery aspects pervasive in product related industries such as:

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|---------------------------|-------------------------|
| - Telecommunications | - Aerospace and Defense |
| - Manufacturing Equipment | - Consumer Electronics |
| - Internet Retailing | - High Technology/IT |
| - Semiconductor | - Power Systems |
| - Auto | - Energy |

Prerequisites

To take this course, you should have a good understanding of elementary probability and statistics as well as exposure to linear programming and computer simulation, (all at the level of OPIM 101).

- Your background in probability and statistics should include an understanding of random variables, measures of central tendency and variation and the use of sample data to estimate distribution parameters
- Your background in linear programming should include an understanding of the algebraic formulation and spreadsheet implementation of linear programs (LPs as well as shadow (dual) prices).
- Your understanding of simulation should include an understanding of the basic principles of Monte Carlo Simulation.

Students without these specific prerequisites, but with a good quantitative or systems background can take the course, but may have to do some extra reading to cover these topics. We also will review the basic quantitative tools required in the course as we go along.

Course Requirements and Grading

Course grades will be based on class participation (15%), 3 group case write-ups (25%), 2 individual homework assignments (20%) and the group project (40%).

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Class Participation

Please be prepared for every class. Because much of the course revolves around case discussion, your input is essential. While you should prepare for classes in your case groups, each and every person should be prepared to talk about the questions to be discussed in class.

Case/Project Groups

At the start of the course, you should form teams of 3 or 4 people. Each team must complete 3 case write-ups and will conduct the project. The homework assignments are individual efforts but you are encouraged to work in your groups to discuss these requirements and to prepare for other classes where cases will be discussed.

Honor Code

As noted above cases and the project are group efforts. You can discuss cases, class materials and the assignments with your group and other members of the class. The homework assignments, however, are done individually. Any case write-ups answers from prior/other related classes cannot be used in the course. You will also be asked to rate all members of your group with respect to their contribution effort.

Cases

During the course, each group must write up and hand in a case write-up for the following cases:

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|---------------------------|-------|
| 1. Shouldice Hospital | 9/20 |
| 2. Zappos.com | 10/18 |
| 3. Harrah's Entertainment | 11/01 |

Case write-ups must be turned in at the start of class in which the case is to be discussed.

Individual Assignments

There are 2 individual assignments. Each assignment provides you with the opportunity to apply the analytical models and concepts introduced in class to specific planning problems. The first assignment will focus on capacity planning for service processes and the second will focus on after sales service support resource management. Due dates are 10/04 and 11/22.

Course Materials

All course materials are either available at the course Study.Net website, or will be distributed in class. Additional materials and all handouts will be posted on the course WebCafe site. For those who would like to have a text, I recommend the following book for reference:

J. A. Fitzsimmons and M. J. Fitzsimmons, *Service Management: Operations, Strategy, and Information Technology*, New York: Irwin-McGraw Hill, 4th ed., 2004.

Term Project

The lecture portion of the course introduces several analytical models and strategy frameworks that are useful for the management of service operations. The in-class examples, cases and homework problems allow you to see how these tools can be applied in various service settings.

By design, all of the classroom material is somewhat sanitized, however. That is, the hard work of acquiring data, cleaning it, and massaging it into a form that is useful for analysis has already been done for you. The use of these "clean" data allows you to focus on internalizing the key concepts without becoming unnecessarily distracted by data anomalies.

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The final project provides an important complement to the classroom experience, allowing you to apply course concepts and tools on a problem of special interest to you. The project is a guided application, in which I assist your group through a significant course of self-study. Specific benefits of the guided study include a chance to think through how best to collect and clean the data, as well as how to apply the models used in class, especially if none of them exactly fits the project situation.

Since we all are actively involved as consumers of services, it should be straightforward to select a particular service provider or a service industry that your group is interested in and is familiar with. There is a wide variety of topics that each group can choose to pursue for the final project. Two types of project work out best.

Service Improvement – a mini-consulting project. It involves use of the methodologies introduced in class to analyze a real life service operations system, diagnose its problems, identify opportunities for improvement and quantify potential costs, benefits, risks and service impacts.

New Service Business Plan. This is an opportunity for entrepreneurs to identify a service need that can be met through enhanced service operations processes. Your group will be required to develop a mini-business plan and support the analysis through use of the tools introduced in the course.

To the extent that the above types of projects do not work out for your group – or to the extent that you have a burning passion to study a particular industry, you also might consider the following option:

Industry / Company Service Profile. You will be required to complete a report that describes the key operational and strategic challenges in the selected service industry, and how various firms are managing these challenges. Alternatively the report could focus on a single firm, describing its service concept, competitive position, underlying service strategy, the main characteristics of its operations, key operational choices it has made, operational policies, etc.

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Class	Date	Topic	To Read Before Class / Agenda	Due
1	Wed 9/08	Introduction: course overview & introduction to service ops strategy	J. A. Fitzsimmons and M. J. Fitzsimmons , "The Nature of Services," <i>Service Management</i> , 4 th ed., New York: Irwin-McGraw-Hill, 2004, pp 17-30.	
2	Mon 9/13	Service strategy – Introduce Benihana case simulation model & Monte Carlo method	W. E. Sasser and J. Klug, "Benihana of Tokyo" <i>HBS Case #9-673-057</i> , 2004, 17pp <ul style="list-style-type: none"> • Overview of simulation modeling • Refresher on probability, simulation 	
3	Wed 9/15	Benihana case discussion	<ul style="list-style-type: none"> • Report on simulation analysis of Benihana case • Overview of Optimization and Sensitivity Analysis 	CD
4	Mon 9/20	Capacity mgmt: introduction	P. Mango and L. Shapiro, "Hospitals Get Serious About Operations" <i>The McKinsey Quarterly</i> , 2001, No. 2, pp. 74-85. J. L. Heskett , "Shouldice Hospital Limited (Abridged)," <i>HBS Case #9-805-002</i> , 2005, 14 pp.	CR
5	Wed 9/22	Capacity mgmt: queuing Little's law	K. L. Katz, B. M. Larson, and R. C. Larson , "Prescription for the Waiting-in-Line Blues," <i>Sloan Management Review</i> , Winter 1991, pp. 44-53. R. B. Chase and S. Dasu, "Want to Perfect Your Company's Service? Use Behavioral Science," <i>Harvard Business Review</i> , June 2001, pp. 78-84. (reprint #R0106D)	
6	Mon 9/27	Queueing: performance metrics	Assorted background readings on webCafe site	
7	Wed 9/29	Capacity mgmt: queuing loss	Peter Kolesar , "Stalking the Endangered CAT," <i>Interfaces</i> , 14.6, Nov-Dec 1984, pp. 16-26.	
8	Mon 10/04	Capacity mgmt: call center case	Application of Analytical Models – Call Center Capacity Plan	A
9	Wed 10/06	Service quality management (Guest Lecture)	V. A. Zeithaml, A. Parasuraman, and L. L. Berry , <i>Delivering Quality Service</i> , New York: The Free Press, 1990, pp. 15-49, 175-186. F. Lai, J. Hutchinson, D Li and C. Bai, "An empirical assessment and application of SERVQUAL in mainland China's mobile communications industry", <i>International Journal of Quality and Reliability Management</i> , Vol. 24, No. 3, 2007, pp. 244-282.	
---	Mon 10/11	Fall Break	No Class	
10	Wed 10/13	Service Recovery, Positioning, Process Analysis & , TQM / 6σ, complexity	C. Hart, J. Heskett and E. Sasser, "The Profitable Art of Service Recovery", <i>Harvard Business Review</i> , July-August 1990, pp. 148-154. C. Hart, "The Power of Unconditional Service Guarantees", <i>Harvard Business Review</i> , July-August 1988, pp. 238-245. J. A. Fitzsimmons and M. J. Fitzsimmons, "Achieving Service Quality," <i>Service Management</i> , 4 th ed., New York: Irwin-McGraw-Hill, 2004, pp. 146-151. Project Topic List Due	P1
11	Mon 10/18	Service Delivery – Internet Retailing Case	F. Frei et al, "Zappos.com: Clothing, Customer Service and Company Culture", HBR Case # 9-610-015, 2010, 27 pp.	CR
12	Wed 10/20	Consumer Electronics industry discussion (Guest Lecture)	Samsung Management - KPI Application discussion	
13	Mon 10/25	Revenue mgmt: - Introduction	Revenue Management Game	
14	Wed 10/27	Revenue mgmt: bid price LPs & expected marginal revenue	R. G. Cross , "The Core Concepts of Revenue Management," <i>Revenue Management</i> , New York: Broadway Books, 1998, pp. 49-98. R.L. Phillips, <i>Pricing and Revenue Optimization</i> , "Capacity Allocation, Chapter 7	
15	Mon 11/01	Harrah's case discussion	M. A. Cohen, N. Gans and N. Agrawal , "Revenue Management at Harrah's Entertainment, Inc.", <i>INFORMS Trans. on Education</i> , May, 2009, pp.160-168.	CR
16	Wed 11/03	Revenue Mgmt: uncertainty	R.L. Phillips, <i>Pricing and Revenue Optimization</i> , "Network Management", Chapter 8	
17	Mon 11/08	Project Progress Reports	Project Plan Presentations	P2
18	Wed 11/10	Product support: customer centric strategy & semiconductor equipment case	M. A. Cohen, N. Agrawal and V. Agrawal, "Winning in the Aftermarket", <i>Harvard Business Review</i> , June 2006, pp. 129-138. J. J. Chamberlain and J. Nunes , "Service Parts Management: A Real-life Success Story", <i>Supply Chain Management Review</i> , September 2004, pp. 38-44.	

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19	Mon 11/15	Product support: repairable parts inventory management	M. A. Cohen, V. Deshpande and N. Rudi, Repairable Service Parts Inventory Management", Lecture Note, OPIM Department, The Wharton School, 2004, 31 pp.	
20	Wed 11/17	Product Support: Industry Applications (Guest Lecture)	MCA Solutions Management – Industry Case Study discussion	
21	Mon 11/22	Delivery Systems:	Project Progress Update – Team meetings	A
22	Wed 11/24	Product support: Performance Based Logistics & Contracting (Guest Lecture)	Jose Guajardo et al, "Impact of Performance Based Contracting on Product Reliability: An Empirical Analysis", Working Paper, OPIM Department, The Wharton School, 2010, 33 pp.	
23	Mon 11/29	Servicization	R. Oliva and R. Kallenberg, "Managing the Transition from Products to Services", <i>International Journal of Service Industry Management</i> , Vol. 14, No. 2, 2003, pp. 160-172.	
24	Wed 12/01	Servicization	R. Oliva and J. Quinn, "Interfaces Evergreen Services Agreement Case, HBS 9-603-112, 2003. 20 pp., Better Place Mini-Case	CD
25	Mon 12/06	Final presentations		P3
26	Wed 12/08	Final presentations		P3
---	Wed 12/15	Final Report Due		P4

Assignments / Deliverables:

Case discussion = CD

Case report (hand-in) = CR

Assignment (hand-in) = A

Project Topic List = P1 (2-3 choices with brief description)

Project plan proposals progress report = P2 (2 page description of your project)

Project presentations = P3

Project Final Report = P4