

(19/01/07)

## OM 386 STRATEGIC QUALITY MANAGEMENT

SPRING 2007

MW 2:00 – 3:15 PM

UTC 1.146

Unique # 03890

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### COURSE TOPICS:

This course focuses on the essence, principles, and practices of strategic quality management. Some of the ideas and topics that are covered are: total quality management (TQM); process improvement; process orientation; service quality; human resources; customer satisfaction programs; quality function deployment; process control and capability; role of inspection; economics of quality; productivity measurement; learning and organizational performance measures; and teachings of Deming, Juran, and Crosby.

### LEARNING MATERIALS:

The Memory Jogger II by Brassard and Ritter (ISBN: 187936441)

A **readings packet** containing all the readings and cases is available from the University Co-op Custom Publishing. A **class companion packet** containing some materials we shall use in class will be available from the GSB Copy Center (GSB 3.136). Please remember to bring the class companion packet to class starting with Session 6.

### PERFORMANCE EVALUATION:

Class Participation	50%
Case Reports (7)	14%
ISO Report - Group Assignment (due <i>Monday</i> , April 2)	10%
Homework – Individual Assignment (due <i>Monday</i> , March 26)	6%
Group Presentations (2): ( <i>March 5,7</i> );( <i>Apr. 30, May 2</i> )	<u>20%</u>
Total	100%

Case Reports: At the beginning of the session in which a case report is due, you will turn in a written report, not to exceed 1 double-spaced page, which addresses the case discussion questions listed in the detailed schedule. The report should not have any attachments. **No late report will be accepted.** These reports will not be returned to you, so please keep a copy for yourself.

ISO Project: It can be argued that no single set of standards has had more impact on increasing the worldwide awareness of quality than the ISO series of standards. This project is an opportunity to learn what ISO series of standards is (assessment, certification, and registration) and what it is not. Imagine that your help has been solicited by the CEO of an American company. The company embarked on an organization-wide TQM initiative about a year ago and is currently using the MBNQA criteria for self-assessment. Recently, the CEO attended a seminar where a consultant proclaimed the virtues of ISO. The CEO does not know anything about ISO. She also wants to understand how the MBNQA and the ISO series do or do not fit together. Prepare a written report, not to exceed 5 double-spaced pages excluding exhibits, to enable the CEO to form an informed opinion. This is a group project. The report is due in class on *Monday, April 2*.

Class Participation: This, the most important component of your course grade, is essentially a measure of how actively you are engaged in class proceedings, and what you contribute to the learning of others during class.

Group Presentations:

Your group will make two oral presentations to the class, each of approximately 20 minutes duration, on topics assigned to you. The presentations are scheduled for March 3, March 5, April 30 and May 2.

**DETAILED SCHEDULE:**

<b>SESSION 1 (M, 1/22)</b> Readings:	<b>INTRODUCTION</b> "Made in U.S.A.: A Renaissance in Quality"
<b>SESSION 2 (W, 1/24)</b> Readings:	<b>WHAT IS QUALITY?</b> <u>Memory Jogger</u> - Radar Chart
<b>SESSION 3 (M, 1/29)</b> Case:	<b>WHAT IS TQM?</b> Paul Chesler, director, Quality Assurance
Questions:	1. What are the causes of the quality problem on the Greasex line? 2. What should Paul Chesler do about the quality problem?
<b>SESSION 4 (W, 1/31)</b> Case:	<b>PROCESS IMPROVEMENT</b> Florida Power and Light Quality Improvement (QI) Story Exercise(A)
Questions:	1. Consider the seven-step problem solving mechanism known as the quality-improvement story (QI story). How would you characterize its role at FPL? 2. Why use a storyboard? 3. What is the role of tools such as fishbone diagram, Pareto chart, and force field analysis?
Readings:	<u>Memory Jogger</u> - Brainstorming, Cause & Effect, Flowchart, Force Field, NGT (and Multivoting), Pareto Chart, Problem-Solving/Process-Improvement Model: Improvement Storyboard, Run Chart, Scatter Diagram, and Tree Diagram
<b>SESSION 5 (M, 2/5)</b> Case:	<b>PROCESS IMPROVEMENT (cont...)</b> Massachusetts General Hospital: CABG Surgery (A)
Questions:	1. What are the reasons for using CABG as the starting point for care path creation at MGH? 2. For each stakeholder at MGH, identify why there may be resistance to the care path.
Readings:	<u>Memory Jogger</u> - Team Guidelines
Assignment:	<i>Case Report</i>
<b>SESSION 6 (W, 2/7)</b> Readings:	<b>WHAT IS PROCESS ORIENTATION?</b> "Leveraging Processes for Strategic Advantage"
Questions:	1. What specifically led SmithKline Beecham, Pepsi, USAA, and Xerox to 'shift to processes'? 2. How has a process orientation changed the jobs of senior managers and how they spend their time? 3. What are the key elements of process orientation?

**SESSION 7 (M, 2/12)****SERVICE QUALITY**

Readings:

"Improving Service Quality in America: Lessons Learned"

Case:

Singapore Airlines (A)

Questions:

1. What are the two or three key elements of SIA's strategy?
2. SIA management states that cabin crews are a vital component of its service strategy. Evaluate the elements of SIA's work-force-management program (e.g., training, performance measurement, feedback, and communication). What changes, if any, do you recommend?
3. How about SIA's system for measuring service quality? Do you recommend any changes?

Assignment: *Case Report***SESSION 8 (W, 2/14)****HUMAN RESOURCES**

Readings:

"Learning from Learning Theory: Implications for Quality Improvement of Turnover, Use of Contingent Workers, and Job Rotation Policies"

Case:

Club Med (B)

Questions:

1. What are the causes of GO turnover?
2. What are the pros and cons of Club Med's rotation policy?

Assignment: *Case Report***SESSION 9 (M, 2/19)****CUSTOMER SATISFACTION**

Readings:

"The Power of Unconditional Service Guarantees"

Case:

Xerox Corporation: The Customer Satisfaction Program

Questions:

1. Should Xerox offer a guarantee? Give two reasons for and two reasons against.
2. If Xerox chooses to offer a guarantee, what kind of guarantee should it offer and why?

Assignment: *Case Report***SESSION 10 (W, 2/21)****GAP MODEL OF CUSTOMER SATISFACTION**

Readings:

Memory Jogger- Radar Chart**SESSION 11 (M, 2/26)****QUALITY FUNCTION DEPLOYMENT**

Readings:

"The House of Quality" by Hauser and Clausing  
Memory Jogger - Affinity Diagram, Interrelationship Digraph,  
 Matrix Diagram, Prioritization Matrices, Tree Diagram

**SESSION 12 (W, 2/28)****QUALITY FUNCTION DEPLOYMENT (CONT....)**

Readings:

"The House of Quality" by Hauser and Clausing  
Memory Jogger - Affinity Diagram, Interrelationship Digraph,  
 Matrix Diagram, Prioritization Matrices, Tree Diagram

**SESSION 13 (M, 3/5)****GROUP PRESENTATIONS****SESSION 14 (W, 3/7)****GROUP PRESENTATIONS****SESSION 15 (M, 3/19)****PROCESS CONTROL/CAPABILITY**

Readings:

“Understanding Variation”

Case:

Memory Jogger- Control Charts, Data Points, Process Capability

Questions:

Quality Wireless (A)

1. What fraction of the days in 2003-2004 failed to meet the targeted hold time of 110 seconds? Given that the daily average hold time was normally distributed with a mean of 99.67 and a standard deviation of 24.24, what fraction of days where the call center failed to meet the targeted hold time of 110 seconds would you expect?
2. What fraction of the days in April 2005 failed to meet the targeted hold time of 110 seconds? Given that the daily average hold time after process improvements was normally distributed with a mean of 79.50 and a standard deviation of 16.86, what fraction of days where the call center failed to meet the targeted hold time of 110 seconds would you expect?
3. Based on the performance in April 2005, do you think that the performance of the call center has improved?

Case:

Quality Wireless (B)

Questions:

1. What do you think of Jackson’s management approach?
2. If we assume that call center performance during the month of September is continuing at the improved level with a mean of 79.50 and a standard deviation of 16.86, what is the probability of observing ten days that average 86.6 or more? What is the probability of observing ten days that average 74.4 or less?
3. What would you do if you were in Jackson’s position?

**SESSION 16 (W, 3/21)****PROCESS CONTROL/CAPABILITY**

Readings:

“Six-sigma Quality Programs”

Case:

Memory Jogger- Control Charts, Data Points, Process Capability

Questions:

Excel Logistics Services

1. Help Stalk organize the data by preparing a run chart.
2. Prepare appropriate process control charts to see if the process is in control. Is the receiving process in or out of control?
3. Customer service requirements determine that receiving process errors should never exceed 2 percent on any given day. What percentage of the days is likely to exceed 2 percent error, given the current performance at receiving? Assume a total of 8,000 transactions per day, 4,000 in each module.
4. Prioritize the set of actions you would take to ensure that more than 99 percent of the days have less than 2 percent receiving error.
5. Can you think of a continuous improvement framework that Stalk can use as an engine to improve performance in the receiving process and other processes at Springfield?

**SESSION 17 (M, 3/26) PROCESS CONTROL/CAPABILITY**

Readings: "Six-sigma Quality Programs"

Memory Jogger- Control Charts, Data Points, Process Capability

Case: Six Sigma Quality at Flyrock Tires

Homework Questions: The questions are designed to help Susan Douglas understand the current capability of the extrusion process and quantify the benefit that may be achieved if the extruder could be transformed to a Six Sigma process.

1. If the extruder setting is accurate, what proportion of the rubber extruded will be within specifications?
2. Douglas has asked to take a sample of 10 sheets of rubber each hour from the extruder and measure the thickness of each sheet. Based on the average thickness of this sample, operators will decide whether the extrusion process is in control or not. Given that Douglas plans Three Sigma control limits, what upper and lower control limits should she specify to the operators?
3. If a bearing is worn out, the extruder produces a mean thickness of 403 thou when the setting is 400 thou. Under this condition, what proportion of defective sheets will the extruder produce? Assuming the control limits in question 2, what is the probability that a sample taken from the extruder with the worn bearings will be out of control? On average, how many hours are likely to go by before the worn bearing is detected?
4. Now consider the case where extrusion is a Six Sigma process. In this case, the extruder output should have a standard deviation of 1.667 thou. What proportion of the rubber extruded will be within specifications in this case?
5. Assuming that operators will continue to take samples of 10 sheets each hour to check if the process is in control, what control limits should Douglas set for the case when extrusion is a Six Sigma process?
6. Return to the case of the worn bearing in question 3 where extrusion produces a mean thickness of 403 thou when the setting is 400 thou. Under this condition, what proportion of defective sheets will the extruder produce (for the Six Sigma process)? Assuming the control limits in question 5, what is the probability that a sample taken from the extruder with the worn bearings will be out of control? On average, how many hours are likely to go by before the worn bearing is detected?

Assignment : Turn in a written response to the homework questions at the start of the session.

**SESSION 18 (W, 3/28) ROLE OF INSPECTION****SESSION 19 (M, 4/2) SUPPLIER QUALITY**

Assignment: ISO Report

**SESSION 20 (W, 4/4) COST OF QUALITY**

Case: Texas Instruments: Cost of Quality (A) and (B)

- Questions:
1. Why use COQ instead of direct measures of quality (DMOQ)?
  2. In Exhibit 10 in case (A), are the components of COQ moving in the right direction?
  3. Why did ISD's first attempt to implement the COQ system fail?

Assignment: Case Report

**SESSION 21 (M, 4/9)**

Readings:

**ECONOMICS OF QUALITY**

“Zero Defections: Quality Comes to Services”

**SESSION 22 (W, 4/11)**

Case:

**REPORT CARDS**

Productivity and Performance Systems: A Comparative Analysis of Northern Telecom and United Parcel Service

Questions:

1. Productivity and performance measurement systems reflect how management views the nature of work itself and why employees work. Articulate in a concise manner the relevant views of the UPS management and those of the NT management.
2. “If you do it our way, you’ll be less tired at the end of the day,” says a UPS spokesman. Is the spokesman right? If yes, where does process knowledge reside at UPS?
3. Where does process knowledge reside at NT?

**SESSION 23 (M, 4/16)**

Readings:

**ORGANIZATIONAL PERFORMANCE MEASURES**

“Using the Balanced Scorecard as a Strategic Management System”

Case:

Analog Devices: The Half-Life System

Questions:

1. How is Schneiderman’s half-life effect different from the well-known experience/learning curve effect?
2. What is the role of the half-life method at Analog?

Assignment: *Case Report***SESSION 24 (W, 4/18)**

Readings:

**LEARNING**

“Building a Learning Organization”

Questions:

1. What five activities, according to Garvin, must a learning organization be skilled at?
2. What slows down learning? What speeds up learning?
3. How can we reconcile ‘Drive out Fear’ with ‘Only the Paranoid Survive’?

**SESSION 25 (M, 4/23)**

Case:

**HEALTH AND SAFETY**

Workplace Safety at Alcoa (A)

Questions:

1. What has been and needs to be the half-life of Mission Valley’s safety improvement?
2. As Paul O’Neil, how do you describe what has and has not worked at Mission Valley?
3. What is your evaluation of Linda Merton’s plan for 1992?
4. Should Harris fire Stepancik?

Assignment: *Case Report***SESSION 26 (W, 4/25)**

Case:

**HEALTH AND SAFETY**

Workplace Safety at Alcoa (B)

1. What did O’Neill learn from his investigation team and discover on his own?
2. What should Richard Green, the Business Unit President, have done? What had he done? Why?
3. What are O’Neill’s objectives?
4. What are O’Neill’s alternatives, given what he had learned?
5. What should O’Neill do?
6. Given what you know about O’Neill, what do you think he did?

**SESSION 27 (M, 4/30)**

**GROUP PRESENTATIONS**

**SESSION 28 (W, 5/2)**

**GROUP PRESENTATIONS**

### **Scholastic Dishonesty**

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the Policy Statement on Scholastic Dishonesty for the McCombs School of Business:

*By teaching this course, I have agreed to observe all of the faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all of the student responsibilities described in that document. If the application of that Policy Statement to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification. Policy on Scholastic Dishonesty: Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> or the General Information Catalog to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.*

### **Class Web Sites and Student Privacy**

*Password-protected class sites will be available for all accredited courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, class e-mail rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1. For information on restricting directory information see: <http://www.utexas.edu/student/registrar/catalogs/gi02-03/app/appc09.html>.*

### **Students With Disabilities**

*The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY.*

**SPRING 2007 OM 386 Strategic Quality Management UTC 1.146 MW 2:00-3:15**

<u>Session</u>	<u>Day</u>	<u>Date</u>	<u>Topic</u>	<u>Case</u>	<u>Assignment</u>
1	M	(1/22)	Introduction		
2	W	(1/24)	What is Quality?		
3	M	(1/29)	What is TQM?	Paul Chesler	
4	W	(1/31)	Process Improvement	Florida Power Light	
5	M	(2/5)	Process Improvement	Mass Gen Hosp	Case Report
6	W	(2/7)	What is Process Orientation?		
7	M	(2/12)	Service Quality	Singapore Airlines	Case Report
8	W	(2/14)	Human Resources	Club Med (B)	Case Report
9	M	(2/19)	Customer Satisfaction Programs	Xerox	Case Report
10	W	(2/21)	Gap Model of Customer Satisfaction		
11	M	(2/26)	Quality Function Deployment		
12	W	(2/28)	Quality Function Deployment		
13	M	(3/5)	Group Presentations		
14	W	(3/7)	Group Presentations		
<b>Spring Break</b>					
15	M	(3/19)	Process Control/Capability	Quality Wireless (A) & (B)	
16	W	(3/21)	Process Control/Capability	Excel Logistics	
17	M	(3/26)	Process Control/Capability	Six Sigma Quality at Flyrock Tires	Homework
18	W	(3/28)	Role of Inspection		
19	M	(4/2)	Supplier Quality		ISO Report
20	W	(4/4)	Cost of Quality	Tex Instr (A) & (B)	Case Report
21	M	(4/9)	Economics of Quality		
22	W	(4/11)	Report Cards	North Telec & UPS	
23	M	(4/16)	Organizational Performance Measures	Analog Devices	Case Report
24	W	(4/18)	Learning		
25	M	(4/23)	Health and Safety	Alcoa (A)	Case Report
26	W	(4/25)	Health and Safety	Alcoa (B)	
27	M	(4/30)	Group Presentations		
28	W	(5/2)	Group Presentations		