

Leading in a Lean and Six Sigma World

CARNEGIE-MELLON UNIVERSITY
Heinz College of Public Policy and Management

Leading in a Lean and Six Sigma World
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Leading in a Lean and Six Sigma World

Course Description

This course provides participants with an understanding of the principles and methods associated with leading in a Lean and Six Sigma world. The skills and tools associated with Lean and Six Sigma to reduce cost and drive customer and employee engagement are a key component of the course content. Students will have the opportunity to learn and experiment with Lean and Six Sigma methods along with the leadership skills associated with customer and employee and engagement, product and service quality, while and formulating personal approaches to their application in the work environment.

No prior familiarity with the theory or practice of Lean and Six Sigma, customer and employee engagement or quality management/improvement are required as a prerequisite for this course; students who have been exposed to these principles and practices will benefit from the opportunity to place these experiences into an integrated context. The course is designed to be intellectually stimulating and professionally useful for students at any phase of their career development.

Course Overview

Although the state of the US economy has changed substantially since 2,000, the need for Lean and Six Sigma to improve customer experience and employee engagement has not. It is no longer good enough to have satisfied customers and employees. When used effectively, Lean and Six Sigma methods can have a positive impact customer and employee engagement and can provide the vital competitive advantage for the US and organizations that survive in the new customer experience environment.

There are three areas of focus for organizational change in this course:

Strategy:

- External: focus on the customer experience and Brand, and the competitive and regulatory environment
- Internal: builds a strategy for culture change and quality and service delivery

Lean and Six Sigma to improve Quality and Service Delivery

- Product Quality: exceeds customer expectations and error free
- Service Quality: manages service interactions and service
- Predictive Analytics: use of data and tools/analytic techniques to improve the customer experience and engagement

Culture:

- Mission, vision and values
- Customer and Employee Engagement
- Leadership and managing cultural change

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- Participants in this course will have the opportunity, during each week of the semester, to review a theoretical principle behind Lean and Six Sigma, analyze and apply those principles, and use those principle to design and deliver an enhance customer experience.

Students will have the opportunity to test theoretical principles in out of class exercises. Brief written reports on these experiences will represent a major contribution to the assessment of student achievement.

Faculty Background

Joseph J. Balestreire is a forward-thinking and results-driven executive, with demonstrated expertise in performance improvement, organizational development, education, customer and employee engagement, and quality planning and implementation. As Senior Vice President and Manager, Retail Bank Quality and Service Delivery at PNC Bank, Mr. Balestreire led the retail bank quality and service delivery strategy, driving problem reduction and improving problem handling, resulting in increased customer and employee satisfaction and engagement. He oversaw multiple cross-functional work groups in all retail product, channel, and operations areas charged with facilitating changes, resulting in improvement from the customer viewpoint.

Mr. Balestreire received his MS in Education from the University of Pittsburgh in 1976. He has over 30 years' experience in Management and Organization Development, Quality Improvement and Customer and Employee Engagement in both Finance and Health Care and eight years teaching in public education. He has been an adjunct faculty member at the Heinz College for Public Policy and Management since 1994. He is a past examiner for the Pennsylvania Quality Leadership Award and has presented nationally at the Institute for Healthcare Improvement National Forum and local quality conferences. In addition, he has consulted with several Health Care Systems.

Learning Contract

The attached outline reviews the overall approach to the educational dynamic of this course; it is designed to be highly interactive, with substantial student engagement in and out of the classroom.

Learning objectives have been established for each class session. Students should be familiar with these expectations and guide their personal preparation efforts to achieve those objectives.

Reading assignments are specified for each class meeting, with the assumption that students will have read the materials and be prepared to critically analyze them in class, as well as to apply the principles in practical exercises. Students are encouraged to contribute suggestions concerning relevant readings during the conduct of the course.

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Course participants are expected to attend each class; if class attendance is not possible, it is the responsibility of the student to notify the instructor and obtain from other students, lecture notes, discussion materials and handouts from the class.

Course participants are expected to participate constructively in class discussions, contributing to the learning of others through the sharing of relevant insights from professional experience and readings.

The instructor's primary responsibility lies in obtaining and structuring learning materials for the personal growth of each participant. The instructor is also responsible for evaluating each student's progress toward the attainment of the specified learning objectives. This evaluation will be conducted collaboratively with the student, with frequent opportunities for constructive feedback on student progress. Primary sources for evaluation of student performance will be written project reports, and the quality of class participation. Grades of A (+/-) will be awarded only for superior performance.

Students are referred to the University policy on cheating and plagiarism. It will be the policy in this course to discourage cheating; in fairness to all, cheating will be treated severely wherever it occurs. Because a large part of the learning experience comes from interaction with peers, students are encouraged to discuss assignments with each other. Materials submitted for grading must, however, be the product of individual effort.

Student Assignments

Discussion Questions

Each week you will be assigned readings in the core texts and articles for the course. You are expected to prepare answers to several discussion questions based on those reading, prior to class. You will use your prepared answers as reference during class discussion and then turn them in at the end of class. Following are guidelines for preparing these answers:

- ☐ Prepare clear and succinct answers; use an outline form if you wish, so long as the key concepts are conveyed
- ☐ Implement critical thinking; analyze the readings
- ☐ Prepare answers on one page only
- ☐ Do not use a cover sheet

Required Articles:

Manage Your Human Sigma
Harvard Business Review – Reprint R0507J
John H. Fleming, Curt Coffman, and James K. Harter

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Your Customer Experience is Superficial unless you have the “Q”
Ricardo Saltz Gulko – October 2017, published on Eglobalis

Defining the Differences for Lean Six Sigma in the Services Environment – White Paper
2010 Six Sigma Qualtec

The Essential Six Sigma
Quality Progress

Lean and Six Sigma A One-Two Punch
Quality Progress

Lessons from the Leading Edge of Customer Experience Management
Harvard Business Review Analytic Services
Sponsored by SAS

Why Spock would reject NPS. So we can live long and Prosper
Linkedin: Mark Eduljee

The Business Impact of Customer Experience
Forrester Research, Inc.: Maxie Schmidt-Subramanian

- Suggested Readings:**
- | | |
|----------------------|---|
| Buckingham, Coffman: | <u>First Break All The Rules</u>
ISBN: 0-684-85286-1 |
| Senge: | <u>The Fifth Discipline: The Art and Practice of a Learning Organization</u>
ISBN: 0-385-26095-4 |
| Hsieh: | <u>Delivering Happiness: A Path to Profits, Passion, and Purpose</u>
ISBN: 978-0-446-56304-8 |
| Blanchard, Bowles | <u>Raving Fans</u>
ISBN: 0-688-12316-3 |

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Project Report

During the course, each student will submit an individually developed analysis of the application of Lean and Six Sigma tools to improve quality and service delivery and the overall customer experience. Each student will use Lean and Six Sigma tools and techniques reviewed in class and apply them in a real situation in their work or school environment. The project report will have two elements, as describe below.

Project/Experience Elements

Descriptive:

- ☐ The key customer
- ☐ The setting/environment in which the customer experience/improvement opportunity takes place
- ☐ The Lean/Six Sigma technique(s) and/or process applied
- ☐ The outcomes of applying the technique

Analytical:

- ☐ The effect the technique had on cost reduction, process efficiency customer and/or employee engagement
- ☐ The impact the technique or process had on the overall customer experience
- ☐ What you learned about the techniques and/or process and its application

Final Project Experience due no later than the end of day Wednesday, June 23 by email.

Note: the application of the technique does not have to be successful; if it is not, explain what impeded it effectiveness, and what might have been done to improve it implementation.

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COURSE OUTLINE

Session	Date	Content
Week 1	5/26	Lecture Topic: Purpose and Content Customer experience evolution and trends in management theory Course requirements and expectations Process Technique: Group roles/simulation

Lean and Six Sigma to improve Quality and Service Delivery

Week 2	6/2	Lecture Topic: Relationship between Business Processes and the Customer Experience Analytic Skill: Leveraging Lean and Six Sigma tool to clarity and understanding the customer experience Process Technique: Customer Journey Mapping and Root Cause Analysis Group Process Process/Multi-voting Reading: <i>Your Customer Experience is Superficial unless you have the "Q"</i> Ricardo Saltz Gulko – October 2017, published on <i>Eglobalis</i>
Week 3	6/9	Lecture Topic: Understanding Customer and Process Outcomes Analytic Skill: Key Quality Indicators Process Technique: Data Analysis: analytic tools (RPB) Reading: CX Blog: <i>How to build an Experience map.</i> <i>Niall O'Connor</i> <i>Lean and Six Sigma A One-Two Punch</i> Quality Progress
Week 4	6/16	Lecture Topic: Managing Process and Customer Experience Analytic Skill: Leveraging analytic tools to focus on what is driving customer engagement and loyalty Process Technique: Analytic tools: Pareto Analysis, Scatter Diagrams and Histograms

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Reading: *Defining the Differences for Lean Six Sigma in the Services Environment – White Paper, 2010 Six Sigma Qualtec*

Week 5 6/23 Lecture Topic: Managing Process Capability
Analytic Skill: Predictive analytics
Process Technique: Applied statistics: Control Charts
Deming: process outcomes and service quality (Blue Beads)
Reading: CX Blog: *Why Spock would reject NPS*
Mark Eduljee, February 10, 2016

Final Project Experience due no later than the end of day Wednesday, June 23 by email.

Impact on Customer and Employee Engagement

Week 6 6/30 Lecture Topic: Delivering Value through the Customer Experience
Synthesis/Project Review and Summary
Analytic Skill ROE: Return on Experience
Process Technique: Employee and customer encounter
Reading: HBR: *Manage Your Human Sigma*
Forrester: *Business Impact of Customer Experience*

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Week 1: **Purpose and Content**
Customer experience evolution and trends in management theory
Course requirements and expectations

Required Reading:

None

Session Objectives:

1. Identify major trends in customer experience management theory.
2. Identify continuities of these trends with customer experience strategies and quality improvement strategies.
3. Identify principles and characteristics of a culture that drives success using customer and employee engagement and quality improvement and its foundation.
4. Understand the value of team/group dynamics, communication and decision-making

Additional References/Resources:

Synergistic Decision-Making

Process Technique:

Group Simulation: Medicine Wheel

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Week 2: **The Relationship between Business Processes and Customer Experience**

Required Reading:

Your Customer Experience is Superficial unless you have the “Q”
Ricardo Saltz Gulko – October 2017, published on *Eglobalis*

Study Questions:

1. According to Ricardo Saltz Gulko “No customer experience, however well designed can make up for a lack of quality.” The article cites Samsung, United and Volkswagen as examples of poor quality that impact the customer experience and the bottom line. Do you agree with Ricardo and if so, provide examples that support or refute his thinking?
2. The article states the quality, culture and strategy all impact the overall customer experience. Provide examples from your work or CMU experience where one or more of these elements have impacted your customer experience.
3. The Galaxy S20, S20+ and S20 Ultra 5G is now available to purchase. Knowing what you know about the flaws in Samsung's processes, would you still buy it? If so, what has Samsung done to regain your trust?
4. Who is your primary customer and what do they want, need or expect from you?

Session Objectives:

1. Defining the relationship between business processes and the customer experience.
2. Identify managements responsibilities in design and implementing customer experience and quality improvement strategies
3. Develop a journey map to illustrate process steps and analyze the cost of poor quality in the customer experience
4. Understanding root cause analysis
5. Identify methods of enhancing interactive participation in small groups

Additional References/Resources:

Samples of process flows and journey maps

Analytical Skills Exercise:

Understand, develop and analyze a journey map and its impact on customer and employee engagement

Process Technique:

Use nominal group process and multi-voting to obtain group consensus

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Week 3: Understanding Customer and Process Outcomes

Required Reading:

Lean and Six Sigma A One-Two Punch
Quality Progress

CX Blog: *How to build an Experience map.*
Niall O'Connor

Study Questions:

1. Based on the *article Lean and Six Sigma – A One-Two Punch*, what are some of the advantages and disadvantages of a Lean approach to improvement and a Six Sigma approach to improvement?
2. The Quality Progress article is based on two manufacturing case studies. In what ways can Lean and Six Sigma apply in a service environment? Support your response with examples.

Session Objectives:

1. Identify key quality indicators
2. Develop a cause and effect diagram to identify variation in processes and the customer experience
3. Identify methods of arraying and presenting data
4. Use run, pie and bar charts to visually organize and analyze data

Additional References/Resources:

Samples of cause and effect diagrams and run, pie and bar charts and their impact on customer and employee engagement.

Analytical Skills Exercise:

1. Review journey map assignment – learning perspective
2. Array a set of data in the most appropriate display
3. Synthesize data analysis with a short fact

Process Technique:

Complete an opportunity statement regarding the education process at CMU.
Apply root cause analysis principles using the 5 why process.

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Week 4: Managing Process and Customer Experience

Required Reading:

Defining the Differences for Lean Six Sigma in the Services Environment
White Paper, 2010 Six Sigma Qualtec

Study Questions:

1. The Six Sigma Qualtec article states that Lean Six Sigma is different in a service environment because of the human factor vs. machine factor. Do you agree or disagree with their thinking and why?
2. What are some of the unique factors that need to be taken into consideration when applying Lean Six Sigma in a service environment?
3. In what ways can “decisions by humans” be managed using Lean/Six Sigma methods/approaches?

Session Objectives:

1. Apply data collection techniques and analysis to work processes
2. Apply the principles of Pareto analysis in problem identification
3. Develop a scatter diagram using a prepared case study
4. Draw conclusions based on data analysis
5. Identify opportunities to improve the customer experience using Pareto and scatter diagrams.

Additional References/Resources:

Sample Pareto charts and Scatter diagrams and their impact on the customer experience.

Analytical Skills Exercise:

1. Develop a Pareto charts and Scatter diagrams using a prepared case study
2. Draw conclusions based on data analysis – impact on the customer experience
3. Identify opportunities for the application in real work.

Process Technique:

Case studies

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Week 5: Managing Process Capability

Required Reading:

CX Blog: *Why Spock would reject NPS*
Mark Eduljee, February 10, 2016

Study Questions:

1. What is your perspective on the relevancy of NPS (Net Promoter Score) and customer loyalty and are they still relevant?
2. Are there alternatives to NPS and Loyalty?

Session Objectives:

1. Identify the use of the scientific method as the structure for problem solving
2. Apply the three strategic questions to analyze improvement efforts
3. Using Histograms to show relationship between similar data elements
4. Apply the theory and control chart techniques to situation data
5. Predictive analytics and Big Data.

Additional References/Resources:

Nolan T. and Batalden, MD: *Knowledge for the Leadership of Continual Improvement in Healthcare*
Langley, K. Nolan and T. Nolan: *Foundation for Improvement* (Part 1 and 2)

Analytical Skills Exercise:

1. Use a histograms diagram to show relationships between similar data elements
2. Apply the theory and control chart techniques to situational data and its impact on customer and employee engagement

Process Technique:

Using Deming's Blue Bead simulation to illustrate how we can bridge data, management and cultural to improve customer and employee engagement.

Reminder: Final Project Experience due end of day Wednesday, June 23 by email.

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Week 6: Delivering Value through the Customer Experience

Required Reading:

Fleming, Coffman, and Harter: *Manage Your Human Sigma*

Study Questions:

Harvard Business Review: Manage Your Human Sigma

1. According to the authors, an infrastructure is needed to holistically manage Human Sigma. In your opinion, what are the key components of this infrastructure and the keys to successful implementation of Human Sigma?
2. What are the advantages and disadvantages of measuring the customer encounter at the local level?

Session Objectives:

1. Understanding impact of customer and employee engagement on the organization.
2. Understanding the role of management as it relates to the Human Sigma operating model.
3. Long Term Value and Business Impact associated with the Customer Experience
4. ROE: Return on Experience

Additional References/Resources:

Keifer, Senge: *The Metanoic Organizations: Experiments in Organizational Innovation*
Senge: *Leadership in Metanoic Organizations*

Analytical Skills Exercise:

- Long Term Value and Attrition
- Customer Experience financial impact models

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Week 6 Cont. Synthesis/Project Review and Summary

Session Objectives:

1. Use of team learning as part of completion of project assignments
2. Provide examples of skills and techniques that are most applicable at each stage of the quality improvement process
3. Clarify major questions or concerns regarding the principles and application of quality improvement
4. Recognize achievements by course participants
5. Evaluate the course and identify improvements for future offerings