

## APICS Lean Enterprise Workshop Series Overview

The *APICS Lean Enterprise Workshop Series* is an in-depth seven-workshop study of the lean principles that companies need in order to meet the demand of today's manufacturing and service environments. In the workshop series, participants will follow Murphy's Toys, a fictitious company, through their lean transformation, and learn lean principles and methodologies along the way. The series offers numerous interactive activities for participants to maximize learning and retention, master lean terminology, and create a lean implementation plan.

Murphy's Toys is a manufacturing company. However, lean principles are very relevant to the service industry. You will note in the lean readiness assessment found in Workshop 1 that almost all aspects of lean are applicable for the service industry. Principles such as value mapping, continuous improvement, and flow all apply to service, although the systems surrounding the principles may appear different. We encourage you to ask participants how each section of the series applies to the service industry and to tailor examples to service businesses.

Topics for each workshop are outlined below.

### Workshop 1. The Lean Enterprise: Introduction

This workshop offers an introduction to lean from the perspective of a manager at Murphy's Toys, which is a fictitious company studied throughout the series. Participants will learn about the basic philosophy of lean, the steps to a lean transformation, and the House of Toyota framework, as well as how to determine product families, correct waste, and quantitatively assess an organization's lean status.

### Workshop 2. The Lean Enterprise: Lean Culture

Lean is a people- and culture-driven process. In this workshop, participants will explore the effects of a lean implementation on employees, brainstorm ideas for implementing change management at Murphy's Toys, and learn the importance and stages of teams in lean environments. An important lean tool, the kaizen, or team-oriented continuous-improvement event, will be introduced, and participants will study a problem at Murphy's Toys, completing a kaizen report. Murphy's Toys will choose the product family to use in the pilot for their lean implementation.

### Workshop 3. The Lean Enterprise: Value Stream Mapping

Value stream mapping is a valuable tool for viewing processes and determining potential areas of improvement. Using standard value-stream mapping icons, participants will draw a current-state value stream map of the injection-molded plastic-toy product line at Murphy's Toys. Participants will then learn what makes a value stream lean, after which they will apply this new knowledge as they develop a future-state map.

**Workshop 4. The Lean Enterprise: Stability and Process Improvement**

In this workshop, participants will learn how to achieve demand stability and improve processes. Concepts covered include load leveling, mixed-model production, buffering, causes of variation, standard work, total productive maintenance, and an introduction to six sigma. Participants will explore methods to reduce setup time through activities.

**Workshop 5. The Lean Enterprise: Just-in-Time**

Now that Murphy's Toys has stabilized its processes, it needs to focus on scheduling production to meet customer demand. This workshop covers determining customer demand, line balancing, continuous flow, implementing pull, scheduling with heijunka, and the use of kanbans. Through a hands-on activity, participant will explore the use of a heijunka system to meet customer demand.

**Workshop 6. The Lean Enterprise: Measuring**

Traditional measurements are not working well for Murphy's Toys as they transform to a lean enterprise. In this workshop, participants will compare and contrast traditional to lean measurements and their resulting behaviors. A review of lean accounting includes such topics as standard cost vs. value stream profit and loss statements, the financial impact of lean improvements, target costing, and lean decision-making. Participants will examine lean metrics that Murphy's Toys can use.

**Workshop 7. The Lean Enterprise: Sustaining**

Now that Murphy's Toys has undergone a lean transformation, it must implement long-term changes to sustain the gains made. These include implementing lean design, analyzing failures, and ensuring ongoing quality control and continuous improvement. In this workshop, participants will perform a failure mode and effects analysis (FMEA), analyze a problem using the six sigma DMAIC tool, and create a lean implementation action plan to take back to their organizations.

**Murphy's Toys**

Murphy's Toys is a fictitious company created especially for the *APICS Lean Enterprise Workshop Series* as an ongoing case study for the series. At Murphy's Toys, complaints are high, quality is low, and demand is building for toys. Each workshop in the series illustrates one step in the story of Murphy's lean transformation. Participants will learn lean principles through activities that include studying Murphy's corporate data, mapping their value streams, leveling their production, and measuring their success.

## Author Biographies

### **Bill Kerber** (*The Lean Enterprise: Introduction* and *The Lean Enterprise: Measuring*)

Bill Kerber is an educator and consultant specializing in executive sales and operations planning and lean manufacturing. In his more than 30 years of industry and consulting experience, he has worked with some of the best companies in the world.

Kerber is currently a faculty member at the Lean Enterprise Institute, the world's leading educational organization focusing on lean manufacturing. He is a Dale Carnegie graduate and has spoken to numerous groups including the APICS international conferences in New Orleans, Seattle, and San Diego, the QAD.INC user conference, the Bull Users Society, the Computer Associates Applications Conference, and many APICS chapter meetings. He received his Bachelor of Science degree in biology from Lafayette College in Easton, Pennsylvania, and attained the Certified Fellow in Production and Inventory Management designation from APICS The Association for Operations Management in 1991.

### **Brian Dreckshage** (*The Lean Enterprise: Lean Culture*)

Brian Dreckshage, CFPIM, is the Senior Managing Consultant at BKD LLP, one of the 10 largest CPA and advisory firms in the U.S. He has over 15 years of experience in materials, lean, and supply chain management in both manufacturing and distribution environments, having held both staff management and consulting positions. He has presented papers at several APICS Remanufacturing Specific Industry Group International Symposia, and at the 2007 APICS International Conference. He holds a bachelor's degree in management and marketing from Missouri State University, an MBA from Oklahoma City University, and is completing an MS in supply chain management from Pennsylvania State University.

Brian expresses his thanks to Art Lundgren and Bill Kerber.

### **Bill Leedale** (*The Lean Enterprise: Value Stream Mapping*)

Bill Leedale, CFPIM, CIRM, CSCP, is a Senior Advisor for Manufacturing and Engineering at IFS. He has over 30 years of experience in operations, materials management, lean, supply chain management and ERP consulting. He has helped companies large and small with process improvements, constraint management and ERP implementations. He has served on several APICS Committees, including SMR and BSCM certification committees. He holds a bachelor's degree in business and economics from Wittenberg University and an MBA from Ohio State University.

**Sam Tomas (*The Lean Enterprise: Stability and Process Improvement*)**

Sam Tomas, CFPIM, CIRM, C.P.M., has 35 years of experience with Motorola in a number of positions including Systems Engineering Manager, Product Manager, Material Operations Manager, Strategic Business Planning Manager, and Manager of International Marketing and Distribution. After retiring, he developed a number of educational courses in the areas of production operations management, supply chain management, international sourcing and procurement, business process reengineering, JIT, logistics, and more, for various commercial customers. He has also taught courses at the University of Phoenix in their Operations Management and Supply Chain Management programs.

**Beth Cudney (*The Lean Enterprise: Just-in-Time*)**

Beth Cudney, Ph.D., is an assistant professor in the Engineering Management and Systems Engineering Department at Missouri University of Science and Technology (formerly University of Missouri – Rolla).

Cudney received her bachelor's degree in industrial engineering from North Carolina State University, and master's degrees in mechanical engineering and business administration from the University of Hartford. She earned her doctoral degree in engineering management from Missouri University of Science and Technology.

Cudney is an American Society for Quality (ASQ)-certified quality engineer, certified manager of quality/organizational excellence, certified quality improvement associate and a certified Six Sigma black belt. A former president of the Institute of Industrial Engineers (IIE) Lean Division, Cudney is currently co-chair for the 2008 IIE Operational Excellence conference, a position she has held for the past four years. In addition, Cudney is a member of the Rotary Club of Rolla, Missouri, the American Society of Mechanical Engineers, ASQ, IIE, American Society for Engineering Management, and the Society of Automotive Engineers.

**Fran Scher (*The Lean Enterprise: Sustaining*)**

Fran Scher, Ph.D., is a consultant with Scher Progression LLC, specializing in quality and operations management, implementation of the Baldrige criteria, and training development. She has over 20 years of experience in operations and manufacturing in the biomedical instrumentation field, including scientific product development, validation, and quality control in a regulated industry. Fran serves as an examiner for the Maryland Performance Excellence Awards using the Baldrige criteria, and is an American Society for Quality-certified quality engineer. She received her bachelor's degree in biology from Towson University in Maryland, her MS and Ph.D. from Colorado State University, and her MBA from Johns Hopkins University in Baltimore, Maryland.

## Acknowledgments

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## How to Use This Guide

This guide is designed to give instructors the necessary information to teach students about the value of the lean enterprise and how to carry out lean implementation in a company.

This instructor guide contains all seven modules of the series, although for convenience the participant workbooks are published as seven individual books.

The left-hand instructor pages, or even-numbered pages, in this guide contain images of the visuals to accompany the lecture, notes to shape the content of the lecture, and questions to pose to participants to stimulate discussion. In the participant workbook these pages contain only the visuals and space to take notes.

Icons are used throughout the instructor text to give visual cues and draw attention. A list of the icons and their uses appears below.

The participant pages, or odd numbered pages, contain the contents of the course. These right-hand pages are the same in the instructor guide and participant workbook. This facing-page layout allows an instructor to see what the participants are referencing.

### Instructor Guide Icons and Cues

The following is a list of icons and cues that will indicate upcoming tasks.



#### Ask

Identifies a question to ask the class



#### Discuss

Identifies a topic for class discussion



#### Explain

Indicates that a topic may require further explanation



#### Flipchart

Identifies an activity for which it may be helpful to write information on a flipchart



#### Note

Indicates an item to which special attention should be paid



#### Time

Indicates how much time to spend on a certain activity

## Activities



*The APICS Lean Enterprise Workshop Series* is highly interactive. Throughout the course, slides with the rainbow ball icon indicate an activity for the participants. These activities are designed to review, enhance, and deepen the participants' knowledge. The activities may be performed individually, in pairs, or in small groups as indicated.

In the first six workshops, participants will spend ten minutes reflecting on what they have learned in the workshop and consider how they could implement the lean methodologies in their own organization. During the last workshop, they will develop an action plan to take back with them and use to effect positive change.

## Instructor Preparation

Instructors should expect to spend an average of two hours of preparation for each hour of instruction. Take the necessary time to become familiar with the training material and practice the presentation.

Instructors are also encouraged to attend an APICS-sponsored Train-the-Trainer program and other instructor training to enhance their instructor skills. Check with your local chapter for more information.

## Instructor Materials

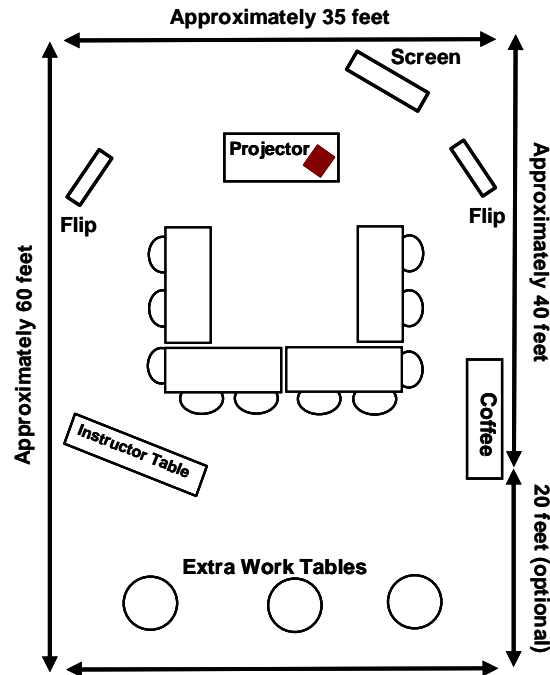
Instructors will need a copy of the complete seven-workshop instructor guide and the CD-ROM of PowerPoint visuals for each workshop. Additional materials may be required for some workshops as indicated on the first page of each workshop.

## Equipment Needed

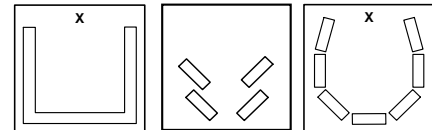
- Projector and screen
- 2 Flipcharts with stands, paper, and markers
- Whiteboard and markers

### Suggested Training Room Layout

The suggested training room layout shown below is conducive to learning and promotes interaction among the learners as well as between the learners and the instructor. Ideally, the room should accommodate additional work tables for breakout exercises at the back. However, this is not necessary.



Or, use one of these layouts shown on the right to encourage participation by the class and to involve all learners. Group problem-solving is greatly enhanced by this type of room layout.



Try to avoid the traditional layout shown to the right when instructing. You will see that it fills from the back as people try to avoid active participation in the class. The focus is on the instructor and not on the learner. Adult learners often have many bad memories of school.



Move around the room during class sessions—especially if you are restricted to using a traditional room layout. This will encourage every participant to take a more active role in the learning environment. When a session ends, put the room back in proper order before leaving.

It is critical that you arrive on location 1 to 2 hours in advance of the first session of the class. This will allow ample time to rearrange the room, test all equipment, identify emergency exits, and verify the locations of the temperature and light controls, restrooms, and refreshment facilities.



**Visual Aids**

Visual aids are designed to help explain information or to provide visual cues for recalling and understanding information. Any media should be used as an aid to enhance the lesson material—not just to make it look fancy to the learner.

This course is designed to be presented using the Microsoft PowerPoint presentation provided. Plan your presentation to give a smooth flow of information, paced to the participants' abilities.

Whether you are using the PowerPoint presentation or any other media, practice using the presentation equipment before the first session.

**Equipment**

Arrive at least 45 minutes to one hour early for each session to set up and test the equipment—projector, flipchart, whiteboard, etc. Test the equipment; walk to the back of the room to test for focus, clarity, and sight lines. Learn how to dim the lights if necessary.

**Blackboards and Whiteboards**

Blackboards are one of the oldest visual aids and can be very effective. Whiteboards can be used in much the same way. Use them to work through class problems and for illustration. Be brave! Draw stick people and trucks, etc., to make your point. This can give good memory clues to learners, pace the presentation, and enliven the class at your artistic expense.

**Flipcharts**

Flipcharts can be used for working problems. The information on flipcharts is permanent and can be retrieved for later use. They are also great to post around the room during the workshop. Flipcharts require special markers. Whiteboard markers will work, but tend to dry out quickly..

