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CENTER FOR PROFESSIONAL DEVELOPMENT

LEAN MASTERY

60 Hours/12 Months/Instructor-Facilitated
Course Code: **CPD076**

OVERVIEW

Lean enterprise is a process designed to bring about rapid improvements to an organization's performance through an overhaul of the value stream. It is composed of a comprehensive set of elements, rules, and tools that focus on value, waste elimination, and continuous incremental improvement.

As market forces dictate pricing and lead-time pressures, businesses need to focus on waste-free processes in order to grow margins and remain competitive. Lean uses specific concepts that are intended to provide excellent quality products, delivered on time, at the lowest total cost, and only on the specific demand of the customer. Companies transitioning to a lean culture are now seeing radical improvements in profitability, service levels, productivity, asset utilization, cash flow, inventory levels, product designs, quality, cycle times, and product costs.

The Lean Mastery Online Program contains clear, concise information on transforming an enterprise to lean. The program is packed with examples, photographs, graphics, quizzes, progress tests, case studies, and many interactive features that provide tips, "try this" exercises, and in-depth information.

OBJECTIVES

Upon completion of this program, you'll be able to:

- Recognize how the application of lean principles can substantially improve the operating and financial performance of any business
- Understand how to recognize and eliminate waste
- Know how to determine value added, non-valued-added, and non-value-added-but-required activities
- Be able to identify the value stream, how it's mapped, and how to identify the areas that require improvement
- Be able to develop a road map and an implementation plan
- Understand policy deployment and why this is a critical part of any lean implementation process
- Recognize the fundamental importance of the Kaizen process, how it's used in every aspect of a lean implementation, and how it's used to change the culture
- Learn about the concept of design for manufacture and assembly and how design influences cost
- Gain a broad understanding of lean tools like 5S, Total Productive Maintenance (TPM), Kanban, visual workplace, error-proofing, and Scheduling
- Understand the role of accounting and how lean metrics must replace traditional metrics

MATERIALS INCLUDED

The most commonly used lean forms will be available for download in Microsoft Excel format. Many of these forms are interactive and will perform calculations or build charts to be used in presentations. If you don't have Excel on your computer, you can use a free download for an Excel viewer, which will be provided.

OUTLINE

I. Foreword
- A. Lean Enterprise Defined
- B. How It All Began

II. The Need for Change
- A. Why Change?
- B. Benefits of Lean
- C. The Evolution to Lean
- D. Touring a Traditional Operation
- E. Lean vs. Traditional Manufacturing
- F. Batch and Queue
- G. The Role of Management
- H. Organization Changes
- I. Resistance
- J. The Role of Education

III. Lean Theory
- A. Overview
- B. Waste
- C. The Types of Waste
- D. Provide Value
- E. Radical Change
- F. Continuous Incremental Improvement
- G. Lean Elements
  - i. Value
  - ii. Value Stream
  - iii. Flow
  - iv. Pull
  - v. Perfection
- H. Lean Rules
  - i. Standard Work
  - ii. Limit Material Movement
  - iii. Limit People Movement
  - iv. Educate Everyone
- I. Lean Tools Overview
  - i. Kaizen
  - ii. 5S
  - iii. TPM
  - iv. SMED
  - v. Process Mapping
  - vi. Takt Time

Outlines are subject to change.
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vii. Line/Work Balancing
viii. Kanban
ix. Mistake Proofing
x. Autonomation
xi. DFMA
xii. Visual Workplace
xiii. 5 Why
xiv. One-Piece-Flow
xv. Spider Charts
xvi. Spaghetti Charts
xvii. U-Shaped/Continuous Flow Cells
xviii. Rabbit Chase
xix. Six Sigma
xx. Focused Factory

IV. Kaizen

A. Kaizen Defined
B. Philosophy
C. 10 Principals
D. Problem Selection
E. Guidelines
F. Value-Added, Non Value-Added, Non-Value-Added Required
G. Manufacturing Kaizen
  i. Batch and Queue
  ii. Manufacturing Kaizen Goals
  iii. Manufacturing Kaizen Aspects
  iv. Manufacturing Kaizen Presentation
  v. Summary
H. Administrative Kaizen

V. Value Stream Mapping

A. VSM Defined
B. Purpose of VSM
C. Technology Used
D. The Current State Map
E. The Future State Map
F. Strategy
G. Getting Started
H. The Team
I. Developing a VSM
J. VSM Approach
K. Definitions and Icons

VI. Transforming the Enterprise

VII. SMED (Single Minute Exchange of Dies)/Quick Change

A. Audi
B. Goals
C. Traditional Concepts
D. Inventory
E. Benefits

F. Rules
G. Internal vs. External Activities
H. Methodology
I. Observe and Document Current Process
J. Separate Internals from Externals
K. Develop Plan
L. Observe and Document New Process
M. Standardize New Process
N. Celebrate

VIII. TPM (Total Productive Maintenance)

A. Introduction
B. Definition
C. Alternatives
D. Prevention Principles
E. Obstacles
F. Types of Breakdowns
G. Deterioration
H. How TPM is Implemented
I. Overall Equipment Effectiveness (OEE)
J. Calculating OEE
K. The Six Big Losses
L. Types of Maintenance
    i. Preventive
    ii. Breakdown
    iii. Corrective
    iv. Predictive
    v. Maintenance Prevention
M. TPM Tools
N. Autonomous Maintenance
O. 7 Steps to Autonomous Maintenance
P. Skills Training
Q. TPM Strategy

IX. 5S

A. Introduction
B. Definition
C. Separate
D. Sort
E. Sweep
F. Standardize
G. Sustain
H. Safety

X. DFMA (Design for Manufacture and Assembly)

A. Definition
B. Traditional Approach
C. Concurrent Engineering
D. DFMA Principles
E. DFMA Rules
F. Why DFMA?

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G. Design Techniques
H. Design Process
I. Design for Six Sigma Overview
J. DFMA Benefits
K. Product Release

XI. Kanban

A. Introduction
B. Definition
C. Pull vs. Push Systems
D. Function
E. Applications
F. Information Flow
G. Types
H. Calculations
I. Information Requirements
J. Manufacturing Rules
K. Planner Rules
L. The Role of MRP
M. Electronic Systems
N. Inventory Carrying Costs

XII. Other Lean Tools

A. Standard Work
B. Visual Workplace Management
C. Error Proofing (Poka-Yoke)
D. Scheduling and Leveling (Heijunka)
E. Value Selling

XIII. Lean and Six Sigma Overview

XIV. Lean Accounting Overview

XV. Implementing Lean

A. Putting it All Together
B. Lean Road Map
C. Policy Development
D. Lean Implementation Plan
E. Lean Metrics

COMPUTER REQUIREMENTS

This program is compatible with the Windows XP and later operating systems and IE 7 and later browsers.

INSTRUCTOR BIOS

Brian Furlong is a seasoned senior executive with 30 years of experience in manufacturing and finance. After working domestically and internationally for major companies such as Emerson,

Westinghouse, Invensys, and National Westminster Bank, Brian has in-depth knowledge of manufacturing and administrative processes. He has directed projects to start up plants in England, Ireland, Thailand, and Mexico and has completed acquisitions in England, China, and India. He's a passionate advocate of lean enterprise and has successfully completed implementation in numerous facilities in the United States, Mexico, Europe, and Asia.

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