

The Lean Design Workshop

A Two-Day Interactive Course

Presented by –

*Ron Mascitelli, PMP
President, Technology Perspectives*

Course Description –

This workshop presents a comprehensive set of practical, easily applied techniques for reducing the manufacturing cost of any product. Students will learn how to apply these powerful tools to real products, in real time, with high efficiency. The product development process represents the most complex, challenging, and, sad to say, poorly understood activity in business. However, *reducing manufacturing cost is the fastest and surest way to achieve a measurable increase in profits*. The practical tools in this workshop can be applied to both new product opportunities and existing successful products, require minimal organizational change, and can yield immediate bottom-line results. Slashing costs is a great place to begin your journey toward lean product development excellence.

The tools and methods in this course are organized into an “itinerary” that follows the timeline of a typical product development project, from initial idea generation to product qualification and launch. Examples, exercises, and guidelines are provided for each tool to help the student decide whether that tool would be valuable in their situation. In this way, attendees can quickly craft a cost reduction strategy that is optimal for their products and markets, and gain enough understanding to get immediate results.

Upon completing this course, students should be able to –

1. Understand the true cost build-up of any product.
2. Utilize twenty cost “levers” to perform cost-reduction trade-offs.
3. Improve customer communication and value capture.
4. Identify synergy across product lines through flexible platform strategies.
5. Eliminate design waste through value engineering.
6. Implement a simplified version of Toyota’s 3P process.
7. Use basic six-sigma tools to reduce variability and scrap.
8. Reduce touch labor and materials through Design for Mfg. and Assembly

Who Should Attend -

Product designers, manufacturing engineers, product-line managers, team leaders, task managers, functional managers, six-sigma blackbelts / green belts, improvement champions, operations managers, process owners, and all others with product development responsibilities.

Course Outline –

Note: A series of practical workshop exercises accompanies the following lecture agenda. The output of the workshop is a prioritized action list for immediate improvement.

Part I. The Business of Lean Design

- When is a Product Profitable?
- Screening for Profitable Products
- Defining a Target Cost
- The “Twenty Key Levers” for Product Cost

Part II. Capturing the Voice of the Customer

- Testing for Value
- The “Lean QFD”
- Prioritizing Customer Requirements

Part III. Platform-Based Cost Reduction

- The Product Line as a “System”
- The Platform Hierarchy
- The Product-Line Optimization Team
- Developing a Product-line Roadmap
- Microplatform Strategies
- Modular / Scalable Design
- Mass Customization

Part IV. Value Engineering

- Basics of Value Engineering and Analysis
- Considering Alternative Designs
- Identifying Points of High Cost Leverage
- The “Quick-Look Value Engineering” Event
- The “Pugh Method” for Concept Selection

Part V. Production Process Preparation (3P)

- Overview of Toyota’s 3P Process
- The “How’s it Built” Review
- The “Seven Alternatives” Process
- Make vs. Buy Trade-offs

Part VI. Six-Sigma and DFMA Methodologies

- Overview of Six-Sigma / Robust Design
- Design Rules and Standardization Tools
- Design for Manufacture and Assembly (DFMA)
- Achieving Continuous Cost Improvement

Part VII. Lean Self-Assessment and Kaizen Tools

About the Instructor –

Ronald Mascitelli, PMP, (Project Management Professional, MS Solid State Physics, University of California, Los Angeles) is the Founder and President of Technology Perspectives. Mr. Mascitelli is a recognized leader in the development of advanced project management and product development methods, with an emphasis on eliminating non-value-added waste and maximizing product-line profitability. He currently presents his workshops and seminars internationally to public audiences, and has created company-specific educational programs for a number of leading firms, including Lockheed-Martin, Boeing, Parker-Hannifin, L3

Communications, Harris Corporation, Rockwell Automation / Allen-Bradley, Raytheon Systems Company, and Applied Materials.

Mr. Mascitelli served as both Senior Scientist and Director of Research and Development for Hughes Electronics and the Santa Barbara Research Center. His industry experience includes management of advanced product development programs for the Department of Defense, DARPA, Lawrence Livermore Laboratory, NASA, the Army Night Vision Laboratory, and the Department of Energy, along with numerous commercial products.

Since founding Technology Perspectives in 1994, Mr. Mascitelli has published over twenty papers and technical articles in major journals, including the *International Journal of Technology Management* and *The Journal of Product Innovation Management*, and is a contributing author for IEEE's *Technology Management Handbook*. Mr. Mascitelli is also the author of a critically acclaimed book on lean project management, entitled *Building a Project-Driven Enterprise: How to Slash Waste and Boost Profits Through Lean Project Management*, and his latest book, entitled *The Lean Design Guidebook*.