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Presented by



Lean *by design*

May 17-20, 2004
Chicago, IL

Front End Techniques for Better, Faster, Cheaper Products

An exclusive two-day conference focused on how to optimize design for manufacturing and produce more robust products with higher quality and reduced costs.

Learn how to:

Make deep cuts in your product's total cost and substantially increase profitability—**expand your lean efforts from manufacturing to design**

Ensure product reliability and quality while reducing costs and cycle time—**deploy robust engineering techniques**

Reign in new product costs and reduce risk—**implement target costing** and proactively manage NPD activities to achieve your target cost

Featuring case studies from:

Maytag ■ Rockwell Collins ■ Boeing ■ Teradyne ■
Dynacon ■ DICKEY-john ■ Club Car ■ NASSCO
Shipbuilding ■ Raytheon ■ *and more...*

Featuring Keynotes by:



Sandy Munro
CEO, Munro & Associates
Design for Assembly
Pioneer and noted lean design expert, on how to leverage the power of lean design to slash costs and drive profitability

&



Shin Taguchi
President, American Supplier Institute, and
Robust Engineering guru, on the proven benefits of Robust Engineering and its current status (and resultant impact) in US Corporations

www.ManagementRoundtable.com

Conference Agenda

Monday, May 17, 2004—Pre-Conference Workshops

- 7:00 – 8:00** Registration and Continental Breakfast
- 8:00 – 4:30** **A. QFD: A Practical, Hands-On Course for Product Developers Who Live in the Real World!** Instructor: Gerald M.Katz, Applied Marketing Science, Inc.
- B. Leveraging the Power of Lean Design to Cut Costs, Increase Quality and Inspire Innovative New Products,** Instructor: Bill Sprague, Munro & Associates

Tuesday, May 18, 2004—Conference Day One

- 7:00 – 8:00** Registration and Continental Breakfast
- 8:00 – 8:15** **Opening Remarks,** Management Roundtable
- 8:15 – 9:30** **Keynote Address:** Sandy Munro, CEO, Munro & Associates, Conference Chair
- 9:30 – 10:15** **Case Study:** Daniel F. Cheeseman, Raytheon
- 10:15 – 10:45** Refreshment Break
- 10:45 – 11:30** **Case Study:** Paul Layton, DICKEY-john
- 11:30 – 12:15** **Case Study:** Dave Hardy, Club Car, Inc.
- 12:15 – 1:30** Lunch
- 1:30 – 2:15** **Case Study:** Stephen J. Sorocky, Dynacon, Inc.
- 2:15 – 3:00** **Case Study:** Lee A. Duneclift, NASSCO Ship Builders
- 3:00 – 3:30** Refreshment Break
- 3:30 – 4:15** **Case Study:** Peter S. Guard and Nancy E. McCutchin, Boeing
- 4:15 – 5:15** **Panel Discussion: Why Opt for Lean Design Instead of Business as Usual?**
- 5:15 – 5:30** **Closing Remarks,** Conference Chair
- 5:30 – 7:00** Networking Reception

Wednesday, May 19, 2004—Conference Day Two

- 7:00 – 8:00** Continental Breakfast
- 8:00 – 8:15** **Opening Remarks,** Conference Chair
- 8:15 – 9:30** **Keynote Address:** Shin Taguchi, President, American Supplier Institute
- 9:30 – 10:00** Refreshment Break
- 10:00 – 11:00** **Case Study:** Jay Mortensen, Maytag
- 11:00 – 12:00** **Case Study:** Terry Ayer, Teradyne
- 12:00 – 1:00** Lunch
- 1:00 – 2:00** **Case Study:** Greg Olson, Rockwell Collins
- 2:00 – 3:00** **Feature Presentation:** Tami L. Capperauld, CAM-I and Boeing Commercial Airplanes
- 3:00 – 3:15** Conference Wrap-Up

Thursday, May 20, 2004—Post-Conference Workshop

- 8:00 – 4:30** **Target Costing – A Value-Based Approach to Competitiveness,** Instructor: Kenneth A. Crow, DRM Associates

Key Benefits:

By participating in this program, you will learn how to:

- Uncover and create profits in your design phase
- Speed your high quality, low cost products to market with lean design
- Increase your ability to yield huge dividends on the factory floor by focusing on “getting it right the first time” in the design phase
- Use trend analysis as a technique to more accurately estimate the cost of new products
- Generate extra features that can enhance your product for free by deploying the “right tools at the right time”
- Expand Lean Design impact including quality, manufacturing processes and service in your redesigns
- Assess the pros and cons of lean design and its potential impact on cost, quality, TTM and customer satisfaction
- Incorporate Robust Engineering into your engineering management strategy to enable “Better, Cheaper & Faster” product development
- Substantially increase profitability by attacking low volume products with Lean Design
- Garner top management commitment and engagement for Lean Design practices and tools
- Identify the cost of design early on, track the impact of the design changes and eliminate “gaps” before production begins



Sandy Munro
CEO, Munro & Associates
*Design for Assembly Pioneer
and noted lean design expert*

Lean Design and Winning the Battle of Profitability

Munro will explore how the commercial best practices of state-of-the-art computer software, combined with the 2,000 year old military philosophy developed by ancient Chinese strategist Sun Tzu—can help the North American manufacturing industry win the battle for profitability.

Profitability in manufacturing is derived largely from a product's design and development—where most of the product's total cost and potential profitability are established. Munro will introduce how you can leverage the power of Lean Design. By taking a strategic and holistic team approach and adopting new rules, he will demonstrate how manufacturers from a cross section of industries have created products that have literally blown away the competition. Specifically, Munro will address:

- How much Quality is enough and when is it time to shoot the Engineer and move to production?
- What's a real value chain and what's the difference between a **Partner, Supplier** and a **Vendor**?
- What tools are proven and worth-while and which just spin your wheels?
- How far up-front is enough and when does **Lean and Mean** turn into **Emaciated and Disheartened**?

Sandy Munro, CEO, Munro & Associates, is a frequent speaker and advisor to some of the world's top manufacturers on implementing change and innovative product development strategies. He is widely known in the North American automotive industry and has worked extensively with global automakers and their key suppliers. Sandy is a noted authority on lean design methodology and has successfully helped manufacturers of all types of products—from autos to airplanes, home appliances to national-defense devices, micro processors to freighters—reap the benefits of lean design.



Shin Taguchi
President, American
Supplier Institute and
Robust Engineering guru

Robust Engineering: A Critical Component in Engineering Management Strategy

Since the 1980s, Taguchi Methods have become synonymous with product quality and its tools and techniques described as “powerful and elegantly simple.” In this session, Shin will describe the evolution of Taguchi principles into “Robust Engineering,” an engineering management strategy focused on reducing the cycle time and costs of delivering products while ensuring product quality and reliability throughout the lifecycle. He will then share the preliminary steps companies are currently taking to implement robust engineering and the initial results of its deployment.

You will learn:

- The key concepts of Robust Engineering
- How Robust Engineering enables “Better, Cheaper & Faster” product development
- Who is currently using Robust Engineering and future industry trends
- Pros and Cons from successful and unsuccessful robust engineering implementations

Shin Taguchi, President, American Supplier Institute, an internationally recognized training and consulting organization dedicated to improving the competitive position of industries. Son of Genichi Taguchi, developer of new engineering approaches for robust technology, Shin Taguchi has trained more than 30,000 employees in quality engineering, product/process optimization.

Main Conference Program

DAY ONE | Lean Design Case Studies | May 18, 2004

Systems Approach to Lean Design

Daniel F. Cheeseman, Senior Engineering Director, Raytheon

The current complexity of today's systems require significant system engineering discipline to assure not only a performance based design but a truly affordable design that achieves the essence of a Six Sigma Design. Using the current systems model deployed on the US Army Excalibur Precision attack system, a review will be made of the current models, tools and strategy's being deployed by Raytheon Missile Systems to assure that customer satisfaction is achieved in cost, schedule and performance—a cradle to grave approach.

Effectively Applying Lean Design in the Shipbuilding Industry

Lee A. Duneclift, Senior Project Engineer, NASSCO

This presentation will review program lessons learned from company-wide deployment to achieving bottom line results, and addressing issues at all levels of the organization and setting expectations. Mr. Duneclift will highlight both the benefits and potential pitfalls including the all important implementation phase. The key takeaways will be experience-based recommendations for anyone who is anticipating deploying Lean Design.

Concurrent Engineering Versus Lean Design at DICKEY-john

Paul Layton, Product Development Manager, DICKEY-john

This case presentation will review the development process for DICKEY-john's new Hand Held Grain Moisture Tester, the M3G. Mr. Layton will discuss DICKEY-john's incorporation of Lean Design Methodology to its traditional concurrent engineering approach to product development and the resultant impact on design time, company-wide communication and cost. Lessons learned and remaining obstacles will be examined.

Clean Sheet – The Lean By Design Development of the Precedent Golf Car

Dave Hardy, Executive Program Director, Club Car, Inc.

In January 2004, Club Car Inc., a division of Ingersoll Rand, introduced the Precedent golf car to rave reviews from the market place. The radically redesigned product focused on features and benefits that golfers and golf course owners love. Mr. Hardy will walk you through the "clean sheet" approach that Club Car took to both its product design and manufacturing processes. By implementing "Lean By Design" principles throughout the process, Club Car was able to: reduce parts (operations and fasteners) by 40%, create a new manufacturing environment focused on quality and a lean supply chain and gain substantial efficiencies in transportation, order entry and other operational areas.

Applying Lean Design Principles to Re-Engineer an Existing Product in a Small Company Context

Stephen J. Sorocky, CEO and Director, Dynacon, Inc.

While lean design provides its largest benefits when applied from the start in new product development—the so-called clean sheet design—this talk will address the application of lean design to an existing clinical laboratory automation product in the field that requires improvements to cost, serviceability and reliability. Lessons learned and results will be presented as well as the considerations resulting from implementing lean design within the constrained resources of a small company and short schedule.

The Boeing 7E7 - Developing the New Interior for the New World

Peter S. Guard and Nancy E. McCutchin, 7E7 Interior Architecture Leaders, Boeing

The 7E7 interior development project utilizes breakthrough teaming and engagement methods to influence the way Boeing designs and builds airplanes. One of the core methods being used to drive culture change is "Lean Design". With a lean and efficient design, Boeing can enable lean manufacturing and drastically reduce part count and flow of the 7E7 assembly process. The presenters will share Boeing's design & manufacturing process by following "A Day In the Life of an Interior Part" as it moves through the value stream.

SPECIAL FEATURE | Panel Discussion: Why Opt for Lean Design Instead of Business As Usual?

Moderator, Conference Chair, Sandy Munro; Panelists: Day One Conference Faculty

Faced with super short lead times, radically low target costs or market share that gets steadily chipped away by offshore competition? Learn what prompted our panelists to make the switch to lean design. Find out how they made the transition, what were their greatest obstacles, what worked and more importantly what didn't and why. As well as the steps they are taking now to go further with their lean design efforts.

DAY TWO | Target Costing Case Studies | May 19, 2004

Practical Application of Target Costing Tools in Early Product Development

Jay Mortensen, Director of Target Costing and Cost Engineering, Maytag

How do we go from where we are to where we want to be in the Target Costing process? This presentation focuses on the tactics and techniques for applying Target Costing tools into an existing robust product development process. It assumes most organizations are already using some aspects of target costing but not the complete process. Topics covered include reducing product development time, early identification of the cost of design, joint development of products with the supply base, tracking the impact of design changes, and elimination of "gaps" before production begins. Lessons learned about resource requirements, team building, and gaining inter-departmental support are integrated into the presentation.

Controlling New Product Costs Through Trend Analysis

Terry Ayer, Value Engineering Program Manager, Teradyne

In today's competitive market it is necessary to confirm product costs as early as possible in order to maintain profit margins. New product funding is normally based on early estimates of cost. Changes during development often impact the final cost. How can these changes be monitored to insure the cost targets have not been exceeded? Mr. Ayer will examine the use of trend analysis as a technique to more accurately estimate the cost of a new product. He will demonstrate their use of analysis data to develop a target bill of materials and DFMA software to evaluate early concepts for comparison to the target.

What You REALLY Need To Know About Target Costing: 5 "Gotta Knows" for Yielding Appropriate Cost Product Designs

Greg Olson, Principal Manufacturing Program Specialist, Rockwell Collins

This is not another Target Costing seminar. Rather, it is a collection of "gotta knows" gleaned from several pleasant successes (and a few miserable failures) in the product development trenches. The presenter will begin with a (very) brief overview of Target Costing fundamentals followed by brief "mini presentations" of his 5 Target Costing "gotta knows." If you mess up on any one of these five simple points, your project will suffer. If you successfully apply these five simple points, your project will benefit. No prior knowledge of Target Costing (or related disciplines) is assumed.

FEATURE PRESENTATION | Hitting The Target, The CAM-I Target Costing Implementation Guide

Tami L. Capperauld, Boeing Commercial Airplanes - Market Driven Target Costing Implementation Group Leader Consortium for Advance Manufacturing International (CAM-I), Target Costing Best Practice Interest Group, Chairman

The Consortium for Advanced Manufacturing - International (CAM-I), Target Costing Best Practice Interest Group developed an actionable Target Costing Implementation guidebook that will enable companies to understand the how, when and why of implementing this important strategic management process. This presentation will cover the key learning points from the guidebook outline, including how to:

- Build a Support Base
- Establish Charter for Target Costing
- Develop Implementation Plan
- Build Teams for Target Costing
- Provide Training
- Acquire Tools
- Develop Action Plan to Achieve Goals
- Institutionalize the Target Costing Process

A | QFD: A Practical Hands-on Course for Product Developers who Live in the Real World!

Instructor: Gerald M. Katz

Executive Vice President
Applied Marketing Science, Inc.

Product developers continually face the challenge of accurately translating customer needs (often expressed in soft consumer terms) into explicit product and process design specifications. In addition, further complications arise when many of the technical solutions conflict with one another. So just how can product developers deal with this level of complexity and prioritize all of the potential trade-offs properly?

Though always a little controversial, QFD remains the best, most rigorous way to accomplish this. A thorough QFD exercise, executed by a well-constructed cross-functional team, forces product developers to consider each customer need explicitly, generate new metrics and new design specifications that, in turn, can result in more creative technical solutions. QFD also provides a rational approach to manage trade-offs and prioritize the features most deserving of an organization's effort and budget.

Since its inception in Japan in the early 1970's, QFD has been both praised for its detailed analysis and reviled for its tedium. This course will teach participants how to conduct a real world QFD exercise without suffering "a nose bleed"! With just enough theory to get started, and an emphasis on the practical issues, this course will fully prepare participants to facilitate their own teams through a real QFD exercise.

Gerry Katz is a recognized authority in the areas of new product development, design of new services, and market research, with 30 years of consulting experience. At Applied Marketing Science, Inc., he has led more than 100 major client engagements employing *The Voice of the Customer*, QFD, and a large number of other marketing science applications. He serves on the Board of Directors of the Product Development & Management Association (PDMA), is a certified New Product Development Professional.



Founded in 1980, **The Management Roundtable** is the leading knowledge and networking resource for product developers. Practitioner-oriented and unbiased, our focus is on providing actionable information about new innovations, processes, tools, and technologies that enable faster time to market, increased profitability, and overall competitive advantage.

B | Leveraging the Power of Lean Design to Cut Costs, Increase Quality and Inspire Innovation

Instructor: Bill Sprague

Munro & Associates

Since a product's design ultimately dictates 70 percent of a product's downstream costs, a company only implementing lean principles in manufacturing is essentially losing the greatest opportunity for significant savings. Lean design is an approach that enables a company to **design out waste** from the process rather than simply tweaking the process; it also leverages traditional DFA/DFM with a more visual, team-based analysis that focuses on reducing the non-valued added elements of designs. The improvement in quality results, enterprise & overhead activities, and assembly & manufacturing processes is profound.

This workshop will examine the fundamental concepts behind Lean Design. You'll be introduced to the critical ingredients for successfully implementing Lean Design: the importance of the multifunctional team, how to anticipate all downstream activities (from manufacturing to service to recycling) during the design phase and how to have an open mind to view materials and technological processes from different perspectives.

By participating in this hands-on, exercise oriented workshop, you will learn:

- Lean Design concepts and documented benefits
- About profit boosting technologies – how to identify new or cross-industry technologies and innovations
- The rules and processes for performing a Lean Design DFA/DFM analysis
- How to use analysis findings to generate multiple improvement ideas for a typical design assembly
- How to generate more design profit through prioritized redesign concepts and innovations
- How to expand Lean Design including quality, manufacturing processes and service in your redesigns
- How to build a business case or team presentation in support of your redesign by developing concept sketches, potential cost and quality savings and implementation plans

Bill Sprague, *Design Prophet*, Munro & Associates, is recognized as a global expert in the implementation of Product Development improvements. Bill earned his Bachelor of Science in Industrial Engineering from Purdue University and a Masters in Business Administration from Florida Atlantic University.

Post-Con Workshop

Thursday, May 20, 2004

C | Target Costing—A Value Based Approach to Competitiveness

Instructor: Kenneth A. Crow

President

DRM Associates

For many products, price can be the ultimate battleground. Many companies react to pricing and cost pressures by taking too little action too late or by simply accepting lower profit margins. Target costing is a proactive approach to understanding the market-driven pricing requirements to be successful in the marketplace, the steps to establishing cost targets, and the process of proactively managing development activities to achieve these target costs. This workshop will provide not only a practical understanding of the target costing method, but also a step-by-step guide to achieving target costs and maximizing the customer value proposition. Case studies and examples will illustrate this process. By participating in this workshop, you will learn about:

- An approach to target costing and its key elements
- Target price—pricing strategies, price elasticity, and maximizing the value proposition
- How to derive and allocate a target cost—a step-by-step approach
- How to track and manage to a target cost—tools and process
- How to achieve target costs with a design-to-cost methodology
- How to develop concept and design alternatives—tools and methods
- Value and function analysis
- Design for excellence—manufacturability, assembly, testability, etc.
- Checklists by development phase for achieving target cost
- How to construct a target costing process—including management actions, process steps, and organizational responsibilities

Kenneth A. Crow is President of DRM Associates, a management consulting and training firm specializing in product development and a Principal in PD-Trak Solutions, a firm providing NPD project/process/portfolio management software. He is a recognized expert in the field of new product development and target costing with over twenty-nine years of experience.

Registration Info

Alumni & Subscriber Discounts:

If you've previously attended a Management Roundtable conference or are a current subscriber to *Product Development Best Practices Report*, you qualify for our \$100 Alumni Discount. To receive this discount when using our on-line registration form, put a check in the special box beneath the priority code field (subject to offline verification).

Team Discounts:

Groups of 3 or more may deduct \$100 per person. Groups of 6 or more, please call 800-338-2223 for special pricing.

Dates:

The 2-day conference will begin at 8:00 am (registration and continental breakfast at 7:00 am) on May 18, 2004 and will adjourn at 3:00 pm on May 19, 2004. Optional pre-conference workshops are offered on Monday, May 17th from 8:00 am – 4:30 pm. There is also an optional post-conference workshop offered on Thursday, May 20th from 8:00 am – 4:30 pm. Please consult the conference agenda for more specifics.

Location & Hotel Accommodations:

The conference will be held at the **Allerton Crowne Plaza**, 701 North Michigan Avenue, Chicago, IL 60611. Please call 312-440-1500 directly for room reservations. Also be sure to mention that you will be attending the "Lean By Design Conference" to receive a special room rate of \$189/night when you make your reservation before April 26, 2004. Only a limited block of rooms is available, so please reserve early.

Cancellations/Substitutions:

You may send a substitute attendee in your place at any time with no penalty (please inform us in advance, if possible). Cancellations made within 5 business days are subject to a \$200 administration fee or the full fee can be credited towards a future purchase. No-shows are liable for the full fee.

No-Risk Guarantee:

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Conference Attire: *Business Casual*

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Front End Techniques for Better, Faster, Cheaper Products

Registration Form

May 17-20, 2004 | Chicago, IL

Please accept the following registration:

- Two-Day Conference** - May 18-19, 2004
- Pre-Conference Workshop** - May 17, 2004
Choose one: A or B
- Post-Conference Workshop** - May 20, 2004

Early Bird Discount—Register by April 1 and Save \$200!

Fees:

	Before 04-01-04	After 04-01-04
2-Day Conference Only	\$1395	\$1595
2-Day Conference + 1 Full-Day Workshop	\$2090	\$2290
2-Day Conference + 2 Full-Day Workshops	\$2785	\$2985
1 Full-Day Workshop Only	\$1195	\$1195

Photocopy this form for additional registrants - please type or print clearly

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Who Should Attend:

VPs, Directors & Managers of:

- Engineering
- Manufacturing
- Product Development
- Quality
- Program Management
- R&D



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