



Portfolio Metrics

Linking Product Development to Corporate Profitability

November 1-3, 2000 • Chicago, Illinois

Implementation examples and how- to's from:
**ANALOG DEVICES, DAIMLERCHRYSLER, ELI LILLY,
SUN MICROSYSTEMS, UNITED DEFENSE, and more**

Keynote address from Robert G. Cooper (author
of *Portfolio Management for New Products*; pioneer
of *stage gate* methodologies)

How to justify the contribution of R&D to the bottom-line,
from Industrial Research Institute's *Tech Value* Program (TVP)

Newest benchmarking data and industry trend analysis,
including exclusive "Product Development Metrics 2000" survey
results from leading expert Bradford L. Goldense, GGI

How to assess true profitability impact with the
"Metrics Thermostat," a powerful new model developed by
Professor John R. Hauser, MIT Sloan School of Management

Connect with your colleagues
and discover how to achieve
greater predictability and ROI
in erratic economic times

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Who Should Attend:

Vice Presidents
& Directors of:

- R&D
- Engineering
- Product Development
- Quality
- Functional Managers
- Sr. Program Managers

Background

In an ever-changing and volatile world, the search for measurability becomes even more arduous for executives charged with improving and measuring product development performance. The ability to select new product winners and allocate sufficient resources to engage the *right number and mix of projects* maximizing portfolio value is critical. With more and more managers being asked to tie R&D investment to the company's bottom-line, practitioners need guideposts for identifying and aligning R&D metrics with corporate strategy.

The 5th Annual Conference on metrics, **Portfolio Metrics: Linking Product Development to Corporate Profitability** will focus specifically on using metrics to evaluate portfolios, determine the valuation of technology and align the organization.

Supporting Organizations



Speed to Market



Special Features:

- Breakout sessions and roundtable discussions with foremost metrics experts
- Survey results and benchmarking data from renowned Goldense Group, Inc, Performance Measurement Group, and Product Development Institute, Inc.
- Three interactive pre-conference workshops (see page 5):
 - A. Metrics Primer: Using Metrics to Improve Engineering Productivity
 - B. A Practical Guide to Achieving Metrics Buy-in
 - C. Proactive and Predictive R&D Metrics



Our company is at the point of trying to measure the process we put in place and trying to improve. I'll be taking back many examples of metrics - an excellent conference."

Bryan Katz
Director, Financial
Analysis/Control
Moen, Inc.



This [conference] offered the tools to use and insights to evaluate my company's processes and practices."

Keith Brightbill
Project Manager
Rubbermaid
Commercial Products



Practical tools and ideas learned that can be understood and implemented in my company."

Paula Lank
Program Director
Physio-Control
Corporation

Key Benefits

By participating, you will learn:

How to maximize your portfolio value

The conference kicks-off with a keynote address by renowned product development expert, Robert G. Cooper. Cooper highlights solutions and best practices for effective portfolio management, based on recent benchmarking research. He also recommends practical methods to bring your project portfolio into alignment with corporate strategy.

How to measure the value of technology

The Industrial Research Institute's Tech Value Program demonstrates one methodology for recognizing the contribution of R&D to company financial success. With a stock price that has tripled within the last year, Analog Devices shares its new R&D metrics to determine required R&D performance as well as their process for measuring the results of improvement strategies displaced in time. In addition, learn about the potential impact that shareholder value metrics play on investment in R&D.

How to achieve organizational alignment

Identifying meaningful, credible and clear metrics can provide a boost to any metrics initiative. Gaining buy-in on all organizational levels and connecting all metrics to business strategy can seem like an unattainable quest. Hear how United Defense LP systematically addressed this formidable task.

“ *The conference delivered a good message - reinforcing my own belief in metrics and its need within my organization. I now have the information that I can utilize in persuading others to come on board.”*

Mike Hodges
General Motors Canada

Learn:

- How to predict project performance in your R&D portfolio; what indicators are most reliable?
- How Sun Microsystems selects priority metrics and uses a web-based portal to manage product life cycle information
- How to justify the contribution of R&D and other hard-to-quantify activities to company financial success; what metrics the Tech Value Program (TVP) uses to prescribe corrective action?
- How to select the right value based metric for your company; what are the cautions and benefits of value based management systems?
- How United Defense LP brought their collocated production and design divisions together to develop common metrics and achieve alignment with corporate strategy
- How to determine strategic priorities and improve profit using the “Metrics Thermostat”
- How to align core R&D metrics with company vision and strategy
- Why implementing value metrics may have a powerful impact on R&D investment and overall company market value
- How to select new product winners and allocate sufficient resources to engage the right number and mix of projects to maximize portfolio value
- Strategies to bridge the gaps between project and corporate level metrics
- How to measure high and low risk; how to weigh trade-offs
- How Eli Lilly uses modeling to set and measure key performance targets in the R&D planning process
- How to identify and implement predictive metrics to reduce risk and enhance product development performance
- How to use PD Scorecards and metrics to generate greater profitability
- How Analog Devices' stock price tripled after implementing new metrics for projects, pipeline management, R&D practices, and overall R&D effectiveness
- Methods to tie R&D strategy to operational issues and business strategy
- DaimlerChrysler's use of metrics to foster continual PD improvements to surpass their remarkable past decade of NPD performance

AGENDA

Wednesday, November 1 - Pre-Conference Workshops

- 8:30-12:00 Concurrent Workshops:
- A) Metrics Primer: Using Metrics to Improve Engineering Productivity, *Bob Neel, Product Development Process Consulting*
 - B) A Practical Guide to Achieving Metrics Buy-in, *Wayne Mackey, Product Development Consulting, Inc.*
- 12:00-1:00 *Lunch*
- 1:00-4:30 C) PPRD: Proactive and Predictive R&D Metrics, *Bradford L. Goldense, Goldense Group, Inc.*

Thursday, November 2

- 7:15-8:15 Conference Registration and Continental Breakfast
- 8:15-8:30 Welcome and Introduction, Management Roundtable
- 8:30-10:00 Keynote Address: Portfolio Performance Metrics for New Product Development, *Robert G. Cooper, Product Development Institute, Inc., and author, Portfolio Management for New Products*
- 10:00-10:30 *Refreshment Break*
- 10:30-11:30 IRI's Tech Value Program: Tools for Enhancing Technology's Contribution to Corporate Worth, *Dr. Trueman Parish, former Director of Frontier & Exploratory Research, Eastman Chemical Company, IRI Emeritus*
- 11:30-12:30 Going Overboard on Platforms: An Analysis of One Firm's Use of Metrics, *Gerald M. Katz, Applied Marketing Science, Inc.*
- 12:30-2:00 Luncheon Breakout Sessions — Select one of the following to examine in-depth with expert facilitators:
- Breakthrough Results Through Data Visualization, Metrics and Portfolio Alignment - *Tom Schuler and Jay Frankenfield, SDF Global Solutions*
 - Product Development Benchmarking - *Peter Tarbox, Performance Measurement Group*
 - Unbalance Your Scorecard - *Dr. Ajai Kapoor, Speed to Market*
- 2:00-3:00 Building Organizational Knowledge: Product Life Cycle Metrics at Sun Microsystems, *Johnathan Propp, Sun Microsystems*
- 3:00-3:30 *Refreshment Break*
- 3:30-4:30 What Analog Devices (ADI) Learned with Product Development Metrics Through the Eyes of a Pioneer, *Robert Stasey, Analog Devices*
- 4:30-5:30 Web-based Benchmarking for Portfolio and Pipeline Management, *Michelle Roloff, Performance Measurement Group, LLC*
- 5:30-7:00 *Networking Reception*

Friday, November 3

- 7:00-8:00 *Continental Breakfast*
- 8:00-9:00 Metrics Use in Industry: 2000 Product Development Metrics Survey Results, *Bradford L. Goldense, Goldense Group, Inc.*
- 9:00-10:00 Building Alignment Within the Organization, *David Whitmore, United Defense LP*
- 10:00-10:30 *Refreshment Break*
- 10:30-11:30 Understanding Value-Based Management Systems and Their Impact on Market Value, *Prof. John B. Gallagher, Maryville College*
- 11:30-1:00 Luncheon Breakout Sessions — Select one of the following to examine in-depth with expert facilitators:
- Gaining Alignment and Buy-in - *Wayne Mackey, PDC and David Whitmore, United Defense*
 - Innovation Metrics - *Dr. Trueman Parish, IRI*
 - Selecting the Right Value Metrics for Your Company - *Prof. John B. Gallagher, Maryville College*
 - Trading Off Cost, Speed and Other Business Objectives - *Preston Smith, New Product Dynamics*
- 1:00-2:00 Chrysler's Successful Transformation to a Product & Process-Driven Company, *Roger Lundberg, DaimlerChrysler*
- 2:00-3:00 Modeling as a Tool to Facilitate the R&D Planning Process, *Paul R. Bunch, Ph.D., and Deepa Gangwani Eli Lilly and Company*
- 3:00 Close of Conference

Pre-Conference Workshops

Concurrent Workshops A & B — 8:30-12:00

Workshop C — 1:00-5:00

A. Metrics Primer: Using Metrics to Improve Engineering Productivity

Instructor: Bob Neel, Product Development Process Consulting

Everyone knows how to use process-feedback metrics to optimize a manufacturing process or piece of equipment. But how do you measure and optimize “fuzzy” R&D processes?

This will be a practical, how-to seminar on using metrics to increase engineering productivity. We will begin with the basic tenet: You can’t control what you can’t *measure* - and you can’t improve what you can’t control! The course includes lecture, a case-study workshop, group discussion, and numerous examples.

- Factors that drive process change
- The importance and power of metrics
- Methods for collecting and analyzing
- Difficulties in measuring R&D
- Making knowledge-worker metrics easy
- How much or how little to collect
- Overcoming “Big Brother” fears
- Things you should measure & not measure
- The derived benefits: using what you learn
- The free benefits & real costs
- Avoiding unintended consequences
- Templates and exercises based on case studies
- Examples of product development metrics
- Getting started

Takeaways:

- Ability to select “good” (drive desired results) metrics
- Data collection and analyzation methods
- Ability to discern what data and how much data to collect
- Using data to drive decisions

B. A Practical Guide to Achieving Metrics Buy-In

Instructor: Wayne Mackey, Product Development Consulting, Inc.

The best metrics won’t help you or your company unless you can get both management and working levels involved and paying attention to them. This workshop will demonstrate a practical approach to achieve the three key enablers of metrics buy-in:

1. Alignment
2. Ownership
3. Simplicity

Alignment to business strategies and upper level goals are critical to getting management buy-in. “Metrics trees” will be demonstrated starting with management imperatives passed down through levels and across functions. Ownership at the working level is achieved when the responsible individual or organization generates the metrics themselves with a simple repeatable process based on clear goals. “It’s my metric” always works better than those dictated by people further from the actual work. Simplicity is demonstrated through a systematic search for the critical few metrics followed by a process for complexity reduction. Feasibility and effectiveness screening are demonstrated using real case study examples.

Takeaways:

- Metrics tree tool to achieve buy-in
- Metrics generation checklist for ownership
- Critical few criteria to reduce the number of metrics
- Feasibility & effectiveness approach to reduce metrics complexity

C. Proactive and Predictive R&D Metrics


Instructor: Bradford L. Goldense, Goldense Group, Inc.

Called “proactive” and “predictive” metrics, these advanced R&D measurement tools enable developers to avoid many traditional project difficulties that all too frequently undermine product launch schedules and the resultant marketplace profitability.

This workshop is designed to assist its participants to develop early up-front measurement indicators to “reduce the risk” of new product development (NPD) projects and the R&D environment as a whole. The “Proactive and Predictive R&D Metrics” seminar focuses on R&D management processes in the NPD body of knowledge that are most highly correlated with success and failure of R&D investments. This seminar enables leading product developers to raise the measurement bar within their company’s development organization in order to achieve “best practices” in product development.

Takeaways:

- Which proactive and predictive R&D metrics tell us where a development project is headed
- How to use and apply advanced metrics to optimize R&D processes in your organization
- Why a company’s technical professionals are key to getting the risk out of NPD
- How to characterize the development process by measuring the process variables

 *The Management Roundtable planned and executed a tremendous conference, covering the breadth of topics with excellent speakers and a lot of information and contacts.”*

James Snyder
Program Manager
Medtronic, Inc.

The Program

Thursday, November 2

KEYNOTE ADDRESS - Portfolio Performance Metrics for New Product Development

Robert G. Cooper, Product Development Institute Inc, Penn State University (ISBM) and McMaster University, Canada, author of 5 books on new product management (including *Portfolio Management for New Products*)

Portfolio management is about picking the winners – which new product projects to invest in, and, it's about resource allocation to get the right balance and numbers of projects, given squeezed resources.

In his talk, Dr. Cooper focuses on the solutions and best practices in dealing with the major problems faced in effective portfolio management, identified in his recent benchmarking studies. The first is picking the right projects to maximize the value of your portfolio. His research reveals that traditional financial tools do a poor job here – there are better methods. Balancing the portfolio – achieving the right mix of projects between long term and short term, high risk and low risk – is the next area where Cooper offers solutions. Not only is the mix of projects wrong in most companies, but most have far too many projects in their new product pipeline. And so, resource balancing – getting the right numbers of projects — is the next topic. Finally, Cooper offers methods such as Strategic Buckets to bring your project portfolio into alignment with your business's innovation strategy. His talk concludes with a look at two fundamentally different approaches to portfolio management — one is likely right for you.

Takeaways:

- Maximize portfolio value by: allocating resources and select-

ing the right balance and number of projects

- Metrics to measure high and low risk
- Implementing Strategic Buckets to align your project portfolio with corporate innovation strategy
- Two schools of thought for effective portfolio management

Industrial Research Institute's Tech Value Program: Tools for Enhancing Technology's Contribution to Corporate Worth

Dr. Trueman Parish; Retired Director of Frontier and Exploratory Research, Eastman Chemical Company; IRI Emeritus

In the early 1990s, Technology VPs of many private companies came under increasing pressure to justify the contribution of R&D to the financial success of their companies. Several turned to the Industrial Research Institute to develop metrics that would allow them to respond to this concern. Most initial efforts were targeted at determining the financial benefits obtained or anticipated from technology investment. However, these benefits are only obtained when R&D is aligned with the organization's vision, strategy, culture and organizational structure so tools have been developed to measure the alignment. Carefully selected metrics can enhance the effectiveness of technology's voice in the development of vision and strategy. To be successful, R&D metrics must be meaningful, credible, and uncomplicated and enjoy the support of managers with program and budget authority. Metrics can also be used at the operational level to track several dimensions of R&D effects and as a diagnostic tool to prescribe improvement actions. This talk will:

- Provide an overview of the methodology developed by the Industrial Research Institute to enable organizations to select a set of metrics that can enable them to measure and

improve their effectiveness

- Illustrate the strengths and weaknesses of several potential metrics
- Describe the depth of metrics that measure alignment
- Describe the system of innovation metrics used at Eastman Chemical Company and the lessons learned from use of these metrics

Takeaways:

- Metrics to justify contribution of R&D to company financial success
- Benefits of aligning R&D with corporate strategy & the tools used to measure it

Going Overboard on Platforms: An Analysis of One Firm's Use of Metrics

Gerald M. Katz, Executive Vice President, Applied Marketing Science

In a recent working paper called "Metrics Thermostat", **Professor John R. Hauser of the MIT Sloan School of Management** examined one firm's use of some of the most commonly accepted metrics in use today (e.g. Platform Re-Use, Time-To-Market, and Customer Satisfaction) and their impact on ultimate profitability. Metrics '97 alumnus Gerry Katz, an associate of Hauser's, will present key highlights from this important paper and their (unexpected) implications.

Using the concept of "adaptive control" (of which a thermostat is perhaps the simplest example), Hauser first develops a theoretical model of this relationship. Then, using real data from several dozen new product development initiatives in one major division, he evaluates their utility in contributing to the firm's profitability. Surprisingly, this analysis showed that, at least for this firm, a blind adherence to certain metrics can sometimes lead to counter-productive results.

The Program

Takeaways:

- The theory of “adaptive control”
- A model for evaluating the effectiveness of various metrics
- A surprising outcome in one well-known and highly regarded firm

Luncheon Breakout Sessions

Select one of the following topics to examine with an expert facilitator:

- A. Breakthrough Results - Through Data Visualization, Metrics and Portfolio Alignment — *Tom Schuler, Chairman & Jay Frankenfield, President, SDF Global Solutions*
- B. Product Development Benchmarking — *Peter Tarbox, Senior Global Account Manager, Performance Measurement Group, LLC*
- C. Unbalance Your Scorecard: A Common Sense Approach for Simplifying the Web of Product Development Metrics — *Dr. Ajai Kapoor, co-founder and VP Product Management, Speed to Market*

Building Organizational Knowledge: Product Life Cycle Metrics at Sun Microsystems

Jonathan Propp, Manager, Strategic Decisions, Sun Microsystems

Two years ago, Sun Microsystems began collecting a comprehensive set of metrics on product development projects. We knew that, for people to track metrics seriously, we needed an easy to use, web-based application that would allow different views of the data for executive management, program managers, and teams.

This presentation will cover the selection, implementation, and use of a web-based portal for managing product life cycle information. It will address some of the issues of vendor selection in an emerging market, infrastructure and resources, and

implementation in a decentralized organization.

Takeaways:

- Learn how to implement a central repository for product life cycle projects
- Criteria for data selection

What Analog Devices (ADI) Learned with Product Development Metrics Through the Eyes of a Pioneer

Robert Stasey, Director of Quality, Analog Devices

Fourteen years ago, ADI set in motion a series of improvement strategies that culminated in the creation of the Scorecard that became one of industry’s most useful business tools linking strategy and action. Targeting sales growth beyond 20% in 1998 required new metrics to determine required R&D performance and to measure results of improvement strategies displaced in time.

This presentation by Mr. Stasey, ADI’s Product Development Metric Steward, will include measures for projects, pipeline management, R&D practices and overall R&D effectiveness. Mr. Stasey will describe how a benchmarking assessment and improvement strategies reshaped ADI’s product development metrics. The importance of the new metrics is underscored by the aggressive targets - 25% sales growth, 25% operating profit and 25% ROA - goals that exceed the performance of ADI’s top competitors. ADI has captured the attention of customers, competitors and now Wall Street, as evidenced by a three-fold rise in the stock price since last year.

Takeaways:

- Measures for projects, pipeline management, R&D practices and overall R&D effectiveness
- How to use metrics to meet aggressive targets

Web-based Benchmarking for Portfolio & Pipeline Management

Michelle Roloff, Service Director, Performance Measurement Group, LLC

Over the last few years, the majority of companies have made significant progress in improving product development. Having achieved improvements in the management of individual projects, companies are turning to portfolio & pipeline management practices for further gains. We will discuss new metrics that are being adopted to assess the performance of the overall development pipeline, show how these can be used to predict future implications, and the impact to higher level financial performance.

Takeaways:

- Review of key metrics for measuring pipeline & portfolio performance
- Current performance levels in the telecommunications and electronic equipment and other industries
- Methods for assessing portfolio & pipeline management practices

Friday, November 3

Metrics Use in Industry: 2000 Product Development Metrics Survey

Bradford L. Goldense, President, Goldense Group, Inc.

The 2000 Product Development Metrics Survey builds on the 1998 survey jointly conducted by Management Roundtable and GGI which focused on the systems, measures, and reward systems being used to manage tactical product development activities such as projects and products. The 2000 survey will focus on processes, activities, decision points, and information being used to manage strategic product development activities.

The Program

The 2000 Survey covers four major areas of concern to top management and top functional management: *R&D linkages to company business strategy, R&D portfolio management and selection, R&D capacity management, and product life-cycle management*. The results of this survey target issues of concern to corporate officers, top functional managers in Marketing, Engineering, and Manufacturing, and all professionals that manage within R&D environments at levels across projects and products.

Building Alignment Within the Organization

David Whitmore, Engineering Services Manager, United Defense LP

Goal: Management wants a 30% improvement in cost, quality, and schedule for transitioning new products into production.

Action Plan: A Transition-to-Production (TTP) management team was created, which in turn created quarterly TTP meetings comprised of managers and supervisors from 3 production sites and one design site scattered throughout the US. The initial meetings were spent with “team building” activities and developing sub-teams with each team assigned an improvement area. Sub-Team Improvement areas included production planning, technical data transfer, processing design changes, and implementing a “Natural Work Team” concept for vehicle assembly. Each team was requested to develop their own improvement project plans and metrics and then provide status briefings at the quarterly meetings.

Issues: After several quarterly meetings, TTP Management is uncertain whether each team is contributing towards the 30/30/30 improvement goals, some design programs are not participating, and some specific improvement targets set by management are not being met.

Solution: The TTP Management

Team began an initiative to better align sub-team actions and objectives with management goals.

Takeaways:

- Using metrics to set goals and align the organization
- Overview of typical conflicts, lessons learned
- Bridging the gaps between project and corporate level metrics
- Metrics to address collocation issues with different business units

Understanding Value Based Management Systems and Their Impact on Market Value

Professor John B. Gallagher, Assistant Professor of Management, Maryville College

What are Shareholder Value Metrics (SVMs)? How are they developed, used, and implemented?

Who is really using them, and how are they really being used? Presentation includes the actual research findings regarding use patterns.

Why should SVM's have any affect on investment in R&D (brief theoretical exploration), and what does the research show? Profiles of research participant companies will be provided: how large they are (sales), how research intensive, the industries they represent, their profitability profiles. It will also include an explanation (brief) of the research methodology, and then an exposition of the research findings and their implications. Firms who use SVM's do appear to invest incrementally more in R&D.

SVM's impact on the R&D Portfolio. The preliminary research findings that SVM use may affect the incremental investment in basic and applied research relative to product development or process improvement.

Other important SVM issues. This will include a discussion of how SVM use may affect the functional relationship between R&D and the rest of the company, and how SVM use may

affect the overall market value of the company.

Takeaways:

- SVM implementation strategies
- Profiles of companies using SVMs
- SVM use and its link to increased R&D investment
- Using SVMs to increase company market value

Luncheon Breakout Sessions

Select one of the following topics to examine with an expert facilitator:

- A. Gaining Alignment and Buy-in — *Wayne Mackey and David Whitmore*
- B. Innovation Metrics — *Dr. Trueman Parish*
- C. Selecting the Right Value Metrics for Your Company — *Dr. John Gallagher*
- D. Trading Off Cost, Speed, and Other Business Objectives — *Preston Smith*

Chrysler's Successful Transformation to a Product & Process-Driven Company

Roger Lundberg, Director of Vehicle Engineering Operations, DaimlerChrysler

Chrysler's 75-year history is filled with dramatic events: stunning success and sensational failures, brilliant engineering and inept styling at times. During the decade of the 90's, Chrysler's sales grew by 50%, and profits soared from near zero, to over \$5B last year. Reinventing its culture and organizational structure, Chrysler implemented Product Development Platform Teams and traded in its internally developed CAD system for an open CAD system (CATIA) in strategic alliance with Dassault Systemes. With the creation of its extended enterprise, everything

The Program

Chrysler's Successful Transformation, cont...

changed: the organization, the processes, the systems and the product. Chrysler had changed from a financially controlled company to a product and process driven company by discarding traditional cost control mechanisms and focusing on product and process.

From 1993 – when Chrysler launched the first products of its platform teams –through 1999, Chrysler made more profit than its entire history. Chrysler improved quality by a factor of 5, received numerous awards for innovative products and concepts, achieved a 50% cut in product development lead time, and doubled its product development throughput using four key product development metrics: quality, speed, cost and innovation.

This talk will feature the complete story of the evolution of Chrysler's ground-breaking Platform Teams, its product development process called the Chrysler Development System, its

Development Factory, and the metrics used in the product development process to achieve these results.

Takeaways:

- Four key product development metrics
- Learn how to make the transition from a financially controlled company to a product and process driven company

Modeling as a Tool to Facilitate the R&D Planning Process

Paul R. Bunch, Ph.D., Sr. Decision Scientist and Deepa Gangwani, Decision Scientist, Eli Lilly & Company

The ability to bring novel pharmaceutical agents to market at reasonable cost is challenging. The staged development process is marked by high attrition of candidate molecules, long cycle times, and intense resource requirements. To meet corporate strategic objectives, the R&D organization must be able to set

and measure key performance targets. Furthermore, it is essential to be able to estimate the resources necessary to execute R&D plans.

We present models of our R&D process that are used to set targets for R&D performance as well as models that are used to predict the expected performance of the projects currently in our R&D portfolio. We will discuss the development and delivery of the models as web-based applications. Several case studies will be covered which describe how the models have been used to aid in strategic decisions.

Takeaways:

- How to set and measure key performance targets for R&D
- Using models to predict expected performance of current projects in your R&D portfolio
- How to develop models as web-based applications
- Using models to determine corporate strategy

Companies that have attended previous metrics conferences

3Com Corporation, AAI Corporation, Abbott Laboratories, Adobe, AeroControlex, Aerojet, Air Products & Chemicals, Inc., Alcoa Automotive Engineering, Allison Engine Company, American Power Conversion, Ameritech, AMI Industries, Amoco Corporation, Analog Devices, Apple Computer, Inc., Applied Materials, Artisan Industries Inc., Ashland Specialty Chemical Co., AT Kearney, AT&T, AT&T Wireless Services, ATPCO, Baker Oil Tools, Barry Controls, Baxter Healthcare Corp., Bayer Diagnostics, BBN Corporation, Bell Helicopter Textron, BellSouth Cellular Corp., Bettis Atomic Power Laboratory, BF Goodrich Aerospace, Bio-Rad Laboratories, Bissell Inc., Black & Decker, Bodine Electric Company, Boehringer Mannheim, Boeing, Bose Corporation, Boston Scientific, Bristol-Myers Squibb, Brother International Corp., Bunn-O-Matic, Carrier Corporation, Case Corporation, Caterpillar, Inc., Cherry Semiconductor, Chips and Technologies, Inc., Coca-Cola Corporation, Compaq Computers, Cooper Tire & Rubber Co., Cordis Corporation, Corning, Inc., Cummins Engine Company, Danaher Controls, DataCard, Dell Computer, DeVilbiss Health Care, Inc., Dow Chemical, Dresser Industries, Inc., E.D. Bullard Company, Eastman Software, Eaton Corporation, ECC International, EcoWater, Education Testing Services, Eldec Corporation, Electro Scientific Industries, Eli Lilly & Company, EMC Corporation, Ericsson, Inc., Ethicon Inc, First Data Solutions, FMC Corporation, Fort James Corporation, Frasier Papers, Fujitsu, Gas Research Institute, Genie Industries, Gilbarco, Glasstech, Inc., Graco Children's Products, Gray Research Inc, Grimes Aerospace Co., Grote Industries, H.J. Heinz Company, Halliburton Energy Services, Hamilton Beach/Proctor-Silex, Harley Davidson Motor Co, Harman-Motive Inc., Hasbro, Inc., Henkel Chemicals Group, Hercules, Inc., Hewlett Packard, Hillenbrand Industries, Hill-Rom, Hobart Brothers, Co., Hon Industries, Honeywell Technology Center, Howmet Corporation, Hughes Aircraft Company, Hughes Electronis, IBM Corporation, IMS Health, Intel Corporation, International Paper, ISCO, Inc., ITT Aerospace Communications, Johnson & Johnson, Kaiser Electronics, Keithley Instruments, Inc., Kendall Healthcare, Kimberly Clark Corporation, KLA-Tencor, Kodak Health Imaging Systems, Kollsman, Inc., Krueger International, Laerdal Medical, Level One Communications, Lexis-Nexis, LifeScan Inc, Lincoln Electric, LSI Logic, Lucas Aerospace, Lucent Technologies, Magna Seating Systems, Magnetek, Inc., Master Lock, Maxtor, McDonnell Douglas Aerospace, MCI WorldCom, Medrad, Medtronic, Mercury Computer Systems, Millipore Corporation, Moen Incorporated, Molex, Inc., Monsanto, Motorola Inc, Nabisco, National Semiconductor, NCR, Nellcor Puritan Bennett, Nestle Frozen Foods Co., New Venture Gear, New York Airbrake Corp, Newport News Shipbuilding, Nissan Research & Development, Nortel Networks, Northern Telecom, Northrup Grumman, Oil-Dri Corporation, Oracle Corporation, Ortel Coporation, Osram Sylvania, Inc., Outboard Marine Corporation, Packard Instruments, Pfizer Inc., Philips Broadband Networks, Phoenix International, PictureTel Corporation, Pitney Bowes, Inc., Plantronics, Polaroid Corp., Pratt & Whitney, Praxair, Inc., Pressco Technology, Inc., Procter & Gamble, Rain Bird, Raychem Corporation, Raytheon, Reflexite, Reichhold, Inc., Rheem Mfg. Co., Robert Bosch Corporation, Robertshaw Controls Company, Roche Diagnostics GMBH, Rockwell Automation, Rogers Corporation, Rohm & Haas Company, Rolls-Royce North America, S.C. Johnson Polymer, Sandia National Labs, SB Power Tool Co., SC Johnson & Son, Inc., Searle, Senco Products, Shared Medical Systems, Shive-Hattery, Inc., Shure Brothers, Inc., Siemens Medical Systems, Simplex, Sprint, Square D Company, Standard Register, State Farm Insurance, Steelcase, Inc., Sun Microsystems, Sunbeam Corporation, Swagelok Marketing, Symantec, Teradyne, Texas Instruments, Thermo King, Thomson Consumer Electronics, Timken Corporation, U.S. Precision Lens, Unisys Corporation, Unitech Systems, United Defense, United Parcel Service, Varian Associates, Viewsonic Corp, Viking Range Corporation, Visteon, Volvo Trucks, Warner Electric, Warner-Lambert, Westinghouse-Commercial NF, Whirlpool Corporation, WL Gore & Associates, Inc., Xerox Corporation, York International Corp., Zimmer, Zoll Medical Corporation

Additional Resources from Management Roundtable

Upcoming Events

September 18-20, 2000 - Chicago, IL

Maximizing Product Development Speed & Throughput -

Featuring Theory of Constraints pioneer, Dr. Eli Goldratt, author of *The Goal* and *Critical Chain*

October 16-18, 2000 - San Diego, CA

Design Anywhere, Manufacture Anywhere -

How to collaborate on product development - around the clock, around the world - for speed and cost advantage

October 31- November 1, 2000 - Chicago, IL

Product Differentiation Bootcamp -

Strategies for Winning Sustainable Advantage in Competitive Markets

January 29-31, 2001 - Phoenix, AZ

Product Development and the Supply Chain - 3rd Annual Conference

Publications

Product Development Best Practices Report (PDBPR)

PDBPR is a unique resource offering access to industry case studies, expert interviews and insight into the product development practices across a wide spectrum of industries. PDBPR is available as a monthly printed newsletter and also as an online, web-based resource with dynamic, searchable indexes. Visit our website for:

- Sample articles, new every month
- Topic spotlights on Metrics and Virtual Teams
- Free 3-month trial subscription

The Critical Path - *provocative musings for the irreverent product developer*

The Critical Path is Management Roundtable's free monthly e-mail newsletter for product development professionals. Each month, TCP features unique insights on product development issues, reviews of relevant websites and online resources, humorous top ten lists and updates on MRT activities. Complete back issues are posted on the MRT website. To subscribe, send email to majordomo@list1.channel1.com and type the following command line into the message body: "*subscribe criticalpath*".

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Management Roundtable has a suite of product development training workshops to help companies address specific issues relating to the development process, including metrics, cycle-time, product definition, cross-functional buy-in and alignment, TOC multi-project management and more. For more information, contact Gregg Tong at gregg@roundtable.com or call 781-891-8080, ext. 216.

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*Collected many key
thinkers in this field to
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Bob Matheson
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Management Roundtable is the leading user-oriented authority on product development. Independent and unbiased, we bring together thought leaders and business practitioners whose common purpose is to define, develop, and deliver customer value — with minimum waste and maximum flexibility.

Founded in 1980, our focus is on sharing product development techniques, processes, discoveries and tools that generate innovation, customer value and faster response.

Our capabilities include conferences, workshops, on-site training, newsletters, research reports, referrals, introductions among practitioners and experts, and online publishing. Visit our website for more information: www.ManagementRoundtable.com



The conference topics were right on target for me. They addressed the critical business problems that I am facing.”

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Sr. Project Manager
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An excellent mix between academic theory and industry experience. Every session generated one or two ideas to try and bring back to my organization.”

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The registration fee is \$1395/person. Fee includes two-day program, results of metrics studies, program materials, luncheons, cocktail reception, continental breakfasts, and refreshment breaks.

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