FAST & Flexible Product Development

ITERATIVE PROCESSES FOR MOVING-TARGET PROJECTS

February 26–28, 2003
Orlando, Florida

STREAMLINE AND SPEED UP PHASE/GATE REVIEWS, KEEPING OPTIONS OPEN

RIGHT-SIZE THE PROJECT TEAM—MANAGE FOR SPEED

HIT THE BULLS-EYE ON CUSTOMER WANTS AND NEEDS (DON'T EXPECT TO GET IT RIGHT THE FIRST TIME)

KEYNOTE SPEAKERS:

Don Reinertsen
Co-author of *Developing Products in Half the Time* and renowned product development expert will explore the economic trade-offs motivating customers to adopt more flexible development processes and how to combine the benefits of structure and flexibility.

Michael Schrage
Author of *Serious Play: How the World's Best Companies Simulate to Innovate* and co-director of MIT's Media Lab E-Markets Initiative will discuss how to cost-effectively use prototyping as a strategic tool for innovation.

The MANAGEMENT ROUNDTABLE

CASE STUDIES

Ford, Hewlett-Packard, Blackbaud, Boeing, Motorola, BIODE, Z Corporation, Lockheed Martin, MDS SCIEX and others

FAST&Flexible
Product Development

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Why this conference is important to you

For product developers, the rule of thumb used to be: lock in requirements early and avoid costly late changes in the development process. Today, in order to respond to the constant changes of the marketplace, customer needs and emerging technologies, the key to success lies in your ability to keep requirements open (for as long as possible) without missing critical market windows or wasting limited resources.

This trend to be fast and flexible is not specific to small companies in fast-cycle industries. In fact, larger companies are also modifying their development processes to increase speed and incorporate evolving customer feedback and technologies throughout the process. To stay competitive, whether you're company is large or small, you'll need to find ways to balance flexibility with process structure.

Management Roundtable's conference, *Fast and Flexible Product Development: Iterative Processes for Moving-Target Projects*, February 26–28, 2003 in Orlando, Florida will bring together leading experts and industry practitioners to explore the latest strategies on how to achieve a more agile, adaptive development process to help you keep costs low and be first to market with the "right" product. By participating, you will learn how to:

- implement feedback mechanisms to generate product preferences throughout the development process
- streamline and speed up phase gate reviews—keeping options open
- modify process methodologies and product architectures to make adjustments less painful
- reap the time-cutting potential of rapid prototyping technologies
- create a resource lean environment to get products efficiently out the door
- use the Design Structure Matrix (DSM) to effectively organize complex design projects and manage workflow with minimal cost and schedule risk
- balance the benefits of late changes against their costs

Key Benefits

By attending this program you will learn how to:

- **recognize and exploit the unanticipated value of prototypes**
- **create a development process that combines the right levels of flexibility and structure**
- **effectively integrate customer data throughout the development process**
- **build an organizational culture that sees the merit in "failing fast and often"**
- **channel scarce resources to the right products**
- **conduct product development processes without stages or gates**
- **identify and minimize rework loops due to poor project planning**
- **make design processes leaner— reduce cycle time and cost**
- **remove speed bumps and rigidity from your development process**
- **examine and procure rapid prototyping technologies and reap their time-cutting potential**
- **"lock in" late and avoid market and technology mistakes**
- **maintain flexibility and agility when working with partners/ suppliers**
- **convert product uncertainties to manageable risks**

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Agenda At A Glance

PRE-CONFERENCE WORKSHOPS
FEBRUARY 26, 2003 / WEDNESDAY

7:00–8:00	Registration / Breakfast
8:00–12:00	**MORNING SESSIONS**

A *Design Structure Matrix,* Tyson Browning, Lockheed Martin

B *Innovative Techniques to Integrate Market Value,* Sheila Mello, Product Development Consulting, Inc.

12:00–1:00	Lunch
1:00–5:00	**AFTERNOON SESSIONS**

C *Rapid Prototyping,* Preston Smith, New Product Dynamics

D *Techniques for Agile Product Development*, Greg Githens, Catalyst Consulting

Who Should Attend

VPs, Directors and Managers of:

- **PRODUCT DEVELOPMENT**
- **SYSTEMS ENGINEERING**
- **R&D**
- **PROCESS MANAGEMENT**
- **ENGINEERING**
- **PROJECT MANAGEMENT**
- **PROGRAM MANAGEMENT**

About Management Roundtable

The MANAGEMENT ROUNDTABLE

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.

Founded in 1980, Management Roundtable publishes the PEER-award-winning Product Development Best Practices Report, offers an online database of PD Best Practices, hosts a variety of specialized conferences and workshops, and conducts customized research, onsite training and expert referrals.

CONFERENCE DAY ONE
FEBRUARY 27, 2003 / THURSDAY

7:00–8:00	Registration / Breakfast
8:00–8:15	Opening Remarks: Don Reinertsen

FREQUENT TESTING AND RAPID PROTOTYPING

8:15–9:30	**KEYNOTE:** **Michael Schrage**
9:30–9:45	Break
9:45–10:45	**CASE STUDY:** **Motorola,** Mike Jahnke and **Z Corporation,** Tom Clay

BETTER MARKET RESEARCH FASTER

10:45–11:45	**CASE STUDY:** **Teradyne** (invited)
11:45–1:00	Lunch
1:00–2:00	**CASE STUDY:** **Becton-Dickinson** (invited)

Track I. Maximize Rapid Iterations

2:00–3:00	**CASE STUDY:** **Lockheed Martin,** Tyson Browning
3:00–3:30	Break
3:30–4:30	**CASE STUDY:** **Ford,** Tony Zambito

Track II. Fast & Flexible Processes for Small Enterprises

2:00–3:00	**CASE STUDY:** **Produxys Solutions,** David Roach
3:30–4:30	**CASE STUDY:** **BIODE,** Kerem Durdag
4:30–5:30	**CASE STUDY:** **Boeing,** Bob Carman
5:50–7:00	Networking Reception

CONFERENCE DAY TWO
FEBRUARY 28, 2003 / FRIDAY

7:30–8:30	Breakfast

BALANCING THE BENEFITS OF LATE CHANGES AGAINST THEIR COSTS

8:30–9:45	**KEYNOTE:** **Don Reinertsen**
9:45–10:00	Break

STRATEGIES FOR INCREASING SPEED AND FLEXIBILITY

10:00–11:00	**CASE STUDY:** **Hewlett-Packard,** Gary Borders
11:00–12:00	**CASE STUDY:** **MDS SCIEX,** Vlad Rasper and Greg Githens, Catalyst Consulting
12:00–1:00	Lunch
1:00–2:00	**CASE STUDY:** **Blackbaud, Inc.** Brian Montgomery
2:00–3:00	**CASE STUDY:** **Qualcomm** (invited)
3:00	End of Conference

Making Money with Speed and Flexibility
Don Reinertsen

Many companies have recognized that changes late in a product development project are expensive. They try to avoid such changes by emphasizing rigorous up front decision-making and highly structured processes. Unfortunately, these methods can add rigidity to a development process and have unexpected side effects, such as:

- forcing important decisions to occur before good information is available
- discouraging the use of valuable but still evolving technologies
- delaying work unnecessarily to wait for consensus

This has caused many companies to consider approaches that focus on carefully balancing the benefits of late changes against their costs. Companies are increasingly examining approaches that:

- defer selected decisions until higher quality information is available
- accelerate the creation of the information needed to make these decisions
- modify process methodologies and product architectures to make adjustments less painful

Don will discuss the economic trade-offs motivating companies to adopt more flexible development processes. Extreme process orientation can cause companies to lose their focus on results. Absence of process can cause companies to keep repeating the same painful mistakes. Don will examine the middle path that seeks to combine the benefits of structure and flexibility.

DON REINERTSEN is president of Reinertsen & Associates, a consulting firm specializing in the management of the product development process. Don is co-author of the best-selling book *Developing Products in Half the Time* and author of *Managing the Design Factory: A Product Developer's Toolkit.* He writes and speaks frequently on techniques for shortening development cycles and teaches a popular course at California Institute of Technology on Streamlining the Product Development Process. Don holds a B.S. from Cornell University in electrical engineering, and an M.B.A. with distinction from Harvard Business School. He is a member of the IEEE, SME, and ASQC.

Prototyping Innovation and Innovative Prototyping:
Strategic Modeling as a Medium for Cost-Effective Innovation
Michael Schrage

Michael Schrage will discuss prototyping, modeling, and simulations as the essential media to manage innovative behavior and turn uncertainties into manageable risks. He will review key elements for successful prototyping, including how to:

- recognize and exploit the unanticipated value of prototypes
- the economics of prototyping and its effect on organizational culture
- understand the trade-offs between modeling with too much detail versus oversimplification
- measure prototyping paybacks: mean-time-to-payback
- avoid mismanagement of prototyping—know when the costs outweigh the benefits

MICHAEL SCHRAGE is co-director of the MIT Media Lab's eMarkets Initiative where he writes, consults and collaborates in the design and deployment of digital innovations in networked marketplaces. In 2000, Schrage authored *Serious Play: How the World's Best Companies Simulate to Innovate,* where he explores the economics and ethology of prototyping and design. He previously authored *Shared Minds: The New Technologies of Collaboration*—the first book to explore both the tools and the dynamics of successful collaboration in business, science and the arts. He is a columnist for *Fortune* magazine and his writings have appeared in the *Harvard Business Review, Wall Street Journal, Fast Company,* and many other publications.

Case Studies

Better, Faster, Cheaper Decision Making with Fast Prototypes
Mike Jahnke, **Motorola**
Tom Clay, President, **Z Corporation**

New, very fast prototyping machines called concept modelers or 3D printers make it possible to speed, improve and reduce cost in the decision-making processes that surround new product development, production and launch. Although traditional prototyping techniques have made impressive gains in shortening the development process and have reduced lead times from months to weeks, the front end of the design process is one remaining area to target for cost and time reduction.

This presentation will review the adoption of very fast prototyping into Motorola's personal communications group, including cell phones and pagers, and identify how physical prototypes were used to improve the communication and sharpen the feedback that are part of any product development effort.

Flexibility by Design (or Necessity): From Theory to Application in SME's
David Roach, President,
Produxys Solutions, Inc.

Small to medium-sized enterprises (SME's) have always needed to remain more flexible than their larger corporate counterparts. This session will cover practical applications of flexible product development systems by looking at both high-tech and low-tech examples at work in smaller enterprises. The use of prototypes to concurrently test market and technology issues will be discussed, as well as how these examples can be translated to most organizations, large or small. Participants will learn that failing often (and early) can reduce cycle time, costs and human resources and ultimately lead to the timely launch of best-of-class products. You will learn:

- multiple techniques to simultaneously test market response & technical validity
- skills to prototype for shorter development time and quicker launches
- the know-how to enhance agility while increasing market acceptance

Crazy and Chaotic Product Development for the Smart, Small and Sharp
Kerem Durdag, Chief Operating Officer,
BIODE

This presentation will focus on product development specifically for companies that are small, involved in commercializing technology from the lab to the real market, and staffed with highly motivated, cross-functional individuals. Kerem will outline strategies to conduct product development in a non-linear, organic and creative fashion without design gates, detailed metrics and project stages. You will learn how to:

- start the process to think creatively regarding product development
- separate product development activities for cost and performance
- conduct product development without stages or gates
- direct a product development vision

Product Development at Warp Speed and Very Low Cost: The Online Virtual Enterprise
Robert Carman, Program Manager,
Boeing, Rocketdyne Advanced Programs

Multi-company, virtually co-located teams provide for the potential of revolutionary change in all aspects of business, including product development, but they also create new unforeseen management challenges. The flexibility of outsourcing all but your world-class processes provides increased flexibility and dramatic potential for changing your company's business model. But it also introduces new challenges of global proportion, such as how to use competitors as key suppliers and integrate supplier contributions into the product definition.

Carman will discuss radical business practices and leadership concepts that have proven to produce more than an order of magnitude reduction in staffing requirements and first-delivered product cost. Best practices associated with the online virtual enterprise will be drawn from several, global-scale product development activities.

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Project Cost, Schedule, and Risk Management Using the Design Structure Matrix (DSM)

*Dr. Tyson R. Browning, Sr. Project Manager, Integrated Company Operations, **Lockheed Martin***

The design structure matrix (DSM) is a relatively new tool for representing and analyzing project processes. It has many applications in project management, including visualization and coordination of activity interfaces, project planning, process improvement, and risk management. You will learn several aspects of project management using the DSM, including how to:

• build a process model based on information and deliverable flow
• identify and minimize rework loops caused by poor project planning
• use the DSM for process integration and improvement
• determine when process architecture affects project cost and schedule risks

Overcoming the Speed Versus Process Dilemma

*Brian Montgomery, Director of Product Marketing & Strategy, **Blackbaud, Inc.***

The "ready, fire, aim" speed of rapid prototyping versus the maximized return on investment of a well thought out, well balanced product portfolio management process—is a classic dilemma for product developers.

However, there may be a broader set of choices available beyond the simple "either/or" of fast versus methodical. This presentation shows how a product portfolio management process was used at two different software companies (as well as a leading hardware company!) that incorporated the logical, methodical decision-making associated with good product selection as well as the speed of rapid prototyping that is required in today's world.

A Process Engineering, Systems Architecting, & Organization Design Using the Design Structure Matrix (DSM)

Dr. Tyson R. Browning
Lockheed Martin

The DSM is a square matrix that shows dependencies between system elements such as product components, people, teams, processes, or activities. With simple analysis, one can prescribe a modular system architecture or organization structure—add a time-basis and enable a faster, lower risk process. The DSM shows process feedbacks and helps identify iteration and rework loops—key drivers of cost and schedule risk. It can also show how delays in external inputs (requirements and equipment) trace directly to increased cost, schedule, and risk.

TAKE-AWAYS:
• How to apply the DSM to systems problems
• How to model information flow and improve organizational integration, coordination, and collaboration
• How to organize complex design projects effectively
• Strategies to make design processes "leaner"

DR. TYSON R. BROWNING is senior project manager in Integrated Company Operations at Lockheed Martin. Browning previously worked with the Product Development Focus Team of the Lean Aerospace Initiative at MIT. He holds a Ph.D. in technology management and policy and two master's degrees from MIT.

B Innovative Techniques to Integrate Market Value for Bottom Line Results

Sheila Mello
Product Development Consulting, Inc.

This workshop will provide key insights on how to quickly and effectively integrate your customers into your product development process. Sheila will outline a choice model highlighting various customer touch points that are possible from pre-concept and ideation through product launch, commercialization, and retirement. She will review customer advisory boards, prototyping, web-based feedback, interactive product definition, and online customer panels.

TAKE-AWAYS:
• Time-saving methods to gather and disseminate rapid/real-time target information and research
• Strategies to develop and maintain fast, flexible customer-integrated product development
• Unique tools to more quickly and effectively integrate customer data in product definition and development

SHEILA MELLO is the author of the recently published book *Customer-Centric Product Definition: The Key to Great Product Development*. She is managing partner of Product Development Consulting, Inc. Sheila has done extensive research in processes for defining customer requirements and is an expert in helping companies implement and institutionalize market-driven product definition programs.

AFTERNOON SESSIONS / 1:00–5:00

C Obtaining Rapid Development from Rapid Prototypes

Preston Smith
New Product Dynamics

Interestingly, those who use rapid prototypes in product development often do not achieve faster development. To obtain this benefit, they must also be careful to arrange their development process to exploit the latent timesaving power of rapid prototypes. Rapid prototypes can be three-dimensional plastic models of mechanical parts, software simulations of electronic hardware, or quick-and-dirty code to demonstrate a software concept. We will not cover the details of rapid prototyping techniques but instead look at how rapid prototyping can fit into the product development cycle and how it should be viewed to capture cycle-time potential.

TAKE-AWAYS:
- How to use rapid prototyping to cut time from your development process
- How to frame open issues as hypotheses so that you can learn from your prototypes and move ahead with certainty
- How to look at and procure rapid prototyping technologies to reap their time-cutting potential

PRESTON SMITH has worked exclusively on accelerated product development for over ten years. He founded New Product Dynamics in 1986 to bring rapid development expertise to a wide variety of companies as an independent consultant. Preston has published numerous articles on the techniques of speeding up product development and is co-author of *Developing Products in Half the Time*.

D Techniques for Agile Product Development

Greg Githens
Catalyst Consulting

Based on research at dozens of fast and flexible organizations, Greg has identified over forty tools and principles for creating agility: speed with quality and efficiency to the development process. The tools and principles are not quick-fix silver bullets, but are effective in practice. Like most break-throughs, a systematic approach is needed. The workshop will be highly tailored to the specific needs of participants.

TAKE-AWAYS:
- How to remove speed bumps and rigidity from your development process
- How to front-load the development process to achieve maximum speed
- Rolling-wave technique for managing project planning and execution
- Selecting project lifecycles that foster flexibility

GREG GITHENS has over 20 years of experience in program management. He is a managing partner with Catalyst Management Consulting. He works with firms of all sizes and industries to solve specific problems, and to create new capability or improve existing capability. This includes rapid project development (improved time-to-market) performance, tools/practices for both the "fuzzy front end" of development, as well as the deployment back end.

Conference Information

Dates:

The conference will begin at 8:00am (registration and continental breakfast at 7:00am) on February 27, 2003 and will adjourn at 3:00pm on February 28, 2003. Optional pre-conference workshops are offered on Wednesday, February 26 from 8:00am–5:00pm.

Location & Hotel Accommodations:

The conference will be held at the Wyndham Palace, 1900 Buena Vista Drive, P.O. Box 22206, Lake Buena Vista, FL 32830-2206. Please call **407-827-2727** directly for room reservations. Please mention Management Roundtable to receive a special rate (we have a limited block of rooms).

Conference Fee:

2-Day Conference	$1595
2-Day + One 1/2-Day Workshop	$2090
2-Day + Two 1/2-Day Workshops	$2585
1/2-Day Workshop only	$695
Two 1/2-Day Workshops	$1295

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EARLY BIRD DISCOUNT:
Reserve by December 31st and SAVE $200 per person

Fee includes program materials, luncheons, reception, continental breakfasts, refreshment breaks, and a complimentary 3-month subscription to Product Development Best Practices Report.

Team Discount:

Groups of 3 or more may deduct $100 per person on the 2-day conference. Groups of 6 or more please call 800-338-2223 for special pricing.

No-Risk Guarantee:

Your satisfaction is 100% guaranteed—money-back or credit.

Registration Form

FAST&Flexible
*Product*Development

**ITERATIVE PROCESSES FOR
MOVING-TARGET PROJECTS**
*February 26–28, 2003
Orlando, Florida*

Please accept the following registration(s):
(please use photocopies for additional people)

☐ Conference (2/27–2/28)

☐ Pre-Conference Workshops (2/26):

     AM Session: ☐ **A:** *Design Structure Matrix*   **OR**   ☐ **B:** *Innovative Techniques*

     PM Session: ☐ **C:** *Rapid Prototyping*   **OR**   ☐ **D:** *Agile Product Development*

Name: Mr. / Ms. _____

Title: _____

Company: _____

Address: _____

City/State/Zip: _____

Phone_____ Fax: _____

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Payment Information   (Amount $_____)

☐ Check enclosed, payable in US funds to *Management Roundtable, Inc.*

☐ Please bill by   ☐ Visa   ☐ Mastercard   ☐ AMEX   ☐ Diner's Club

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    Signature _____

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**FAST & FLEXIBLE
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