

Book Reviews

Book Review Editors: Beebe Nelson, Ed.D., NPDP, and Kenneth B. Kahn, Ph.D., NPDP

Book reviewed in this issue:

Paul Belliveau, Abbie Griffin, and Stephen Somermeyer, editors

The PDMA ToolBook for New Product Development

Books received for possible review in a future issue:

Ashish Arora, Andrea Fosfuri, and Alfonso Gambardella

Markets for Technology: The Economics of Innovation and Corporate Strategy

Vincent Bozzone

Speed to Market: Lean Manufacturing for Job Shops

John Seely Brown and Paul Duguid

The Social Life of Information

Amiya K. Chakravarty

Market Driven Enterprise: Product Development, Supply Chains, and Manufacturing

Henry Chesbrough

Open Innovation: The New Imperative for Creating and Profiting from Technology

Kenneth Carlton Cooper

The Relational Enterprise: Moving beyond CRM to Maximize All Your Business Relationships

Edmund B. Fitzgerald

Globalizing Customer Solutions

Eliezer Geisler

Creating Value with Science and Technology

Tim Jones

Innovating at the Edge: How Organizations Evolve and Embed Innovation Capability

Jeff Mauzy and Richard A. Harriman

Creativity, Inc.: Building an Inventive Organization

Robert C. Megantz

Technology Management: Developing and Implementing Effective Licensing Programs

David Moschella

Customer-Driven IT: How Users Are Shaping Technology Growth

Jeffrey H. Rohlfs

Bandwagon Effects in High-Technology Industries

Stefan H. Thomke

Experimentation Matters: Unlocking the Potential of New Technologies for Innovation

Zaltman, Gerald

How Customers Think: Essential Insights into the Mind of the Market

The PDMA ToolBook for New Product Development, Paul Belliveau, Abbie Griffin, and Stephen Somermeyer, eds. New York: John Wiley & Sons, 2002. 472 + viii pages. \$60.00.

This *PDMA ToolBook for New Product Development* is planned as the first of a series to supplement the *PDMA Handbook of New Product Development* (Rosenau 1996). Whereas the *Handbook* is a relatively comprehensive guide for those new to product development, the *ToolBook* provides more advanced or recent topics.

The *ToolBook* is a collection of independent chapters divided into four parts of related topics. Each part includes a few pages of editorial overview, which serve as summaries of the chapters and indicate common themes among these chapters. Many chapters provide a wealth of tools, while others are more conceptual or descriptive. Some presume application in a large, mature company, and others focus on smaller, more dynamic ones. Some apply to consumer products and others to industrial products. There is little cross-referencing between chapters. Because of this independence and variation, each chapter is reviewed separately.

(1) Fuzzy Front End: Effective Methods, Tools and Techniques (Peter A. Koen et al.): The authors conclude that a sequential process, such as a stages-and-gates model, is inadequate to describe the fuzzy front end of development due to the inherently iterative nature of this phase. Thus, they insightfully propose a seven-element iterative model. This is a breakthrough in thinking, because it moves beyond the sequential nature of most process models. They describe each of the elements and provide an overview list of several techniques that could be helpful in executing that element. Unfortunately, their model and its associated techniques have been used only at the authors' companies so far, although the chapter is supported by 68 references to the academic literature.

(2) Hunting for Hunting Grounds: Forecasting the Fuzzy Front End (Christopher W. Miller): This chapter describes a technique aimed at finding new markets (the hunting grounds) and associated new products when a firm is saddled with mature consumer markets. Miller describes the technique in detail, but it is rather difficult to follow, because the process is complex and because key terms used, such as "hunting ground," "idea," and "concept" are not illustrated. He advises generating three to five hunting grounds and 500 to 1500 ideas and 100 to 150 concepts for each hunting ground, so the ideas and concepts apparently are not developed in much detail. The entire process will occupy several people for three to six months.

(3) Telephoning Your Way to Compelling Value Propositions (George Castellion): Castellion describes in detail a technique for understanding product attributes that customers desire through detailed qualitative telephone interviewing. The key to success is to position the respondent as a "professor," while the interviewer encourages this professor as an "intelligent pupil." The chapter also lightly covers converting the information gained into a compelling value proposition but recommends that this is so critical to project success that it must be done by the project team. The author downplays the increasing difficulty of reaching the desired respondent live on the telephone.

(4) Focusing [New Product Development] NPD Research on Customer-Perceived Value (Charles Miller and David C. Swaddling): This chapter is a broad overview of customer research techniques to aid

product development projects. It covers all phases of the project, and it offers a list of tools useful in each phase. However, it does not provide any detail or how-to help for these tools. Its core message is that only the customer really knows where the value of the product lies, so the development team needs continually to tap into customer-perceived value as they develop the product.

(5) Product Champions: Crossing the Valley of Death (Stephen K. Markham): The "valley of death" occurs before a project is approved formally. According to the author, "championing is a voluntary act by an individual to promote a particular project" (119). He describes how such an individual can act outside of formal channels and processes to obtain approval for a desired project. Although an occasional champion may be admired, we question whether an organization should encourage such behavior in lieu of an accepted front-end process and resources to support it. (Chapter 15 discusses the inherent conflict between product champions and senior management when managing project risk.)

(6) Managing Product Development Teams Effectively (Roger Th. A. J. Leenders et al.): This is a fresh approach to managing cross-functional product development teams by assessing them in terms of two characteristics: team cooperation and team integration. Cooperation is revealed by a harmonious atmosphere in which members feel comfortable together. Integration measures uniform communication across team membership rather than members clumping by function. More of either is not necessarily better, but both should increase over the life of the project. This chapter provides instruments for measuring both characteristics regularly during the project to identify unfavorable trends early.

(7) Decision-Making: The Overlooked Competency in Product Development (Mark J. Deck): This chapter focuses narrowly on the phase-end decisions made by management rather than on the thousands of daily decisions made by the team. While most such management decisions do occur at the end of a phase, management and the team always must remain alert to out-of-bounds conditions that should trigger an immediate review. Although most of the material describes the decision-making process and its difficulties, the last few pages provide some useful tools to

measure, to track, and to improve management decision-making.

(8) How to Assess and Manage Risk in NPD Programs: A Team-Based Approach (Gregory D. Githens): This chapter describes a 10-step process for managing risks inherent in innovation. The process is strongly team based, which is wise for this subject with its many psychological undertones. Collaboration allows the team to build the consensus needed to attack its risks effectively. As with other chapters, this material is a good introduction to the subject, but the reader probably would want more detail before implementing it on a substantial scale. Unfortunately, this chapter does not provide references that would take the reader further. Chapter 15 on the program manager's perspective is related to this one.

(9) Capturing Employee Ideas for New Products (Christine Gorski and Eric J. Heinekamp): A key resource for new products is the ideas and knowledge of the company's employees. Gorski and Heinekamp review several employee suggestion systems as ways of creating and of providing incentives to employees to contribute ideas. Then they adapt the concept of employee suggestion systems to capturing new product ideas. The chapter includes a detailed 10-step process for building an idea generation, capture, and approval system. The authors make best-practice recommendations, such as using the idea originator as the idea owner during the process to improve participation rates.

(10) Lead User Research and Trend Mapping (Lee Meadows): These two related topics can be used for identifying new markets and product opportunities. Lead users are innovators who adapt products to meet their needs. The chapter stresses the importance of finding and collecting ideas from this group. Trend mapping, as its name implies, involves studying industry and product trends as a way to identify future requirements. The author provides examples and tips for using both techniques.

(11) Technology Stage Gate™: A Structured Process for Managing High-Risk New Technology Projects (Greg M. Ajamian and Peter A. Koen): The authors adapt the stage-gate approach to new technology development. The key differences between product and technology development are the higher risks and

additional uncertainty. Ajamian and Koen emphasize that the next phase of a technology development project often is unclear until the outcome of the current phase is complete. The Technology Performance Table (Table 11-3) appears to be a valuable tool for aligning market needs with various solution options. As presented, the process is geared toward large companies where technology development and product development are separate processes, often in separate organizations.

(12) Universal Design: Principles for Driving Growth into New Markets (James L. Mueller and Molly Follette Story): The core of this material is a 29-step guideline for ensuring that products are acceptable to the largest possible group of users. The guideline applies primarily to consumer-oriented products. This is the opposite approach from the current focus on mass customization and market segmentation. Wonderful examples show how improving usability can tap new markets and dominate existing ones. This approach has limited application in business-focused products.

(13) Portfolio Management: Fundamental to New Product Success (Robert G. Cooper, Scott J. Edgett, and Elko Kleinschmidt): This is a good summary of numerous books and papers the authors have published on this topic. It provides an overview, some benchmarking, and detailed recommended practices. The authors recommend two different practices, gate centric and portfolio centric, for implementing portfolio management for different types of businesses. These advanced methods may not be suitable for all businesses, and they apply best to large companies. This chapter is a good introduction to this complex topic.

(14) Assessing the Health of New Product Portfolio Management: A Metric for Assessment (Robert J. Meltzer): Measuring the effectiveness of NPD is difficult due to the considerable time between changes in the process and the results and to constantly changing external factors. Meltzer advocates depreciated product value metric (DVPM) as a metric for the NPD process. DVPM is a backward-looking metric for NPD effectiveness rather than being predictive. Selecting the depreciation rate(s) is a key and controversial step in using this metric. Thus, the author recommends an alternative: Compute the DVPM with different depreciation rates for each

year, and see if the resulting trend (improving or deteriorating) is the same.

(15) Risk Management: The Program Manager's Perspective (David J. Dunham): In contrast with the team-level approach in chapter eight, this chapter aims at risk management for program managers (typically senior management). It discusses the program manager's roles in NPD as the investor, facilitator, and coach to NPD teams, and it describes many of the obstacles to effective risk management. The chapter includes a six-step risk management process, and several tools/templates that the program manager should expect teams to use. This process and associated tools are not correlated with those from the project side in chapter eight, so the reader will need to consolidate both sides into a unified whole to ensure strong team-management coordination.

(16) Process Modeling in New Product Development (Paul Bunch and Gary Blau): This chapter discusses ways to model the NPD process. This model is most applicable to slow, high-attrition high-cost businesses, such as drug research. The authors review a simple algebraic steady-state model and its limitations in the real world. They describe more complex simulation models as well. The chapter describes how to use the models as part of portfolio management for both product planning and prioritization. Portfolio management is covered in more detail in chapter 13.

There is material here for every product developer, but the whole book is unlikely to be of interest to many. Those who use the chapters as a starting point for learning about a topic may be frustrated that the chapter-end references often do not lead the reader to more complete or alternative treatments. For those who need or want instructions for practical use, many chapters include cookbook-like instructions and templates to make the techniques easy to adopt. The book concludes with 36 pages of the PDMA Glossary (a current version of this glossary is available publicly on the PDMA website). The short index covers the book inadequately for a book of such length and variety.

The *PDMA ToolBook* is recommended as a worthwhile investment for anyone who wants information on newer topics and as a handy reference to advanced product development techniques. As a bonus, it is likely to be supplemented with other volumes in the future.

John G. Cordes
National Semiconductor

Preston G. Smith CMC
New Product Dynamics

References

- Rosenau, Jr., Milton D. ed., with Abbie Griffin, George Castellion, and Ned Anschuetz, senior eds. *The PDMA Handbook of New Product Development*. New York: John Wiley & Sons, 1996.