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# New Product Development

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**Robin Karol, PhD, NPDP**

Chief Executive Officer, Product  
Development and Management  
Association

**Beebe Nelson, EdD, NPDP**

Co-Director, International Association  
for Product Development



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***New Product Development  
For Dummies®***

**by Robin Karol, PhD,  
NPDP, and Beebe  
Nelson, EdD, NPDP**

**Foreword by Dr.  
Geoffrey Nicholson,  
Vice President, 3M ret.**



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# About the Authors

**Robin Karol** is CEO of the Product Development and Management Association (PDMA), a professional society that creates and nurtures a global community in which people and businesses learn to grow and prosper through innovation and the introduction of new products. Robin is an adjunct full professor at the University of Delaware Lerner School of Business Administration, where she teaches courses on the Management of Creativity and Innovation. Robin worked at DuPont for 23 years in various aspects of innovation and new product development, achieving the role of Director of Innovation Processes. A certified new product development professional (NPDP), she received her PhD in Biochemistry from the State University of New York at Buffalo. She has numerous publications and has presented at many conferences and workshops. The Industrial Research Institute (IRI) presented Robin with its Maurice Holland Award for the best paper in its journal *Research-Technology Management* in 2003.

**Beebe Nelson** is Co-Director of the International Association for Product Development (IAPD), a consortium of leading product developers who come together to improve their ability to execute new product development. She has organized, chaired, presented at, and facilitated conferences and workshops in product development, and has contributed chapters and articles in a number of venues. From 1998 to 2003, she was Book Review Editor of the *Journal of Product Innovation*

*Management*, a publication of the PDMA. Beebe is a certified new product development professional (NPDP) and holds a doctorate in philosophy from the Harvard Graduate School of Education. Beebe has taught Philosophy at the University of Massachusetts at Boston and most recently in the College of Management at UMass-Lowell. She chairs the Advisory Council of Partners in Ending Hunger, a not-for-profit organization located in Maine.



# Dedication

We dedicate this book to the members of the PDMA and the IAPD with whom we have worked and learned, and to George Castellion and his Frontier Dialogues. He was willing not to have the answers so that we could all learn together.

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# Foreword

*N*ew Product Development For Dummies. I would guess that some of my colleagues might be offended at these words. But the fact is that a certain amount of naiveté is an essential ingredient in the process of getting a new product to market. After all, if we know it all, where is the room for discovery? It has been my experience that successful innovators have the characteristic of trying something first to see if it works, and explaining it later. Indeed, even better still, they get someone else to explain it.

This book teaches us the various hurdles to be overcome and the activities required if this endeavour of developing new products is to be successful. Indeed, it is a survival issue for many companies and for countries, including the U.S. A recent study by the National Academy of Science shows that the United States has moved from having a positive balance of payments of \$33 billion for high-tech products in 1990, to having a negative balance of payments of \$24 billion in 2004.

There are incremental new products, and there are revolutionary new products, those products that change the basis of competition. Developing new products requires creativity — coming up with ideas for new products — and innovation — the process of turning those ideas into something of value.

I use the following definitions:

“Research and Development is the transformation of money into knowledge. Innovation is the transformation of knowledge into money.”

Clearly we need both. This book focuses on the transformation of an idea into something of value — in other words, the transformation of knowledge into money. We cannot be happy with satisfying the customer; we have to reach the next level of delighting the customer. That often comes from products that satisfy a need that the customer did not even know he or she had.

To be successful with new products, an organization must provide an environment that allows innovation to thrive, the resources to get it done, and a measurable expectation of success. If you want to activate innovation in an organization, you need to:

Know where you want to go — *Vision*

Know where the rest of the world is going — *Foresight*

Have ambition — *Stretch goals*

Have freedom to achieve your goals — *Empowerment*

Draw from and work with others — *Communication, Networking*

Be rewarded for your efforts — *Recognition*

Passion and courage, however difficult they are to measure, are also essential in new product development. I can tell you from my experience in championing Post-It Notes that we had to have passion and courage. We were told several times by management to kill the program. I know that if we had had some of the processes like the

ones described in this book, we could have had that product in the market two years earlier than we did.

Companies of any size must hire innovative people to join their team. These people should be creative, have broad interests, be capable problem solvers, be self motivated, have a strong work ethic, and be resourceful.

And so in your passionate and courageous effort to get new products successfully into the market by using the tools in this book, always keep in mind the six phases a program is likely to go through:

1. Enthusiasm
2. Disillusionment
3. Panic
4. Search for the guilty
5. Punishment of the innocent
6. Praise and honors for the non-participant

A final message: Enjoy the book, innovate for the customer, network with your colleagues, and have fun. But most of all, I wish you success with your new products.

— Dr. Geoffrey C. Nicholson, Retired 3M Vice President

**Visit**

**<http://www.dummies.com/cheatsheet/newproductdevelopment> to view this book's cheat sheet.**

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# Introduction

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Do you watch the Super Bowl on a high-definition flat-screen television? Does your microwave heat up leftovers in the blink of an eye? If so, thank a new product developer. Are you confident that the package you sent today will reach its destination by tomorrow morning? Have you found a retirement package that meets all your needs? If so, thank a new product developer.

Are you hoping that someone will solve the planet's energy problems and find cures for the diseases that plague the world? A new product developer is already on the case.

The people who develop new products look for problems they can solve, gaps they can fill, and ways they can make consumers' lives better, easier, and more exciting. They take on these tasks because they're curious, creative, and ambitious. They also want to make money — for themselves and for their companies. Unlike visionaries who like to invent for the sake of invention, new product developers commit to getting new products into markets where people can benefit from them, and for good returns on their investments. If you're looking to grow your business, sustain it for the long haul, and become a hero to your customers, jump right into *New Product Development For Dummies*. You can thank us later!

# About This Book

We wrote this book for people who develop new products. Don't let the title of this book mislead you into thinking that developing new products is a walk in the park. Developing new products is not only the most rewarding thing you can do in business but also about the most challenging. It calls for both creativity and discipline, and it requires a willingness to make mistakes and then learn from them.

We first met at product conferences, where companies from around the world came together to trade stories of their successes and share the reasons for their failures. We were anxious to collaborate with others. Fifteen years or so ago, though, none of us really knew how to make new product development pay off on a consistent basis. We'd look at each other and say, "Do you suppose it would help if we had cross-functional new product teams?" Or, "I wonder if we ought to get management to review this project before we bet the farm on it." Many of us were willing to make the kinds of stupid mistakes people make when they have no obvious answers.

Today, we *do* know what's important to achieve success in developing new products. We don't mean that only we, Robin and Beebe, know. We mean that many professionals know, and plenty of people in small and large companies around the world use the practices that we describe here.

In this book, we give you tons of tips, examples, and pointers that illustrate what successful new product developers do, and we help you to implement the practices that separate “the best from the rest.” We had a blast writing this book, and we hope that you have a blast reading it and applying it to your work. After all, what’s more exciting than creating something that didn’t exist before? You do very important and very hard work. Our biggest motivation as we wrote this book was to make sure that everything we put on paper is accurate, helpful, and clear and represents the respect we have for you and for the work you’re doing.

## Conventions Used in This Book

To guide you through this book, we include the following conventions:

- ✓ *Italics* point out defined terms and emphasize certain words.
- ✓ **Boldface** text indicates key words in bulleted lists and actions to take in numbered lists.
- ✓ Monofont highlights Web addresses.

Here are two important definitions:

- ✓ People who develop new products don’t develop only things; they develop things *and* services *and*

improvements to things and services that already exist. When we use the term “new product,” we’re referring to all the new products and services that solve customers’ problems and make their lives better.

✓ When we use the term *develop*, we’re referring to all the activities that occur between the time when a company sees an opportunity for a new product and when it introduces the product to the market.

## What You’re Not to Read

We really didn’t include anything that we don’t think is important, but if you’re in a hurry (and if you’re a product developer, we bet you are), here are some suggestions:

- ✓ Look at the Table of Contents to figure out exactly which chapter deals with the problem that’s bugging you right now. You can skip all the rest, until another problem or question rears its head.
- ✓ You can skip all the sidebars or save them for a rainy day. These shaded boxes mostly give examples and pointers from real-world experience. If you don’t read them, you won’t lose the thread.
- ✓ You can skip the text marked with a Technical Stuff icon. We put some things in those paragraphs that seemed a bit, well, technical — it isn’t the kind of stuff product developers talk about on a daily basis.

# Foolish Assumptions

One of the cardinal rules in new product development is “Know thy customer.” For us, that customer is you. We had to make some assumptions about you in writing this book, and some of them may be foolish or just plain wrong. Anyway, here they are:

- ✓ We assume that you’re interested in developing new products or in supporting people who develop new products.
- ✓ We assume that you have some business background. We use terms like “return on investment” and “business case” throughout the text — terms that we assume you learned in school and/or use in your everyday work.
- ✓ We assume that you work in any industry imaginable and that you play just about any conceivable role in your industry. Your company may be large or small, old or just starting out. Also, we assume that you may be changing roles or industries.

Product developers often create character sketches of people for whom they develop their products. Here are some sketches that helped us picture our readers:

*I’m the VP of R&D at a small company that builds homes for first-time homeowners. I’m sure we could do a better job of designing, constructing, and marketing our homes if we treated them like new products. After all, we go through a pretty complex design/development process each time we introduce a new model. I need some kind of primer, an entry-level*