

DEVELOPING

NEW

FOOD
PRODUCTS
FOR A
CHANGING
MARKETPLACE

EDITED BY

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DEVELOPING NEW FOOD PRODUCTS FOR A CHANGING MARKETPLACE

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Developing New Food Products for a Changing Marketplace

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Foreword

SUCCESSFUL introduction of new products to the marketplace is the lifeblood of successful packaged food manufacturers. It is often said that food companies are market driven, and as such they respond to new consumer demands through the introduction of new and improved products. This process also provides new “news” to the marketplace to stimulate consumer interest and sales. Perhaps more than any other industry, a successful new products program is critical for the survival of packaged food companies.

So, how is the industry doing in new product introductions? Among several measurements, one is total new products introduced in recent years. In 1998, just over 11,000 new and improved products were introduced to the marketplace. The totals have declined in each of the past 3 years, after reaching a peak of 16,863 in 1995 (*New Product News*, January 1999).

Why is the number of new product introductions decreasing? Part of the reason is an unsatisfactory return on investment in new product development and introduction. The process is very costly, as it includes market analysis, product and process development, manufacturing, marketing, etc. Moreover, innovation in new food products is often lacking, and life span in the market tends to be short.

Another key reason for the reduction in new product introductions is the enormous number of company mergers, which can reduce competition and sometimes brands. It also can reduce investment and innovation in new products.

In summary, there is a need for major improvement in the process by which industry has traditionally made decisions and managed new product development and market introduction. The need is even more critical when

we consider that the environment in which new products are created and marketed has changed dramatically in recent years. For example, there is increased complexity related to safety, health benefits, new ingredients, and new consumer demands. In addition, timeliness in getting to market with new products has never been more critical. Couple these factors with the pressing need to “do more with less” and still be more innovative and we have a formula for potential disaster.

This book by Brody and Lord can help avert disaster and can provide an excellent foundation for a successful new products program. It is comprehensive and deals with all aspects of the *business* of new products. It will be a key competitive factor for experienced as well as new members of new product business teams!

BRUCE R. STILLINGS, Ph.D.
President, 1998–99
Institute of Food Technologists
President
Food & Agriculture Consultants Inc.

Foreword

Food product development is an excellent idea, and *Developing New Food Products for a Changing Marketplace* is an excellent book. The concept of gathering all of the pieces of product development together, integrating the portions in such a way that the silos that affect most development groups are eased carefully together is most welcome, and most unusual. The concept of discipline, applied to new food products, too often is translated to mean keeping “those guys” in line during development, marketing, etc.

The authors note that the emphasis for new products is on speed and that life cycles are shorter than ever. So the concern is that more new products will enter the marketplace, fail faster, and convince those operating in the new food product arena that the economic safety of mundane line extensions precludes real innovation. It is good to see prominent chapters on product policy and goals and on the role of business strategy, product portfolios, and product selection. The concept of a definition of a new product is refreshing; so is the statement that new product development is not a rationale to try to fool consumers.

A number of gurus participated in preparation of the book; including people from industry—notably Bob Smith, John Finley, Alvan Pyne, and others—and from academia and consulting—particularly John Lord and Aaron Brody. Although a certain amount of theory is included, it is exceptionally well backed up with real-life examples. It ought to be must reading for food science majors, as well as those pursuing any role in the food sector. The changes in this industry have been massive during the last several years, and have greatly affected the role of new products and of altered standard products as well.

Undergraduate and graduate food science students are often poorly prepared

for the business of food science and often become disenchanted with the compromises that occur during the process of product development and improvement. Reading this volume should help prepare students and beginning scientists for the requirements of business and assist them in developing products that can be effectively marketed and processed. Anything that can help reduce the rate of failure in new products will be welcomed by everyone. This book just might do the job.

FRANCES KATZ, PH.D.
Director of Publications
The Institute of Food Technologists

Foreword

THERE'S plenty to say on the positive side of this new book, a true labor of love for Drs. Brody and Lord. In fact, the only negative thing I can think of is that packaging, as usual, is sort of at the end of the line. Of course, nearly one-quarter of the book is devoted to packaging—a great acknowledgment of the role of packaging in food product development. The first serious treatment of packaging doesn't occur until Chapter 8, and then packaging all but disappears again until Chapters 13 to 16. Such placement, perhaps done with some sort of acceptable logical organization in mind, nonetheless perpetuates a view of the world which is not productive: namely, that packaging and product are somehow distinctly different, and separate, considerations. First do the product. Then drop it in a box.

However, the real point should be that there is actually just one multifaceted personality on which to work in food product development. Ultimately, after all, the effort results in just one presentation to the consumer. It's often said that the package sells the product the first time; the product sells itself after that. Failure to understand and act on this simple premise may well account for a lot of product failures in the first place. Whether the package fails to catch the consumer's eye or provide an assurance of quality or prove its utility in the home after opening, the result is the same: the consumer makes another choice at the next opportunity.

The product and package is, at best, a coordinated, complementary system. Like other systems, it must start at the beginning, in the earliest planning stages, if it is to be successful at the end.

Whereas the definition of product is fairly straightforward, not so with packaging. Are we referring to the retail shelf package? Yes. To its graphic

design? Yes. To the structural design engineering? Yes. To the distribution package? Yes. To the machinery line system which will produce, fill, and seal the product? Yes! Nothing in the world of packaging is simple, not even the apparently simple things. The trick is to provide an economically favorable packaging system which protects, preserves and communicates for the product. Material selection, machinery line design, graphic communication, and more all eventually have nearly equal status and, to the point, require informed marketers and technologists to make the final decisions.

Dr. Brody is one of the few individuals practicing today who truly understands the necessary melding of left and right brains, of creativity and engineering, of structural integrity and consumer preference in packaging decisions. Together with Dr. Lord, the two have assembled a "who's who" lineup of authorities to make this work broader in coverage, deeper in appropriate technology, more ambitious in scope, and fundamentally more useful than any previously recorded documentation of food product (and packaging) development. I would expect that of them. Whether pulling from the packaging design world with Roy Parcels, from the packaging regulatory world with Jean Storlie, or from the packaging engineering and technology world with Dr. Gordon Robertson and Dr. Steve Raper, Drs. Brody and Lord have gone to the top of the heap and pulled from the best. This book should be the centerpiece in the library of any food product development team, anywhere in the world.

WILLIAM C. PFLAUM

Executive Director

Institute of Packaging Professionals

Foreword

SAINT Joseph's University has had a long and very successful relationship with the food industry. Starting as a part-time program in 1960, the undergraduate food marketing major has become the University's largest and most well-known program, graduating hundreds of young men and women who have assumed positions of great responsibility and importance throughout the food industry. The Department of Food Marketing graduates approximately 120 students each year in our undergraduate and graduate food marketing programs.

The external recognition of our food marketing program comes in the form of the dozens of companies who each year recruit our graduates, the firms who sponsor their managers in our executive programs, and funding by the U.S. Department of Agriculture of the Center for Food Marketing which is housed, along with the Erivan K. Haub School of Business, in our newest campus building, Mandeville Hall. Both the Haub family and the Connelly/Mandeville families have vital stakes in the global food business. Their support is testimony to the value of our educational programs to that industry.

Given our commitment to the food industry, it comes as no surprise that John Lord and Aaron Brody have embarked upon this effort to pull together some of the leading food industry experts and create a truly cross-functional book describing the complex process of developing new food products. One of the hallmarks of Saint Joseph's University is our commitment to the liberal arts and sciences. This text brings together the sciences and business in a unique way and demonstrates the importance of a broad-based approach to education and to business strategy.

As a University president, teacher of executive students and author, I believe

that *Developing New Food Products for a Changing Marketplace* represents an important advancement for the food industry and for education. The opportunity to bring food and packaging technology into a marketing classroom, and the equivalent opportunity to bring marketing into a food science classroom, should be greatly beneficial to students as well as to their teachers. Industry professionals who make up the cross-functional teams used to create and execute new products in this changing marketplace will likewise benefit from the combination of science and business represented herein.

NICHOLAS S. RASHFORD, S.J.
President
Saint Joseph's University

Preface

HARD to believe, but once upon a time, not so very long ago, new food products were the exclusive province of the white coat clad, bench technical people in the recesses of their laboratories. They brewed their liquids, mixed their ingredients, blended their flavors, heated and cooled, conducted their private taste panels and proclaimed, "This is our company's new food product! Go forth and sell it!"

Difficult to conceive, but ignoring both consumers and their marketing representatives within the corporate hierarchy was common practice, and in some companies new food products continue to be the technically driven.

At the opposite pole were companies that employed hired MBA-guns to "develop" new food products. To them, the transformation of their pet focus-group-tested concept into an edible reality was a simple overnight exercise by a lab "technician." That type of thinking still prevails in many places.

We cannot possibly forget the place of packaging in this scenario: after the product had been fully developed and the manufacturing folks had started engineering the line, someone remembered that this product must be thrown into a package ". . . and it has to be done by a week from Tuesday to meet the sales promotion schedule which coincides with the new TV ad campaign on the first pitch of the opening game of the World's Series . . ." "oh, and don't forget to call in the ad agency this afternoon to design the package . . ."

"Who did the shelf life testing?"

"Where are the market launch print insert materials?"

"Has anyone checked with the legal department to find out if this new plastic is FDA approved and if the package copy claims are O.K.?"

“ . . . I don’t care, the price has to be \$x. You are going to have to find a way to trim costs . . . ”

Never happened . . . can’t possibly happen now . . . not in our company.

Don’t you believe it!

When John Lord and Aaron Brody sat down at Saint Joseph’s University Department of Food Marketing back in 1994, Professor Lord was teaching a senior course in Product Policy and Aaron Brody was consulting in food product and packaging technology. Product Policy was a marketing course covering what were then perceived to be indispensable food product development elements: identifying consumer needs, concept generation, concept evaluation, screening, targeting, product protocol, launch strategies, marketing research, advertising and promotion, post launch, and so on. No technical development, no packaging, nothing that smacked of nutrition or chemistry or shelf life.

Other universities were teaching food science and technology students about product formulation, pilot processing, flavor panel testing, instrumental analyses, and quality assurance. Hardly a nod toward consumers, marketing research and analysis, product positioning, or anything that resembled marketing.

At some Schools of Packaging students were learning package structural design, testing, materials, permeation, shelf life, migration protection, and all those other subjects that together summed to the physical package. Graduate Schools of Business Administration were expounding on theories to accelerate the new product development process. Schools of Art were mentioning package design as an afterthought, as if it were a wayward son, and . . . but we imagine that you can imagine the situation back then

That day in Philadelphia, John and Aaron conceived a revolutionary paradigm to teach product policy to Food Marketing majors as the food product development integral of food marketing, food technology, and food packaging. Everyone in class might not become an expert in every facet, but each would know that many components together constitute food product development—and would be at least cognizant of the various inputs required.

We searched for a textbook for our students. We scoured the classics in product development, packaging, marketing, and food technology but could not find a single book that captured the universe of coherent new food product development as we envisioned it.

Our solution was simple: for each class session, we prepared notes from our experience (and we certainly had lots, good and bad) and copied selected references from the literature (probably violating all sorts of copyright laws and rendering ourselves as criminals) and recited from the gospel according to the writers. We also invited a host of experts from industry to demonstrate and lecture on their specialties. Professionals conceived and formulated products before the students’ eyes, showed slides and videos of their new food product development projects, and then asked the students to taste their outra-

geous foods. They ranted over distribution, went into rapture over the launch tactics and sampling, pontificated on nutritional values, and on and on it went.

A few students were bored; some were overwhelmed; some were underwhelmed; but a majority (most of whom are now practicing what they learned with food companies and consultancies) grasped the concept that new food product development was a systematic integration of many diverse disciplines. They realized that the too-high percentage of new food product failure may, in large measure, be attributed to a paucity of participatory elements, and not just a failure to identify consumer needs or to meet consumer expectations. This Product Policy course highlighted all the elements, and enhanced and enriched them with anecdotes and sea stories from the salts who had lived them. The course was capped by a term project in which student teams developed a new food product with its marketing plan, including a budget, packaging, formulae, consumer test results and all the rest of the elements that would make for a successful new food product.

The course was a success and continues to be taught, not only to seniors, but also to executives in a weekend education program, as a short course with the University of Georgia, and in conjunction with Pennsylvania State University.

The course has been taught without a text—until now. Aaron and John invested several years of our lives formalizing our notes and persuading our colleagues to contribute to this book. We have chapters from some of our original course lecturers, such as Stan Segall from Drexel University on laboratory procedures and Roy Parcels, a Packaging Hall-of-Famer on package design. We have some of the real pioneers, such as Bob Smith, the force behind Nabisco SnackWell's®, on new food product organization, Al Pyne from CPC International on laboratory testing, and Howard Moskowitz on sensory testing. We have some world class pros, such as University of Georgia's Romeo Toledo on food science, Eric Greenberg on legal issues and Tetra Pak's Gordon Robertson on shelf life testing. We have Jean Storlie, on labeling, Liz Robinson of New Product Sightings on the need for companies to introduce new products, Purdue University's John Connor on the framework of our food industry, and University of Missouri's Steve Raper and Arthur D. Little's Marv Rudolph on quality function deployment. No more knowledgeable and seasoned group could have been assembled to define new food product development.

We are proud of this accomplishment. Our contributors are proud of their participation. We all hope that we have interpreted our market accurately and have targeted this market with a product that meets its needs and fulfills its promises. We hope this will become the standard food product development reference for food industry marketing, new product, brand and product development executives and practitioners as well as the standard textbook in university business and food science and technology departments.

This book is a complete manual of theory and practice for food product development. It follows, therefore, that this preface also must be complete, with our gratitude expressed to all who made the book possible: our students, academic colleagues, and professors and the professionals with whom we debated and from whom we grew; Joe Eckenrode and Eleanor Riemer, our publishers who pushed us all the way, and Wendy Peeples Hill, who labored so marvelously with us on every detail.

However, as with all lifetime endeavors, our greatest thanks go to our colleagues and families who surrendered some of themselves to ensuring that we did indeed finish this work.

John wishes to acknowledge Ned Dunn, C. J. McNutt Professor of Food Marketing and former CEO of Harris Teeter, and Richard Kochersperger, Director of the Center for Food Marketing, both at Saint Joseph's University, for their valuable insight and comments. I want to thank food marketing students at Saint Joe's for the past 24 years (and the next 24 years) without whom there would have been little motivation to pursue this project. Mostly, I want to thank my wife Joan for her outstanding patience during the many weekends and evenings that this text consumed (the second time I have asked her to do this, because she also saw me through my doctoral education). I want to also thank my daughter Megan, who has decided to pursue a career in biology but who nonetheless helped to edit several chapters of the book, and to acknowledge my sons, Sean and Ryan, who had to endure some (but not really all that many) hockey, basketball, and other games without dad present because he was working on "that book."

Aaron's wife Carolyn has known so many of these 25-hour days from her husband but remains forever "my beloved and my beloved is thee." Aaron's eldest son Stephen now appreciates the body of work generated by his dad; and his wife Susan who is so devoted to excellence, their children and our wonderful grandchildren, Michelle Jennifer and Derek Jason. Our middle son Glen has matured into a master and his wife Sharon is one of the great mothers of history to their children and our so active grandchildren, Camryn Alexander and Skyler Alexis. Our baby son, Robyn is so dedicated to performance, his consummately professional wife Kellie, and their daughter and our granddaughter Natalia Sienna, and their son and our grandson Pierce Aaron, who had the good sense to appear in time to have his name included in this book. I love you all plus qu' hier et moins que demain—toujours. Thank you all for being my family.

AARON L. BRODY
JOHN B. LORD