

Research and Development in the Chemical and Pharmaceutical Industry, Peter Bamfield. , 3rd ed., Wiley-VCH Verlag GmbH & Co., Weinheim, Germany (2006). 288 pp., Price: US\$ 100.00, ISBN: 3-527-31775-9

Research and development is defined by the author as “The invention and development of products, processes, systems and services which will provide the company with a commercial opportunity.” To illustrate the never ending changes in the industry (in search of such opportunities), the author gives interesting details on the merger of several pharmaceutical companies (for example, Pharmacia, Upjohn, and Monsanto formed Pfizer Inc., in the period 1995–2000).

The amalgamation of these companies was part of their search for new products. Keys to that search are the R&D personnel. At the end of the chapter, the author writes:

“By the end of this book the reader should understand the principles inherent in running a successful R&D organisation in any of the sectors of the Chemical, Pharmaceutical, Chemical Biology and allied industries. This will include knowing the requirements for harnessing the human resource, organising the environment for a climate of creativity and then managing the resultant innovations through to success in the market place.”

Following the introduction are 12 chapters divided into four main sections:

Section A: Harnessing the human resource

- Building the scientific skills base of the group;
- Developing the people who form the skills base;
- The R&D team manager.

Section B: Organising for an innovative environment

- The structural components of an R&D organization;
- The provision of appropriate support;
- A financially sound, healthy, safe and quality environment.

Section C: Creativity and innovation

- Creativity and the nurturing of innovation;
- The protection of intellectual property;
- The exploitation of opportunities.

Section D: Project management of innovation

- The selection and evaluation of R&D projects;
- The innovation chain;
- The project management skills.

To begin the second major section of the book (Organising for an Innovative Environment), Bamfield writes: “The environment in which research operates has changed over the last few decades with an increasing speed.” Indeed, it does and, at times, not to the benefit of some employees. As I reviewed this book, Pfizer announced a 10,000-person reduction in its staff. Competition in the industry is fierce and according to the author of

this book, “The globalisation of R&D means that an additional set of managerial competencies is required. Outsourcing is now an essential component of business strategy having implications for the management of R&D.”

Creativity and innovation are essential components of a successful organisation. But both are easily stifled or destroyed by poor management. Creative thinking and generation of ideas need to be stimulated at both the individual and company levels. The creation of an aura of “total creativity management” is thoroughly reviewed in the third major section of this book.

I was intrigued by the discussion of an innovative Russian concept of problem-solving entitled TRIZ which is based on their theory of inventive problem solving. TRIZ is very different from other creativity techniques in that it operates via a study of patterns of problems and solutions and not by the spontaneous creativity of individuals and groups.

The final section deals with project management of innovation. The selection of innovative projects is essential for a company’s competitive position. Thus, there is a need for clear definition of innovation to be included in the company strategy.

This is a very interesting and well-written book from my limited perspective. Never having been in an industrial research environment (save for one summer as a student) I am totally unprepared to critically review such a book. However, I am prepared to critique and appreciate good writing, and this text has it. My feeling is that this book will be well received by those truly knowledgeable in the field of industrial research.

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Quantitative Analysis of Marine Biological Communities: Field Biology and Environment, G.J. Bakus. Wiley-Interscience, John Wiley & Sons Inc., Hoboken, NJ (2007). 450 pp. (plus CD-ROM), Price: US\$ 99.95, ISBN: 0-470-04440-3

In this text, Bakus combines common quantitative techniques with recent advances in quantitative methodology and demonstrates how this combination can be used to study marine organisms. Among the topics covered are plot/plotless sampling, biometrics, experimental design, game theory, optimization, time trends, modeling, and environmental impact assessments.