Learning from (others') experience

Building the Case for Biotechnology: Management Case Studies in Science, Laws, Regulations, Politics, and Business

Edited by Mark J. Ahn, Michael A. Alvarez, Arlen D. Meyers & Anne S. York

Logos Press, 2010
416 pages, paperback/hardcover,
$79.95/$99.95
Paperback ISBN: 978-1-934899-15-1
Hardcover ISBN: 978-1-934899-16-8

Reviewed by Shreefal Mehta

When teaching biotechnology management courses, a bulk of the material usually covers the complex path for commercializing biomedical technologies—navigating the patent, regulatory and reimbursement pathways—in order to understand how to get a product to market. These are critical, informational topics for engineers and scientists with an interest in management or entrepreneurship as well as students approaching careers in this industry from the business perspective. All these types of students are typically present in biotech management electives or in executive courses in the industry, in which good scientists are now being elevated to management positions.

In such a science-based business, high-uncertainty, science-driven product development and technology cannot be divorced from the business issues, and several textbooks have attempted to maintain this balance. However, lectures and fact-based textbooks fall short of achieving the understanding and analytical thinking process required to be a good manager[1]. The experience needed to successfully address complex business and management issues is not formula based, and a student has to acquire insight into a way of thinking and analyzing that is largely gained through experience—provided in most biotech management classes through guest lectures from experienced executives and entrepreneurs whose shared knowledge and stories add depth and context. Most biotech business courses incorporate a good number of practitioners as guest lecturers.

The case study method is another well established pedagogical tool used in general business schools to bring the rich context of real world decision making to the classroom. There are a few textbooks written for teaching a cross-disciplinary biotech management course[2,3], and these tend to incorporate specific short case examples within the text to illustrate a point but do not fill in the depth of experience that can come from detailed cases and class discussions in the case method. Although several case studies focused around the biotech, medical device or pharmaceutical industry are available from Harvard, Stanford, Ivey and other publishers, these are largely written for MBA students and are often difficult to bring into a classroom of PhDs or engineers or to the mixed audiences in the elective or executive training courses. In addition, many of the published cases are now aging and are not as relevant in the changing context of the biotechnology industry today.

Building the Case for Biotechnology offers to complement existing texts and lectures in biotech management teaching with a fresh suite of 22 detailed cases to drive class discussions along a variety of topics. This book is clearly intended as a reference compilation of cases for the instructor in a variety of courses and among a diverse population of students, both science- and business-based. The subject matter in these case studies covers devices, biopharmaceuticals and diagnostics and includes decision-making situations focusing on financing, business models, corporate merger and product positioning strategy, among other topics. The cases also provide a rich context of various stages of company growth. This collection stands out because of its freshness and the breadth of cases, which cover various situations from university licensing and startup to large public companies in mergers and acquisitions. Educators will find a good mix of business models and technologies to fit their needs for multiple classes.

The introduction offers notes on teaching using the case method and contains useful tips on organizing class discussion and grading. However, the commonly available case supplement for educators with teaching notes (from business case publishers), which can prove very helpful for educators who are not trained in case method teaching, is not provided here. Perhaps an online service with teaching supplements for these cases could be offered by the publisher in the future. Additionally, while at the current time the publisher is not providing individual cases for purchase, that would seem to be the preferred route, as only specific selected cases would be likely to be used in a course with a given group of students.

Although the case content does not always follow category headings as expected (for example, some cases listed under the science category do not have key resolutions or decision-making points involving technology), the mapping table that delineates the technology platform (drugs, devices, diagnostics) and status of company (private, public) is useful as a first sorting mechanism. Additionally, there are a few minor comments on the content and style: The quality of writing and case format vary due to the multiple authors, which could be improved with some more thorough editing input. In particular, some cases do not leave decision points open for class discussion. A more consistent framework for each case would help.

This book is recommended as a reference to all teachers of commercialization of biomedical technologies as a much needed collection of cases useful for teaching biotech management. It adds diverse and updated business models and discussion issues into the pedagogical arsenal.

Shreefal Mehta is CEO of The Paper Battery Company and an adjunct faculty member at Rensselaer Polytechnic Institute, Troy, New York, USA.
e-mail: shreefal@scientist.com

COMPETING FINANCIAL INTERESTS
The author declares no competing financial interests.

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2. Mehta, S. *Commercializing Successful Biomedical Technologies* (Cambridge Univ. Press, 2008).
3. Friedman, Y. *The Business of Biotechnology*, edn. 3 (Logos, Washington, DC, 2008).