

# observatório

da **inovação** e competitividade

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**Science Business – The Promise, The Reality, and the  
Future of Biotech**

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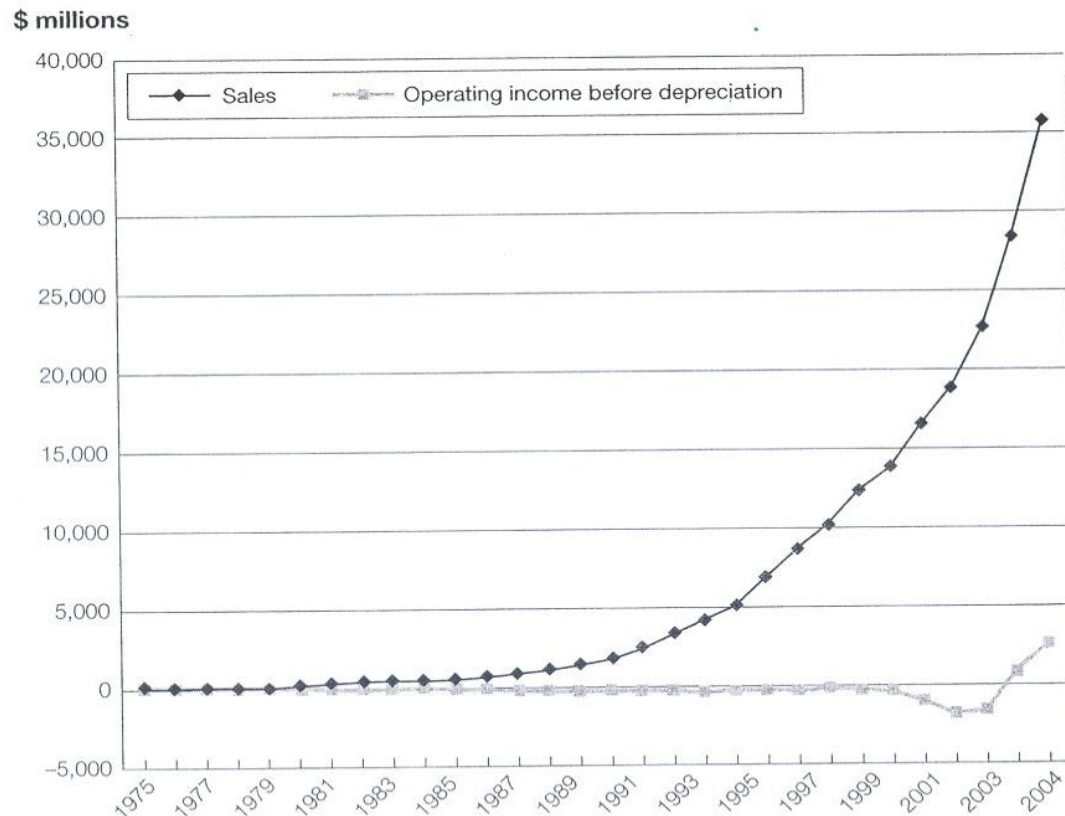
- “The framework I develop in this book is fairly straightforward. I argue that the performance of science-based business, like biotechnology, hinges on how well the sector is organized and managed to deal with the fundamental business problems created by science”. – can science be a business?

## Chapter I – The Science-Based Business – A Novel Experiment

- “For more than twenty-five years, the biotechnology industry has been host to a profound and important experiment: the fusion of science and business” (p. 1)

FIGURE 1-1

Revenues and profitability in the biotechnology sector, 1975–2004



Values are inflation-adjusted.

Source: Compustat.

- “the thesis of this book is that the disappointing performance of the biotechnology sector reflects a fundamental and deep struggle between the conflicting objectives and requirements of the science of biotechnology and the business of biotechnology” (p. 6); “science-based business are challenged by the characteristics of science that ‘stress’ these institutional arrangements, rules, organizational Technologies, and management practices” (p. 7)

- SCIENCE-BASED – connotes a commercial enterprise or collection of enterprises that attempts to both create science and to capture value from it (p. 1)
- “The basic thesis of this book, however, is that a science-based business entails unique challenges that require different kinds of organizational and institutional arrangements and different approaches to management” (p. 4)

- The challenges of science as a business: struggle between the conflicting objectives and requirements of the science of biotechnology and the business of biotech – for example, science holds methodology sacred; business focuses on results.



*The challenges to the business of  
biotechnology are rooted in three specific  
characteristics of the science of biotechnology*

- *1. The profound and persistent uncertainty of the science of the science of biotechnology requires mechanisms for managing and rewarding risk;*

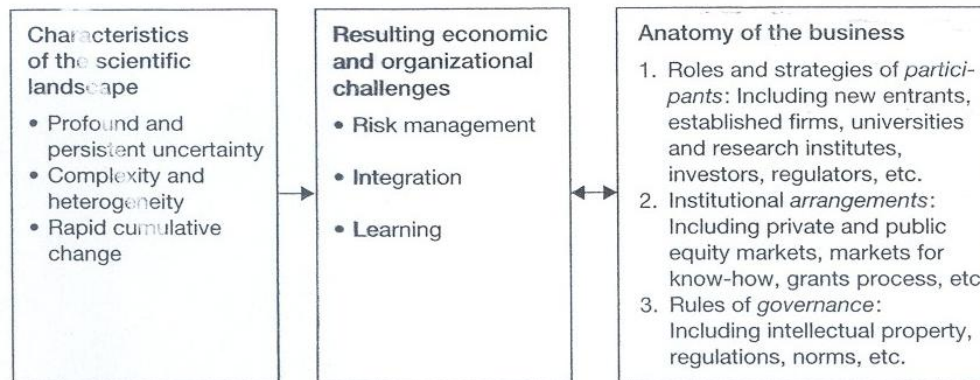
- *2. The highly complex and heterogeneous (Biotechnology involves integration across disparate scientific fields; approaches, and functional skill sets) nature of the scientific knowledge base requires mechanisms for integration across disciplines and functional areas of expertise;*

- *3. The rapid cadence of scientific progress requires mechanisms for cumulative learning.*

- “THE MANAGEMENT CHALLENGES OF THE SCIENCE-BASED BUSINESS ARE NOVEL AND AS SUCH CANNOT BE ADDRESSED WITH INDISCRIMINATE BORROWING OF PRACTICES, MODELS, APPROACHES, AND ARRANGEMENTS THAT HAVE WORKED WELL IN OTHER INDUSTRIES, INCLUDING HIGH-TECH INDUSTRIES” (P. 14)

FIGURE 1-2

**Conceptual framework**



Muito Obrigado

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