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Rhetoric, Innovation, Technology
Case Studies of Technical Communication in
Technology Transfers

Stephen Doheny-Farina

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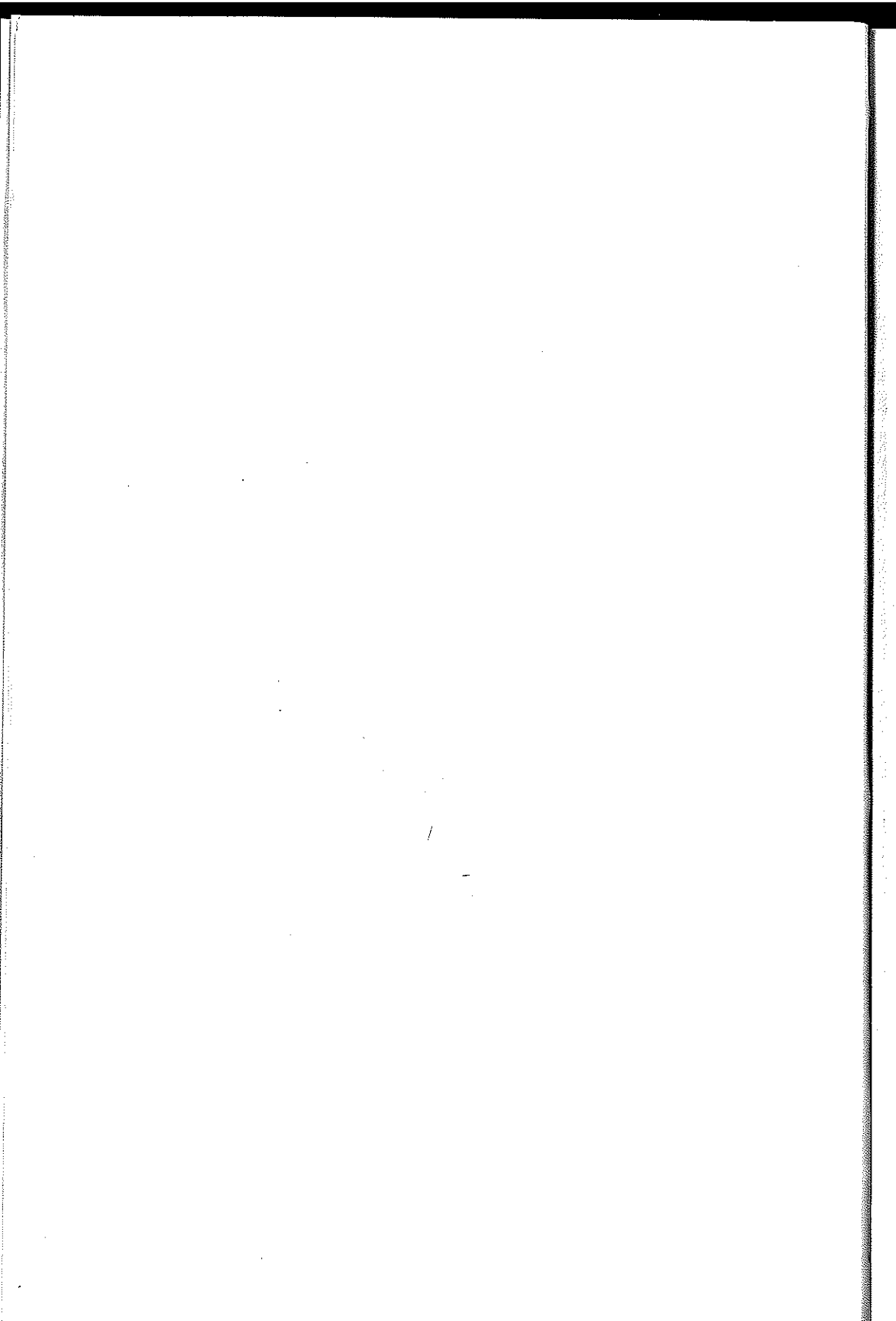
Series Foreword vii

Preface ix

Acknowledgments xiii

- 1 Technical Communication and Technology Transfer 1
 - 2 From Investment to Production: The Role of Two Business Plans in a New High-Tech Venture 31
 - 3 From Lab to Market: The Role of Instructional Texts in the Transfer of Biomedical Technology 95
 - 4 From Design to Use: The Roles of Communication Specialists on Product Design Teams 165
 - 5 From Student to Expert: Praxis, Product Innovation, and the Teaching of Technical Communication 217
- Appendix: Classroom Applications 231
- References 265
- Index 275

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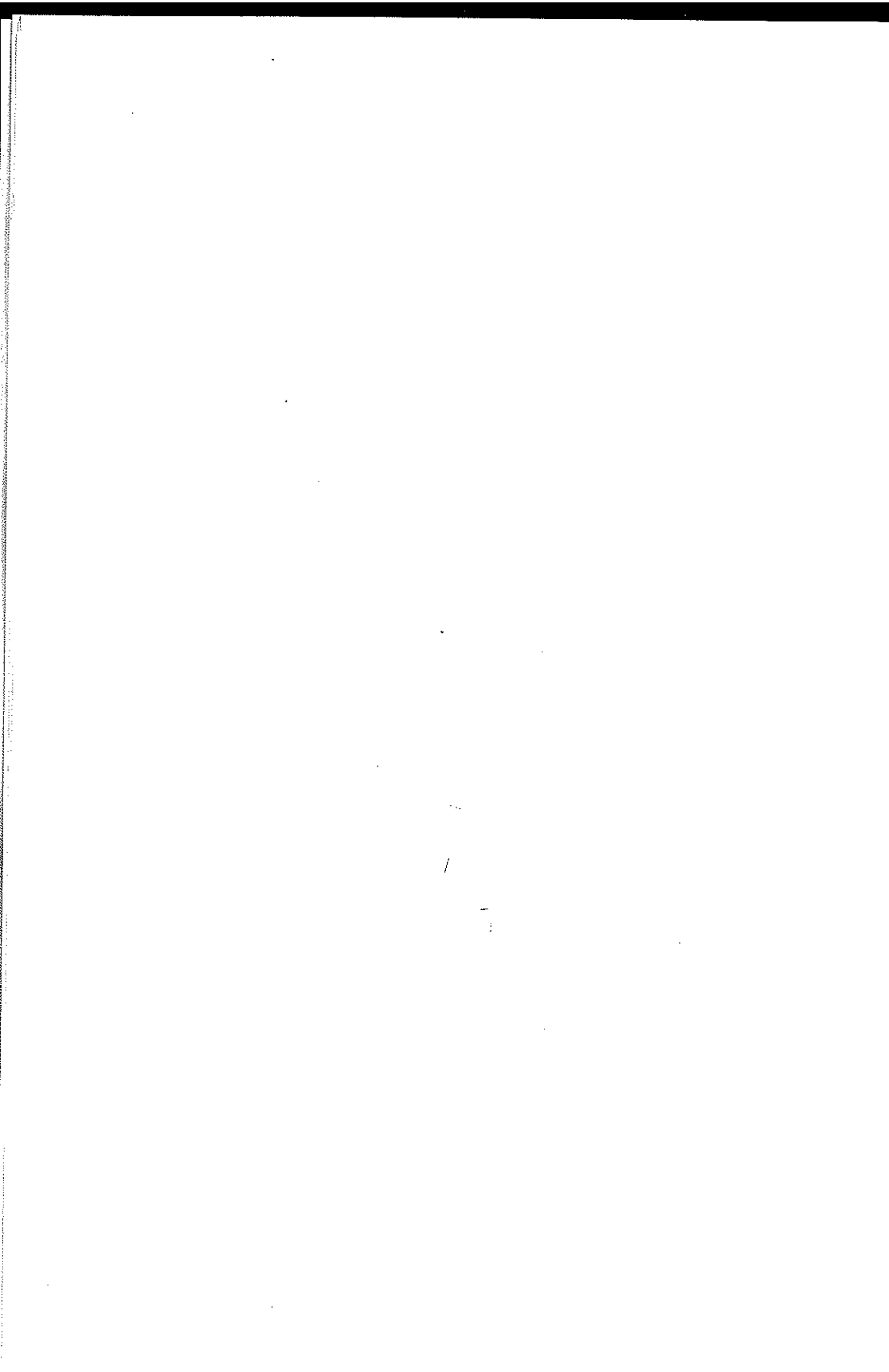


Series Foreword

Technical communication is one of the most rapidly expanding fields of study in the United States, Europe, and the Pacific rim, as witnessed by the growth of professional societies and degree-granting programs in colleges and universities as well as the evolving status of documentation specialists in industry. The writer, and writing, are no longer mere servants of science and engineering but rather partners in the complex matrix of forces that go into the construction of knowledge and information. And the audience is not a passive but an active player in this transaction. Furthermore, computational science has delivered a powerful tool for the creation, presentation, exchange, and annotation of text—so powerful that we speak not in terms of a text but rather of a hypertext, of seamless information environments that integrate a variety of media.

The MIT Press Series in Technical Communication will present advanced research in all aspects of this rapidly expanding field, including hypertext and hypermedia systems, online documentation, information architecture, interface design, graphics, collaborative writing in distributed networks, the role of the writer in industry, scientific and engineering writing, training and education in technical writing. Only in addressing such a wide range of topics do we begin to understand the complexity and power of this field of expertise.

Ed Barrett



Preface

This book explores the rhetorical nature of the phenomena commonly labeled technology transfers and in the process uncovers some of the rhetorical barriers to successful technology transfers. At the same time, it attempts to deflate the myth of knowledge transfer by arguing that processes typically called information transfer and technology transfer are not transfers at all but instead series of personal constructions and reconstructions of knowledge, expertise, and technologies by the participants attempting to adapt technological innovations for social uses.

As such, this book is standing astride at least two disciplinary realms. On the one hand, it attempts to make some sense of what is being said and studied within "the field" of technology transfer studies. (I put quotation marks around "the field" because what I am referring to is a multidisciplinary amalgamation that resists simple classifications. I suppose that many whose work centers on technology transfers perceive a number of "fields" replete with subgroups, splinter groups, antigroups, and outsiders, like myself, attempting to make sense of these events we are calling technology transfers.) On the other hand, this book is a product of the relatively recent movement of rhetorical studies of scientific, technical, commercial, and professional enterprises, institutions, and disciplines.

Chapter 1 offers a critical review of the communication theory that underlies much research on technology transfer. I follow that review with a discussion of some examples of a small but growing body of rhetorically based research on rhetoric in scientific, technological, and professional contexts. A number of the ideas discussed in this chapter are explored in the remaining chapters, each of which is composed of lengthy case studies illustrating a variety of rhetorical issues in technology transfers.

Chapter 2 presents a case describing the development of an entrepreneurial start-up company. More important, it explores the constructive and destructive power of a fledgling company's business plans, as well as the social, political, and organizational factors that surrounded the writing of those texts. I first published this study in a considerably shortened form in 1986 (Doheny-Farina 1986). The version in this book is more detailed and expansive, providing not only a more detailed picture of the company but also a glimpse of the larger social-rhetorical environment within which it arose. Furthermore, the case illustrates a number of issues related to university-industry relationships in the development of innovative, start-up companies. Finally, it provides an analysis of an enterprise attempting to evolve from a loosely to a more specified organizational structure.

Chapter 3 analyzes the rhetorical barriers to the transfer of a new biomedical technology—an innovative, experimental artificial heart. In particular, the case explores the development of expertise across the transfer. Because this case describes the relationship between a university research hospital and a biomedical products manufacturer, it provides another analysis of the challenges of university-industry collaboration in the development of technological innovations. At its center, chapter 3 is an examination of the development and use of several documents across the transfer: from the technical developers to the writers to the users. This examination allows me to analyze some of the difficulties in crossing organizational structures. And, as such, it presents a series of problems that contrast with those discussed in chapter 2, which focuses on an enterprise attempting to establish, not overcome, organizational boundaries. Ultimately this chapter explores the contingent nature of new technologies—the difficulties in establishing among participants just what a new technology is and does—and calls for a redefinition of the concept of technology transfer.

Chapter 4 carries on the analysis of the barriers that separate participants in technology transfers and presents two cases, each arguing that expert practical rhetoricians—technical writers—need to become participants in new product development processes from the design stage onward. As such, this chapter focuses on the difficulties in crossing organizational barriers. In both cases, incremental advances in technologies and subsequent applications are the sources of new product develop-

ment projects that call for the inclusion of technical writers in order to adapt the applications to the users better.

Chapter 5 examines several key elements in the education of technical communicators, elements geared to help them constructively break down the walls between organizational and disciplinary divisions in order to become better collaborators with others of differing expertise. The book's appendix contains a brief discussion of specific classroom applications for technical communication courses, followed by a lengthy fictional case designed for the classroom to raise the issues of intraorganizational barriers to collaboration in a new product development process.

Some might criticize the inclusion of a chapter and appendix devoted to these educational issues. However, it is just as important to examine the pedagogical implications of the rhetorical nature of technology transfers as it is to examine the failures and successes of these processes in industry. If change is going to come, if the processes of adapting technologies to society are going to be improved, it is going to come, in part, through the performances of better educated, enlightened professionals.