Preface

This monograph grew out of my research in the field of resource-constrained project scheduling conducted from 1995 to 2004 during my work as teaching assistant and assistant professor at the Institute for Economic Theory and Operations Research of the University of Karlsruhe. The aim of the book is to give an introduction to quantitative concepts and methods for resource allocation in project management with an emphasis on an order-theoretic framework allowing for a unifying treatment of various problem types. In order to make the work accessible for general readers, the basic concepts needed are reviewed in introductory sections of the book.

Many people have contributed to the outcome of this research. First and foremost, I would like to express my deep appreciation to my supervisor Professor Klaus Neumann, who introduced me to the field and the community of project scheduling. I have greatly benefited from his comprehensive scientific knowledge and expertise, his continuous encouragement, and his support. During all these years, his department has been a stimulating and attractive place for doing research and teaching in Operations Research.

Moreover, I would like to thank my former colleagues for many fruitful discussions on various research topics and their continning interest in my work. A major part of my research has been done in collaboration with the colleagues of the Karlsruhe project scheduling group, Birger Franck, Cord-Uhrich Fündeling, Karsten Gentner, Steffen Hagmayer, Dr. Thomas Hartung, Dr. Roland Heilmann, Christoph Mellentien, Dr. Hartwig Nübel, Dr. Thomas Selle, PD Dr. Norbert Trantmann, and Professor Jürgen Zimmermann. Our work has been greatly influenced by the activities of a research unit on project scheduling funded by the Deutsche Forschungsgemeinschaft and involving colleagues from the universities of Berlin (Professor Rolf Möhring), Bonn (Professor Erwin Pesch), Karlsruhe (Professor Klans Neumann), Kiel (Professor Andreas Drexl), and Osnabrück (Professor Peter Brucker). Numerous joint workshops on project scheduling and the "cooperative-competitive" spirit in this group have been a great incentive to work even harder.

Finally, I grateful acknowledge the help of several people in preparing the manuscript of this monograph: Klaus Neumann for many valuable comments on different versions of the manuscript, Gerhard Grill for carefully proof-reading and improving the English wording of the manuscript, Frederik Stork for pointing me to state-of-the-art contributions in convex programming, and Jürgen Zimmermann for making experimental results on resource levelling problems available to me. Of course the faults and deficiencies remaining are entirely my own.

Clausthal-Zellerfeld, February 2005

Christoph Schwindt