PREFACE TO THE FIFTH EDITION (SIE)

This edition was necessitated by the requests received from a large number of practising professionals and teachers, and students of colleges across India, to incorporate a few important topics in the fifth adapted edition of the book, which they felt would help make the book a more comprehensive read. While incorporating the additional material, I have made conscious attempts to maintain the style of the previous edition of the book.

The fifth adapted edition is primarily intended to be a textbook for students pursuing BTech, MCA. The contents have been developed considering the requirements of students pursuing an MBA and practising IT professionals as well. This edition can also be used as a reference reading by anyone who has completed a first-level software engineering course.

New to this edition

This edition aims to facilitate an updated study of software project management with respect to contemporary developments in the field. A distinguishing feature of the book is the presence of numerous examples of important principles through a running case study. Contents of the previous edition have been enhanced with several new and important topics such as

- Outsourced Products
- Software Processes and Models
- Software Cost, Effort and Duration Estimation
- LOC Estimation
- Effect of Schedule Change (Putnam's results)
- Software Project Termination
- Review Processes
- Software Project Management Tools
- Process Automation
- Cost Performance Index (CPI)
- Schedule Performance Index (SPI)

Configuration management systems, which is an important aspect of study for any software project manager has been provided extended coverage. The discussions on topics such as software quality management, software testing, and life cycle models, have been strengthened by adding more depth.

Almost every chapter has been supplemented with enhanced pedagogical features, including additional solved examples, case studies, solved exercises (111), and further exercises (108).

Given that nowadays almost every software project manager uses some form of automated tools to effectively collect information, make plans, and disseminate information to the team members, an appendix on automated tools has been added to familiarize the readers with various aspects of automated tools.

Book Overview

Chapters 1 and **2** discuss some basic issues in software project management and highlight the two major categories of activities that every project manager undertakes: project planning, and project monitoring and control. **Chapter 3** describes the basic steps that need to be carried out by a project manager during project planning and the exact order in which these are to be undertaken. Since project management activities to a large extent depend on the specific development process model adopted, **Chapter 4** discusses the relevant aspects of popular development process models, including those suitable for modern agile processes. **Chapter 5** focuses on effort and duration estimation techniques. **Chapter 6** elucidates how various project activities can be planned based on effort and duration estimations, and also explains with the help of specific examples how various types of charts are used for activity planning. Since the success of a project depends to large extent on effective management of project risks, and especially the risk of schedule slippage, **Chapter 7** discusses a risk management approach with special focus on management of risks of schedule slippage using PERT charts and Monte Carlo simulation approach. Resource allocation issues are covered in **Chapter 8**. Project monitoring and control issues, including the techniques for configuration management are discussed in **Chapter 9**. The issues of contract management, human resource management, team structure, and quality management are discussed subsequently in **Chapters 10** to **13**.

Online Learning Centre

This book is supported by the following additional study resources for both instructors and students. These are available at the online learning center, which can be accessed at http://www.mhhe.com/hughes/spm5.

For Instructors

- Power Point Presentations
- Tutorial Exercises
- Artwork

For Students

- Points to Remember
- Hints for Selected Questions
- Self-test Quizzes
- Sample Chapter for Reading

Acknowledgements

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Publisher's Note

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