

Six Sigma for Green Belts and Champions: Foundations, DMAIC, Tools, Cases, and Certification

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"Much has been said or written in recent times about the value of Six Sigma methodologies in driving organizational improvement. Yet, so many still seem to be intimidated by or skeptical about these principles and tools. In this text, Drs. Gitlow and Levine have provided a pragmatic, user-friendly treatment of underlying principles and methods, management obligations, and helpful case study examples to assist all of us in value-added enterprise-wide improvement."

-Gary Floss, Managing Director, Bluefire Partners, and Board of Directors, the American Society for Quality (ASQ)

"The authors provide the perfect blend of managerial insight and a straightforward "how to" approach to statistics. Anyone interested in learning about Six Sigma for the first time, or practitioners wanting to learn more, will find this book to-the-point, exciting, and easy to read. And also hard to put down!"

-Timothy C. Krehbiel, Professor of Decision Sciences and MIS, Miami University (Ohio)

"This book provides an excellent understanding of the foundations of quality management that provide a basis for the evolution of Six Sigma. For executives who wish to be "Champions" of Six Sigma, this book provides an understanding of what to expect of Green Belts as they work through a DMAIC project and what they should expect of themselves. Green Belt candidates will find the case studies extremely useful and informative. Both Champions and Green Belts will benefit from the comprehensive coverage of certification."

-Edward A. Popovich, Ph. D., Vice President, Enterprise Excellence, Boca Raton Community Hospital and President, Sterling Enterprises International, Inc.

The first complete Six Sigma implementation guide for Green Belts and Champions!

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- >> Understand the rationale for Six Sigma
- >> Implement a proven executive framework for a successful quality initiative
- >> Use the DMAIC method for improvement from start to finish: Define, Measure, Analyze, Improve, and Control
- >> Manage Six Sigma statistics-without becoming a statistician
- >> Learn through complete detailed manufacturing and service case studies
- >> Learn how to understand and manage Six Sigma statistics, through practical, Minitab-based application examples. Includes instructions for using Minitab software
- >> Learn how to pass Six Sigma certification examinations with sample questions and answers

If you're "project managing" Six Sigma (potential Green Belt)-or promoting it at the executive level (potential Champion)-this is your book. It's the first Six Sigma book written specifically for Green Belts, Champions...and anyone who plans to become one. Two experts help you master the entire DMAIC model: Define, Measure, Analyze, Improve, and Control. You'll discover realistic solutions for Six Sigma's profound human and technical

challenges. You can even prepare for one of the world's leading Six Sigma certification programs. Clear, detailed, and proven...this is the one indispensable book for anyone who must manage Six Sigma to success.

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David M. Levine is Professor Emeritus of Statistics and Computer Information Systems at Bernard M. Baruch College (City University of New York). He received B.B.A. and M.B.A. degrees in Statistics from City College of New York and a Ph.D. degree from New York University in Industrial Engineering and Operations Research. He is nationally recognized as a leading innovator in business statistics education and is the co-author of such best-selling statistics textbooks as *Statistics for Managers using Microsoft Excel*, *Basic Business Statistics: Concepts and Applications*, *Business Statistics: A First Course*, and *Applied Statistics for Engineers and Scientists using Microsoft Excel and Minitab*. He has published articles in various journals including *Psychometrika*, *The American Statistician*, *Communications in Statistics*, *Multivariate Behavioral Research*, *Journal of Systems Management*, *Quality Progress*, and *The American Anthropologist*.

Dr. Howard S. Gitlow is Executive Director of the University of Miami Institute for the Study of Quality in Manufacturing and Service and a Professor of Management Science, University of Miami, Coral Gables, Florida. He was a Visiting Professor at the Science University of Tokyo in 1990 where he studied Quality Management with Dr. Noriaki Kano. He received his Ph.D. in Statistics (1974), M.B.A. (1972), and B.S. in Statistics (1969) from New York University. His areas of specialization are Six Sigma Management, Dr. Deming's theory of management, Japanese Total Quality Control, and statistical quality control.

Dr. Gitlow is a Six Sigma Master Black Belt, a senior member of the American Society for Quality Control and a member of the American Statistical Association. He has consulted on quality, productivity, and related matters with many organizations, including several Fortune 500 companies.

Dr. Gitlow has co-authored several books. These include: *Quality Management: Tools and Methods for Improvement*, Richard D. Irwin Publishers (2005), third edition; *Quality Management Systems*, CRC Press (2000), *Total Quality Management in Action*, Prentice-Hall, (1994); *The Deming Guide to Quality and Competitive Position*, Prentice-Hall, (1987), fifteenth printing; *Planning for Quality, Productivity, and Competitive Position*, Dow Jones-Irwin Publishers (1990); and *Stat City: Understanding Statistics Through Realistic Applications*, Richard D. Irwin Publishers (1987), second edition. He has published over 45 academic articles in the areas of quality, statistics, management, and marketing.

While at the University of Miami, Dr. Gitlow has received awards for Outstanding Teaching, Outstanding Writing, and Outstanding Published Research Articles.

PREFACE

Preface

Unique Aspects of the Book

Six Sigma for Green Belts and Champions: Foundations, DMAIC, Tools, Cases, and Certification, has numerous features that make this book unique.

☐ Contains coverage of the foundations of management necessary for professional Six Sigma management. This includes how to deploy an organization's mission statement throughout an organization through a cascading and interlocking system of key objectives and key indicators, called a dashboard. It is illustrated with many practical and relevant examples.

☐ Presents a thorough and detailed anatomy of the Six Sigma improvement model, called the DMAIC model. DMAIC is an acronym for Define-Measure-Analyze- Improve-Control. The DMAIC model is a well-tested vehicle for guiding an improvement team through the maze of a complex process improvement project.

☐ Integrates coverage of Six Sigma management with detailed coverage of those statistical methods that are appropriate for Green Belt and Champion certification. Each statistical method is explained and applied to an example involving actual data in a quality improvement context. Coverage of statistics begins with an introduction and basic definitions, along with graphs and descriptive statistical measures; provides critical insights into probability and probability distributions; and covers the ☐ essential topics of confidence intervals, hypothesis testing, design of experiments, and control charts, all from an applied quality improvement perspective. Output from the Minitab statistical software package, widely used in Six Sigma management, is ☐ illustrated.

☐ Includes chapter ending appendixes that provide step-by-step instructions for using Minitab Version 14 for the statistical methods covered in each chapter.

☐ Includes two case studies in Six Sigma management. Each case study provides a detailed examination of all the steps involved in using the DMAIC Six Sigma approach. One case is from a service industry, and the other relates to manufacturing.

☐ Includes information on Champion and Green Belt certification exams, along with sample test questions.

Other Books

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