Record Nr. UNINA9910830148303321 Six sigma [[electronic resource]]: advanced tools for black belts and **Titolo** master black belts / / Loon Ching Tang ... [et al.] Pubbl/distr/stampa Chichester, England;; Hoboken, NJ,: Wiley, c2006 **ISBN** 1-282-11204-X 9786612112041 0-470-06200-2 0-470-06199-5 Descrizione fisica 1 online resource (427 p.) Altri autori (Persone) TangLoon Ching Disciplina 658.4013 658.562 Six sigma (Quality control standard) Soggetti Total quality management Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Six Sigma; Contents; Preface; PART A: SIX SIGMA: PAST, PRESENT AND FUTURE; 1 Six Sigma: A Preamble; 1.1 Introduction; 1.2 Six Sigma Roadmap: DMAIC; 1.3 Six Sigma Organization; 1.4 Six Sigma Training; 1.5 Six Sigma Projects; 1.6 Conclusion; References; 2 A Strategic Assessment of Six Sigma; 2.1 Introduction; 2.2 Six Sigma Framework; 2.3 Six Sigma Features; 2.4 Six Sigma: Contrasts and Potential; 2.5 Six Sigma: Inherent Limitations; 2.6 Six Sigma in the Knowledge Economy; 2.7 Six Sigma: Improving the Paradigm; References; 3 Six Sigma SWOT; 3.1 Introduction; 3.2 Outline of Six Sigma 3.3 SWOT Analysis of Six Sigma3.4 Further Thoughts; References; 4 The Essence of Design for Six Sigma; 4.1 Introduction; 4.2 The IDOV Roadmap; 4.3 The Future; References; 5 Fortifying Six Sigma with OR/MS Tools; 5.1 Introduction; 5.2 Integration of OR/MS into Six Sigma Deployment; 5.3 A New Roadmap for Six Sigma Black Belt Training; 5.4 Case Study: Manpower Resource Planning; 5.5 Conclusions; References; PART B: MEASURE PHASE; 6 Process Variations and Their Estimates; 6.1 Introduction; 6.2 Process Variability; 6.3 Nested Design; References; 7

Fishbone Diagrams vs. Mind Maps; 7.1 Introduction

7.2 The Mind Map Step by Step7.3 Comparison between Fishbone Diagrams and Mind Maps: 7.4 Conclusion and Recommendations: References: 8 Current and Future Reality Trees: 8.1 Introduction: 8.2 Current Reality Tree; 8.3 Future Reality Tree (FRT); 8.4 Comparison with Current Six Sigma Tools; 8.5 Conclusion and Recommendations; References; 9 Computing Process Capability Indices for Nonnormal Data: A Review and Comparative Study; 9.1 Introduction; 9.2 Surrogate PCIs for Nonnormal Data; 9.3 Simulation Study; 9.4 Discussion of Simulation Results; 9.5 Conclusion; References 10 Process Capability Analysis for Non-Normal Data with MINITAB10.1 Introduction; 10.2 Illustration of the Two Methodologies Using a Case Study Data Set; 10.3 A Further Case Study; 10.4 Monte Carlo Simulation; 10.5 Summary; References; PART C: ANALYZE PHASE; 11 Goodness-of-Fit Tests for Normality; 11.1 Introduction; 11.2 Underlying Principles of Goodness-of-Fit Tests; 11.3 Pearson Chi-Square Test: 11.4 Empirical Distribution Function Based Approaches: 11.5 Regression-Based Approaches; 11.6 Fisher 's Cumulant Tests; 11.7 Conclusion; References 12 Introduction to the Analysis of Categorical Data12.1 Introduction; 12.2 Contingency Table Approach; 12.3 Case Study; 12.4 Logistic Regression Approach: 12.5 Conclusion; References: 13 A Graphical Approach to Obtaining Confidence Limits of Cpk; 13.1 Introduction; 13.2 Graphing Cp, k and p; 13.3 Confidence Limits for k; 13.4 Confidence Limits For Cpk; 13.5 A Simulation Study; 13.6 Illustrative Examples; 13.7 Comparison with Bootstrap Confidence Limits; 13.8 Conclusions; References; 14 Data Transformation for Geometrically Distributed Quality Characteristics: 14.1 Introduction 14.2 Problems of Three-Sigma Limits for the G Chart

Sommario/riassunto

The 2007 winner of the Masing Book Prize sets out important Six Sigma concepts and a selection of up-to-date tools for quality improvement in industry. Six Sigma is a widely used methodology for measuring and improving an organization's operational performance through a rigorous analysis of its practices and systems. This book presents a series of papers providing a systematic 'roadmap' for implementing Six Sigma, following the DMAIC (Define, Measure, Analyse, Improve and Control) phased approach. Motivated by actual problems, the authors offer insightful solutions to some of the mo