Here is a chapter from an updated Design for Six Sigma, Second Edition, which has extensive new chapters and learning modules on innovation, lean product development, computer simulation, and critical parameter management—plus new thread-through case studies. This updated edition provides unrivaled real-world product development experience and priceless walk-throughs that help you choose the right design tools at every stage of product and service development. The book includes detailed directions, careful comparisons, and work-out calculations that make every step of the Design for Six Sigma process easier. The first comprehensive guide to the integration of Design for Six Sigma principles in the medical devices development cycle Medical Device Design for Six Sigma: A Road Map for Safety and Effectiveness presents the complete body of knowledge for Design for Six Sigma (DFSS), as outlined by American Society for Quality, and details how to integrate appropriate design methodologies up front in the design process. DFSS helps companies shorten lead times, cut development and manufacturing costs, lower total life-cycle cost, and improve the quality of the
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Integrates concept and design methods such as Pugh Controlled Convergence approach, QFD methodology, parameter optimization techniques like Design of Experiment (DOE), Taguchi Robust Design method, Failure Mode and Effects Analysis (FMEA), Design for X, Multi-Level Hierarchical Design methodology, and Response Surfaced methodology. Covers contemporary and emerging design methods, including Axiomatic Design Principles, Theory of Inventive Problem Solving (TRIZ), and Tolerance Design. Provides a detailed, step-by-step implementation process for each DFSS tool. Covers the structural, organizational, and technical deployment of DFSS within the medical device industry. Includes a DFSS case study describing the development of a new device. Presents a global perspective of medical device regulations. Providing both a road map and a toolbox, this is a hands-on reference for medical device product development practitioners, product/service development engineers and architects, DFSS and Six Sigma trainees and trainers, middle management, engineering team leaders, quality engineers and quality consultants, and graduate students in biomedical engineering. More than an introduction to statistical concepts and methods, this comprehensive resource provides sophisticated Six Sigma practitioners with the statistical tools necessary for rooting out and solving problems associated with product or service design. Design for Six Sigma (DFSS) is a response to the demand of faster design of new products while radically improving the success rate and quality of these products by focusing on the voice of the customer. This book is an introduction into the subject matter. What Is Design for Six Sigma? reveals how to use DFSS to design new products, services, and processes so that quality problems can be solved before they ever start. Topics include: How to design new products and processes. The DMADOV implementation process (Define, Measure, Analyze, Design, Optimize, and Verify) How to redesign existing processes and services. Design for Lean Six Sigma is the only book that employs a "road-map" approach to DFSS, which allows corporate management to understand where they are in the process and to integrate DFSS methodology more fully into their overall business strategy. This is a similar approach to that used by Forrest Breyfogle in his successful book: "Implementing Six Sigma, 2E". This approach will allow corporate management to understand where they are in the process and to integrate DFSS methodology more fully into the overall business strategy. Another important aspect of this book is its coverage of DFSS implementation in a broad range of industries including service and manufacturing, plus the use of actual cases throughout. Here is a chapter from an updated Design for Six Sigma, Second Edition, which has extensive new chapters and learning modules on innovation, lean product development, computer simulation, and critical parameter management—plus new thread-through case studies. This updated edition provides unrivalled real-world product development experience and priceless walk-throughs that help you choose the right design tools at every stage of product and service development. The book includes detailed directions, careful comparisons, and work-out calculations that make every step of the Design for Six Sigma process easier. Here's the book that clearly and logically answers the complex question quality managers and product developers face almost every day: WHICH PRODUCT DEVELOPMENT TOOLS SHOULD I USE AND WHEN? This much-needed, well-written roadmap for robust, efficient product development features: * All the coverage needed to implement six sigma in any manufacturing concern * A complete review of both traditional and contemporary design methods * Systems discussed include: DOE (Design Of Experiment), Taguchi Method, QFD (Quality Function Deployment), Axiomatic Design, and TRIZ (Theory for Inventive Problem-Solving) * Practical examples to highlight important elements of
A unique multi-systems approach to designing products, incorporating the traditional and contemporary methods discussed, detailing how and when to use them. Valuable assistance when preparing for certification exams. This volume addresses design improvement from the perspective of prevention by introducing readers to the tools of the Six Sigma design process. The author discusses the issues of designing for Six Sigma, covering the topics that any Shogun Six Sigma Master must be familiar with: customer satisfaction, quality function deployment, benchmarking, sysThe Toolset is a comprehensive collection of the relevant Design for Six Sigma+Lean tools, which are necessary for successfully implementing innovations. All tools are presented in a clear structure, providing a good overview of the methodology. The chronology of the listed tools corresponds to the procedure in a Design for Six Sigma+Lean development project with the stages Define, Measure, Analyze, Design, and Verify. Due to this unique structure by which tools can be found and applied quickly we created a book that facilitates project work in practical use enormously. Design for Six Sigma (DFSS) is an innovative continuous improvement methodology for designing new products, processes, and services by integrating Lean and Six Sigma principles. This book will explain how the DFSS methodology is used to design robust products, processes, or services right the first time by using the voice of the customer to meet Six Sigma performance. Robust designs are insensitive to variation and provide consistent performance in the hands of the customer. DFSS is used to meet customer needs by understanding their requirements, considering current process capability, identifying and reducing gaps, and verifying predictions to develop a robust design. This book offers: Methodology on how to implement DFSS in various industries Practical examples of the use of DFSS Sustainability utilizing Lean Six Sigma techniques and Lean product development Innovative designs using DFSS with concept generation Case studies for implementing the DFSS methodology Design for Six Sigma (DFSS) enables organizations to develop innovative designs. In order to redesign an existing process or design a new process, the success is dependent on a rigorous process and methodology. DFSS ensures that there are minimal defects in the introduction of new products, processes, or services. The authors have compiled all of the tools necessary for implementation of a practical approach though innovation. Design for Six Sigma (DFSS), or the Six Sigma DMADV process (Define, Measure, Analyze, Design, Verify), is an improvement system used to develop new processes or products at Six Sigma quality levels. It also can be employed if a current process requires more than just incremental improvement. It is executed by Six Sigma Green Belts and Six Sigma Black Belts, and overseen by Six Sigma Master Black Belts. The Practical, Example-Rich Guide to Building Better Systems, Software, and Hardware with DFSS Design for Six Sigma (DFSS) offers engineers powerful opportunities to develop more successful systems, software, hardware, and processes. In Applying Design for Six Sigma to Software and Hardware Systems, two leading experts offer a realistic, step-by-step process for succeeding with DFSS. Their clear, start-to-finish roadmap is designed for successfully developing complex high-technology products and systems that require both software and hardware development. Drawing on their unsurpassed experience leading Six Sigma at Motorola, the authors cover the entire project lifecycle, from business case through scheduling, customer-driven requirements gathering through execution. They provide real-world examples for applying their techniques to software alone, hardware alone, and systems composed of both. Product developers will find proven job aids and specific guidance about what teams and team members need to do at every stage. Using this book’s integrated, systems approach, marketers, software professionals, and hardware
developers can converge all their efforts on what really matters: addressing the customer’s true needs. Learn how to Ensure that your entire team shares a solid understanding of customer needs Define measurable critical parameters that reflect customer requirements Thoroughly assess business case risk and opportunity in the context of product roadmaps and portfolios Prioritize development decisions and scheduling in the face of resource constraints Flow critical parameters down to quantifiable, verifiable requirements for every sub-process, subsystem, and component Use predictive engineering and advanced optimization to build products that robustly handle variations in manufacturing and usage Verify system capabilities and reliability based on pilots or early production samples Master new statistical techniques for ensuring that supply chains deliver on time, with minimal inventory Choose the right DFSS tools, using the authors’ step-by-step flowchart If you’re an engineer involved in developing any new technology solution, this book will help you reflect the real Voice of the Customer, achieve better results faster, and eliminate finger-pointing. About the Web Site The accompanying Web site, sigmaexperts.com/dfss, provides an interactive DFSS flowchart, templates, exercises, examples, and tools.Optimize Every Stage of Your Product Development and Commercialization To remain competitive, companies must become more effective at identifying, developing, and commercializing new products and services. Design for Six Sigma (DFSS) is the most powerful approach available for achieving these goals reliably and efficiently. Now, for the first time, there’s a comprehensive, hands-on guide to utilizing DFSS in real-world product development. Using a start-to-finish case study, a practical roadmap, and easy-to-use templates, Commercializing Great Products with Design for Six Sigma shows how to optimize every stage of product commercialization. Drawing on a combined sixty-five years of product experience, the authors show how to make better product and portfolio decisions; develop better business cases and benefits assessments; create better concepts and designs; scale up manufacturing more effectively; and execute better launches. Learn how to Establish infrastructure to support successful commercialization Use Stage-Gate® processes to minimize risk and optimize the use of people and resources Create better plans: Segment markets, define product value, estimate financial value, and position new products for success Capture the “Voice of the Customer,” analyze it, and use it to drive development Choose the right tools: Ideation, Pugh Concept Selection, QFD, TRIZ, and many more Develop better products and processes: Process Maps, Cause and Effects Matrices, Failure Modes and Effects Analysis, Statistical Design and Data Analysis Tools, and more Test and improve product performance and reliability Perform Post Mortems and apply what you’ve learned to your next project Whether you’re an executive, engineer, designer, marketer, or quality-control professional, Commercializing Great Products with Design for Six Sigma will help you identify more valuable product concepts and translate them into high-impact revenue sources. Do the Design for Six SIGMA decisions we make today help people and the planet tomorrow? Who will be responsible for deciding whether Design for Six SIGMA goes ahead or not after the initial investigations? Will team members perform Design for Six SIGMA work when assigned and in a timely fashion? How will variation in the actual durations of each activity be dealt with to ensure that the expected Design for Six SIGMA results are met? How can we improve Design for Six SIGMA? Defining, designing, creating, and implementing a process to solve a business challenge or meet a business objective is the most valuable role in EVERY company, organization and department. Unless you are talking a one-time, single-use project within a business, there should be a process. Whether that process is managed and implemented by humans, AI, or a combination of the two, it needs to be.
designed by someone with a complex enough perspective to ask the right questions. Someone capable of asking the right questions and step back and say, 'What are we really trying to accomplish here? And is there a different way to look at it?' For more than twenty years, The Art of Service's Self-Assessments empower people who can do just that - whether their title is marketer, entrepreneur, manager, salesperson, consultant, business process manager, executive assistant, IT Manager, CxO etc - they are the people who rule the future. They are people who watch the process as it happens, and ask the right questions to make the process work better. This book is for managers, advisors, consultants, specialists, professionals and anyone interested in Design for Six SIGMA assessment. All the tools you need to an in-depth Design for Six SIGMA Self-Assessment. Featuring 618 new and updated case-based questions, organized into seven core areas of process design, this Self-Assessment will help you identify areas in which Design for Six SIGMA improvements can be made. In using the questions you will be better able to: - diagnose Design for Six SIGMA projects, initiatives, organizations, businesses and processes using accepted diagnostic standards and practices - implement evidence-based best practice strategies aligned with overall goals - integrate recent advances in Design for Six SIGMA and process design strategies into practice according to best practice guidelines Using a Self-Assessment tool known as the Design for Six SIGMA Scorecard, you will develop a clear picture of which Design for Six SIGMA areas need attention. Included with your purchase of the book is the Design for Six SIGMA Self-Assessment downloadable resource, which contains all questions and Self-Assessment areas of this book in a ready to use Excel dashboard, including the self-assessment, graphic insights, and project planning automation - all with examples to get you started with the assessment right away. Access instructions can be found in the book. You are free to use the Self-Assessment contents in your presentations and materials for customers without asking us - we are here to help.Here is a chapter from an updated Design for Six Sigma, Second Edition, which has extensive new chapters and learning modules on innovation, lean product development, computer simulation, and critical parameter management--plus new thread-through case studies. This updated edition provides unrivalled real-world product development experience and priceless walk-throughs that help you choose the right design tools at every stage of product and service development. The book includes detailed directions, careful comparisons, and work-out calculations that make every step of the Design for Six Sigma process easier.
highly-competitive markets. Forecasts of cash flow, market share, and price are used to select the final design from among the alternatives considered. A single formalism is used to integrate the tasks and responsibilities of marketing research, product planning, finance, design, engineering, and manufacturing within the overall product realization process. The targeted audiences for this book are graduate engineers, statisticians, and scientists who are or who soon will be involved in planning, designing, manufacturing, and servicing products for highly-competitive markets. Preview a sample chapter from this book along with the full table of contents by clicking here. You will need Adobe Acrobat to view this pdf file. Here is a chapter from an updated Design for Six Sigma, Second Edition, which has extensive new chapters and learning modules on innovation, lean product development, computer simulation, and critical parameter management--plus new thread-through case studies. This updated edition provides unrivalled real-world product development experience and priceless walk-throughs that help you choose the right design tools at every stage of product and service development. The book includes detailed directions, careful comparisons, and work-out calculations that make every step of the Design for Six Sigma process easier. The following is a chapter from Kai Yang's Design for Six Sigma for Service. This comprehensive handbook aggressively tackles the difficulties involved in applying rigorous Six Sigma statistical methods to service environments. It delivers solid, effective solutions that can help your organization achieve measurable gains in customer satisfaction, cost reduction, value improvement, change management, and process performance. Featuring detailed design guidance and valuable tips, this book provides the specifics you need to create product value through improved service practices. The first book to integrate axiomatic design and robust design for a comprehensive quality approach As the adoption of quality methods grows across various industries, its implementation is challenged by situations where statistical tools are inadequate, yet the earlier a proactive quality system is introduced into a given process, the greater the payback these methods will yield. Axiomatic Quality brings together two well-established theories, axiomatic design and robust design, to eliminate or reduce both conceptual and operational weaknesses. Providing a complete framework for immediate implementation, this book guides design teams in producing systems that operate at high-quality levels for each of their design requirements. And it shows the way towards achieving the Six-Sigma target--six times the standard deviation contained between the target and each side of the specification limits--for each requirement. This book develops an aggressive axiomatic quality approach that: * Provides the tools to reduce conceptual weaknesses of systems using a framework called the conceptual design for capability * Reduces operational weaknesses of systems in terms of quality losses and control costs * Uses mathematical relationships to bridge the gap between science-based engineering and quality methods Acclaro DFSS Light, a Java-based software package that implements axiomatic design processes, is available for download from a Wiley ftp site. Acclaro DFSS Light is a software product of Axiomatic Design Solutions, Inc. Laying out a comprehensive approach while working through each aspect of its implementation, Axiomatic Quality is an essential resource for managers, engineers, and other professionals who want to successfully deploy the most advanced methodology to tackle system weaknesses and improve quality. This is the eBook version of the printed book. Development of a new product requires the product development team to address many complex customer requirements during the commercialization process. Consider a situation in which a new product being developed must meet specified upper and lower specification limits based on Voice of the Customer interviews. The design team must model and understand the sources of
potential variation in the new product that need to be monitored and controlled if the product is to meet the identified customer needs. The process of analyzing component variation and designing a final product that meets customer tolerance requirements is known as statistical tolerancing. In this Short Cut, various Design for Six Sigma techniques for determining the impact of multiple sources of variation on a final product are examined in detail. A procedure is described for using representative models for individual product components to estimate the expected overall level of variation in the performance of a final product. Three methods of tolerance analysis are presented and the merits of each are discussed: Worst Case Analysis, Root Sum of Squares Analysis, and Six Sigma Tolerance Analysis. A detailed case study example, involving multiple sources of variation, is employed to illustrate the application of these methods. Minitab® is used to identify the best-fitting distributions from data sets for individual components. Monte Carlo Simulation with Crystal Ball® is then employed to determine the most important individual sources of variation and the overall variation of the final product. Finally, Crystal Ball’s OptQuest® optimization feature is utilized to determine the required design value for each key parameter to meet final customer requirements. Contents What This Short Cut Covers Introduction Worst Case Analysis Root Sum of Squares Analysis Six Sigma Tolerance Analysis What's in the Book Commercializing Great Products with Design for Six Sigma About the Authors Related Publications Here is a chapter from Design for Six Sigma Statistics, written by a Six Sigma practitioner with more than two decades of DFSS experience who provides a detailed, goal-focused roadmap. It shows you how to execute advanced mathematical procedures specifically aimed at implementing, fine-tuning, or maximizing DFSS projects to yield optimal results. For virtually every instance and situation, you are shown how to select and use appropriate mathematical methods to meet the challenges of today's engineering design for quality. Can management personnel recognize the monetary benefit of design for six sigma? Why should you adopt a design for six sigma framework? How will the design for six sigma data be captured? What are the concrete design for six sigma results? Are you measuring, monitoring and predicting design for six sigma activities to optimize operations and profitability, and enhancing outcomes? Defining, designing, creating, and implementing a process to solve a challenge or meet an objective is the most valuable role in EVERY group, company, organization and department. Unless you are talking a one-time, single-use project, there should be a process. Whether that process is managed and implemented by humans, AI, or a combination of the two, it needs to be designed by someone with a complex enough perspective to ask the right questions. Someone capable of asking the right questions and step back and say, 'What are we really trying to accomplish here? And is there a different way to look at it?' This Self-Assessment empowers people to do just that - whether their title is entrepreneur, manager, consultant, (Vice-)President, CxO etc - they are the people who rule the future. They are the person who asks the right questions to make Design For Six Sigma investments work better. This Design For Six Sigma All-Inclusive Self-Assessment enables You to be that person. All the tools you need to an in-depth Design For Six Sigma Self-Assessment. Featuring 951 new and updated case-based questions, organized into seven core areas of process design, this Self-Assessment will help you identify areas in which Design For Six Sigma improvements can be made. In using the questions you will be better able to: - diagnose Design For Six Sigma projects, initiatives, organizations, businesses and processes using accepted diagnostic standards and practices - implement evidence-based best practice strategies aligned with overall goals - integrate recent advances in Design For Six Sigma and process design strategies into practice according to best practice
guidelines Using a Self-Assessment tool known as the Design For Six Sigma Scorecard, you will develop a clear picture of which Design For Six Sigma areas need attention. Your purchase includes access details to the Design For Six Sigma self-assessment dashboard download which gives you your dynamically prioritized projects-ready tool and shows your organization exactly what to do next. You will receive the following contents with New and Updated specific criteria: - The latest quick edition of the book in PDF - The latest complete edition of the book in PDF, which criteria correspond to the criteria in - The Self-Assessment Excel Dashboard - Example pre-filled Self-Assessment Excel Dashboard to get familiar with results generation - In-depth and specific Design For Six Sigma Checklists - Project management checklists and templates to assist with implementation INCLUDES LIFETIME SELF ASSESSMENT UPDATES Every self assessment comes with Lifetime Updates and Lifetime Free Updated Books. Lifetime Updates is an industry-first feature which allows you to receive verified self assessment updates, ensuring you always have the most accurate information at your fingertips. Design for Six Sigma (DFSS) is a systematic approach for manufacturing companies to address product and process issues at the early development stage. Through inventive thought processes, early error elimination, and robust design, DFSS has dramatically impacted product quality and performance and increased profit. In this comprehensive volume, the four-phase IDOV--Identify-Design-Optimize-Verify--DFSS methodology is discussed in detail. The various practices from inventive design methodologies, deterministic and stochastic numerical methods, and the use of CAE simulation techniques, are mapped to the DFSS procedure. Many case studies are used to illustrate how tools are used in DFSS processes. Written by DFSS practitioners and technologists, this book is intended for any engineer to use as a reference in executing DFSS projects. Technology companies can only achieve the full benefits of Six Sigma if they implement it proactively, starting with the earliest stages of technology development and product design, link it to a well-structured product development process, and rigorously manage it. Design for Six Sigma in Technology and Product Development shows how. Authors Clyde Creveling, Jeff Slutsky, and David Antis Jr. present step-by-step techniques, flow diagrams, scorecards, and checklists, plus the first complete introduction to Critical Parameter Management (CPM), the breakthrough approach to managing complex product development. This book is written primarily for engineers and researchers who use statistical robust design for quality engineering and Six Sigma, and for statisticians who wish to know about the wide range of applications of experimental design in industry. It is a valuable guide and reference material for students, managers, quality improvement specialists and other professionals interested in Taguchi’s robust design methods as well as the implementation of Six Sigma. This book can also be useful to those who would like to learn about the role of Robust Design within the Six Sigma (Improve phase) methodology and Design for Six Sigma (DFSS) (Optimize) methodology. It combines classical experimental design methods with those of Taguchi’s robust designs, demonstrating their prowess in DFSS and suggesting new directions for the development of statistical design and analysis. This is the first book to completely cover the whole body of knowledge of Six Sigma and Design for Six Sigma with Simulation Methods as outlined by the American Society for Quality. Both simulation and contemporary Six Sigma methods are explained in detail with practical examples that help understanding of the key features of the design methods. The systems approach to designing products and services as well as problem solving is integrated into the methods discussed. Inleiding tot een methode voor het stroomlijnen van bedrijfprocessen, het verbeteren van efficiency en effectiviteit en het vergroten van
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de klanttevredenheid. The primary objective of this new book is to provide a comprehensive reference for those who work in a service industry setting. Unlike Design for Six Sigma a Roadmap for Product Development, this new book will address the 5 leading issues in the service industry, which are customer satisfaction, cost reduction, value improvement, change management and process performance measurements. This proposal constitutes an algorithm of design applying the design for six sigma thinking, tools, and philosophy to software design. The algorithm will also include conceptual design frameworks, mathematical derivation for Six Sigma capability upfront to enable design teams to disregard concepts that are not capable upfront, learning the software development cycle and saving development costs. The uniqueness of this book lies in bringing all those methodologies under the umbrella of design and provide detailed description about how these methods, QFD, DOE, the robust method, FMEA, Design for X, Axiomatic Design, TRIZ can be utilized to help quality improvement in software development, what kinds of different roles those methods play in various stages of design and how to combine those methods to form a comprehensive strategy, a design algorithm, to tackle any quality issues in the design stage. What are the revised rough estimates of the financial savings/opportunity for Design for Six SIGMA improvements? What threat is Design for Six SIGMA addressing? Is the impact that Design for Six SIGMA has shown? What are the key elements of your Design for Six SIGMA performance improvement system, including your evaluation, organizational learning, and innovation processes? What may be the consequences for the performance of an organization if all stakeholders are not consulted regarding Design for Six SIGMA? Defining, designing, creating, and implementing a process to solve a business challenge or meet a business objective is the most valuable role in EVERY company, organization and department. Unless you are talking a one-time, single-use project within a business, there should be a process. Whether that process is managed and implemented by humans, AI, or a combination of the two, it needs to be designed by someone with a complex enough perspective to ask the right questions. Someone capable of asking the right questions and step back and say, 'What are we really trying to accomplish here? And is there a different way to look at it?' This Self-Assessment empowers people to do just that - whether their title is entrepreneur, manager, consultant, (Vice-)President, CxO etc - they are the people who rule the future. They are the person who asks the right questions to make Design for Six SIGMA investments work better. This Design for Six SIGMA All-Inclusive Self-Assessment enables You to be that person. All the tools you need to an in-depth Design for Six SIGMA Self-Assessment. Featuring 723 new and updated case-based questions, organized into seven core areas of process design, this Self-Assessment will help you identify areas in which Design for Six SIGMA improvements can be made. In using the questions you will be better able to: - diagnose Design for Six SIGMA projects, initiatives, organizations, businesses and processes using accepted diagnostic standards and practices - implement evidence-based best practice strategies aligned with overall goals - integrate recent advances in Design for Six SIGMA and process design strategies into practice according to best practice guidelines Using a Self-Assessment tool known as the Design for Six SIGMA Scorecard, you will develop a clear picture of which Design for Six SIGMA areas need attention. Your purchase includes access details to the Design for Six SIGMA self-assessment dashboard download which gives you your dynamically prioritized projects-ready tool and shows your organization exactly what to do next. Your exclusive instant access details can be found in your book. Six Sigma provides an overarching concept, methodology and the tools to improve quality and customer satisfaction, thereby increasing profitability. This book moves beyond applying Six SIGMA to the realm of software design.
 Sigma to already existing products and services to quantifying, designing and measuring success in from the start. Most new ideas are launched on the market without taking customer needs into account. Failings are discovered in the marketplace where products or services then have to be refined and redesigned - indeed perhaps some 80% of new products or services will fail altogether. By using the Six Sigma approach to designing new products and services the chances of failure are greatly reduced. Six Sigma encourages innovation within a controlled framework, leading to better products and services brought to the marketplace more quickly. This book aims to provide a detailed resource of guidance and inspiration covering all the aspects of business strategy, product/service design, project management and execution necessary for the successful introduction of new products and services, all under the auspices of a customer-focused Six Sigma approach. Moreover it provides a tangible way of measuring satisfaction and the success of the new. The Toolset is a comprehensive collection of the relevant Design for Six Sigma+Lean tools, which are necessary for successfully implementing innovations. All tools are presented in a clear structure, providing a good overview of the methodology. The chronology of the listed tools corresponds to the procedure in a Design for Six Sigma+Lean development project with the stages Define, Measure, Analyze, Design, and Verify. Due to this unique structure by which tools can be found and applied quickly we created a book that facilitates project work in practical use enormously. Migrating from a tool based approach to a question based approach is a decisive success factor in our opinion enabling firstly, increased efficiency of project work for the Project Leader, his team and the associated Stakeholders, and secondly, significantly increasing the probability of success for the respective innovation projects. A roadmap to consistent, high-quality service for any organization A service is typically something created to serve a paying customer, whether internal or external. Some services consist of several processes linked together while others consist of a single process. This book introduces Design for Six Sigma (DFSS), an easy-to-master, yet highly effective data-driven method that prevents defects in any type of service process. The particular focus of this publication is service DFSS, which leads to what the authors term "a whole quality business," one that takes a proactivestance and gets things right the first time. Not only does the whole quality business produce a high-quality product and offer high-quality services, but it also operates at lower cost and higher efficiency, throughout the entire life cycle, than its competitors because all the links in the supply chain are optimized. Following a detailed overview that sets forth the basic premise and key concepts of service DFSS, the authors offer all the information and tools needed to take advantage of service DFSS within their own organizations, including: * Clear and in-depth coverage of the philosophical, organizational, and technical aspects of service DFSS * Step-by-step roadmap of the entire service DFSS deployment and execution process * Full discussions of all the key methods involved in service DFSS, including axiomatic design, design for X, the theory of inventive problem solving (TRIZ), transfer function, design scorecards, and Taguchi’s method * Practical, illustrative examples that demonstrate how the theory is put into practice * Assistance in developing the necessary skills in applying DFSS in organizational settings Problems and their solutions are provided at the end of each chapter to help readers grasp the key concepts they need to move forward in the text. Acclaro DFSS Light(r), a Java-based software package that implements axiomatic design processes discussed in Chapter Eight, is available for download from an accompanying Wiley ftp site. Acclaro DFSS Light(r) is a software product of Axiomatic Design Solutions, Inc. This book is ideal as a reference to service DFSS for corporate executives, quality control managers, and process engineers, or as a
complete training manual for DFSS teams. It is also a superior textbook for graduate students in management, operations, and quality assurance.

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