

Software Project Management Walker Royce Pearson Education

This book provides essential insights on the adoption of modern software engineering practices at large companies producing software-intensive systems, where hundreds or even thousands of engineers collaborate to deliver on new systems and new versions of already deployed ones. It is based on the findings collected and lessons learned at the Software Center (SC), a unique collaboration between research and industry, with Chalmers University of Technology, Gothenburg University and Malmö University as academic partners and Ericsson, AB Volvo, Volvo Car Corporation, Saab Electronic Defense Systems, Grundfos, Axis Communications, Jeppesen (Boeing) and Sony Mobile as industrial partners. The 17 chapters present the "Stairway to Heaven" model, which represents the typical evolution path companies move through as they develop and mature their software engineering capabilities. The chapters describe theoretical frameworks, conceptual models and, most importantly, the industrial experiences gained by the partner companies in applying novel software engineering techniques. The book's structure consists of six parts. Part I describes the model in detail and presents an overview of lessons learned in the collaboration between industry and academia. Part II deals with the first step of the Stairway to Heaven, in which R&D adopts agile work practices. Part III of the book combines the next two phases, i.e., continuous integration (CI) and continuous delivery (CD), as they are closely intertwined. Part IV is concerned with the highest level, referred to as "R&D as an innovation system," while Part V addresses a topic that is separate from the Stairway to Heaven and yet critically important in large organizations: organizational performance metrics that capture data, and visualizations of the status of software assets, defects and teams. Lastly, Part VI presents the perspectives of two of the SC partner companies. The book is intended for practitioners and professionals in the software-intensive systems industry, providing concrete models, frameworks and case studies that show the specific challenges that the partner companies encountered, their approaches to overcoming them, and the results. Researchers will gain valuable insights on the problems faced by large software companies, and on how to effectively tackle them in the context of successful cooperation projects.

Projects continue to grow larger, increasingly strategic, and more complex, with greater collaboration, instant feedback, specialization, and an ever-expanding list of stakeholders. Now more than ever, effective project management is critical for the success of any deliverable, and the demand for qualified Project Managers has leapt into nearly all sectors. Project Management provides a robust grounding in essentials of the field using a managerial approach to both fundamental concepts and real-world practice. Designed for business students, this text follows the project life cycle from beginning to end to demonstrate what successful project management looks like on the ground. Expert discussion details specific techniques and applications, while guiding students through the diverse skill set required to select, initiate, execute, and evaluate today's projects. Insightful coverage of change management provides clear guidance on handling the organizational, interpersonal, economic, and technical glitches that can derail any project, while in-depth cases and real-world examples illustrate essential concepts in action.

Project Management for Engineering, Business and Technology is a highly regarded textbook that addresses project management across all industries. First covering the essential background, from origins and philosophy to methodology, the bulk of the book is dedicated to concepts and techniques for practical application. Coverage includes project initiation and proposals, scope and task definition, scheduling, budgeting, risk analysis, control, project selection and portfolio management, program management, project organization, and all-important "people" aspects—project leadership, team building, conflict resolution, and stress management. The systems development cycle is used as a framework to discuss project management in a variety of situations, making this the go-to book for managing virtually any kind of project, program, or task force. The authors focus on the ultimate purpose of project management—to unify and integrate the interests, resources and work efforts of many stakeholders, as well as the planning, scheduling, and budgeting needed to accomplish overall project goals. This sixth edition features: updates throughout to cover the latest developments in project management methodologies; a new chapter on project procurement management and contracts; an expansion of case study coverage throughout, including those on the topic of sustainability and climate change, as well as cases and examples from across the globe, including India, Africa, Asia, and Australia; and extensive instructor support materials, including an instructor's manual, PowerPoint slides, answers to chapter review questions and a test bank of questions. Taking a technical yet accessible approach, this book is an ideal resource and reference for all advanced undergraduate and graduate students in project management courses, as well as for practicing project managers across all industry sectors.

Virtual Project Management: Software Solutions for Today and the Future explores the technical management issues involved in the revolutionary new way of building complex software intensive systems faster and cheaper by employing the power of distributed operations. The book examines the implementation issues that cut deep inside present day collocated engineering organizations and recommends practical and affordable actions to aid organizations seeking increased productivity through distributed operations. The demand for integrated solutions constructed from a combination of existing and newly developed software increases daily. Many organizations find themselves with shortages of the critical skills necessary to compete in many of these newly created markets. Employing virtual collaborative development provides a dramatic increase in a company's opportunities to successfully compete. Virtual collaboration provides a broader skill and product knowledge base coupled with a deeper pool of personnel to potentially employ. It removes two of the major barriers – company affiliation and physical location. Virtual Project Management: Software Solutions for Today and the Future focuses on critical characteristics underlying how work actually gets done in traditional collocated engineering environments. It examines the changes taking place on virtual projects through a series of anecdotes based on real project experiences. The book provides an 8 step practical and affordable plan that can be used as a framework in either setting up and executing a new virtual project, or in instituting improvements to a project that has drifted off course. Others have lived through the pain of learning lessons the hard way. You don't need to follow their path. The insights and solutions offered by Paul McMahon answer the questions virtual project leaders will be asking well into the 21st century.

From Concept to Cash

The Economics of Iterative Software Development

Case Studies

Traditional, Agile, Extreme

Agility and Discipline Made Easy

Doing Hard Time

A Unified Approach

bull; Reflects all of the changes that were integrated into RUP v2003-the latest version of the very popular produc t bull; Learn the key concepts, fundamentals of structure, integral content, and motivation behind the RUP bull; Covers all phases of the software development lifecycle -from concept, to delivery, to revision

Classical and Object-Oriented Software Engineering, 5/e is designed for an introductory software engineering course. This book provides an excellent introduction to software engineering fundamentals, covering both traditional and object-oriented techniques.Schach's unique organization and style makes it excellent for use in a classroom setting. It presents the underlying software engineering theory in Part I and follows it up with the more practical life-cycle material in Part II. Many software engineering books are more like reference books, which do not provide the appropriate fundamentals before inundating students with implementation details.In this edition, more practical material has been added to help students understand how to use what they are learning. This has been done through the use of "How To" boxes and greater implementation detail in the case study. Additionally, the new edition contains the references to the most current literature and includes an overview of extreme programming.The website in this edition will be more extensive. It will include Solutions, PowerPoints that incorporate lecture notes, newly developed self-quiz questions, and source code for the term project and case study.

This is the first book to address the back-end of the development cycle from a project management perspective. This guide will benefit both the technical and non-technical professional.

The world of software development methodology has become a bit of a cottage industry. Philosophical divisions and dogma laced with branding and driven by profit motive are commonplace. Re-invention replaces integration due to a lack of collaboration. A pragmatic perspective however would be to leverage all past experience in context when approaching modern software engineering challenges. For example, issues faced by the Agile community related to agility at scale and technical debt have already been addressed before by other communities. SDLC 3.0 represents the rationalization of modern software engineering methods into a Complex Adaptive System of practices. It leverages Control Systems Engineering theory to explain Agile beyond a tacit and anecdotal basis such that the pace of modern practice adoption can accelerate. With "more for less" now being as important as "being agile," it articulates blueprints of the Lean IT Enterprise. Who should read this book: . - If you are an Agilist and tired of having to pause when asked the question "What is Agile." - If you are a Traditionalist and you would like to learn why Agile is a better approach - if someone would just explain "why it works" in a credible way.. - If you are an Executive and you are faced with a fiduciary duty to influence IT investment outcomes. A blueprint of a Lean IT Enterprise is valuable to you. . - If you are a Researcher and you are tired of fads and brands, and want to ground Agile in applied science and rigorous mathematics. . - If you are a Methodologist and you believe that the cottage industry must stop, and that we must get past fragmentation and tacit or anecdotal evidence.. - If you are a Practitioner and you can't afford to pontificate on which "pure" wholesale method to leverage when faced with the "realities on the ground." . - If you are an independent thinker, a centrist. - If you are a pragmatist. Winner 2010 Dr. Dobbs Jolt Productivity Award

Building Creative Teams

Software Project Dynamics

Innovations in Digital Economy

Implementing Lean Software Development

Traditional, Adaptive, Extreme

Managing Software Requirements

The Rational Unified Process Made Easy

A new edition of the most popular book of project management case studies, expanded to include more than 100 cases plus a "super case" on the Iridium Project Case studies are an important part of project management education and training. This Fourth Edition of Harold Kerzner's Project Management Case Studies features a number of new cases covering value measurement in project management, covers all aspects of project management and may be used as a capstone for a course. This new edition: Contains 100-plus case studies drawn from real companies to illustrate both successful and poor implementation of project management Represents a wide range of industries, including medical and pharmaceutical, aerospace, manufacturing, automotive, finance and banking, and telecommunication international project management plus a "super case" on the Iridium Project, covering all aspects of project management Follows and supports preparation for the Project Management Professional (PMP®) Certification Exam Project Management Case Studies, Fourth Edition is a valuable resource for students, as well as practicing engineers and managers, and can be used on its own or with the Project Management: A Systems Approach to Planning, Scheduling, and Controlling. (PMP and Project Management Professional are registered marks of the Project Management Institute, Inc.)

Software Project ManagementA Unified FrameworkAddison-Wesley Professional

Doing Hard Time is written to facilitate the daunting process of developing real-time systems. It presents an embedded systems programming methodology that has been proven successful in practice. The process outlined in this book allows application developers to apply practical techniques - garnered from the mainstream areas of object-oriented software development - to meet the demand for real-time ideas that are up-to-date with the latest concepts and trends in programming. By using the industry standard Unified Modeling Language (UML), as well as the best practices from object technology, he guides you through the intricacies and specifics of real-time systems development. Important topics such as schedulability, behavioral patterns, and real-time frameworks are demystified, empowered, and explained. Being a certified bibliophile and a professional geek, I have more shelf space devoted to books on software methods than any reasonable human should possess. Balancing Agility and Discipline has a prominent place in that section of my library, because it has helped me sort through the noise and smoke of the current method wars. --From the Foreword by Grady Booch This is an outstanding book that takes the care with which they have handled the subject. --From the Foreword by Alistair Cockburn The authors have done a commendable job of identifying five critical factors--personnel, criticality, size, culture, and dynamism--for creating the right balance of flexibility and structure. Their thoughtful analysis will help developers who must sort through the agile-disciplined debate, giving them guidance and direction. As Arthur Pyster Agility and discipline: These apparently opposite attributes are, in fact, complementary values in software development. Plan-driven developers must also be agile; nimble developers must also be disciplined. The key to success is finding the right balance between the two, which will vary from project to project according to the circumstances and risks involved. Developers, pulled in different directions, learn how to give each value its due in their particular situations. Balancing Agility and Discipline sweeps aside the rhetoric, drills down to the operational core concepts, and presents a constructive approach to defining a balanced software development strategy. The authors expose the bureaucracy and stagnation that mark discipline without agility, and liken agility without discipline to unbridled speed. In development teams and ground-breaking case studies, they illustrate the differences and similarities between agile and plan-driven methods, and show that the best development strategies have ways to combine both attributes. Their analysis is both objective and grounded, leading finally to clear and practical guidance for all software professionals--showing how to locate the sweet spot on the spectrum.

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Reflections on Management

Managing the Object-oriented Project

How to Manage Your Software Projects, Your Teams, Your Boss, and Yourself

Managing Successful High-tech Product Introduction

The Economics of Software Quality

Object Solutions

Strengthening Forensic Science in the United States

A classic treatise that defined the field of applied demand analysis, Consumer Demand in the United States: Prices, Income, and Consumption Behavior is now fully updated and expanded for a new generation. Consumption expenditures by households in the United States account for about 70% of America's GDP. The primary focus in this book is on how households adjust these expenditures in response to changes in price and income. Econometric estimates of price and income elasticities are obtained for an exhaustive array of goods and services using data from surveys conducted by the Bureau of Labor Statistics, providing a better understanding of consumer demand. Practical models for forecasting future price and income elasticities are also demonstrated. Fully revised with over a dozen new chapters and appendices, the book revisits the original Taylor-Houthakker models while examining new material as well, such as the use of quantile regression and the stationarity of consumer preference. It also explores the emerging connection between neuroscience and consumer behavior, integrating the economic literature on demand theory with psychology literature. The most comprehensive treatment of the topic to date, this volume will be an essential resource for any researcher, student or professional economist working on consumer behavior or demand theory, as well as investors and policymakers concerned with the impact of economic fluctuations.

¶This is an incredibly wise and useful book. The authors have considerable real-world experience in delivering quality systems that matter, and their expertise shines through in these pages. Here you will learn what technical debt is, what is it not, how to manage it, and how to pay it down in responsible ways. This is a book I wish I had when I was just beginning my career. The authors present a myriad of case studies, born from years of experience, and offer a multitude of actionable insights for how to apply it to your project.¶Grady Booch, IBM Fellow Master Best Practices for Managing Technical Debt to Promote Software Quality and Productivity As software systems mature, earlier design or code decisions made in the context of budget or schedule constraints increasingly impede evolution and innovation. This phenomenon is called technical debt, and practical solutions exist. In Managing Technical Debt, three leading experts introduce integrated, empirically developed principles and practices that any software professional can use to gain control of technical debt in any software system. Using real-life examples, the authors explain the forms of technical debt that afflict software-intensive systems, their root causes, and their impacts. They introduce proven approaches for identifying and assessing specific sources of technical debt, limiting new debt, and paying off debt over time. They describe how to establish managing technical debt as a core software engineering practice in your organization. Discover how technical debt damages manageability, quality, productivity, and morale¶and what you can do about it Clarify root causes of debt, including the linked roles of business goals, source code, architecture, testing, and infrastructure Identify technical debt items, and analyze their costs so you can prioritize action Choose the right solution for each technical debt item: eliminate, reduce, or mitigate Integrate software engineering practices that minimize new debt Managing Technical Debt will be a valuable resource for every software professional who wants to accelerate innovation in existing systems, or build new systems that will be easier to maintain and evolve.

Social scientists, whether earnest graduate students or tenured faculty members, clearly know the rules that govern good writing. But for some reason they choose to ignore those guidelines and churn out turgid, pompous, and obscure prose. Distinguished sociologist Howard S. Becker, true to his calling, looks for an explanation for this bizarre behavior not in the psyches of his colleagues but in the structure of his profession. In this highly personal and inspirational volume he considers academic writing as a social activity. Both the means and the reasons for writing a thesis or article or book are socially structured by the organization of graduate study, the requirements for publication, and the conditions for promotion, and the pressures arising from these situations create the writing style so often lampooned and lamented. Drawing on his thirty-five years' experience as a researcher, writer, and teacher, Becker exposes the foibles of the academic profession to the light of sociological analysis and gentle humor. He also offers eminently useful suggestions for ways to make social scientists better and more productive writers. Among the topics discussed are how to overcome the paralyzing fears of chaos and ridicule that lead to writer's block; how to rewrite and revise, again and again; how to adopt a persona compatible with lucid prose; how to deal with that academic bugaboo, "the literature." There is also a chapter by Pamela Richards on the personal and professional risks involved in scholarly writing. In recounting his own trials and errors Becker offers his readers not a model to be slavishly imitated but an example to inspire. Throughout, his focus is on the elusive work habits that contribute to good writing, not the more easily learned rules of grammar and punctuation. Although his examples are drawn from sociological literature, his conclusions apply to all fields of social science, and indeed to all areas of scholarly endeavor. The message is clear: you don't have to write like a social scientist to be one.

Results-Based Software Management: Achieve Better Outcomes with Finite Resources Effective software development is no longer merely an IT concern: today, it is crucial to the entire enterprise. However, most businesspeople are not ready to make informed decisions about software initiatives. The Economics of Iterative Software Development: Steering Toward Better Business Results will prepare them. Drawing on decades of software development and business experience, the authors demonstrate how to utilize practical, economics-based techniques to plan and manage software projects for maximum return on technology investments. The authors begin by dispelling widespread myths about software costs, explaining why traditional, [engineering-based] software management introduces unacceptable inefficiencies in today's development environments. Next, they show business and technical managers how to combine the principles of economics and iterative development to achieve optimal results with limited resources. Using their techniques, readers will learn how to build systems that enable maximum business innovation and process improvement¶and implement software processes that allow them to do so consistently. Highlights include How to repeatedly quantify the value a project is delivering and quickly adjust course as needed How to reduce software project size, complexity, and other [project killers] How to identify and eliminate software development processes that don't work How to improve development processes, reduce rework, mitigate risk, and identify inefficiencies How to create more proficient teams by improving individual skills, team interactions, and organizational capability Where to use integrated, automated tools to improve effectiveness What to measure, and when: specific metrics for project inception, elaboration, construction, and transition The Economics of Iterative Software Development: Steering Toward Better Business Results will help both business and technical managers make better decisions throughout the software development process¶and it will help team and project leaders keep any project or initiative on track, so they can deliver more value faster.

Project Management Leadership

Software Project Management in Practice

Software Project Management

Balancing Agility and Discipline

Disciplined Agile Delivery

The Rational Unified Process

Project Management for Engineering, Business and Technology

Project Management Leadership is a comprehensive guide to the human factors involved in Project Management, in particular the leadership skills required to ensure successful implementation of current best practice. It provides the latest insights on team building, motivation, collaboration, and networking skills, and the way these can be harnessed to manage a successful project. Exercises and worked examples are provided throughout.

Almost all software projects are risky. The goal of every project manager is to somehow deal with the cost and schedule uncertainty while meeting your customer's needs. In Object-Oriented Project Management with UML, Murray Cantor describes an elegant, UML-based approach to managing object-oriented projects guaranteed to deliver high-quality software on time and within budget. Drawing on his experience managing major software projects at IBM and TASC, Cantor supplies you with:

- * Proven ways to reap the benefits of using UML tools to tame most project demons and deliver optimal OO systems
- * Tips on integrating object-based techniques with traditional methods for project planning, risk management, scheduling, time-phased budgeting, and more
- * Expert advice on how to handle all the important "people" issues that crop up during a development project
- * Real-life war stories that let you see firsthand what worked and what didn't on several major development projects
- * A full-length project example that walks you through every phase of a project told in terms of problems and solutions

Visit the companion Web site at www.wiley.com/compbooks/cantor to find:

- * Sample project schedules, budgets, database templates for managing use cases, and a work-breakdown structure
- * A spreadsheet workbook for managing incremental development
- * A development tracking diagram

Prior to joining TASC, Dr. Cantor was a development manager at IBM, where he oversaw the development of high-end graphics and multimedia systems.

"This remarkable book combines practical advice, ready-to-use techniques, and a deep understanding of why this is the right way to develop software. I have seen software teams transformed by the ideas in this book." --Mike Cohn, author of *Agile Estimating and Planning*
"As a lean practitioner myself, I have loved and used their first book for years. When this second book came out, I was delighted that it was even better. If you are interested in how lean principles can be useful for software development organizations, this is the book you are looking for. The Poppendiecks offer a beautiful blend of history, theory, and practice." --Alan Shalloway, coauthor of *Design Patterns Explained*
"I've enjoyed reading the book very much. I feel it might even be better than the first lean book by Tom and Mary, while that one was already exceptionally good! Mary especially has a lot of knowledge related to lean techniques in product development and manufacturing. It's rare that these techniques are actually translated to software. This is something no other book does well (except their first book)." --Bas Vodde "The new book by Mary and Tom Poppendieck provides a well-written and comprehensive introduction to lean principles and selected practices for software managers and engineers. It illustrates the application of the values and practices with well-suited success stories. I enjoyed reading it." --Roman Pichler "In *Implementing Lean Software Development*, the Poppendiecks explore more deeply the themes they introduced in *Lean Software Development*. They begin with a compelling history of lean thinking, then move to key areas such as value, waste, and people. Each chapter includes exercises to help you apply key points. If you want a better understanding of how lean ideas can work with software, this book is for you." --Bill Wake, independent consultant
In 2003, Mary and Tom Poppendieck's *Lean Software Development* introduced breakthrough development techniques that leverage Lean principles to deliver unprecedented agility and value. Now their widely anticipated sequel and companion guide shows exactly how to implement Lean software development, hands-on. This new book draws on the Poppendiecks' unparalleled experience helping development organizations optimize the entire software value stream. You'll discover the right questions to ask, the key issues to focus on, and techniques proven to work. The authors present case studies from leading-edge software organizations, and offer practical exercises for jumpstarting your own Lean initiatives. Managing to extend, nourish, and leverage agile practices
Building true development teams, not just groups
Driving quality through rapid feedback and detailed discipline
Making decisions Just-in-Time, but no later
Delivering fast: How PatientKeeper delivers 45 rock-solid releases per year
Making tradeoffs that really satisfy customers
Implementing Lean Software Development is indispensable to anyone who wants more effective development processes--managers, project leaders, senior developers, and architects in enterprise IT and software companies alike.

Object Solutions is a direct outgrowth of Grady Booch's experience with object-oriented project in development around the world. This book focuses on the development process and is the perfect resource for developers and managers who want to implement object technologies for the first time or refine their existing object-oriented development practice. The book is divided into two major sections. The first four chapters describe in detail the process of object-oriented development in terms of inputs, outputs, products, activities, and milestones. The remaining ten chapters provide practical advice on key issues including management, planning, reuse, and quality assurance. Drawing upon his knowledge of strategies used in both successful and unsuccessful projects, Grady Booch offers pragmatic advice for applying object-technologies and controlling projects effectively.

Barry W. Boehm's Lifetime Contributions to Software Development, Management, and Research

Practices from OpenUP and RUP

Software Management

A Path Forward

Effective Software Project Management

A Practitioner's Guide to the RUP

Software Engineering

This is the most authoritative archive of Barry Boehm's contributions to software engineering. Featuring 42 reprinted articles, along with an introduction and chapter summaries to provide context, it serves as a "how-to" reference manual for software engineering best practices. It provides convenient access to Boehm's landmark work on product development and management processes. The book concludes with an insightful look to the future by Dr. Boehm. Why another book on software project management? For some time, the fields of project management, computer science, and software development have been growing rapidly and concurrently. Effective support for the enterprise demands the merging of these efforts into a coordinated discipline, one that incorporates best practices from both systems development and project management life cycles. Robert K. Wysocki creates that discipline in this book--a ready reference for professionals and consultants as well as a textbook for students of computer information systems and project management. By their very nature, software projects defy a "one size fits all" approach. In these pages you will learn to apply best-practice principles while maintaining the flexibility that's essential for successful software development. Learn how to make the planning process fit the need * Understand how and why software development must be planned on a certainty-to-uncertainty continuum * Categorize your projects on a four-quadrant model * Learn when to use each of the five SDPM strategies--Linear, Incremental, Iterative, Adaptive, and Extreme * Explore the benefits of each strategic model and what types of projects it supports best * Recognize the activities that go into the Scoping, Planning, Launching, Monitoring/Controlling, and Closing phases of each strategy * Apply this knowledge to the specific projects you manage * Get a clear picture of where you are and how to get where you want to go

The Practical, Start-to-Finish Guide to Planning and Leading Iterative Software Projects
Iterative processes have gained widespread acceptance because they help software developers reduce risk and cost, manage change, improve productivity, and deliver more effective, timely solutions. But conventional project management techniques don't work well in iterative projects, and newer iterative management techniques have been poorly documented. Managing Iterative Software Development Projects is the solution: a relentlessly practical guide to planning, organizing, estimating, staffing, and managing any iterative project, from start to finish. Leading iterative development experts Kurt Bittner and Ian Spence introduce a proven, scalable approach that improves both agility and control at the same time, satisfying the needs of developers, managers, and the business alike. Their techniques are easy to understand, and easy to use with any iterative methodology, from Rational Unified Process to Extreme Programming to the Microsoft Solutions Framework. Whatever your role--team leader, program manager, project manager, developer, sponsor, or user representative--this book will help you Understand the key drivers of success in iterative projects
Leverage "time boxing" to define project lifecycles and measure results
Use Unified Process phases to facilitate controlled iterative development
Master core concepts of iterative project management, including layering and evolution
Create project roadmaps, including release plans
Discover key patterns of risk management, estimation, organization, and iteration planning
Understand what must be controlled centrally, and what you can safely delegate
Transition smoothly to iterative processes
Scale iterative project management from the smallest to the largest projects
Align software investments with the needs of the business

Whether you are interested in software development using RUP, OpenUP, or other agile processes, this book will help you reduce the anxiety and cost associated with software improvement by providing an easy, non-intrusive path toward improved results--without overwhelming you and your team.

Demonstrates important concepts and offers working Transact-SQL code, covering data filtering, DDL, DML, statistical functions, runs and sequences, transactions, stored procedures and triggers, and performance tuning.

An Integrated Approach

Managing Technical Debt

The Technical and Social History of Software Engineering

Software Solutions for Today and the Future

Continuous Software Engineering

Effective Project Management

A UML Pattern Language

This book constitutes the revised selected papers of the Third International Conference on Innovations in Digital Economy, SPBU IDE 2021, held in St. Petersburg, Russia, in October 2021. The 23 papers presented were thoroughly reviewed and selected for publication from 153 submissions. The papers are organized according to the following topical sections: economic efficiency and social consequences of digital innovations implementation; regional innovation systems and clusters as drivers of the economic growth during the Fourth Industrial Revolution; industrial, service and agricultural digitalization; response of an educational system and labor market to the digital-driven changes in the economic system; digital transformation trends in the government and financial sector.

Software Project Management explains the latest management strategies and techniques in software developments. It covers such issues as keeping the team motivated, cost-justifying strategies, deadlines and budgets.

Master IBM's Breakthrough DAD Process Framework for Succeeding with Agile in Large, Complex, Mission-Critical IT Projects It is widely recognized that moving from traditional to agile approaches to build software solutions is a critical source of competitive advantage. Mainstream agile approaches that are indeed suitable for small projects require significant tailoring for larger, complex enterprise projects. In *Disciplined Agile Delivery*, Scott W. Ambler and Mark Lines introduce IBM's breakthrough *Disciplined Agile Delivery (DAD)* process framework, which describes how to do this tailoring. DAD applies a more disciplined approach to agile development by acknowledging and dealing with the realities and complexities of a portfolio of interdependent program initiatives. Ambler and Lines show how to extend Scrum with supplementary agile and lean strategies from Agile Modeling (AM), Extreme Programming (XP), Kanban, Unified Process (UP), and other proven methods to provide a hybrid approach that is adaptable to your organization's unique needs. They candidly describe what practices work best, why they work, what the trade-offs are, and when to consider alternatives, all within the context of your situation. *Disciplined Agile Delivery* addresses agile practices across the entire lifecycle, from requirements, architecture, and development to delivery and governance. The authors show how these best-practice techniques fit together in an end-to-end process for successfully delivering large, complex systems--from project initiation through delivery. Coverage includes Scaling agile for mission-critical enterprise endeavors Avoiding mistakes that drive poorly run agile projects to chaos Effectively initiating an agile project Transitioning as an individual to agile Incrementally building consumable solutions Deploying agile solutions into complex production environments Leveraging DevOps, architecture, and other enterprise disciplines Adapting your governance strategy for agile projects Based on facts, research, and extensive experience, this book will be an indispensable resource for every enterprise software leader and practitioner--whether they're seeking to optimize their existing agile/Scrum process or improve the agility of an iterative process.

An updated edition of the bestselling book on managing IT projects New topics introduced in this edition include Adaptive and eXtreme management methods, team selection and management, and risk analysis
Immerses readers in a simulated real-world situation where they must perform as seasoned project managers to move example projects through their lifecycles
Walks readers through a series of projects that they are most likely to encounter on the job
Authors adhere to the Project Management Institute's (PMI®) curriculum outline
The fully-interactive CD-ROM has been updated for MS Project 2002 (PMI, PMP, and Project Management Professional are registered marks of the Project Management Institute, Inc.)

A Practitioner's Guide to Agile Software Delivery in the Enterprise

Object-Oriented Project Management with UML

Object-Oriented and Classical Software Engineering

An Introduction

Sdlc 3.0: Beyond a Tacit Understanding of Agile: Towards the Next Generation of Software Engineering

Third International Scientific Conference, SPBPU IDE 2021, Saint Petersburg, Russia, October 14-15, 2021, Revised Selected Papers

Steering Toward Better Business Results

A Lifetime of Invaluable Management Insights from Legendary Software Quality Guru Watts S. Humphrey
In 1986, Watts S. Humphrey made an outrageous commitment: a promise to transform software development. As the pioneering innovator behind SEI's Capability Maturity Model (CMM), Personal Software Process (PSP), and Team Software Process (TSP), Humphrey has more than met that promise. But his contributions go beyond methodology: For decades, his deeply personal writings on project management have been admired by software engineers worldwide. Reflections on Management brings together Humphrey's best and most influential essays and articles--sharing insights that will be indispensable for anyone who must achieve superior results in software or any other endeavor. Collected here for the first time, these works offer compelling insights into everything from planning day-to-day work to improving quality, encouraging teamwork to becoming a truly great leader. All of these writings share a powerful vision, grounded by a life in software that has extended across nearly six decades. The vision is this: To succeed, professionals must effectively manage for more than plans, schedules, and code--they must manage teams, bosses, and above all, themselves.

Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

This Seventh Edition of Donald Reifer's popular, bestselling tutorial summarizes what software project managers need to know to be successful on the job. The text provides pointers and approaches to deal with the issues, challenges, and experiences that shape their thoughts and performance. To accomplish its goals, the volume explores recent advances in dissimilar fields such as management theory, acquisition management, globalization, knowledge management, licensing, motivation theory, process improvement, organization dynamics, subcontract management, and technology transfer. Software Management provides software managers at all levels of the organization with the information they need to know to develop their software engineering management strategies for now and the future. The book provides insight into management tools and techniques that work in practice. It also provides sufficient instructional materials to serve as a text for a course in software management. This new edition achieves a balance between theory and practical experience. Reifer systematically addresses the skills, knowledge, and abilities that software managers, at any level of experience, need to have to practice their profession effectively. This book contains original articles by leaders in the software management field written specifically for this tutorial, as well as a collection of applicable reprints. About forty percent of the material in this edition has been produced specifically for the tutorial. Contents:

- * Introduction
- * Life Cycle Models
- * Process Improvement
- * Project Management
- * Planning Fundamentals
- * Software Estimating
- * Organizing for Success
- * Staffing Essentials
- * Direction Advice
- * Visibility and Control
- * Software Risk Management
- * Metrics and Measurement
- * Acquisition Management
- * Emerging Management Topics

"The challenges faced by software project managers are the gap between what the customers can envision and the reality on the ground and how to deal with the risks associated with this gap in delivering a product that meets requirements on time and schedule at the target costs. This tutorial hits the mark by providing project managers, practitioners, and educators with source materials on how project managers can effectively deal with this risk." -Dr. Kenneth E. Nidiffer, Systems & Software Consortium, Inc. "The volume has evolved into a solid set of foundation works for anyone trying to practice software management in a world that is increasingly dependent on software release quality, timeliness, and productivity." -Walker Royce, Vice President, IBM Software Services-Rational

Pioneering software engineer Capers Jones has written the first and only definitive history of the entire software engineering industry. Drawing on his extraordinary vantage point as a leading practitioner for several decades, Jones reviews the entire history of IT and software engineering, assesses its impact on society, and previews its future. One decade at a time, Jones assesses emerging trends and companies, winners and losers, new technologies, methods, tools, languages, productivity/quality benchmarks, challenges, risks, professional societies, and more. He quantifies both beneficial and harmful software inventions; accurately estimates the size of both the US and global software industries; and takes on "unexplained mysteries" such as why and how programming languages gain and lose popularity.

A Unified Framework

A Strategic Managerial Approach

Virtual Project Management

Enterprise Modeling with UML

Designing Successful Software Through Business Analysis

A Guide for the Perplexed

Project Management

CD-ROM contains: Java and XML implementations of ideas and models described in the appendix.

"Per Kroll and Philippe Kruchten are especially well suited to explain the RUP...because they have been the central forces inside Rational Software behind the creation of the RUP and its delivery to projects around the world." --From the Foreword by Grady Booch
This book is a comprehensive guide to modern software

development practices, as embodied in the Rational Unified Process, or RUP. With the help of this book's practical advice and insight, software practitioners will learn how to tackle challenging development projects--small and large--using an iterative and risk-driven development approach with a proven track record.

The Rational Unified Process Made Easy will teach you the key points involved in planning and managing iterative projects, the fundamentals of component design and software architecture, and the proper employment of use cases. All team members--from project managers to analysts, from developers to testers--will learn how to immediately apply the RUP to their work. You will learn that the RUP is a flexible, versatile process framework that can be tailored to suit the needs of development projects of all types and sizes. Key topics covered include: How to use the RUP to develop iteratively, adopt an architecture-centric approach, mitigate risk, and verify software quality
Tasks associated with the four phases of the RUP: Inception, Elaboration, Construction, and Transition
Roles and responsibilities of project managers, architects, analysts, developers, testers, and process engineers in a RUP project
Incrementally adopting the RUP with minimal risk
Common patterns for failure with the RUP--and how to avoid them
Use this book to get quickly up to speed with the RUP, so you can easily employ the significant power of this process to increase the productivity of your team.

M-->CREATED

Software legend Capers Jones reveals the tight links between software quality, ROI, and TCO, and help you optimize all three

- Strong empirical evidence that high quality generates strongly positive ROI and reduced TCO.
- Practical ways to prevent defects, and remove them in pre-test, test, and postrelease.
- Easy

checklists for assessing and improving practice, plus insights into the costs/benefits of intervention. •By renowned software consultant Capers Jones. In this book, world-renowned software management expert Capers Jones and software quality guru Jitendra Subramanyam help development leaders and practitioners quantify and optimize the economic impact of quality throughout the software lifecycle - and then choose the highest value interventions to improve it. The authors introduce powerful empirical and field data on the ability of inspection, static analysis, and test methods to reduce up to 95% of defects, and discuss the business value of improvements of this magnitude. The Economics of Software Quality is based on proven best quality practices in IT departments and at world-leading integrators, embedded software companies, and systems software groups. Jones and Curtis bring together crucial new information on: • Identifying and fixing the root causes of short- and long-term software cost inefficiencies. •Predicting and measuring software defects and their quality impacts. •Assessing current practices and identifying the best interventions. •Calculating the ROI of quality during development and maintenance. •Comparing and choosing methods of defect prevention. •Selecting methods of defect removal, such as inspections and static analysis. •Understanding and evaluating more than 20 kinds of software testing. •Best practices for postrelease defect reporting and repair. •Recognizing 'hazardous' metrics and their problems

Developing Real-time Systems with UML, Objects, Frameworks, and Patterns

The Guru's Guide to Transact-SQL

Reducing Friction in Software Development

Managing Iterative Software Development Projects

"The Japanese samurai Musashi wrote: 'One can win with the long sword, and one can win with the short sword. Whatever the weapon, there is a time and situation in which it is appropriate.' "Similarly, we have the long RUP and the short RUP, and all sizes in between. RUP is not a rigid, static recipe, and it evolves with the field and the practitioners, as demonstrated in this new book full of wisdom to illustrate further the liveliness of a process adopted by so many organizations around the world. Bravo!" --Philippe Kruchten, Professor, University of British Columbia "The Unified Process and its practices have had, and continue to have, a great impact on the software industry. This book is a refreshing new look at some of the principles underlying the Unified Process. It is full of practical guidance for people who want to start, or increase, their adoption of proven practices. No matter where you are today in terms of software maturity, you can start improving tomorrow." --Ivar Jacobson, Ivar Jacobson Consulting "Kroll and MacIsaac have written a must-have book. It is well organized with new principles for software development. I encounter many books I consider valuable; I consider this one indispensable, especially as it includes over 20 concrete best practices. If you are interested in making your software development shop a better one, read this book!" --Ricardo R. Garcia, President, Global Rational User Group Council, www.rational-ug.org/index.php "Agile software development is real, it works, and it's here to stay. Now is the time to come up to speed on agile best practices for the Unified Process, and this book provides a great starting point." --Scott W. Ambler, practice leader, Agile Modeling "IBM and the global economy have become increasingly dependent on software over the last decade, and our industry has evolved some discriminating best practices. Per and Bruce have captured the principles and practices of success in this concise book: a must for executives, project managers, and practitioners. These ideas are progressive, but they strike the right balance between agility and governance and will form the foundation for successful systems and software developers for a long time." --Walker Royce, Vice President, IBM Software Services-Rational "Finally, the RUP is presented in digestible, byte-size pieces. Kroll and MacIsaac effectively describe a set of practices that can be adopted in a low-ceremony, ad hoc fashion, suited to the culture of the more agile project team, while allowing them to understand how to scale their process as needed." --Dean Leffingwell, author and software business advisor and executive "This text fills an important gap in the knowledge-base of our industry: providing agile practices in the proven, scalable framework of the Unified Process. With each practice able to be throttled to the unique context of a development organization, Kroll and MacIsaac provide software teams with the ability to balance agility and discipline as appropriate for their specific needs." --Brian G. Lyons, CTO, Number Six Software, Inc. In Agility and Discipline Made Easy , Rational Unified Process (RUP) and Open Unified Process (OpenUP) experts Per Kroll and Bruce MacIsaac share twenty well-defined best practices that you and your team can start adopting today to improve the agility, predictability, speed, and cost of software development. Kroll and MacIsaac outline proven principles for software development, and supply a number of supporting practices for each. You'll learn what problems each practice addresses and how you can best leverage RUP and OpenUP (an open-source version of the Unified Process) to make the practice work for you. You'll find proactive, prescriptive guidance on how to adopt the practices with minimal risk and implement as much or as little of RUP or OpenUP as you want. Learn how to apply sample practices from the Unified Process so you can Execute your project in iterations Embrace and manage change Test your own code Describe requirements from the user perspective Architect with components and services Model key perspectives Whether you are interested in agile or disciplined development using RUP, OpenUP, or other agile processes, this book will help you reduce the anxiety and cost associated with software improvement by providing an easy, non-intrusive path toward improved results--without overwhelming you and your team.