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## KEY=AND - BISHOP TRISTEN

## SOFTWARE ARCHITECTURE IN PRACTICE

Addison-Wesley Professional This is the eagerly-anticipated revision to one of the seminal books in the field of software architecture which clearly defines and explains the topic.

## BUSINESS PROCESS MATURITY

## A COMPARATIVE STUDY ON A SAMPLE OF BUSINESS PROCESS MATURITY MODELS

Springer Science & Business Media Organisations face many challenges, which induce them to perform better, and thus to establish mature (or excellent) business processes. As they now face globalisation, higher competitiveness, demanding customers, growing IT possibilities, compliancy rules etc., business process maturity models (BPMMs) have been introduced to help organisations gradually assess and improve their business processes (e.g. CMMI or OMG-BPMM). In fact, there are now so many BPMMs to choose from that organisations risk selecting one that does not fit their needs or one of substandard quality. This book presents a study that distinguishes process management from process orientation so as to arrive at a common understanding. It also includes a classification study to identify the capability areas and maturity types of 69 existing BPMMs, in order to strengthen the basis of available BPMMs. Lastly it presents a selection study to identify criteria for choosing one BPMM from the broad selection, which produced a free online selection tool, BPMM Smart-Selector.

## SECURE CODING IN C AND C++

Pearson Education "The security of information systems has not improved at a rate consistent with the growth and sophistication of the attacks being made against them. To address this problem, we must improve the underlying strategies and techniques used to create our systems. Specifically, we must build security in from the start, rather than append it as an afterthought. That's the point of Secure Coding in C and C++. In careful detail, this book shows software developers how to build high-quality systems that are less vulnerable to costly and even catastrophic attack. It's a book that every developer should read before the start of any serious project." --Frank Abagnale, author, lecturer, and leading consultant on fraud prevention and secure documents Learn the Root Causes of Software Vulnerabilities and How to Avoid Them Commonly exploited software vulnerabilities are usually caused by avoidable software defects. Having analyzed nearly 18,000 vulnerability reports over the past ten years, the CERT/Coordination Center (CERT/CC) has determined that a relatively small number of root causes account for most of them. This book identifies and explains these causes and shows the steps that can be taken to prevent exploitation. Moreover, this book encourages programmers to adopt security best practices and develop a security mindset that can help protect software from tomorrow's attacks, not just today's. Drawing on the CERT/CC's reports and conclusions, Robert Seacord systematically identifies the program errors most likely to lead to security breaches, shows how they can be exploited, reviews the potential consequences, and presents secure alternatives. Coverage includes technical detail on how to Improve the overall security of any C/C++ application Thwart buffer overflows and stack-smashing attacks that exploit insecure string manipulation logic Avoid vulnerabilities and security flaws resulting from the incorrect use of dynamic memory management functions Eliminate integer-related problems: integer overflows, sign errors, and truncation errors Correctly use formatted output functions without introducing format-string vulnerabilities Avoid I/O vulnerabilities, including race conditions Secure Coding in C and C++ presents hundreds of examples of secure code, insecure code, and exploits, implemented for Windows and Linux. If you're responsible for creating secure C or C++ software--or for keeping it safe--no other book offers you this much detailed, expert assistance.

## SOFTWARE QUALITY ASSURANCE

John Wiley & Sons The most comprehensive General, Organic, and Biochemistry book available, Introduction to General, Organic, and Biochemistry, 11th Edition continues its tradition of a solid development of problem-solving skills, numerous examples and practice problems, along with coverage of current applications. Written by an experienced author team, they skillfully anticipate areas of difficulty and pace the book accordingly. Readers will find the right mix of general chemistry compared to the discussions on organic and biochemistry. Introduction to General, Organic, and Biochemistry, 11th Edition has clear & logical explanations of chemical concepts and great depth of coverage as well as a clear, consistent writing style which provides great readability. An emphasis on Real-World aspects of chemistry makes the reader comfortable in seeing how the chemistry will apply to their career.

## TSP--LEADING A DEVELOPMENT TEAM

Pearson Education Watts Humphrey, inventor of CMM, PSP, and TSP provides team leaders with a whole new way of leading an effective development team.

## ENGINEERING SAFE AND SECURE SOFTWARE SYSTEMS

Artech House This first-of-its-kind resource offers a broad and detailed understanding of software systems engineering from both security and safety perspectives. Addressing the overarching issues related to safeguarding public data and intellectual property, the book defines such terms as systems engineering, software engineering, security, and safety as precisely as possible, making clear the many distinctions, commonalities, and interdependencies among various disciplines. You explore the various approaches to risk and the generation and analysis of appropriate metrics. This unique book explains how processes relevant to the creation and operation of software systems should be determined and improved, how projects should be managed, and how products can be assured. You learn the importance of integrating safety and security into the development life cycle. Additionally, this practical volume helps identify what motivators and deterrents can be put in place in order to implement the methods that have been recommended.

## SOFTWARE EXTENSION TO THE PMBOK® GUIDE FIFTH EDITION

Project Management Institute Designed to be used in tandem with the latest edition of the PMBOK® Guide, this comprehensive volume closely follows the PMBOK® Guide's approach to style, structure and naming, while providing readers a balanced view of methods, tools, and techniques for managing software projects across the life cycle continuum from highly predictive life cycles to highly adaptive life cycles. Software Extension To the PMBOK® Guide Fifth Edition provides readers with knowledge and practices that will not only improve their efficiency and effectiveness but that of their management teams and project members as well.

## REFLECTIONS ON MANAGEMENT

## HOW TO MANAGE YOUR SOFTWARE PROJECTS, YOUR TEAMS, YOUR BOSS, AND YOURSELF

Pearson Education 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.

## THE CERT C CODING STANDARD

## 98 RULES FOR DEVELOPING SAFE, RELIABLE, AND SECURE SYSTEMS

Pearson Education The CERT C Coding Standard, Second Edition enumerates the coding errors that are the root causes of current software vulnerabilities in C, prioritizing them by severity, likelihood of exploitation, and remediation costs. "Secure programming in C can be more difficult than even many experienced programmers realize," said Robert C. Seacord, technical manager of the CERT Secure Coding Initiative and author of the CERT C Coding Standard. "Software systems are becoming increasing complex as our dependency on these systems increases. In our new CERT standard, as with all of our standards, we identify insecure coding practices and present secure alternatives that software developers can implement to reduce or eliminate vulnerabilities before deployment."

## TRANSPORTATION SYSTEMS AND ENGINEERING: CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

## CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

IGI Global From driverless cars to vehicular networks, recent technological advances are being employed to increase road safety and improve driver satisfaction. As with any newly developed technology, researchers must take care to address all concerns, limitations, and dangers before widespread public adoption. Transportation Systems and Engineering: Concepts, Methodologies, Tools, and Applications addresses current trends in transportation technologies, such as smart cars, green technologies, and infrastructure development. This multivolume book is a critical reference source for engineers, computer scientists, transportation authorities, students, and practitioners in the field of transportation systems management.

## SOFTWARE PROCESS AND PRODUCT MEASUREMENT

## INTERNATIONAL CONFERENCES IWSM 2009 AND MENSURA 2009 AMSTERDAM, THE NETHERLANDS, NOVEMBER 4-6, 2009. PROCEEDINGS

Springer Science & Business Media improve modern software development approaches.

## ADVANCES IN COMPUTERS

Academic Press Advances in Computers, an ongoing series since 1960, presents detailed coverage of innovations in computer hardware, software, theory, design, and applications. It has also provided contributors with a medium in which they can explore their subjects in greater depth and breadth than journal articles usually allow. As a result, many articles have become standard references and continue to be of significant, lasting value in this rapidly expanding field. Presents detailed coverage of recent innovations in computer hardware, software, theory, design, and applications Includes in-depth surveys and tutorials on new computer technology that pertain to computing, with topics such as combinatorial testing, constraint-based testing, and black-box testing Written by well-known authors and researchers in the field Includes extensive bibliographies with most chapters Presents volumes devoted to single themes or subfields of computer science

## SOFTWARE PROJECT MANAGEMENT FOR DISTRIBUTED COMPUTING

## LIFE-CYCLE METHODS FOR DEVELOPING SCALABLE AND RELIABLE TOOLS

Springer This unique volume explores cutting-edge management approaches to developing complex software that is efficient, scalable, sustainable, and suitable for distributed environments. Practical insights are offered by an international selection of pre-eminent authorities, including case studies, best practices, and balanced corporate analyses. Emphasis is placed on the use of the latest software technologies and frameworks for life-cycle methods, including the design, implementation and testing stages of software development. Topics and features: · Reviews approaches for reusability, cost and time estimation, and for functional size measurement of distributed software applications · Discusses the core characteristics of a large-scale defense system, and the design of software project management (SPM) as a service · Introduces the 3PR framework, research on crowdsourcing software development, and an innovative approach to modeling large-scale multi-agent software systems · Examines a system architecture for ambient assisted living, and an approach to cloud migration and management assessment · Describes a software error proneness mechanism, a novel Scrum process for use in the defense domain, and an ontology annotation for SPM in distributed environments · Investigates the benefits of agile project management for higher education institutions, and SPM that combines software and data engineering This important text/reference is essential reading for project managers and software engineers involved in developing software for distributed computing environments. Students and researchers interested in SPM technologies and frameworks will also find the work to be an invaluable resource. Prof. Zaigham Mahmood is a Senior Technology Consultant at Debesis Education UK and an Associate Lecturer (Research) at the University of Derby, UK. He also holds positions as Foreign Professor at NUST and IIU in Islamabad, Pakistan, and Professor Extraordinaire at the North West University Potchefstroom, South Africa.

## ENCYCLOPEDIA OF SOFTWARE ENGINEERING THREE-VOLUME SET (PRINT)

CRC Press Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

## ENCYCLOPEDIA OF INFORMATION SCIENCE AND TECHNOLOGY

IGI Global Snippet "This set of books represents a detailed compendium of authoritative, research-based entries that define the contemporary state of knowledge on technology"--Provided by publisher.

## COMPUTING HANDBOOK, THIRD EDITION

## COMPUTER SCIENCE AND SOFTWARE ENGINEERING

CRC Press Computing Handbook, Third Edition: Computer Science and Software Engineering mirrors the modern taxonomy of computer science and software engineering as described by the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS). Written by established leading experts and influential young researchers, the first volume of this popular handbook examines the elements involved in designing and implementing software, new areas in which computers are being used, and ways to solve computing problems. The book also explores our current understanding of software engineering and its effect on the practice of software development and the education of software professionals. Like the second volume, this first volume describes what occurs in research laboratories, educational institutions, and public and private organizations to advance the effective development and use of computers and computing in today's world. Research-level survey articles provide deep insights into the computing discipline, enabling readers to understand the principles and practices that drive computing education, research, and development in the twenty-first century.

## SOFTWARE PROCESS IMPROVEMENT FOR SMALL AND MEDIUM ENTERPRISES: TECHNIQUES AND CASE STUDIES

## TECHNIQUES AND CASE STUDIES

IGI Global Software engineering is of major importance to all enterprises; however, the key areas of software quality and software process improvement standards and models are currently geared toward large organizations, where most software organizations are small and medium enterprises. Software Process Improvement for Small and Medium Enterprises: Techniques and Case Studies offers practical and useful guidelines, models, and techniques for improving software processes and products for small and medium enterprises, utilizing the authoritative, demonstrative tools of case studies and lessons learned to provide academics, scholars, and practitioners with an invaluable research source.

## CMMI FOR DEVELOPMENT

## GUIDELINES FOR PROCESS INTEGRATION AND PRODUCT IMPROVEMENT

Pearson Education CMMI® for Development (CMMI-DEV) describes best practices for the development and maintenance of products and services across their lifecycle. By integrating essential bodies of knowledge, CMMI-DEV provides a single, comprehensive framework for organizations to assess their development and maintenance processes and improve performance. Already widely adopted throughout the world for disciplined, high-quality engineering, CMMI-DEV Version 1.3 now accommodates other modern approaches as well, including the use of Agile methods, Lean Six Sigma, and architecture-centric development. CMMI® for Development, Third Edition, is the definitive reference for CMMI-DEV Version 1.3. The authors have revised their tips, hints, and cross-references, which appear in the margins of the book, to help you better understand, apply, and find information about the content of each process area. The book includes new and updated perspectives on CMMI-DEV in which people influential in the model's creation, development, and transition share brief but valuable insights. It also features four new case studies and five contributed essays with practical advice for adopting and using CMMI-DEV. This book is an essential resource–whether you are new to CMMI-DEV or are familiar with an earlier version–if you need to know about, evaluate, or put the latest version of the model into practice. The book is divided into three parts. Part One offers the broad view of CMMI-DEV, beginning with basic concepts of process improvement. It introduces the process areas, their components, and their relationships to each other. It describes effective paths to the adoption and use of CMMI-DEV for process improvement and benchmarking, all illuminated with fresh case studies and helpful essays. Part Two, the bulk of the book, details the generic goals and practices and the twenty-two process areas now comprising CMMI-DEV. The process areas are organized alphabetically by acronym for easy reference. Each process area includes goals, best practices, and examples. Part Three contains several useful resources, including CMMI-DEV-related references, acronym definitions, a glossary of terms, and an index.

## THE CERT GUIDE TO INSIDER THREATS

## HOW TO PREVENT, DETECT, AND RESPOND TO INFORMATION TECHNOLOGY CRIMES (THEFT, SABOTAGE, FRAUD)

Addison-Wesley Professional CERT's definitive, up-to-the-minute guide to insider threats: recognizing them, preventing them, detecting them, and mitigating them • •The only 'insider threat' guide from CERT, the world's leading information security experts: based on CERT's uniquely comprehensive collection of malicious insider incidents. •Presents practical strategies for assessing and managing insider risks associated with technology, organization, personnel, business, and process. •Exceptionally timely: indispensable for the 'Era of Wikileaks' Wikileaks recent data exposures demonstrate the danger now posed by insiders, who can often bypass physical and technical security measures designed to prevent unauthorized access. Insiders are already familiar with their organizations' policies, procedures, and technologies, and can often identify vulnerabilities more effectively than outside 'hackers.' Most IT security mechanisms are implemented primarily to defend against external threats, leaving potentially enormous vulnerabilities exposed. Now, the insider threat team at CERT, the world's leading information security experts, helps readers systematically identify, prevent, detect, and mitigate threats arising from inside the organization. Drawing on their advanced research with the US Secret Service and Department of Defense, as well as the world's largest database of insider attacks, the authors systematically address four key types of insider 'cybercrime': national security espionage, IT sabotage, theft of intellectual property, and fraud. For each, they present an up-to-date crime profile: who typically commits these crimes (and why); relevant organizational issues; methods of attack, impacts, and precursors that could have warned the organization in advance. In addition to describing patterns that readers can use in their own organizations, the authors offer today's most effective psychological, technical, organizational, cultural, and process-based countermeasures.

## SOFTWARE PROCESS IMPROVEMENT

## 14TH EUROPEAN CONFERENCE, EUROSPI 2007, POTSDAM, GERMANY, SEPTEMBER 26-28, 2007, PROCEEDINGS

Springer Science & Business Media This book constitutes the refereed proceeding of the 14th European Software Process Improvement Conference, EuroSPI 2007, held in Potsdam, Germany, in September 2007. The 18 revised full papers presented together with an introductory paper were carefully reviewed and selected from 60 submissions. The papers are organized in topical sections on enforcement, alignment, tailoring, focus on SME issues, improvement analysis and empirical studies, new avenues of SPI, SPI methodologies, as well as testing and reliability.

## PRACTICAL SUPPORT FOR LEAN SIX SIGMA SOFTWARE PROCESS DEFINITION

## USING IEEE SOFTWARE ENGINEERING STANDARDS

John Wiley & Sons Practical Support for Lean Six Sigma Software Process Definition: Using IEEE Software Engineering Standards addresses the task of meeting the specific documentation requirements in support of Lean Six Sigma. This book provides a set of templates supporting the documentation required for basic software project control and management and covers the integration of these templates for their entire product development life cycle. Find detailed documentation guidance in the form of organizational policy descriptions, integrated set of deployable document templates, artifacts required in support of assessment, organizational delineation of process documentation.

## PRINCIPLES OF INCIDENT RESPONSE AND DISASTER RECOVERY

Cengage Learning Learn how to identify vulnerabilities within computer networks and implement countermeasures that mitigate risks and damage with Whitman/Mattord's PRINCIPLES OF INCIDENT RESPONSE & DISASTER RECOVERY, 3rd Edition. This edition offers the

knowledge you need to help organizations prepare for and avert system interruptions and natural disasters. Comprehensive coverage addresses information security and IT in contingency planning today. Updated content focuses on incident response and disaster recovery. You examine the complexities of organizational readiness from an IT and business perspective with emphasis on management practices and policy requirements. You review industry's best practices for minimizing downtime in emergencies and curbing losses during and after system service interruptions. This edition includes the latest NIST knowledge, expanded coverage of security information and event management (SIEM) and unified threat management, and more explanation of cloud-based systems and Web-accessible tools to prepare you for success. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

## APPSENSOR GUIDE

Lulu.com

## THE METHOD FRAMEWORK FOR ENGINEERING SYSTEM ARCHITECTURES

CRC Press The architects of today's large and complex systems all too often struggle with the lack of a consistent set of principles and practices that adequately address the entire breadth of systems architecture. The Method Framework for Engineering System Architectures (MFESA) enables system architects and process engineers to create methods for effective

## ENTERPRISE RESOURCE PLANNING: CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

## CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

IGI Global The design, development, and use of suitable enterprise resource planning systems continue play a significant role in ever-evolving business needs and environments. Enterprise Resource Planning: Concepts, Methodologies, Tools, and Applications presents research on the progress of ERP systems and their impact on changing business needs and evolving technology. This collection of research highlights a simple framework for identifying the critical factors of ERP implementation and statistical analysis to adopt its various concepts. Useful for industry leaders, practitioners, and researchers in the field.

## ISSUES & TRENDS OF INFORMATION TECHNOLOGY MANAGEMENT IN CONTEMPORARY ORGANIZATIONS

IGI Global As the field of information technology continues to grow and expand, it impacts more and more organizations worldwide. The leaders within these organizations are challenged on a continuous basis to develop and implement programs that successfully apply information technology applications. This is a collection of unique perspectives on the issues surrounding IT in organizations and the ways in which these issues are addressed. This valuable book is a compilation of the latest research in the area of IT utilization and management.

## TRANSFORMING IT EDUCATION

## PROMOTING A CULTURE OF EXCELLENCE

Informing Science It is by now an obvious observation that much of the world depends on information technology. Our infrastructure relies on IT: our buildings, finance systems, roads, airplanes, cars, televisions, washing machines and bread makers; as does much of what we do: our banking, learning and communicating. Almost everyone today uses information technology, but few know how it works, and very few indeed understand the mysteries of how to build new systems. This imbalance between 'users' and 'knowers' grows worse every year. With the 'dot com collapse', the number of students studying computers, and information technology more generally, has been shrinking steadily. In the long run, this trend is not likely to be a good thing, either in Australia or elsewhere. What can we do about this? IT courses worldwide report falling enrolments and high attrition. The glamour of computing – seemingly effortless graphics and animations, and the management of massive computations and data sets – is at odds with the reality of how difficult it can be to coax computers into exhibiting these advanced capabilities; and many students find the transition from the dream to reality too difficult to master. One possibility is to reconceptualize both what and how we teach, making IT more attractive to students without sacrificing the rigour and depth needed to produce graduates capable of life-long learning against the backdrop of rapidly evolving technologies. The Faculty of Information Technology at QUT has long sought to develop curricula and pedagogies that make this possible. The results of this search show in innovative curricula, real-world engagement, and a dominant position in our local market for IT education. QUT's strategic plan, the 'QUT Blueprint'*, exhorts the University to be bold, experiment, and engage with the real world in order to ensure we remain relevant and attuned to the needs of both our graduates and the industries that will employ them. The contents of this book report on a significant part of our response to this challenge. I'm honoured to be able to write this preface only a year after I joined QUT; the work herein is a credit to my two predecessors as Deans of the Faculty, Professors Dennis Longley and John Gough, and to all the staff of the Faculty, both academic and professional, and current and past. Hopefully it will also help to inspire a new generation of staff and students. To you, the reader, this book is best thought of as a snapshot of a long quest to discover the secrets of how best to approach the moving feast that is IT education. It will be of interest to those looking to develop new curricula of their own, or benchmark their own journeys of discovery. We should never imagine that we have all the answers; indeed, it's our hope that readers will learn from, and improve on, what we have achieved, and share their insights with us in return, so that the co-evolution of ICT teaching around the world can be facilitated.

## SOFTWARE QUALITY. INCREASING VALUE IN SOFTWARE AND SYSTEMS DEVELOPMENT

## 5TH INTERNATIONAL CONFERENCE, SWQD 2013, VIENNA, AUSTRIA, JANUARY 15-17, 2013, PROCEEDINGS

Springer This book constitutes the refereed proceedings of the 5th Software Quality Days Conference (SWQD) held in Vienna, Austria, in January 2013. This professional symposium and conference offers a range of comprehensive and valuable opportunities for advanced professional training, new ideas, and networking with a series of keynote speeches, professional lectures, exhibits, and tutorials. The seven scientific full papers accepted for SWQD were each peer-reviewed by three or more reviewers and selected out of 18 high-quality submissions. Further, two keynotes and six short papers on promising research directions were also presented and included in order to spark discussions between researchers and practitioners. The papers are organized into topical sections on risk management; software and systems testing; test processes; model-based development; and process improvement and measurement.

## PROCESS BASED UNIFICATION FOR MULTI-MODEL SOFTWARE PROCESS IMPROVEMENT

Zádor Dániel Kelemen Many different quality approaches are available in the software industry. Some of the ap-proaches, such as ISO 9001 are not software specific, i.e. they define general requirements for an organization and they can be used at any company. Others, such as Automotive SPICE have been derived from a software specific approach, and can be used for improving specific (in this case automotive) processes. Some are created to improve development processes (e.g. CMMI for Development), others focus on services (e.g. CMMI for Services), and again others are related to particular processes such as software testing (e.g. TMMi) or resource manage-ment (e.g. People CMM). A number of differences among quality approaches exist and there can be various situations in which the usage of multiple approaches is required, e.g. to strengthen a particular process with multiple quality approaches or to reach certification of the compliance to a number of stand-ards. First of all it has to be decided which approaches have potential for the organization. In many cases one approach does not contain enough information for process implementation. Consequently, the organization may need to use several approaches and the decision has to be made how the chosen approaches can be used simultaneously. This area is called Multi-model Software Process Improvement (MSPI). The simultaneous usage of multiple quality ap-proaches is called the multi-model problem. In this dissertation we propose a solution for the multi-model problem which we call the Pro-cess Based Unification (PBU) framework. The PBU framework consists of the PBU concept, a PBU process and the PBU result. We call PBU concept the mapping of quality approaches to a unified process. The PBU concept is operationalized by a PBU process. The PBU result includes the resulting unified process and the mapping of quality approaches to the unified process. Accordingly, we addressed the following research question: Does the PBU framework provide a soluti

## ENCYCLOPEDIA OF INFORMATION SCIENCE AND TECHNOLOGY, FOURTH EDITION

IGI Global In recent years, our world has experienced a profound shift and progression in available computing and knowledge sharing innovations. These emerging advancements have developed at a rapid pace, disseminating into and affecting numerous aspects of contemporary society. This has created a pivotal need for an innovative compendium encompassing the latest trends, concepts, and issues surrounding this relevant discipline area. During the past 15 years, the Encyclopedia of Information Science and Technology has become recognized as one of the landmark sources of the latest knowledge and discoveries in this discipline. The Encyclopedia of Information Science and Technology, Fourth Edition is a 10-volume set which includes 705 original and previously unpublished research articles covering a full range of perspectives, applications, and techniques contributed by thousands of experts and researchers from around the globe. This authoritative encyclopedia is an all-encompassing, well-established reference source that is ideally designed to disseminate the most forward-thinking and diverse research findings. With critical perspectives on the impact of information science management and new technologies in modern settings, including but not limited to computer science, education, healthcare, government, engineering, business, and natural and physical sciences, it is a pivotal and relevant source of knowledge that will benefit every professional within the field of information science and technology and is an invaluable addition to every academic and corporate library.

## DESIGNING SOFTWARE ARCHITECTURES

## A PRACTICAL APPROACH

Addison-Wesley Professional Designing Software Architectures will teach you how to design any software architecture in a systematic, predictable, repeatable, and cost-effective way. This book introduces a practical methodology for architecture design that any professional software engineer can use, provides structured methods supported by reusable chunks of design knowledge, and includes rich case studies that demonstrate how to use the methods. Using realistic examples, you'll master the powerful new version of the proven Attribute-Driven Design (ADD) 3.0 method and will learn how to use it to address key drivers, including quality attributes, such as modifiability, usability, and availability, along with functional requirements and architectural concerns. Drawing on their extensive experience, Humberto Cervantes and Rick Kazman guide you through crafting practical designs that support the full software life cycle, from requirements to maintenance and evolution. You'll learn how to successfully integrate design in your organizational context, and how to design systems that will be built with agile methods. Comprehensive coverage includes Understanding what architecture design involves, and where it fits in the full software development life cycle Mastering core design concepts, principles, and processes Understanding how to perform the steps of the ADD method Scaling design and analysis up or down, including design for pre-sale processes or lightweight architecture reviews Recognizing and optimizing critical relationships between analysis and design Utilizing proven, reusable design primitives and adapting them to specific problems and contexts Solving design problems in new domains, such as cloud, mobile, or big data

## BEST PRACTICES FOR CORPORATE LIBRARIES

ABC-CLIO In this book, experts in the field describe best practices based on their experiences in corporate libraries worldwide. * 44 graphs and figures demonstrating concepts and providing data * Six photographs of library events and services * A glossary of business and library terms * A bibliography for each chapter in the book

## SOFTWARE QUALITY ASSURANCE

## IN LARGE SCALE AND COMPLEX SOFTWARE-INTENSIVE SYSTEMS

Morgan Kaufmann Software Quality Assurance in Large Scale and Complex Software-intensive Systems presents novel and high-quality research related approaches that relate the quality of software architecture to system requirements, system architecture and enterprise-architecture, or software testing. Modern software has become complex and adaptable due to the emergence of globalization and new software technologies, devices and networks. These changes challenge both traditional software quality assurance techniques and software engineers to ensure software quality when building today (and tomorrow's) adaptive, context-sensitive, and highly diverse applications. This edited volume presents state of the art techniques, methodologies, tools, best practices and guidelines for software quality assurance and offers guidance for future software engineering research and practice. Each contributed chapter considers the practical application of the topic through case studies, experiments, empirical validation, or systematic comparisons with other approaches already in practice. Topics of interest include, but are not limited, to: quality attributes of system/software architectures; aligning enterprise, system, and software architecture from the point of view of total quality; design decisions and their influence on the quality of system/software architecture; methods and processes for evaluating architecture quality; quality assessment of legacy systems and third party applications; lessons learned and empirical validation of theories and frameworks on architectural quality; empirical validation and testing for assessing architecture quality. Focused on quality assurance at all levels of software design and development Covers domain-specific software quality assurance issues e.g. for cloud, mobile, security, context-sensitive, mash-up and autonomic systems Explains likely trade-offs from design decisions in the context of complex software system engineering and quality assurance Includes practical case studies of software quality assurance for complex, adaptive and context-critical systems

## SOFTWARE PROCESS IMPROVEMENT AND MANAGEMENT: APPROACHES AND TOOLS FOR PRACTICAL DEVELOPMENT

## APPROACHES AND TOOLS FOR PRACTICAL DEVELOPMENT

IGI Global Over the past decade, there has been an increase in attention and focus on the discipline of software engineering. Software engineering tools and techniques have been developed to gain more predictable quality improvement results. Process standards such as Capability Maturity Model Integration (CMMI), ISO 9000, Software Process Improvement and Capability dEtermination (SPICE), Agile Methodologies, and others have been proposed to assist organizations to achieve more predictable results by incorporating these proven standards and procedures into their software process. Software Process Improvement and Management: Approaches and Tools for Practical Development offers the latest research and case studies on software engineering and development. The production of new process standards assist organizations and software engineers in adding a measure of predictability to the software process. Companies can gain a decisive competitive advantage by applying these new and theoretical methodologies in real-world scenarios. Researchers, scholars, practitioners, students, and anyone interested in the field of software development and design should access this book as a major compendium of the latest research in the field.

## WHY QUALITY IS IMPORTANT AND HOW IT APPLIES IN DIVERSE BUSINESS AND SOCIAL ENVIRONMENTS, VOLUME I

Business Expert Press These two volumes are about understanding—why—and application—how—with the aim of providing guidance and introduction to both. Quality is the consistent achievement of the user's expectations of a product or service. The achievement needs to be "The right thing, right first time, every time, in time." Beginning with manufacturing and services, it also includes professional, personal, and spiritual dimensions. Variation does not sit happily with consistency and skill in handling risk and opportunity requires competence in the use of statistics, probability, and uncertainty; and needs to complement the critically essential soft dimensions of quality and the overarching and underpinning primacy of personal relationships. There are no clear boundaries to the applicability of quality and the related processes and procedures expressed in management systems, and this is why it matters so much to show "how it applies in diverse business and social environments." Increasingly, the acceptability of boundaries that are drawn depends on their effect on the user and the achievement of quality, and the latest standards on quality management are explicit on this key point. Quality is everyone's business, and there is no single professional discipline that can properly express this. Insights, knowledge, experience, best practice, tools, and techniques need to be shared across all kinds of organizational and professional boundaries, and there is no departmental boundary that can stand apart from the organization-wide commitment to quality achievement.

## PRODUCT FOCUSED SOFTWARE PROCESS IMPROVEMENT

## 6TH INTERNATIONAL CONFERENCE, PROFES 2005, OULU, FINLAND, JUNE 13-18, 2005, PROCEEDINGS

Springer On behalf of the PROFES Organizing Committee we are proud to present to you the proceedings of the 6th International Conference on Product Focused Software Process Improvement (PROFES 2005), held in Oulu, Finland. Since 1999, PROFES has established itself as one of the recognized inter- tional software process improvement conferences. Thepurposeoftheconferenceistobringtolightthemostrecent?ndingsand results in the area and to stimulate discussion between researchers, experienced professionals,andtechnologyproviders.Thelargenumberofparticipantscoming from industry con?rms that the conference provides a variety of up-to-date t- ics and tackles industry problems. The main theme of PROFES is professional software process improvement (SPI) motivated by product and service quality needs. SPI is facilitated by software process assessment, software measurement, process modeling, and technology transfer. It has become a practical tool for quality software engineering and management. The conference addresses both the solutions found in practice and the relevant research results from academia. This is re?ected in the 42 full papers, which are – as in the years before – a well-balanced mix of academic papers as well as industrial experience reports. The business of developing new applications like mobile and Internet services orenhancingthefunctionalityofavarietyofproductsusingembeddedsoftwareis rapidlygrowing,maturingandmeetingtheharshbusinessrealities.Theaccepted papers focusing on wireless and the Internet are grouped into a special "mobile and wireless" session. WewishtothankVTTElectronics,theUniversityofOuluincludingInfotech, and Fraunhofer IESE for supporting the conference. We are also grateful to the authors for high-quality papers, the Program Committee for their hard work in reviewing the papers, the Organizing Committee for making the event possible, and all the numerous supporters who helped in organizing this conference.

## MODERNIZING LEGACY SYSTEMS

## SOFTWARE TECHNOLOGIES, ENGINEERING PROCESSES, AND BUSINESS PRACTICES

Addison-Wesley Professional Most organizations rely on complex enterprise information systems (EISs) to codify their business practices and collect, process, and analyze business data. These EISs are large, heterogeneous, distributed, constantly evolving, dynamic, long-lived, and mission critical. In other words, they are a complicated system of systems. As features are added to an EIS, new technologies and components are selected and integrated. In many ways, these information systems are to an enterprise what a brain is to the higher species--a complex, poorly understood mass upon which the organism relies for its very existence. To optimize business value, these large, complex systems must be modernized--but where does one begin? This book uses an extensive real-world case study (based on the modernization of a thirty year old retail system) to show how modernizing legacy systems can deliver significant business value to any organization.

## MEASURING INFORMATION SYSTEMS DELIVERY QUALITY

IGI Global "The book provides analyses and explains some of the contradictions and apparent paradoxes of many information systems quality perspectives"--Provided by publisher.

## ISO 9001

## 2000 FOR SOFTWARE AND SYSTEMS PROVIDERS: AN ENGINEERING APPROACH

CRC Press Executives, engineering managers, project managers, engineers, and process improvement experts within engineering organizations need a resource that systematically translates the requirements of ISO 9001:2000 into a usable specification for engineers. Understanding ISO 9001:2000 from an engineer's perspective ensures that software, hardware, and sy

## CORPORATE DEFENSE AND THE VALUE PRESERVATION IMPERATIVE

## BULLETPROOF YOUR CORPORATE DEFENSE PROGRAM

CRC Press This is the first book to finally address the umbrella term corporate defense, and to explain how an integrated corporate defense program can help an organization address both value creation and preservation. The book explores the value preservation imperative, which represents an organization's obligation to implement a comprehensive corporate defense program in order to deliver long-term sustainable value to its stakeholders. For the first time the reader is provided with a complete picture of how corporate defense operates all the way from the boardroom to the front-lines, and vice versa. It provides comprehensive guidance on how to implement a robust corporate defense program by addressing this challenge from strategic, tactical, and operational perspectives. This arrangement provides readers with a holistic view of corporate defense and incorporates the management of the eight critical corporate defense components. It includes how an organization needs to integrate its governance, risk, compliance, intelligence, security, resilience, controls and assurance activities within its corporate defense program. The book addresses the corporate defense requirement from various perspectives and helps readers to understand the critical interconnections and inter-dependencies which exist at strategic, tactical, and operational levels. It facilitates the reader in comprehending the importance of appropriately prioritizing corporate defense at a strategic level, while also educating the reader in the importance of managing corporate defense at a tactical level, and executing corporate defense activities at an operational level. Finally the book looks at the business case for implementing a robust corporate defense program and the value proposition of introducing a truly world class approach to addressing the value preservation imperative. Cut and paste this link (https://m.youtube.com/watch?v=u5R_eOPNHbI) to learn more about a corporate defense program and how the book will help you implement one in your organization.