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845 - ALESSANDRA ELLISON

There's more to IT than technology! Yes, IT involves computers, software, and services, but good IT synthesizes these elements with a concentration on how your organization can best meet its goals. Increasingly, the IT department is the hub of any company-and companies expect IT managers to accomplish a variety of tasks with limited resources. Thus, CIOs must hone their organizational and managerial skills to run the most effective program possible. Join author

Jan De Sutter as he details the range of methodologies necessary for effective IT management, from how to align your IT department with the mission of your organization to how to measure and present the results of your work. The Power of IT is a must-have for CIOs, IT managers, IT professionals, and MBA students everywhere, and is sure to become a much-utilized resource in company libraries, business management courses, and the personal collections of those who not only want to get IT done, but who also

want to do IT right.

Software is an essential enabler for science and the new economy, but software often falls short of our expectations, remaining expensive and not yet sufficiently reliable for a constantly changing and evolving market. This publication, which forms part of the SoMeT series, consists of 41 papers, carefully reviewed and revised on the basis of technical soundness, relevance, originality, significance, and clarity. These explore new trends and theories which illuminate the direction of

developments which may lead to a transformation of the role of software in tomorrow's global information society. The book offers an opportunity for the software science community to think about where they are today and where they are going. The emphasis has been placed on human-centric software methodologies, end-user development techniques, and emotional reasoning, for an optimally harmonised performance between the design tool and the user. The handling of cognitive issues in software development and the tools and techniques related to this form part of the contribution to this book. Other comparable theories and practices in software science, including emerging technologies essential for a comprehensive overview of information systems and research projects, are also addressed. This work represents another milestone in mastering the new challenges of software and its promising technology, and provides the reader with new insights, inspiration and concrete material to further the study of this new technology. Software engineering has advanced rapidly in recent years in parallel with the complexity and scale

of software systems. New requirements in software systems yield innovative approaches that are developed either through introducing new paradigms or extending the capabilities of well-established approaches. Modern Software Engineering Concepts and Practices: Advanced Approaches provides emerging theoretical approaches and their practices. This book includes case studies and real-world practices and presents a range of advanced approaches to reflect various perspectives in the discipline.

Drawing on best practices identified at the Software Quality Institute and embodied in bodies of knowledge from the Project Management Institute, the American Society of Quality, IEEE, and the Software Engineering Institute, Quality Software Project Management teaches 34 critical skills that allow any manager to minimize costs, risks, and time-to-market. Written by leading practitioners Robert T. Futrell, Donald F. Shafer, and Linda I. Shafer, it addresses the entire project lifecycle, covering process, project, and people. It contains extensive practical resources-including downloadable checklists, templates, and forms.

Designed to conform to the ISO/IEC standard 14143, the Common Software Measurement International Consortium (COSMIC) Function Point method has become the major estimation technique based on international standards for building software-intensive systems. COSMIC Function Points: Theory and Advanced Practices supplies a cutting-edge look at current a

Software effort estimation is one of the oldest and most important problems in software project management, and thus today there are a large number of models, each with its own unique strengths and weaknesses in general, and even more importantly, in relation to the environment and context in which it is to be applied. Trendowicz and Jeffery present a comprehensive look at the principles of software effort estimation and support software practitioners in systematically selecting and applying the most suitable effort estimation approach. Their book not only presents what approach to take and how to apply and improve it, but also explains why certain approaches should be used in specific project situations. Moreover, it explains popular

estimation methods, summarizes estimation best-practices, and provides guidelines for continuously improving estimation capability. Additionally, the book offers invaluable insights into project management in general, discussing issues including project trade-offs, risk assessment, and organizational learning. Overall, the authors deliver an essential reference work for software practitioners responsible for software effort estimation and planning in their daily work and who want to improve their estimation skills. At the same time, for lecturers and students the book can serve as the basis of a course in software processes, software estimation, or project management.

This book constitutes the thoroughly refereed post-proceedings of the International Workshop on Software Measurement, IWSM-Mensura 2007, held in Palma de Mallorca, Spain, in November 2007. The 16 revised full papers presented were carefully reviewed and selected for inclusion in the book. The papers deal with aspects of software measurement like function-points measurement, effort and cost estimates, prediction, industrial experiences in software measurement,

planning and implementing measurement, measurement-based software process improvement, best practices in software measurement, usability and user interaction measurement, measurement of open source projects, teaching and learning software measurement as well as new trends and ontologies for software measurement.

The Certified Function Point Specialist Examination Guide provides a complete and authoritative review of the rules and guidelines prescribed in the release of version 4.3 of the Function Point Counting Practices Manual (CPM). Providing a fundamental understanding of the IFPUG Functional Size Measurement method, this is the ideal study guide for the CFPS examination. The text: Includes time-tested tips on how to best prepare for the exam Provides a series of questions and answers at the end of each chapter with specific references to the latest version of the CPM Contains two CFPS practice exams to measure understanding and identify areas where more study is needed Active members of the Counting Practices Committee and a past president of the IFPUG supply time-tested insight

on how to use the CPM manual effectively and efficiently during the exam. The two sample exams and detailed examples throughout the text help to ensure readers develop the comprehension required to attain certification the first time around. Following certification, this book is a valuable reference for applying the IFPUG method for sizing proficient software design, development, and deployment. Praise for the book: While there are a number of solid books on counting function points, this new book fills a gap in the function point literature by providing useful information on the specifics of becoming a certified function point counter. The authors are all qualified for the work at hand, and indeed have contributed to the function point counting methodology. —Capers Jones, President, Capers Jones & Associates LLC

This present volume describes some of the latest advances in the computer science field today. This current volume emphasizes information processing with chapters on artificial intelligence, data bases and software engineering. In particular it looks at the interfaces between AI and software develop-

ment with chapters on how AI affects the development of correct programs, and conversely, how software engineering can affect the development of correct AI programs. Key Features: * In-depth surveys and tutorials on new computer technology. * Well-known authors and researchers in the field. * Extensive bibliographies with most chapters. * Impact of AI on software development and impact of software development on correct AI programs. * What is the educational role of mathematics in the development of the next generation of computer professional? * In-depth surveys and tutorials on new computer technology. * Well-known authors and researchers in the field. * Extensive bibliographies with most chapters. * Impact of AI on software development and impact of software development on correct AI programs. * What is the educational role of mathematics in the development of the next generation of computer professional?

"Mastering the Requirements Process: Getting Requirements Right" sets out an industry-proven process for gathering and verifying requirements, regardless of whether you work in a traditional or ag-

ile development environment. In this sweeping update of the bestselling guide, the authors show how to discover precisely what the customer wants and needs, in the most efficient manner possible. Poor quality continues to bedevil large-scale development projects, but few software leaders and practitioners know how to measure quality, select quality best practices, or cost-justify their usage. In *The Economics of Software Quality*, leading software quality experts Capers Jones and Jitendra Subramanyam show how to systematically measure the economic impact of quality and how to use this information to deliver far more business value. Using empirical data from hundreds of software organizations, Jones and Subramanyam show how integrated inspection, static analysis, and testing can achieve defect removal rates exceeding 95 percent. They offer innovative guidance for predicting and measuring defects and quality; choosing defect prevention, pre-test defect removal, and testing methods; and optimizing post-release defect reporting and repair. This book will help you Prove that improved software quality translates in-

to strongly positive ROI and greatly reduced TCO Drive better results from current investments in debugging and prevention Use quality techniques to stay on schedule and on budget Avoid "hazardous" metrics that lead to poor decisions Important note: The audio and video content included with this enhanced eBook can be viewed only using iBooks on an iPad, iPhone, or iPod touch.

The volume includes a set of selected papers extended and revised from the 12009 Pacific-Asia Conference on Knowledge Engineering and Software Engineering (KESE 2009) was held on December 19~20, 2009, Shenzhen, China. Volume 1 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Computer and Software Engineering to disseminate their latest research results and exchange views on the future research directions of these fields. 140 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Yanwen Wu. On behalf of this volume, we would like to express our

sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Computer and Software Engineering.

This volume constitutes the refereed proceedings of the Third International Conference on Contemporary Computing, IC3 2010, held in Noida, India, in August 2010.

Communication research is evolving and changing in a world of online journals, open-access, and new ways of obtaining data and conducting experiments via the Internet. Although there are generic encyclopedias describing basic social science research methodologies in general, until now there has been no comprehensive A-to-Z reference work exploring methods specific to communication and media studies. Our entries, authored by key figures in the field, focus on special considerations when applied specifically to communication research, accompanied by engaging examples from the literature of communication, journalism, and media studies. Entries cover every step of the research process, from the

creative development of research topics and questions to literature reviews, selection of best methods (whether quantitative, qualitative, or mixed) for analyzing research results and publishing research findings, whether in traditional media or via new media outlets. In addition to expected entries covering the basics of theories and methods traditionally used in communication research, other entries discuss important trends influencing the future of that research, including contemporary practical issues students will face in communication professions, the influences of globalization on research, use of new recording technologies in fieldwork, and the challenges and opportunities related to studying online multi-media environments. Email, texting, cellphone video, and blogging are shown not only as topics of research but also as means of collecting and analyzing data. Still other entries delve into considerations of accountability, copyright, confidentiality, data ownership and security, privacy, and other aspects of conducting an ethical research program. Features: 652 signed entries are contained in an authoritative work spanning four

volumes available in choice of electronic or print formats. Although organized A-to-Z, front matter includes a Reader's Guide grouping entries thematically to help students interested in a specific aspect of communication research to more easily locate directly related entries. Back matter includes a Chronology of the development of the field of communication research; a Resource Guide to classic books, journals, and associations; a Glossary introducing the terminology of the field; and a detailed Index. Entries conclude with References/Further Readings and Cross-References to related entries to guide students further in their research journeys. The Index, Reader's Guide themes, and Cross-References combine to provide robust search-and-browse in the e-version.

Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirements analyst needs to know about establishing customer requirements, this first-of-its-kind book is the perfect desk guide for systems or software development work.

Going where no book on software measurement and metrics has previously gone, this critique thoroughly examines a number of bad measurement practices, hazardous metrics, and huge gaps and omissions in the software literature that neglect important topics in measurement. The book covers the major gaps and omissions that need to be filled if data about software development is to be useful for comparisons or estimating future projects. Among the more serious gaps are leaks in reporting about software development efforts that, if not corrected, can distort data and make benchmarks almost useless and possibly even harmful. One of the most common leaks is that of unpaid overtime. Software is a very labor-intensive occupation, and many practitioners work very long hours. However, few companies actually record unpaid overtime. This means that software effort is underreported by around 15%, which is too large a value to ignore. Other sources of leaks include the work of part-time specialists who come and go as needed. There are dozens of these specialists, and their combined effort can top 45% of total

software effort on large projects. The book helps software project managers and developers uncover errors in measurements so they can develop meaningful benchmarks to estimate software development efforts. It examines variations in a number of areas that include: Programming languages Development methodology Software reuse Functional and non-functional requirements Industry type Team size and experience Filled with tables and charts, this book is a starting point for making measurements that reflect current software development practices and realities to arrive at meaningful benchmarks to guide successful software projects.

Provides everything needed to implement Mk II FPA, which was previously available only under license. Mk II FPA represents a new generation of Function Point Analysis. It provides a set of software measurement techniques suitable for sizing and estimating business applications software. This is a fully integrated and calibratable method for estimating effort, time and manpower required for software development projects, taking into account

the concepts of risk analysis. Written by the originator of the method, provides the complete definition, case studies and practical tips on implementation.

"A clearly written book that is a useful primer for a very complicated set of topics." --Capers Jones, Chief Scientist Emeritus, Software Productivity Research LLC Practical Software Estimation brings together today's most valuable tips, techniques, and best practices for accurately estimating software project efforts, costs, and schedules. Written by a leading expert in the field, it addresses the full spectrum of real-world challenges faced by those who must develop reliable estimates. M. A. Parthasarathy draws on the immense experience of Infosys, one of the world's largest and most respected providers of IT-enabled business solutions, to bring you the only book with detailed guidance on estimating insourced and outsourced software projects, as well as projects that blend both approaches. He demonstrates how to successfully utilize Function Point (FP) methods, the industry's leading estimation model. Then, using real case studies, he system-

atically identifies pitfalls that can lead to inaccurate estimates--and offers proven solutions. Coverage includes How to estimate all types of software projects, including "fresh" development, reengineering, and maintenance How to incorporate the impact of core project elements on estimates: scope, environment, experience, and tools FP analysis from start to finish: data and transaction functions, general system characteristics, and more FP methods for any platform or business function Innovative re-estimation methods to track progress How to quote RFPs and prepare contracts: fixed price, time/material, and project execution lifecycle models Alternatives to FP: Delphi, COCOMO II, and COSMIC-FFP How to choose the right estimation tools Practical Software Estimation is the definitive reference for anyone who must estimate software projects accurately: project and IT managers, individual developers, system designers, architects, executives, consultants, and outsourcers alike. List of Figures List of Tables Foreword Preface Acknowledgments Chapter 1: Introduction Chapter 2: Role of Estimation in Software Pro-

jects Chapter 3: A Study of Function Point Analysis Chapter 4: Data Functions Chapter 5: Transactional Functions Chapter 6: General System Characteristics Chapter 7: Size, Effort, and Scheduling of Projects Chapter 8: Estimation Flavors Chapter 9: A Sense of Where You Are Chapter 10: Tips, Tricks, and Traps Chapter 11: Insourcing versus Outsourcing Chapter 12: Key Factors in Software Contracts Chapter 13: Project Estimation and Costing Chapter 14: Other Estimation Methods Chapter 15: Estimation Tools Chapter 16: Estimation Case Study Appendix A: Reference Tables: Transaction Function Counts Appendix B: Reference Tables: Data Function Points Bibliography Index

The idea of Business Rules has been around for a while. Simply put, a Business Rule is a statement that defines or constrains some aspect of the business. In practice they are meant to reduce or eliminate the delays, waste, and frustration associated with the IT department having to be involved with almost every action affecting an organization's information systems. The advent of Web services has created renewed interest in them. There are now

several well established rules-based products that have demonstrated the effectiveness of their use. But until now there has not been a definitive guide to Business Rules. Ron Ross, considered to be the father of Business Rules, will help organizations apply this powerful solution to their own computer system problems. This book is intended to be the first book that anyone from an IT manager to a business manager will read to understand what Business Rules are, and what how they can be applied to their own situation.

With Contributions by Capers Jones, Howard Rubin, David Garmus, Lawrence Putnam, and Elizabeth Clark The accurate, quantitative measurement of software quality and process performance is rapidly becoming an essential part of competition in the ever-tightening software marketplace. Software metrics provide insights into productivity and quality gains from improvements in skill, technology, and development methodology. An effective metrics program helps practitioners assemble the best team, select the optimal development methodology, and enhance the quality of a software product.

In short, metrics enable software developers to pursue proven, successful strategies, and to change course when metrics point to less-than-optimum quality or productivity. Written by the world's leading authorities in the field, *IT Measurement* showcases state-of-the-art in software metrics and provides the practical knowledge that practitioners need in order to take full advantage of software metrics technology. The book's collected articles offer important perspectives on the role of metrics in the development process, and show how metrics directly enhance software quality and output efficiency. The book explores several vital areas, including Function Point Analysis, project estimation and management, outsourcing, statistical process control, and more. These articles range from basic theory to the sophisticated application of metrics. Specific topics covered include: The expanding role of function point metrics Work output measurement for IT work units The use of metrics for tracking Enhanced estimation with metrics Metrics in outsourcing Standardization of SLOC The application of SPC to performance management Functional met-

rics in B2B e-commerce project success Enlightening and pragmatic, *IT Measurement* will help you gain a deeper understanding of software metrics and the ability to apply concrete measures in order to objectively evaluate and more finely shape your software development program. 020174158XB02212002

An effective, quantitative approach for estimating and managing software projects How many people do I need? When will the quality be good enough for commercial sale? Can this really be done in two weeks? Rather than relying on instinct, the authors of *Software Measurement and Estimation* offer a new, tested approach that includes the quantitative tools, data, and knowledge needed to make sound estimations. The text begins with the foundations of measurement, identifies the appropriate metrics, and then focuses on techniques and tools for estimating the effort needed to reach a given level of quality and performance for a software project. All the factors that impact estimations are thoroughly examined, giving you the tools needed to regularly adjust and improve your estimations to

complete a project on time, within budget, and at an expected level of quality. This text includes several features that have proven to be successful in making the material accessible and easy to master: * Simple, straightforward style and logical presentation and organization enables you to build a solid foundation of theory and techniques to tackle complex estimations * Examples, provided throughout the text, illustrate how to use theory to solve real-world problems * Projects, included in each chapter, enable you to apply your newfound knowledge and skills * Techniques for effective communication of quantitative data help you convey your findings and recommendations to peers and management *Software Measurement and Estimation: A Practical Approach* allows practicing software engineers and managers to better estimate, manage, and effectively communicate the plans and progress of their software projects. With its classroom-tested features, this is an excellent textbook for advanced undergraduate-level and graduate students in computer science and software engineering. An Instructor Support FTP site is available from the

Wiley editorial department.

The two volumes of this book collect high-quality peer-reviewed research papers presented in the International Conference on ICT for Sustainable Development (ICT4SD 2015) held at Ahmedabad, India during 3 - 4 July 2015. The book discusses all areas of Information and Communication Technologies and its applications in field for engineering and management. The main focus of the volumes are on applications of ICT for Infrastructure, e-Governance, and contemporary technologies advancements on Data Mining, Security, Computer Graphics, etc. The objective of this International Conference is to provide an opportunity for the researchers, academicians, industry persons and students to interact and exchange ideas, experience and expertise in the current trend and strategies for Information and Communication Technologies.

CRM is an integrated information system that is used to plan, schedule and control the pre-sales and post-sales activities in an organization. This text is a manager's guide to making the most of CRM techniques for enhancing customer service, sales

force effectiveness and marketing strategy.

First came Melissa. Then the I Love You virus. Then Code Red and Nimda. The cumulative effects of these orchestrated attacks are devastating from a financial standpoint. This book is precisely the guide that managers need. Enterprise Security allows the manager to analyze their infrastructure, spot potential weaknesses, and build a formidable defense.

This is the revised edition of the first text book in English specially developed for training for IPMA-D and IPMA-C exams, now based on Version 4 of the ICB. In this 4th edition, the text has been restructured to align with the structure of the competence elements in the ICB version 4, divided into Practice competences, People competences and Perspective competences. Therefore, this book will be essential guidance and study book for everyone studying for the IPMA-D, IPMA-C and IPMA-B exams. Besides that, it is an extremely rich source book for those project managers that have committed themselves to a lifelong professional development. In addition, the book had to be applicable to groups of

project managers originating from diverse cultures. For this reason, this is not a book that tells how a Westerner must behave in an Arab or an Asian country, but one that looks at the different subjects covered in the ICB, as seen from diverse cultural standpoints. Each chapter is based on the same structure: Key concepts, Introduction, Actions that lead to competence development, Self-assessment, Special topics, Assignments. Text boxes, additional to the main text, give additional explanation to the main text. An elaborate Index of terms allows that this book can be used as a highly up-to-date information source to all aspects of project management. Next to that all, a web-site is available with videos, discussion fora on specific topics, and the opportunity to discuss with the author.

This book constitutes the refereed proceedings of the 16th International Conference on Product-Focused Software Process Improvement, PROFES 2015, held in Bolzano, Italy, in December 2015. The 18 revised full papers presented together with 10 short papers and 18 workshop papers were carefully reviewed and selected from 50 submissions. The

papers are organized in topical sections on lessons learned from industry-research collaborations; instruments to improve the software development process; requirements, features, and release management; practices of modern development processes; human factors in modern software development; effort and size estimation validated by professionals; empirical generalization; software reliability and testing in industry; workshop on processes, methods and tools for engineering embedded systems; workshop on human factors in software development processes; and workshop on software startups: state of the art and state of the practice.

This book constitutes the refereed proceedings of the 20th International Conference on Product-Focused Software Process Improvement, PROFES 2019, held in Barcelona, Spain, in November 2019. The 24 revised full papers, 4 industry papers, and 11 short papers presented were carefully reviewed and selected from 104 submissions. The papers cover a broad range of topics related to professional software development and process improvement driven by product and ser-

vice quality needs. They are organized in topical sections on testing, software development, technical debt, estimations, continuous delivery, agile, project management, microservices, and continuous experimentation. This book also includes papers from the co-located events: 10 project papers, 8 workshop papers, and 4 tutorial summaries.

The widespread deployment of millions of current and emerging software applications has placed software economic studies among the most critical of any form of business analysis. Unfortunately, a lack of an integrated suite of metrics makes software economic analysis extremely difficult. The International Function Point Users Group (IFPUG), a nonpro

Function Point Analysis: Measurement Practices for Successful Software Projects is a comprehensive presentation of the principles of function point analysis (FPA) and a guide to its effective use in managing the development and deployment of software. Written for both information technology (IT) practitioners and managers, it describes how to use this proven-but-underutilized software-sizing

metric to achieve successful software projects. Completely up-to-date, the book introduces the latest rules and guidelines released in the International Function Point Users Group (IFPUG) Counting Practices Manual 4.1. Function Point Analysis presents fundamental counting techniques for basic-to-advanced technologies. It explains the calculations for determining function point size, an indication of a software application's overall functionality and complexity. Moving beyond mechanics, the book features the most common uses of FPA and reveals experience-based techniques for applying the methodology with success. The book covers such important topics as: An overview of FPA for the IT executive A description of software measurement, relating size to other software metrics Sizing data and transactional functions The application of general system characteristics Counting object-oriented, Web-based, client-server, and GUI applications Becoming a Certified Function Point Specialist (CFPS), using a practice exam The use of FPA for accurate project estimating, development and maintenance outsourcing, and performance produc-

tivity baselining FPA automation tools, including function point repository tools and function point-based project estimation tools. The role of FPA in standardizing industry benchmarking data. Numerous detailed examples and case studies demonstrate the FPA methodology in action. As a reference, tutorial, and practical guide, *Function Point Analysis: Measurement Practices for Successful Software Projects* raises the level of awareness and understanding of FPA and its role in bringing proven quality standards to the software development industry.

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This book includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Computer Science, Computer Engineering and Information Sciences. The book presents selected papers from the conference proceedings of the International Conference on Systems, Computing Sciences and Software Engineering (SCSS 2006). All aspects of the conference were managed on-line.

Function point counting is one of the fastest growing software management techniques used in the

software industry today. This book shows how to successfully execute the function point counting methodology, based on the current rules and guidelines set forth by the International Function Point Users Group (IFPUG). Covers software measurement and the application of the function point methodology, the specific rules and guidelines of the function point methodology, and function point uses and benefits. For programmers and software development managers.

This book constitutes the refereed proceedings of two joint events - the International Workshop on Software Measurement, IWSM 2009 and the International Conference on Software Process and Product Measurement, Mensura 2009, held in Amsterdam, The Netherlands, in November 2009. The 24 revised full papers presented were carefully reviewed and selected from numerous submissions for inclusion in the book. This book considers issues such as the applicability of measures and metrics to software, the efficiency of measurement programs in industry and the theoretical foundations of software engineering.

/ MetriKon / Mensura Steering Committee is proud to have once more obtained the approval of Springer to publish the second edition of the joint conference proceedings in the prestigious Lecture Notes in Computer Science (LNCS) series. We hope to maintain this collaboration for the future editions of these joint events.

The Certified Function Point Specialist Examination Guide provides a complete and authoritative review of the rules and guidelines prescribed in the release of version 4.3 of the Function Point Counting Practices Manual (CPM). Providing a fundamental understanding of the IFPUG Functional Size Measurement method, this is the ideal study guide for th

On behalf of the PROFES Organizing Committee, we are proud to present to you the proceedings of the 9th International Conference on Product-Focused Software Process Improvement (PROFES 2008) held in Frascati - Monteporzio Catone, Rome, Italy. Since 1999, PROFES has established itself as one of the recognized international process improvement conferences. The main theme of PROFES is professional so-

ware process improvement (SPI) motivated by product and service quality needs. Focussing on a product to be developed, PROFES 2008 addressed both quality engineering and management topics including processes, methods, techniques, tools, organizations, and enabling SPI. Both solutions found in practice and the relevant research results from academia were presented. Domains such as the automotive and mobile applications industry are growing rapidly, resulting in a strong need for professional development and improvement. Nowadays, the majority of embedded software is developed in collaboration, and distribution of embedded software development continues to increase. Thus, PROFES 2008 addressed different development modes, roles in the value chain, stakeholders' viewpoints, collaborative development, as well as economic and quality aspects. Mobile development was included again as one of the themes. Since the beginning of the series of PROFES conferences, the purpose has been to bring to light the most recent findings and novel results in the area of process improvement, and to stimulate discussion among re-

searchers, experienced professionals, and technology providers from around the world.

Function point analysis is established internationally as a method for determining the scope and functional size of software from an assessment of the user requirements. The IFPUG "Function Point Counting Practices Manual" and the Nesma FPA counting practices manual "Definitions and Counting Guidelines for the Application of Function Point Analysis" both follow the "Albrecht" method and describe how to apply the method to implemented systems, software development and software enhancement. Application of the method to software enhancement is not well developed; other priorities have prevented a more considered treatment of this aspect of its application in the past. Function point analysis has been applied extensively to the development of new software. Its use in this respect is well established and is supported by a wealth of research and practical experience. It is now appropriate to explore in greater depth the application of FPA to software enhancement and maintenance. Users of software metrics need to know whether FPA can be

successfully applied to software enhancement and, if so, in what way and within what constraints. Consideration of these issues led NESMA to form the working group on "FPA for Enhancement and Maintenance". These guidelines apply FPA for enhancement projects, adjusting the regular weight of a function impacted by the enhancement project by an impact factor. The impact factor depends on the degree in which the function is enhanced by the project. The guidelines are universally applicable, so also using the IFPUG CPM 4.3 FPA guidelines as your basic FPA measure. Objectives The Guide is intended for anyone with an interest in the management of enhancements to an information system. The Guide describes an objective and replicable method for assessing the scope and size of an enhancement project. The method is objective in that the results obtained are independent of the person applying the method; the result obtained is bona fide in that two different people using the same guidelines obtain the same result. The method is replicable in that a particular outcome can be determined a priori, and the same out-

come can be produced on the second and subsequent applications of the method. Intended Audience The Guide is intended for anyone who performs function point analysis and wants to measure the size of enhancement projects more precisely. It is assumed that the reader is familiar with the standard FPA method. Scope of the Research NESMA considered the application of FPA to software enhancement from the perspective of the standard function point analysis method. The result of this work, embodied in these guidelines, is a method applicable to software enhancement and testing that is strongly related to the standard FPA method. The term Enhancement Function Point Analysis (EFPA) is used to differentiate the method from the standard function point analysis method. Disclaimer The method has been tried in practice. However, NESMA does not claim that the method in its current form has been validated scientifically. Additional research and practical use is necessary to demonstrate the validity of the method. By offering this guide to the international functional software measurement community, NESMA wants to advance

the application of function point analysis to enhancement projects and to broaden the understanding of measurement applied to software enhancement. NESMA is not responsible for any use of this method or for the results obtained from its application. Comments and suggestions for further improvement of this method may be sent to office@nesma.org.

Software development has been a troubling since it first started. There are seven chronic problems that have plagued it from the beginning: Incomplete and ambiguous user requirements that grow by >2% per month. Major cost and schedule overruns for large applications > 35% higher than planned. Low defect removal efficiency (DRE) Cancelled projects that are not completed: > 30% above 10,000 function points. Poor quality and low reliability after the software is delivered: > 5 bugs per FP. Breach of contract litigation against software outsource vendors. Expensive maintenance and enhancement costs after delivery. These are endemic problems for software executives, software engineers and software customers but they are not insurmountable. In

Software Development Patterns and Antipatterns, software engineering and metrics pioneer Capers Jones presents technical solutions for all seven. The solutions involve moving from harmful patterns of software development to effective patterns of software development. The first section of the book examines common software development problems that have been observed in many companies and government agencies. The data on the problems comes from consulting studies, breach of contract lawsuits, and the literature on major software failures. This section considers the factors involved with cost overruns, schedule delays, canceled projects, poor quality, and expensive maintenance after deployment. The second section shows patterns that lead to software success. The data comes from actual companies. The section's first chapter on Corporate Software Risk Reduction in a Fortune 500 company was based on a major telecom company whose CEO was troubled by repeated software failures. The other chapters in this section deal with methods of achieving excellence, as well as measures that can prove excellence to C-level

el executives, and with continuing excellence through the maintenance cycle as well as for software development.

This volume contains 85 papers presented at CSI 2013: 48th Annual Convention of Computer Society of India with the theme "ICT and Critical Infrastruc-

ture". The convention was held during 13th -15th December 2013 at Hotel Novotel Varun Beach, Visakhapatnam and hosted by Computer Society of India, Vishakhapatnam Chapter in association with Vishakhapatnam Steel Plant, the flagship company of RINL, India.

This volume contains papers mainly focused on Data Mining, Data Engineering and Image Processing, Software Engineering and Bio-Informatics, Network Security, Digital Forensics and Cyber Crime, Internet and Multimedia Applications and E-Governance Applications.