MASTERING SOFTWARE PROJECT MANAGEMENT

Best Practices, Tools and Techniques

SKN008759

MURALI CHEMUTURI
THOMAS M. CAGLEY, JR.

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FOREWORD

When a software project fails, the impact to an organization can be significant. The losses the organization experiences may be financial, the project's failure may negatively impact the organization's credibility with customers, or the organization may lose market position and competitive advantage. As of this writing, the latest statistics from the 2009 Standish Group CHAOS report state that "44% were challenged which are late, over budget, and/or with less than the required features and functions." This is an alarming number. It represents a dismal trend and is in fact an increase in the number of failures, representing the highest failure rate in over a decade.

Although the reasons for these failures vary, there is every reason to believe that some of these failures are directly attributable to ineffective software project management. Furthermore, it is safe to assume that in nearly all of these failures, project management played at least a minor role. Show me a failed project and I will show you a failed project manager or process.

Does the blame for a failed project always rest on the project manager's shoulders? Can organizational behaviors be blamed for some of these failures? Can a customer or client cause a project to fail? If we concede that, from time to time, there are some extraordinary causes of failure that are outside the boundary of a project manager's control, plenty of fingers are still left pointing at ineffective project management skills, practices, techniques, and technologies.

So, what is at the heart of these project failures? Is it the skill level of the individual project manager? Is it the result of unavailable or inaccurate project data? Is it a lack of training or a lack of a proper project management practices?

To state the obvious, it is essential that software development organizations focus their attention on improving the state of their project management practices. More to the point, there is enough collective experience and understanding that we can now acknowledge and identify software project management best practices.

This is in fact what Murali Chemuturi and Tom Cagley have accomplished in *Mastering Software Project Management: Best Practices, Tools and Techniques.* They have compiled their collective experience and wisdom and have presented it in a practical, clear, and concise format that is of value to a new project manager as well as more experienced project managers. The authors present the process and the philosophy behind the methodologies and techniques of software project management.

The introduction to the book quickly puts context around the authors' working definition of a software development project and the classification of a software project, which includes the software development life cycle, approach-driven software, software maintenance, agile software development, and Web-application development. The authors are clear — this book addresses software project management utilizing a process-driven approach.

Their project management framework comprises four core elements: acquisition, initiation, execution, and closure. In the four chapters that discuss these core elements, we learn about various workflows and best practice activities and are given helpful tools and techniques. The book is formatted in such a way as to be useful as an educational text as well as a practical reference guide for the practitioner.

Mastering software project management is about gaining control through the use of reliable and meaningful information. The authors have addressed the importance of control with insightful chapters on planning, scheduling, and change management. Once again, they present process flows, useful templates, and guidance on how to execute the best practices they have outlined.

Software project management best practices would not be complete without a chapter on agile development. The authors drive home the point that for an organization to achieve success, the organization must first embrace the agile philosophy. Here, too, the authors discuss how to plan and control the workflow in an agile environment.

Chapter 12 discusses pitfalls and best practices and begins with an important observation regarding how best practices may be viewed in an organization. The authors point out that management is unique to an organization based on that organization's culture. And while producing positive results is an important aspect of management, of greater importance is that the results are achieved with optimal costs, productivity, quality, and morale. In their words, "... it is necessary for organizations to adopt best practices and avoid the pitfalls to grow and prosper."

And perhaps, quite possibly, the authors have saved the best for last. There are ten appendixes that focus on project management intangibles, such as Appendix C, dealing with the art and science of managing people, in which the authors discuss such topics as delegating and managing your superiors. Appendix

B addresses the practice of making decisions. Appendix E centers on issue resolution. The list goes on to include other relevant topics such as productivity, measures and metrics, and customer satisfaction. Yes, all of these topics should be considered to be part of a comprehensive discussion on mastering software project management.

This book should be required reading for all software project managers and for those organizations that struggle with late and costly project implementation. The advice and processes so rigorously detailed in this book should become the de facto standard for improving an organization's development practices.

— **David Herron**
Vice President of Knowledge Solution Services
David Consulting Group, USA

PREFACE

Before we talk about software project management, we need to understand the terms *project* and *management*. Once we understand these two terms and how they relate to each other, we can apply them to the field of software development. In the subsequent chapters and appendices, we strive to define and explain and then to show just what software project management is.

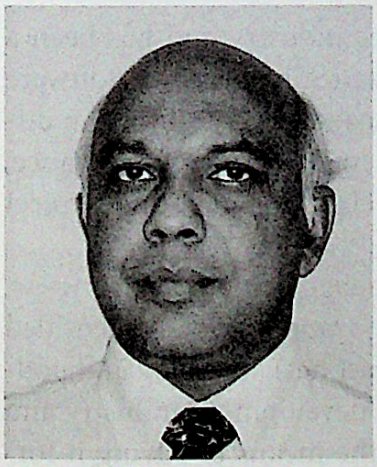
Software projects are initiated, planned, and executed at two places. The first is within the same organization that is going to use the end product; the second is in an organization specialized in developing software that will be used by other organizations. In this book, we are not considering hobby projects although they can use the techniques in the book also. Projects can also be called internal projects and external projects. Internal projects are those with an end product that is used within the same organization; external projects are those with an end product that is used by another organization. We will expand on these terms in subsequent chapters.

Our focus in this book is on the management of software projects that are tightly planned, monitored, controlled, and executed. These projects could be internal or external projects.

This book is not geared to help you pass exams of any kind or to receive certification. Rather it helps you pass the examination conducted by life and to achieve success in software project management. This book is based on our experiences: experiences gained through academic efforts, reading books and literature, and managing and observing real-life projects. What we have learned has been plowed back in to fine tune our theories. This book is a result of that fine tuning and is something akin to the expression "What they don't teach you at Harvard."

We will be glad to receive your feedback and promise to usually respond in one business day. We can be reached at murali@chemuturi.com and t.cagley@davidconsultinggroup.com.

ABOUT THE AUTHORS

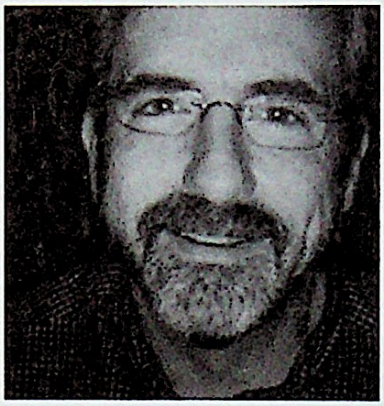


Murali Chemuturi is an information technology and software development subject matter expert, hands-on programmer, author, consultant, and trainer. In 2001, he formed Chemuturi Consultants, his own IT consulting and software development firm. Chemuturi Consultants help software development organizations to achieve their quality and value objectives. The firm provides training in several software engineering and project management topics, such as software estimation, test effort estimation, function point analysis, and software project management, to name a few. Chemuturi Consultants also offers a number of products to aid project managers and software development professionals, such as PMPal, a software project management tool, and EstimatorPal, FPAPal, and UCPPal, a set of software estimation tools.

Prior to starting Chemuturi Consultants, Murali gained over 15 years of industrial experience in various engineering and manufacturing management positions. He then gained over 24 years of information technology and software development experience. His most recent position prior to forming Chemuturi Consultants was vice president of Software Development at Vistaar e-Business Pvt., Ltd.

His undergraduate degrees and diplomas are in electrical and industrial engineering. He holds a MBA and a postgraduate diploma in computer methods and programming. Murali also has several years of academic experience, teaching a variety of computer and IT courses, such as COBOL, Fortran, BASIC, computer architecture, and database management systems.

He is a member of IEEE, a senior member of the Computer Society of India, and a Fellow of the Indian Institute of Industrial Engineering as well as a well-published author in professional journals.



Thomas M. Cagley, Jr. is vice president of consulting for the David Consulting Group. He is an authority in guiding organizations through the process of integrating software measurement with model-based assessments to yield effective and efficient process improvement programs. He is a recognized industry expert in the measurement and estimation of software projects. His areas of expertise encompass management experience in project management, development methods and metrics, quality integration, quality assurance, and the application of the Software Engineering Institute's Capability Maturity Model Integration® to achieve process improvements.

Tom has over 20 years experience in the software industry and has been a consultant since 1997. He was previously metrics practice manager at Software Productivity Research. Earlier, he held technical and managerial positions in different industries as a leader in software methods and metrics, quality assurance, and systems analysis. He is a frequent speaker at metrics, quality, and project management conferences.

Tom blogs about software development and management topics at www.tcagley.wordpress.com and edits a podcasts of essays and interviews entitled Software Process and Measurement Cast (www.spamcast.net). The blog and podcast serve as a platform to share information with the development industry and to foster a continuing dialog. Sharing and dialog are the means of paying it forward.

He is a member of the International Function Point Users Group and is a Certified Function Point Specialist. He is currently the immediate past president of IFPUG and previously served as the chair of the IFPUG Conference Committee and director of Conferences and Education.

Tom has a B.S. from Louisiana State University and has done extensive postgraduate work at Cleveland State University, Case Western Reserve University, and Kent State University.

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Downloads available for *Mastering Software Project Management: Best Practices, Tools and Techniques* consist of free software project planning templates; a demo version of an integrated and collaborative software project managment tool called PMPal, which is valid for 180 days; TestPal, a free, fully functional tool useful for test effort estimations and test case design; and PET, a free personal effectiveness tool.

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"**Mastering S[illegible] Project Management** is a masterpiece of clarity, organization and [illegible] practical knowledge. Read it thoughtfully and with care as it is a rich [illegible] trove of experience and insight. Remember the old saying 'don't w[illegible] work smart'—this book will give you the knowledge and tools to d[illegible] that."

—**Robert C. Anderson**, Director, Process Development and Quality Assurance, Computer Aid, Inc.

"This book provides you with tools, techniques, and practices that you can use immediately on your own projects. It supplies the information you need to diagnose your team's situation and presents practical advice to help you build better software—a must read!"

—**John Zielinski**, Project Manager, IBM Global Services

Written from the standpoint of a project manager working in a software development organization, this unique guide explains software project management in its entirety, including project acquisition and execution with backward linkages to concepts that play a facilitation role in successful project management. It provides all the guidance, best practices, tools and techniques needed to master software project management and achieve superior results.

KEY FEATURES

- Presents best practices and pitfalls to avoid for nearly every topic discussed
- Details management of work, configuration, quality management, productivity, team morale and expectations management of the project team, functional management, senior leadership and customers
- Covers all facets of planning—project management, induction training, and deployment—and every aspect of project control
- Explains decision-making concepts from the perspective of software project managers and includes all the tools and techniques needed for making quantitative decisions
- WAV offers downloadable software project planning templates, a demo version of a collaborative software project management tool (PMPal), a tool useful for test effort estimations and test case design (TestPal); and a personal effectiveness tool (PET)—**available from the Web Added Value™ Download Resource Center at www.jrosspub.com**

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