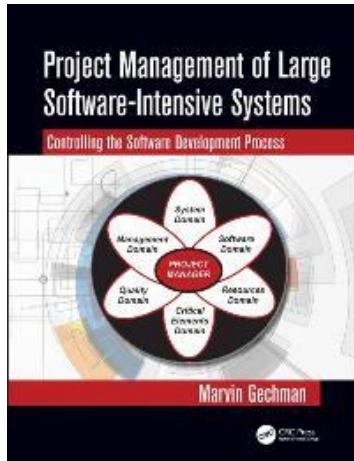# PM WORLD BOOK REVIEW

Book Title: ***Project Management of Large Software-Intensive Systems: Controlling the Software Development Process***

Author: **Marvin Gechman**

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List Price: $79.95   Format: Large, soft cover, 366 pages

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Reviewer: **Oluwasegun Odetola, PMP**

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Introduction

Project management of large software-intensive systems is a detailed compendium of managing large and highly complex software implementation projects and how the project manager can deliver such projects with control of the software development process from start to finish. It is broken down into five sections with a total of sixteen chapters that deliver all there is to know about managing the software development process.

Overview of Book's Structure

Section 1 – Software Project Management Fundamentals

1) **Software Project Management Introduction**: The first chapter introduces the reader to the book, taking the reader through business operations and the basics of software project management, the need to have a one-page flowchart picture of software that is to be built, defining what the software system is, software project planning, the software team, software classes and categories and software development standards.

2) **Software Project Management Activities**: The second chapter takes the reader through the overview of the software project management domain, the importance of the requirements traceability matrix, software project management objectives, software project management control areas, software process improvement, system sustainment and possible pitfalls that may occur.

3) **System and Software Life Cycle Processes**: The third chapter discusses the software project management processes, lifecycle process, system definition, system development lifecycle process, implementation process, integration, testing, verification, system sustainment, testing processes and the fact that not having processes is very costly.

4) **Software Development Methodologies:** Chapter four discusses the software development process models including evolutionary software acquisitions strategy, incremental model, the iterative model, prototyping, the spiral model, the unified process model, linear sequential model as well as software analysis and design models, managing agile software development projects, schedules and activity networks and software standards. In this chapter, it is stated that having a methodology to follow is critical in a mid-sized or large-scale software development program.

Section 2 – Software Management and Quality Domains

5) **Software Management Domain:** Chapter five focuses on software project planning and oversight, software risk management and mitigation, technical and management reviews, critical requirements assurance and software subcontract management. The need to define done and the importance of planning is discussed here.

6) **Software Quality Domain:** The sixth chapter discusses software process improvement, software quality assurance, software configuration management and control, software peer review objectives and the integrated capability maturity model and the need for continuous process improvement.

Section 3 – Software Resources Domain

7) **Managing the Software Project Team:** In this chapter, staffing the software team is discussed, as well as the importance of properly loading staff according to their skill levels, the impact of social media and generational differences, motivating and demotivating factors, communications, managing programmers, creating an environment of excellence, software training plans and the truth that people are the most important resource of any successful program.

8) **Managing Software Costs and Schedules:** The program master plan and schedule, work breakdown structure, managing software budgets, managing software schedules, managing software cost and schedule with earned value as well as integrated process and product development are discussed in this chapter. Here, the author writes that managing software costs and schedule is one of the most important functions of the project manager.

9) **Managing Software Facilities, Reuse and Tools:** In this chapter, the software development environment, the software integration and test environment, software development libraries, software development files, software data management, software development physical working environments and managing reusable software products are discussed. Infrastructure is critical to any software development program.

Section 4 – Systems and Software Engineering Domains

10) **Systems Engineering Domain:** Chapter ten discusses the system concept and requirements development, system and subsystem design, software and hardware items integration and testing and system qualification testing.

11) **Software Engineering Domain:** Chapter eleven discusses software requirements analysis, software item design, software item architectural design, software item detailed design, coding and unit testing, software unit integration and testing, software item qualification testing, subsystem integration and testing, software transition to operations and transition to sustainment.

12) **Collaboration of Software and Systems Engineering:** Chapter twelve discusses system and software development and verification process, system lifecycle phases and reviews, software development documentation and collaboration between software and systems engineering during different phases of the program.

Section 5 – Critical Software Elements Domain

13) **Software Documentation and Work Products:** The purpose and value of software documentation, software documentation production, core software and system documentation, software management and quality control plans, software work instructions and procedures and non-document software work products are discussed in this chapter. The importance of proper documentation cannot be over-emphasized and the criticality of this is detailed here.

14) **Software Estimating Methods:** Chapter fourteen discusses software estimating fundamentals, software size estimation methods, software code growth and the tools used for estimation. The importance of estimating accuracy is also discussed.

15) **Managing Software Performance with Measurements:** As it has oft been said, if you cannot measure it, you cannot manage it**,** this chapter states that the knowledge of software projects is directly proportional to the knowledge of the project manager. It therefore discusses the importance of performance measurements, principal objectives of software

measurement, continuous feedback control systems, approach to software management measurements, types of software measurements, software measurement categories and indicators, software measurement set, measurement data collection time frame, software measurement information specification, analysis and reporting of software management indicators and software indicator thresholds and red flags.

16) **Managing Software System Sustainment:** The final chapter of the book discusses software sustainment objectives, planning for software sustainment, the software sustainment plan, software sustainment organization, key software sustainment issues, contract closure and closing the project smoothly.

Highlights

Project management of large software-intensive systems guides the reader through the detailed processes of managing not only large software projects but can also be used as a guide to delivering small software projects as well with any form of complexity.

Highlights: What I liked!

'I really liked that the book is written in easy-to-understand language and is detailed in such a way that anyone in the software industry can use it as a guide in delivering a software project successfully. You don't have to be an expert to understand the book.

Who might benefit from the Book?

This book benefits every person involved in the software integration process such as business analysts, developers, system administrators, quality analysts and especially project, product and program managers and whoever is interested in learning about managing software implementation projects.

Conclusion

This book is well-written and detailed and is a must-read for all involved in software-intensive systems and is evidence of the author's hands-on experience in managing large software-intensive systems.

For more about this book, go to: https://www.crcpress.com/Project-Management-of-Large-Software-Intensive-Systems/Gechman/p/book/9780367136710

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Oluwasegun Odetola is a project management professional with experience managing projects to achieve higher than expected goals. He holds a bachelor's degree in Mechanical Engineering, a master's degree in Project Management, a master's degree in Information Technology and Management and became a certified Project Management Professional in 2012. He has over 17 years of experience in roles in Project Management, Information Technology, Engineering and Manufacturing. Oluwasegun is a member of the Project Management Institute, Dallas chapter.

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