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Book Review

TSP^{SM}Coaching Development Teams (SEI Series in Software Engineering), by Watts S. Humphrey, Addison-Wesley Professional; 1st edition, April 2006. ISBN: 0201731134

TSP^{SM}Coaching Development Teams is an excellent reference/handbook to add to any software engineer's library. A TSP coach, TSP team leader or anyone interested in improving coaching skills will benefit from reading this handbook. It focuses on *coaching* software development teams to execute high-quality work and deliver a high-quality product within the project's agreed upon constraints. This book utilizes the Team Software Process (TSP) to apply key principles necessary to recognize quality work, work that does not measure up, and how to motivate the developers to consistently improve.

The title of the book is misleading because it leads one to believe that it solely focuses on TSP coaching. Not true! The principles taught in this book can be used by any development team. This book is not only intended for TSP coaches, but should be used by managers and team leaders. The book provides the missing link that glues the process, the people and the product by following proven coaching principles and insights from "*the father of software quality.*" The book echoes Watts Humphrey's words, insights and philosophies as though he were personally coaching the reader.

The book has 416 pages and includes a Preface, an Index and five Parts divided into 28 Chapters. The Parts introduce Team Formation, Launching a TSP Team, Coaching a TSP Project, TSP Extensions and Maintaining a TSP Team. It reads very easily, all chapters have clear objectives, plenty of examples, profound insights and great executive summaries. The preface defines who should use the book, the learning goals, prerequisites and the organization of the five key sections of the book. In this section, Watts Humphrey could have not said it any better, "Development work is a team activity, and the effectiveness of this teamwork largely determines the quality of the team's work. The quality of the team's work, in turn, determines the success of the entire project." This statement sets the tone for the entire book. By utilizing the Team Software Process, supportive management, committed leadership and insightful coaching. This leads to a high performance team developing high quality products.

The four chapters in Part I focus on background material related to team development, team behavior, coaching principles and methods and team building. The three essential key points about being a coach are described. The first key point is defining the six basic coaching principles: build talent, set high standards, focus on success, focus on improvement, improve in steps, and celebrate every step. Watts goes into detail about each principle.

Watts explains why sometimes team building activities do not yield the desired results. This is the second key point. Watts states "when the teambuilding is disconnected from the work environment, it will be an exciting memory with no connection to the job. Therefore, such exercises generally do not have a measurable effect on the way the participants subsequently work together." This observation is a key motivator for why the TSP Launch process is so critical to developing a unified high performance team. TSP establishes the conditions for a jelled team by using the job that management wants this team to do. The launch process forces all members to discuss management's needs and expectations; determine team goals and roles; develop a system conceptual design and development strategy and process; develop a quality plan; establish risks; review with management the plan and commitments; and hold a launch post mortem. Watts defines the coach's role in all of these steps.

The third key point in Part I relates to "getting team members involved." Watts provides nine simple but great techniques: ask, don't tell; play dumb; frequently check for agreement; sense unspoken concern or disagreement; don't let anyone monopolize the discussion; manage the experts; coach the team leader; keep the focus on facts and data; and allow no observers.

Part II of the book has twelve chapters. It focuses on various aspects of launching a TSP team. It covers in detail the coach's role in preparing for the launch to launch postmortem to preparing for a relaunch. The

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first point in this section is addressed in Chapter 8, Team roles. Watts defines ten standard team roles (team leader, team member, customer interface manager, design manager, implementation manager, test manager, planning manager, process manager, quality manager, and support manager) and their responsibilities. By identifying these roles, issues and concerns are identified and handled in an effective and efficient way. The second point is found in Chapter 11. Watts emphasizes the importance of focusing on three quality categories that must be considered during the TSP launch. These categories are product function; product properties (Compatibility, Documentation, Installability, Maintainability, Performance, Reliability, Safety, Security, and Usability); and product defects. Watts provides guidelines for estimating defects, collecting and interpreting quality data, and finally how to coach team members to utilize the quality data. The third key point in this section is addressed in Chapter 14. It describes how to obtain management support. It focuses on the concept of "No Surprises." Management should be warn in advance about major issues and how the team is capable and dedicated to resolving these issues.

The four chapters in Part III focus on how the coach should deal with common development problems, planning and quality. A big concern is how project managers are so focused on deliverables and how detailed plans are baselined and must be fixed. When the schedule slips, all hell breaks lose. Chapter 18 gets to the underlying fundamentals associated with this problem – planning. The chapter addresses understanding the purpose of the plan, types of plans, how to maintain the plan and when to update it. There are five principle types of plans: baseline plan, team plan, detailed plans, overall plan and the quality plan. A baseline plan defines what the team committed to management during the TSP launch. It defines key project milestones and dates. The team plan is what teams use to guide their work. Detailed plans are for team members to guide their work for a short period of time (8 weeks). Overall plan is a consolidated plan of individual detailed plans with workload balancing. And the most ignored plan of non-TSP organizations is the quality plan. The quality plan provides the baseline for quality performance (defect expectations throughout the entire lifecycle). Maintaining a plan is a big issue with managers because they believe it will extend the schedule. Watts states that "[the] decision to update the plan should be primarily based on the team's needs. When the team members feel that their current plans no longer help them to do their work, they need new plans. If the new plans are not reasonably consistent with the baseline plan, they must meet with management and renegotiate the baseline commitments." Watts adds that "while requirements changes are frequently given as the cause for unplanned tasks, they should not be a problem. Requirements changes can generally be negotiated. The biggest cause of trouble are the changes that arise from a better understanding of the job the team has already committed to do." A great way to assess progress is to observe two principle indicators: earned value and task hours. By examining these indicators, leaders can learn a great deal about the quality of their plan, where the work currently stands, and what is likely to happen in the future. Chapter 19 focuses on managing quality. Watts says that "if the team doesn't manage its defects at the beginning of the project, those defects will manage the team at the end of the project. The team's work will also be highly unpredictable, and it will take much longer to do. In short, the reason to manage defects is to permit the team to economically and predictably produce a quality product."

The four chapters in Part IV focus on team type, team size, and how TSP can be adapted to account for these factors. In Chapter 21, Watts relates team structure to the work to be done and to structure the team so its management system best fits its work assignment. He defines three principal perspectives to consider in team formation: Interdependence, Specialization; and Size. The first two principles really have to deal with the span of control. Applying these principles to TSP leads to classifying teams into one of the six categories: Project Teams, Functional Teams, Distributed Teams, Multiple Teams, Integrated Development Teams, and System Wide Teams. The remaining three chapters discuss these team types in detail and process principles that should be applied to them. There are seven process principles to consider: Use sound engineering methods at all levels, manage daily workload changes, define standard reporting measures, encourage team-level decision making, enforce architectural discipline, manage the system's emergent properties (security, performance, safety, usability, availability, maintainability,. . .), and employ quantitative quality management.

The last four chapters in Part V focus on providing guidance on how to handle coaching issues associated with teambuilding, coaching ethics, understanding the TSP coach's role, and the rewards of coaching. Team communications are important and Watts suggest four typical techniques that can improve team communications: sharing a common workspace, hold-

ing frequent team meetings, concentrating on facts and data, and getting everything on the table. The second point of Chapter 25 and really a common theme for the PSP/TSP approach deals with the concept of *discipline*. Random House defines discipline as "a regimen that develops or improves skill." Watts utilizes this definition and addresses discipline from two different perspectives: improving performance and the fidelity with which a defined process is actually followed. TSP data is considered private and Watts states it simply, "members personal data are private, and their performance is not. The basic principle is that developers are paid to do a job, so the amount of time they spend, the tasks they perform, and the products they produce are valid management concerns and these data should be public. However, defect data, detailed time and defect logs are much more personal." In chapter 28, Watts addresses some of the issues of being a TSP Coach. A TSP coach guides people to improve their personal performance and helps them to work more effectively in teams by building understanding and motivation, building a coaching team, reporting to management, and self coaching.

The section dedicated to the personal challenges associated with being a TSP coach could provide more insights. There is no appendix that cross references all the key principles discussed in the book.

This book is the missing piece to the overall TSP/PSP series written by Watts. It is full of insights and examples. It is easy to understand, internalize, and apply the coaching principles to support software development teams. The coaching concepts learned can be applied to any type of team. A must read for TSP coaches, software leads and managers. "Keep on Truck'n" Watts.

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