



## The TSP Builds Teams and Successful Software



The Team Software Process<sup>SM</sup> (TSP<sup>SM</sup>) was developed by the Software Engineering Institute to help integrated teams plan and track their work while developing and enhancing software intensive systems. While the general concepts of effective teamwork are well known, engineering teams do not generally get guidance on how to build cohesive teams or on how to effectively lead and coach such teams. The TSP builds and guides “self-directed” teams. These are teams that manage their own work, build quality products, and consistently meet commitments. As the articles in this issue show, such teams provide a rewarding working environment and are a sound business investment.

By establishing effective team-working practices, organizations also build mature management practices. The TSP provides specific guidance on how to most effectively implement many of the high-maturity practices specified by the Capability Maturity Model<sup>®</sup> (CMM<sup>®</sup>). As this month’s authors point out, implementing the TSP accelerates an organization’s CMM improvement program.

In the first theme article, *AV-8B’s Experience Using the TSP to Accelerate SW-CMM Adoption*, Dr. Bill Hefley, Jeff Schwalb, and Lisa Pracchia describe how using the TSP accelerated their CMM improvement efforts. The first step to CMM Level 2 is the most difficult and is where teams often need the most guidance. As this article shows, the guidance provided by the TSP cut the typical time to reach Level 2 by about 40 percent.

Next in *How the TSP Impacts the Top Line*, Robert Musson examines the management consequences of using the TSP. He addresses the cost benefit trade-offs management must make in running a software-intensive business and explains how the TSP impacts these trade-offs. He shows that organizations can cut development costs by 25 percent and reduce total life-cycle costs by 60 percent.

Two theme articles discuss the benefits of using the TSP. In *All the Right Behavior*, David R. Webb describes how the TSP helps teams determine their status and manage their work. When projects cannot precisely measure their status, they cannot recognize their schedule problems in time to economically resolve them. The earned value tracking provided by the TSP enables development groups to recognize their problems in time to effectively address them.

The final theme article, *Managing a Company Using TSP Techniques* by Dr. Carlos Montes de Oca and Dr. Miguel A. Serrano, describes how they used the TSP to manage a software company. As they point out, “The TSP is a powerful team process that can be customized to manage the performance of teams beyond the software domain.” While the TSP was originally developed to support integrated engineering teams, this article indicates the broad applicability of the TSP’s team-building and team-working methods.

Two supporting articles in this issue deal with the costs and benefits of process improvement. In *SEI CMM Level 5: Lightning Strikes Twice*, Gregory P. Fulton describes three management elements required for rapid and effective process improvement. Even after organizations reach high maturity levels, process improvement requires management support that is largely independent of the technology used. Such support should help any group, whether using the TSP or not. Jim McHale addresses the principal costs of TSP introduction and use in his article *TSP: Process Costs and Benefits*.

Dr. Ioana Rus, Dr. Carolyn Seaman, Dr. Mikael Lindvall, Dr. Victor Basili, and Dr. Barry Boehm introduce a new Web-based repository of lessons learned in *A Web Repository of Lessons Learned from COTS-Based Software Development*. The new system will allow dialogues between users and experts that provide concrete support for problems.

This issue wraps up with two online articles. Noopur Davis’ *Using the TSP to Implement the CMM* shows how TSP methods map to the CMM framework. Paul J. Solomon’s article, *From Performance-Based Earned Value to the CMMI*, explains that earned value management can be a process thread to enable effective process integration and improvement during transition to the Capability Maturity Model<sup>®</sup> Integration<sup>SM</sup>.

Finally, a very important announcement is in this issue: Dr. Nancy Spruill of the Office of the Under Secretary of Defense announces CrossTalk’s 2002 U.S. Government’s Top 5 Quality Software Projects competition. If your project qualifies, I urge you to submit a nomination. I served on last year’s Top 5 review committee and will also be a judge this year. Whether or not your project wins a coveted Top 5 slot, you will learn a great deal just from preparing a nomination.

Watts S. Humphrey

*Fellow, Software Engineering Institute at Carnegie Mellon University*