A Team-Based Process Improvement Initiative

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The Information Technology Institute (ITI) thrives on a research and development (R&D) environment that is similar to many applied research institutes in the United States. We deliver projects that apply advanced and useful high technologies to difficult problems. Our solutions range from consultancy services and research prototypes to robust applications and products for our industry partners.

Most of these projects have a fixed deadline, be it a launch date or a deployment date. Hence, the process supporting these projects need to be sensitive to the management of scope and resources (the other available variables).

The improvement process started in 1992, when ITI embarked on a journey to define an ISO9000-compliant Quality Management System (QMS). ISO9000 provided a framework for the structure and types of procedures that needed to be put in place. The ISO9000 procedures in ITI were complemented with a Project Management Process and a suite of guidelines. The first round of QMS definition was completed in 1994.

From 1995, a depth-first process-centric strategy was adopted to strengthen the practice of the QMS. Under such a strategy, experts in the process were engaged to train all staff in the best practices. These best practices were adopted, step at a time, into our standard practices. The project management internalisation practice started in 1995, and the testing internalisation practice started in 1996.

During the panel session, I will take a macro perspective towards deriving a process best suited to any environment. Instead of describing the processes that are in use in our organisation, I will emphasise on the participation of teams in the definition and deployment of the QMS. This team-based approach helped us assure the quality of our output as well as the buy-in of our R&D staff.

All process engineers participate in the planning of the project. For example, all process engineers come together to define the objective, scope, major deliverable, completion criteria, work breakdown, schedule and optimal resource usage of the internalisation effort. The project management internalisation effort itself is treated as a project, and we are the first pilot site of the project management process that we intend our R&D teams to follow. This practice of involving the core team of process engineers in the planning ensures total commitment and understanding. The practice of piloting any process on ourselves first gives confidence to the R&D teams.

At the implementation level, R&D staff will participate in task forces to perform root-cause analysis and solution formulation. Significant changes are also piloted before being incorporated as standard practice. By involving the R&D teams in the definition and revision of the QMS, we ensure greater chances of process adoption.

Software paradigms change quite rapidly in response to technology changes. The standard practices of any software environment needs to be constantly updated to reflect such changes. The best parties to do the change are the busy line R&D teams. Hence, the need for a team-based approach to process improvement: R&D to provide the inputs and experiences, and process engineers to standardise and evolve the processes.