

# Organizational Learning for Software Process Improvement

One or Two Day Seminar<sup>\*</sup>

## Seminar Description

Are you struggling with achieving Level 3 against CMMI or ISO/IEC 15504? Is there broad resistance to change in your organization? Do software professionals question the value of your organizational processes?

This seminar describes lessons learned in analyzing, defining, and deploying software processes. Models such as the Capability Maturity Model for Software and the staged representation of CMMI are intended at Level 3 to transform organizations by instilling a capacity for organizational learning – coming to understand what processes work well in your business environment, capturing those lessons in the form of defined processes, and deploying tailored processes that incorporate those lessons across projects, while catering to the unique needs of the projects. Models and standards such as CMMI build on organizational learning and change management that has been studied for many years from a diverse set of perspectives.

CMMI in particular captures these concepts in four process areas:

- *Organizational Process Focus* addresses the people issues associated with analyzing the status quo, identifying opportunities for improvement, implementing and deploying improved processes, and learning as part of a continual improvement cycle. It encapsulates the Plan-Do-Check-Act cycle (the formalism preferred is Initiate-Diagnose-Establish-Act-Learn).
- *Organizational Process Definition* addresses defining standardized processes, along with the tailoring guidelines needed to make the standards useful within the business context of a project. It also describes the measurement repository that accompanies the standard processes: processes and measurement go hand-in-hand.
- *Organizational Training* addresses the skills building aspect of process deployment. This training focuses on organizational training needs, which are typically driven by the standard processes. Project-specific training needs are addressed elsewhere in CMMI.
- *Integrated Project Management* addresses tailoring the standard processes to the needs of the project and then using that defined process in managing the project. Communication and coordination among the stakeholders are critical aspects of project management emphasized here.

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<sup>\*</sup> This seminar can be delivered over either one or two days. Longer seminars involve more case studies, exercises, and role plays, as well as a more in-depth study of the material. Shorter forms of this material can be presented also.

While CMMI identifies best practices for organizational learning, it is not the only improvement framework that considers these issues. As an example of a commonly framework that incorporates the concepts of organizational learning, it provides a departure point for discussing the challenges and research into how organizational transformation works that is outside the scope of a “best practices” model.

The seminar includes recommendations on “how” to implement these processes that go beyond the scope of “what” should be done. Best practice frameworks such as CMMI are intrinsically limited by the need to cater to a broad user community without constraining the variety of implementations possible. This seminar is not constrained by such considerations and will unabashedly advocate and condemn various improvement practices.

Topics include:

- Business value of SPI
- The soft side of SPI
- Process groups
- Appraisals, assessments, evaluations, capability determinations, audits, ...
- Defining good processes
- Institutionalizing best practices
- Deployment of standard processes
- Organizational learning

### **Who Should Attend**

- Executives who are considering sponsoring a process improvement program
- Middle managers who are struggling with too many priorities
- Project managers who wish their projects to succeed
- Process experts who want to guide successful improvement efforts
- Software professionals who desire to use the best software engineering practices available

### **Course Prerequisites**

There are no pre-requisites for this workshop.

### **Course Objectives**

After completing this seminar, participants should be able to:

- Understand the basics of process improvement against business objectives
- Describe what a "best practice" is and how they know it's really best.
- Characterize a "good" standardized process description.
- Communicate the kind of knowledge best captured in a process description versus training, tools, and job aids.
- Describe the challenges to deploying standard processes effectively.
- Characterize the “iron cage” of institutionalization
- Describe the nature of a learning organization

## **Module Description**

### Module 1 – Introducing Software Process Improvement

- The business case for SPI
- The quagmire of improvement frameworks
- Success factors for SPI
- The tipping point between Working Harder and Working Smarter

### Module 2 – Establishing the Infrastructure for SPI

- Process groups
- The SEPG guide
- What I would do differently today
- The diversity of assessments
- The soft side of SPI

### Module 3 – Good Process Definitions

- Minimum essential information
- Processes vs procedures vs tools vs training
- Process simplification
- A hierarchy of processes

### Module 4 – Deploying Standardized Assets

- A set of standard software processes
- Process automation, tools, and the Web
- Training
- Interpreting and tailoring – keeping it real
- Institutionalization of a quality culture

### Module 5 – Learning: The Thing That Makes It Improvement!

- Learning from experience
- Concepts of organizational learning
- Double loop feedback
- Staying aligned with business objectives

## **Activities and Exercises**

Activities and exercises include case studies, situational analyses, role playing, and interactive lecturing.