# PROFESSIONAL TESTER

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## Very early lifecycle testing

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# Improving process improvement

To many, test process improvement means following one of the two best known reference models: TMM (relaunched as TMMi in 2005) and TPI® (relaunched in late 2009 as TPI® NEXT and discussed in this issue of Professional Tester). But there is more to TPI than these.

**Erik van Veenendaal** introduces some of the many approaches to test process improvement.

**The ISTQB Certified** Tester Expert Level syllabus of which I am an author, due out in early 2010, is entitled *Improving the Testing Process.* That fact reflects the importance placed on the subject by testing thought leaders and their organizations which face ever-increasing challenges.

There are various angles from which to work and process-orientated seems to get the most attention. Others such as people-oriented (make sure your testers are top of the class and they will do a better job) or automation-oriented (use a unit-test framework and/or automate regression tests) are also proven ways to improve testing. Don't focus only on process: balance your improvement efforts!

The syllabus covers TMMi and TPI® in detail, but also other process-based approaches. Here is a selection with references and brief explanations.

**IDEAL [1]**
An organizational improvement model that serves as a roadmap for initiating, planning, and implementing improvement actions. The IDEAL model is named for the five phases it describes: initiating, diagnosing, establishing, acting and learning.

**Fundamental Concepts of Excellence [2]**
Nine criteria: results orientation, customer focus, leadership and constancy of purpose, management by processes and facts, people development and involvement, continuous learning, innovation and improvement, partnership development and corporate social responsibility.

**Critical Testing Process [3]**
A content-based model for test process improvement built around twelve critical processes. These are highly visible: peers and management judge competence and mission-critical operations where performance affects profit and reputation. The model is context sensitive and allows itself to be adapted, including in identification of specific challenges, recognition of attributes of good processes and selection of the order and importance of implementation of process improvements.

**STEP (Systematic Test and Evaluation Process) [4]**
A structured testing methodology, also used as a content-based reference model for improving the testing process. Does not require that improvements occur in a specific order. Seven basic premises: requirements-based testing strategy, testing starts at the beginning of the lifecycle, tests are used as requirements and usage models, testware design leads software design, defects are detected earlier or prevented altogether, defects are systematically analyzed, testers and developers work together.

**Cause-Effect diagrams (also called Ishikawa fishbone diagrams) [5]**
A brainstorming technique to identify clusters of causes and symptoms whose solution will provide the most benefit. It uses graphical representation to organize and display the interrelationships of various possible root causes of a problem. Possible causes of a real or potential defect or failure are organized in categories and subcategories in a

horizontal tree structure, with the (potential) defect or failure as the root node.

**Causal analysis during inspection process [6]**
A review technique to facilitate analysis of the causes of detected defects and identification of actions to eliminate them.

**Goal-Question-Metric (GQM) [7]**
An approach to software measurement using three levels: conceptual level (goal), operational level (question) and quantitative level (metric).

**Fundamental change management process [8]**
A structured approach to transitioning individuals, teams, and organizations from a current state to a desired future state in eight steps: create a sense of urgency, pull together the guiding team, develop the change vision and strategy, communicate for understanding and buy-in, empower others to act, produce short-term wins, don't let up, create a new culture ■

[1] IDEAL: A User's Guide for Software Process Improvement, McFeeley. SEI 1996, CMU/SEI-96-HB-001
[2] efqm.org
[3] Critical Testing Processes, Black. Addison Wesley 2003, ISBN 0-201-74868-1
[4] Systematic Software Testing, Craig and Jaskiel. Artech House 2002, ISBN 1-580-53508-9
[5] Problem Solving in Groups, Robson. Gower, ISBN 0-566-07415-x
[6] Software Inspection, Gilb and Graham. Addison Wesley 1993, ISBN 0-201-63181-4
[7] Software Modeling and Measurement: The Goal Question Metric Paradigm, Basili. University of Maryland 1992, CS-TR-2956 (UMIACS-TR-92-96)
[8] Our Iceberg is Melting, Kotter and Rathgeber. Pan Macmillan 2005, ISBN 978-0-230-01420-6

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