How to improve testing organization with TMMI

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Plan

Improvement – do we really need it?
Improvement – what options do we have?
TMMI – it’s not so terrible!
TMMI – does it work? Case study.
DO WE NEED TO IMPROVE THINGS?
WHAT WE THINK WE DO...
WHAT WE ACTUALLY DO...
Attempt no. 1 – Deming cycle
Attempt no. 2 – Standards

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Attempt no. 3 – Maturity models
Model

• Structure
  – Process area
  – Generic and specific goals
  – Generic and specific practices

Process framework

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TMMi® Model

(1) Initial
(2) Managed
  Test Policy and Strategy
  Test Planning
  Test Monitoring and Control
  Test Design and Execution
  Test Environment

(3) Defined
  Test Organization
  Test Training Program
  Test Lifecycle and Integration
  Non-functional Testing
  Peer Reviews

(4) Measured
  Test Measurement
  Software Quality Evaluation
  Advanced Peer Reviews

(5) Optimization
  Defect Prevention
  Test Process Optimization
  Quality Control

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Specific Goal and Practice Summary

SG 1  Perform a Product Risk Assessment
  SP 1.1 Define product risk categories and parameters
  SP 1.2 Identify product risks
  SP 1.3 Analyze product risks

SG 2  Establish a Test Approach
  SP 2.1 Identify items and features to be tested
  SP 2.2 Define the test approach
  SP 2.3 Define entry criteria
  SP 2.4 Define exit criteria
  SP 2.5 Define suspension and resumption criteria

SG 3  Establish Test Estimates
  SP 3.1 Establish a top-level work breakdown structure
  SP 3.2 Define test lifecycle
  SP 3.3 Determine estimates for test effort and cost

SG 4  Develop a Test Plan
  SP 4.1 Establish the test schedule
  SP 4.2 Plan for test staffing
  SP 4.3 Plan stakeholder involvement
  SP 4.4 Identify test project risks
  SP 4.5 Establish the test plan

SG 5  Obtain Commitment to the Test Plan
  SP 5.1 Review test plan
  SP 5.2 Reconcile work and resource levels
  SP 5.3 Obtain test plan commitments
Specific Practices by Goals

SG 1  Perform Product Risk Assessment

A product risk assessment is performed to identify the critical areas for testing.

SP 1.1  Define product risk categories and parameters

Product risk categories and parameters are defined that will be used during the product risk assessment.

Example work products

1. Product risk categories lists
2. Product risk evaluation and prioritization criteria

Sub-practices

1. Determine product risk categories
   A reason for identifying product risk categories is to help in the future consolidation of the test tasks into test types in the test plans.

   Examples of product risk categories include the following:
   - Functional risks
   - Architectural risks
   - Non-functional risks, e.g., usability, efficiency, portability, maintainability, reliability
   - Change related risks, e.g., regression

2. Define consistent criteria for evaluating and quantifying the product risk likelihood and impact levels
3. Define thresholds for each product risk level

   Risk level is defined as the importance of a risk as defined by its characteristics (impact and likelihood). For each risk level, thresholds can be established to determine the acceptability or unacceptability of a product risk, prioritization of product risks, or to set a trigger for management action.
Glossary

**acceptance criteria**
The exit criteria that a component or system must satisfy in order to be accepted by a user, customer, or other authorized entity. [IEEE 610]

**acceptance testing**
Formal testing with respect to user needs, requirements, and business processes conducted to determine whether or not a system satisfies the acceptance criteria and to enable the user, customers or other authorized entity to determine whether or not to accept the system. [After IEEE 610]

**action proposal**
The documented action to be taken to prevent the future occurrence of common causes or to incorporate best practices into test process assets.

**actual result**
The behavior produced/observed when a component or system is tested.

**alpha testing**
Simulated or actual operational testing by potential users/customers or an independent test team at the developers’ site, but outside the development organization. Alpha testing is often employed for off-the-shelf software as a form of internal acceptance testing.
Practical application
Challenges

- No consensus regarding testing scope and approach
- Poor communication
- No work standards
- Problems with quality of artifacts
- Mindset: PO and SM: „What is QA”?
Practical application

Solution

- TMMI practices as a mean for building own approach
Practical application

Solution

- TMMI Level 2, 3 and 4
- Tools: Confluence + JIRA (Zephyr)
- Knowledge base – information architecture
- DoR and DoD

Workflow
- Test case management
- Requirements management
- Defect tracking

Test strategy
- Test plan and scope
- Monitoring and reporting
- Knowledge base
Make it happen
Building better quality in IT

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