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Vikram Manni,
Senthil Jayakumar K,
Dennis S,
Padmashree R.

Testing Process Improvement A Perspective

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Agenda

- Introduction to Accenture's Test Assessment Framework
- The Assessment Process
- The Test Assessment Tool
- Test Assessment Tool Details
- Key Benefits

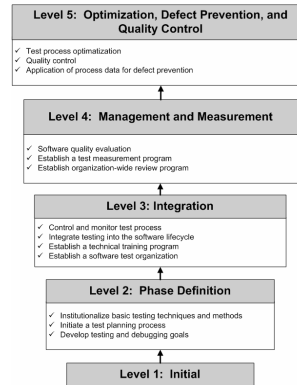
Note
This presentation explains the concept of Accenture's Test Assessment Framework. The ratings and the output discussed are representative illustration of the actual tool. Patent of Accenture's Test Assessment Framework is pending.

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The Testing Maturity Model (TMM)

Linking CMMI process maturity with Testing Maturity

- The Testing Maturity Model (TMM):
 - Was developed in 1996 at the Illinois Institute of Technology
 - Aims to address testing gaps in CMMI, ISO 9001, Bootstrap, and SPICE (ISO 15504)
 - Takes a 5-staged approach (like CMMI) to testing maturity for organizations
 - TMM Maturity **Sub-Goals** make up Maturity **Goals**, which make up the 5 TMM Test Maturity **Levels**



TMM key Maturity Differentiators

Test maturity differences help to understand test practices of organizations

- | |
|--|
| <p>'Initial' 1 vs. 'Defined' 2</p> <p>✓ At level 1, organizations struggle between testing and development/debugging, whereas at level 2, they recognize and define testing as a <i>distinct</i> discipline</p> |
| <p>'Defined' vs. 'Integrated' 3</p> <p>✓ At level 2, organizations start testing with an predictable starting situation, whereas at level 3, they aim to test & plan testing <i>early</i> in the SDLC</p> |
| <p>'Integrated' vs. 'Managed/Measured' 4</p> <p>✓ At level 3, organizations still focus on testing often & everywhere, whereas at level 4, they aim to <i>improve test efficiency and effectiveness</i> by <i>management/control & quality review</i></p> |
| <p>'Managed/Measured' vs. 'Optimized' 5</p> <p>✓ At level 4, organizations aim to reduce test effort by management & control, whereas at level 5, they aim to optimize effort by activities like automation, statistical testing, but mostly by defect <i>prevention</i> through overall SDLC <i>process improvement</i></p> |

TMM strengths & challenges

While TMM concepts are strong, more is required for practical application

- Testing Maturity Model (TMM) *strengths*
 - ✓ Aligned with **CMMI**
 - ✓ **Improves testing gaps** in CMMI and other process models
 - ✓ **Sound structure** (academic) & comprehensive
- TMM *challenges*
 - **Staged** testing approach (only)
 - No large-scale, practical implementation

Bridging the gaps: the Test Assessment Framework

Mapping TMM to individual test areas enables comprehensive & targeted improvement ... and value creation!

- The 5 TMM maturity levels can be used to assess **individual areas**
- This approach enables:
 - Assessment of the entire **testing scope**
 - Comprehensive and **targeted value creation**

Maturity Level	Test area	Test area	Test area	Test area	Test area	Test area
1	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	✓	-
3	✓	✓	✓	-	-	-
4	✓	✓	-	-	-	-
5	✓	✓	-	-	-	-

Typical Key areas under purview

Test Assessment enables comprehensive & targeted improvement ... and value creation!

Project Management Categories

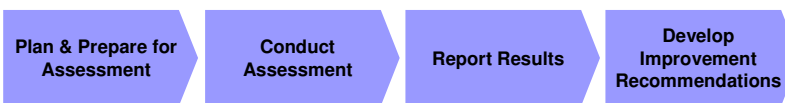
1. Project Initiation
2. Project Planning
3. Project Execution
4. Project Tracking
5. Project Closure

Software Engineering Categories

- Requirement Management
- Defect Management
- Metrics
- Test Condition & Script Development
- Test Data Management
- Test Execution
- Test Planning
- Test Automation
- Reporting
- Review Process
- Training
- Performance Testing
- UAT
- Entry/Exit Criteria
- Configuration Management
- Review Process
- Traceability

The Test Assessment Process

The assessment process covers four major steps



- **Plan & prepare** for assessment
 - Develop assessment plan, Select & prepare team, Obtain & review evidence.
- **Conduct** assessment
 - Examine evidence, Verify & validate evidence (incl. interviews), Document findings, Generate results.
- **Report** results
 - Deliver assessment results, Package & archive assets.
- **Recommend** improvements
 - Identify & prioritize improvement suggestions, Develop improvement plan.

The Test Assessment Tool

The test assessment tool supports the end-to-end assessment process

- A **Test Assessment Tool** has been developed that helps to:
 - Plan & prepare for assessment
 - Recommend improvements
- And **fully supports**:
 - Conducting the assessment
 - Reporting results



The Test Assessment Tool

Key characteristics of the Test Assessment

- **Test Assessment**
 - ✓ Reduces **subjectivity**, focused on rating
 - ✓ **Assessor decides on rating** & test maturity
 - ✓ Coverage **130** questions over 15 Test Areas
 - ✓ Automated reporting schema

Detailed Structure

Test Area, View, Question, Rating

- The Assessment contains of different **Test Areas**:
 - E.g.: “Methodology”, “Environment and Tools”, “Metrics”
- Each Test Area is divided into Test ‘**Views**’ or Topics; e.g. Process, Technology, and People
- Within each Test Topic we find the **Questions**
- The Questions in Test Assessment are focused on rating and view-oriented.
- Ratings partially TMM-based ratings, including ‘N/A’ & ‘Unknown’

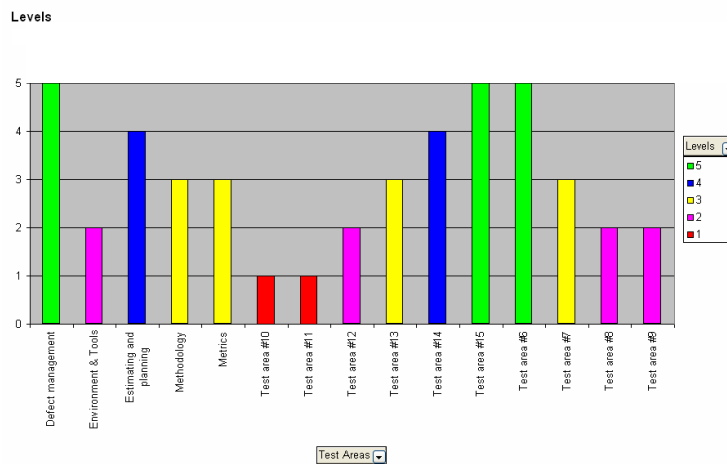
Test Assessment Ratings

Assessor's considerations for all Assessment ratings

- Use the following considerations for assigning ratings to the Test Assessment questions
 - **Zero** : It is clear and/or there is evidence that the factor is **not** performed
 - **A** : It is unclear and/or there is marginal evidence that the factor is performed
 - **B** : The factor is performed, but not across the SDLC or not across all projects; i.e. it is not institutionalized
 - **I** : The factor is performed and is institutionalized, but management & measurement disciplines are insufficient or not in place
 - **Δ** : The factor is performed, institutionalized, managed & measured, but there is no evidence for continuous evaluation & improvement
 - **E** : The factor is performed, institutionalized, managed & measured, and continuously evaluated & improved
 - **N/A** (not applicable): The factor should not be included in the rating
 - **Unknown**: It is unclear that the factor is performed; it will be rated as **A**

Test Assessment Reporting Schema

Gives a quick window on maturity of individual test areas



Test Assessment Report

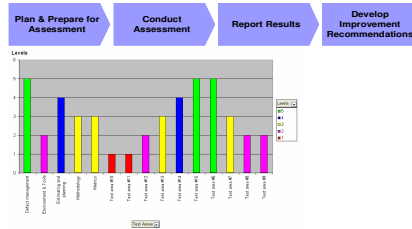
Drives Short term and Long term Improvement Areas

- Test Assessment report and facts collated during assessment
 - Serves as a base to identify gaps.
 - Helps in drafting immediate action plan for the project
 - Quick action items
 - Long term action items
- Project stakeholders along with the testing Subject Matter Expert to freeze on the priorities of implementation for the improvement areas and recommendations suggested.
- Roadmap for implementation to be rolled out.
- Implementation of the same to be driven by the Quality In-Charge.

Key Benefits

- The Test Assessment Framework provides the following **key benefits**

- ✓ Focus on **specific** Test Areas
- ✓ Standard, reusable
- ✓ Usage: consulting & projects
- ✓ **Value generator**
- ✓ Contributes towards **Testing process improvement**



Summary

- The test assessment framework
 - Facilitates evaluation of individual test areas.
 - Facilitates projects to identify the respective weak areas and set improvement strategy.
 - Acts as an input for the SEPG group from the organisation perspective.
 - Will be a Part of ADM which acts as a base for evaluating Test processes maturity at organisation level.