THE VALUE OF TMMI WEBINAR

26-Aug-2021
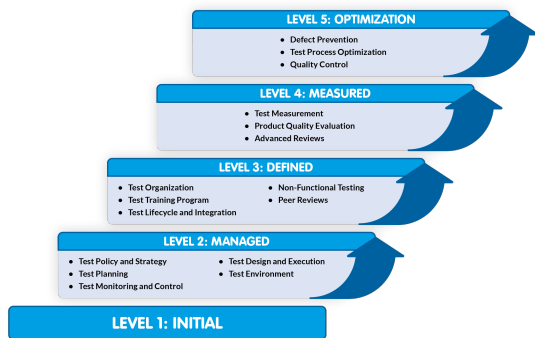
About TMMi America

- TMMi America is a local chapter of TMMi Foundation

- TMMi America provides local relationship to the TMMi Foundation in North America. It was started in 2020.

website: www.tmmiamerica.org

Mission: To support organizations to improve their software and system testing and achieve higher and sustainable levels of product quality for the systems they are developing and maintaining through the Test Maturity Model Integrated (TMMi).

Our Speaker for today

Mike Ennis,
Founder & Treasurer,
TMMi Americas Chapter

➢ Mike Ennis is a senior IT Consultant with over 30 years of software development experience

➢ Founder and Treasurer of TMMi America Chapter

➢ Mike has provided consulting expertise across industries including insurance, financial banking, oil, gas and energy, telecommunications, hospitality and retail

➢ A software and systems engineering and testing leader, providing consulting, training, and expert services

➢ Mike holds certifications in CSTE, CSQA, CTFL, CTM, Agile Testing, Agile Scrum Master, TMMi Assessor and John Maxwell Coach

➢ Mike has worked with clients from small start-ups to Fortune 100 global businesses. He specialize in testing best practices and agile coaching/mentoring in a wide variety of development lifecycles, including Kanban, Scrum, SAFe, DevOps, Waterfall, and Spiral.

➢ Mike has a bachelor's degree in Computer Science/Math and is currently matriculating in a Masters in Christian Counseling
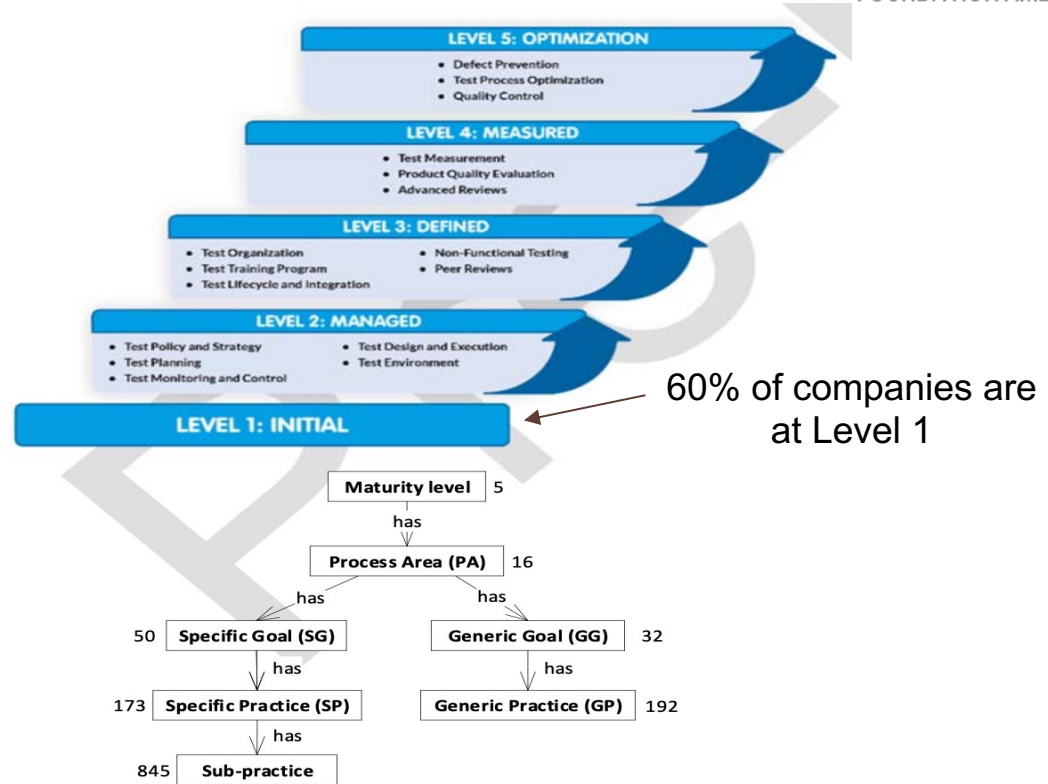
Testing Maturity Model (integrated)

Understanding the value of TMMi

What is TMMi

- TMMi stands for Test Maturity Model integration. It is a staged assessment model just like CMMi and follows the rating process in a staged manner. TMMi uses the concept of maturity levels for process evaluation and improvement.

- TMMi is comprised of 5 levels of maturity containing 16 process areas. Each process area is comprised of Specific Goals, Specific Practices and Sub-practices. Process areas also include Generic Goals and Practices.

- TMMi supports testing activities and improvements in test process systems and software testing practices. It can be integrated with both waterfall and agile methodologies. It focuses on moving organizations from defect detection to defect prevention.

LEVEL 5: OPTIMIZATION
- Defect Prevention
- Test Process Optimization
- Quality Control

LEVEL 4: MEASURED
- Test Measurement
- Product Quality Evaluation
- Advanced Reviews

LEVEL 3: DEFINED
- Test Organization
- Test Training Program
- Test Lifecycle and Integration
- Non-Functional Testing
- Peer Reviews

LEVEL 2: MANAGED
- Test Policy and Strategy
- Test Planning
- Test Monitoring and Control
- Test Design and Execution
- Test Environment

LEVEL 1: INITIAL

60% of companies are at Level 1

| Maturity level | 5 |

has →

| Process Area (PA) | 16 |

has ← → has

| 50 | Specific Goal (SG) | | Generic Goal (GG) | 32 |

has ↓ → has ↓

| 173 | Specific Practice (SP) | | Generic Practice (GP) | 192 |

has ↓

| 845 | Sub-practice |

Figure 1-Top: Maturity levels of TMMi and their Process Areas (PA). Bottom: Structure of TMMi as a meta-model

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What is TMMi – Test Planning Example

The following example identifies Process Areas>>Specific Goals>>Specific Practices
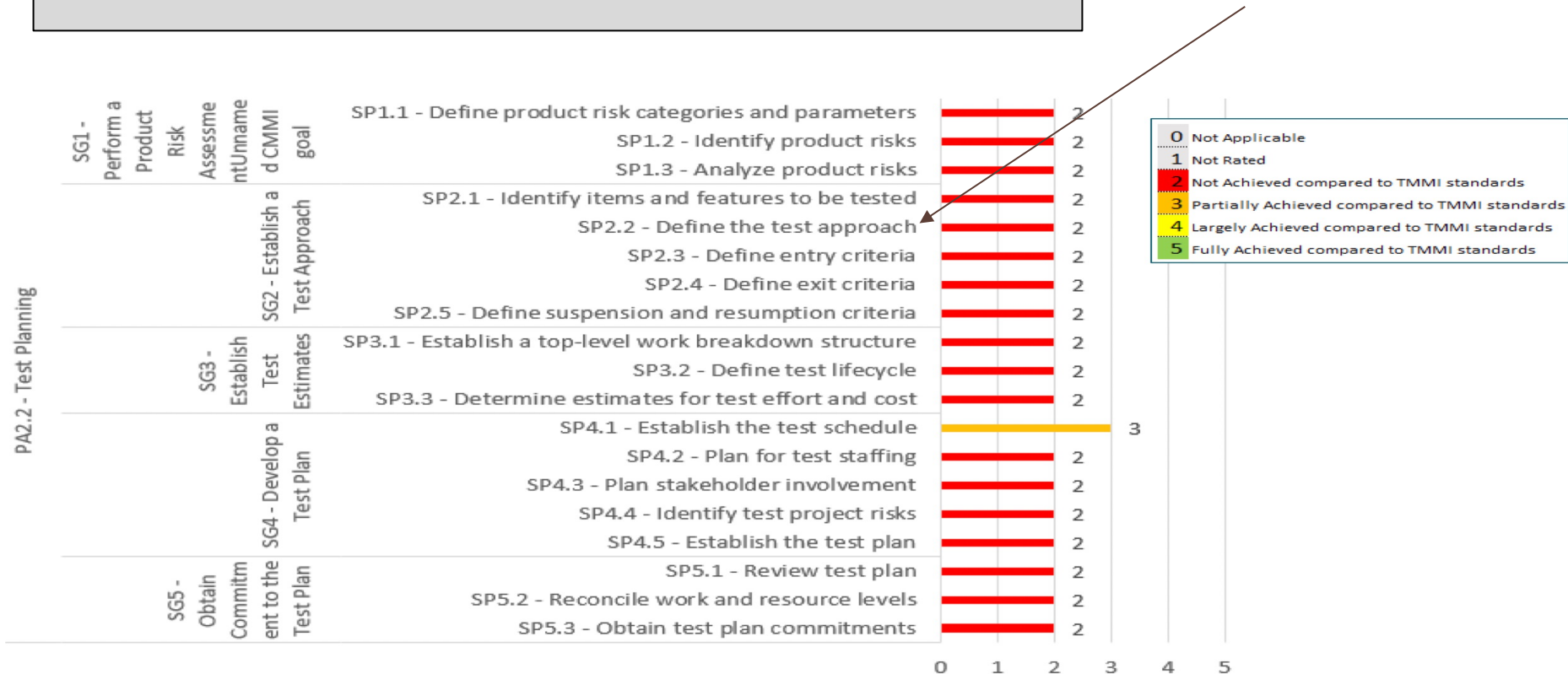
What is TMMi – Defining Test Approach Example

TMMi®
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The following example breaks down Specific Practice for Defining the test approach

SP 2.2 **Define the test approach**

The test approach is defined to mitigate the identified and prioritized product risks.

Example work products

1. The approach, e.g., selected set of test design techniques, should be described in sufficient detail to support identification of major test tasks and estimation of the time required to do each one.

Sub-practices

1. Select the test design techniques to be used. Multiple test design techniques are defined to provide adequate test coverage based on the defined product risks

Criteria for selecting a test design technique include the following:

- Type of system
- Regulatory standards
- Customer or contractual requirements
- Level of risk
- Type of risk
- Documentation available
- Knowledge of the testers
- Time and budget
- Development lifecycle
- Previous experience with types of defects found

2. Define the approach to review test work products
3. Define the approach for re-testing

Examples of approaches for re-testing include the following:

- For all high risk test items a full re-test will take place re-executing the full test procedure
- For all low risk test items the incidents are re-tested in isolation

4. Define the approach for regression testing

Examples of elements of a regression test approach include the following:

- Focus of the regression testing, e.g., which items and/or features
- Methods to select the test cases to be executed
- Type of testing to be performed
- Manual testing or using test automation tools

TMMi, a Blueprint for success

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Common Uses of TMMi

1. **Consulting Firms**

   o Great way to quickly diagnose testing practices/maturity

   o Easy to compare/benchmark organization to other similar companies

   o Big Box firms often use it to sell additional testing services

2. **Suppliers**

   o Many companies require suppliers to be accredited at TMMi Level 4 or 5

   o Suppliers are motivated to leverage TMMi

   o Must have a formal assessment and be registered with the TMMi Foundation

3. **Test Process Improvement**

   o Companies interested in transforming software delivery and driven by an internal champion

   o Organizations are interested in achieving more frequent, higher quality and secure deployments that deliver value to the end users

   o Companies are looking for ways in which the cost of poor quality can be reduced and/or lowering testing spend
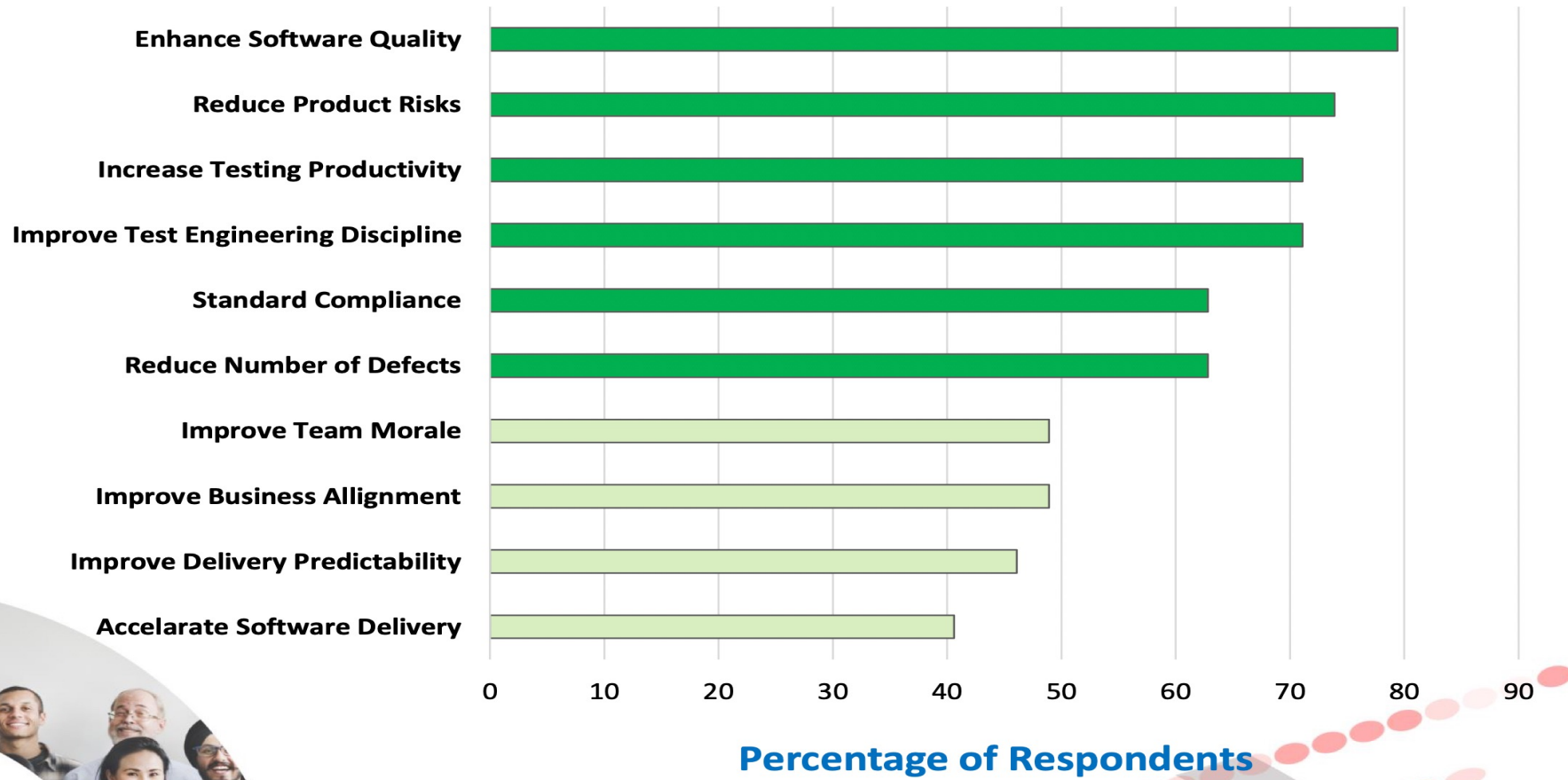
Benefits

- **Direct**

  o Improved product quality (Defect Removal Efficiency)

  o Better production performance (Response time, throughput)

  o Test productivity (Velocity)

  o More frequent deployments (Cycle Time)

  o Happy customers (CSAT)

  o Better predictability (Reduced Variation)

  o Secure applications (Vulnerabilities)

- **Indirect**

  o Improved employee satisfaction (Process over heroes)

Benefits – Survey 2020

Horizontal bar chart titled "Percentage of Respondents"

Benefit	Percentage of Respondents (approx.)
Enhance Software Quality	~79
Reduce Product Risks	~74
Increase Testing Productivity	~71
Improve Test Engineering Discipline	~71
Standard Compliance	~63
Reduce Number of Defects	~63
Improve Team Morale	~49
Improve Business Allignment	~49
Improve Delivery Predictability	~46
Accelarate Software Delivery	~41

How TMMi compares to other assessment tools

Table 1-Comparison of TMMi and TPI-Next

Criteria	TMMi	TPI-Next
Representation	Staged model	Continuous model
Test levels	All test levels (unit, integration, system, user-acceptance testing)	Focus on higher test levels (System and user-acceptance testing)
Supported test methodology	Test-method independent	Linked to TMap (tmap.net)
Terminology	ISTQB based	TMap based
Base SPI model	Related to CMMI	None
Certification	Possible through formal assessment	None

How agile fits into TMMi

Level	Process Area	Agile Relevance
Level 2: Managed	Test Policy	Partial
	Test Planning	Full
	Test Monitoring & Control	Full
	Test Design & Execution	Full
	Test Environment	Full
Level 3: Defined	Test Organization	N/A
	Test Training Program	Full
	Test Lifecyle Integration	Partial
	Non-Functional Testing	Full
	Peer Reviews	Full
Level 4: Measured	Test Measurement	Full
	Product Quality Evaluation	Full
	Advanced Reviews	Full
Level 5: Optimized	Defect Prevention	Full
	Test Process Optimization	Partial
	Quality Control	Partial

How agile fits into TMMi – Level 2: Managed

1. **Test Policy**
   - Keep at high level
   - Focus on business outcomes
2. **Test Strategy**
   - Adhere to Definition of Ready as entry criteria and Definition of Done for exit criteria
   - Apply the Agile Testing Quadrant (Functional, Non-Functional, Automation, Exploratory etc)
   - Functional, Integration, E2E, UAT within sprints?
   - Provide test estimates via Story Points, T-shirt size etc
   - Be sure to identify test related tasks such as test data setup, account access, environment setup
   - Obtain consensus on Sprint, Release testing
3. **Test Monitoring & Control**
   - Monitor test progress using burn down charts, Kanban boards, Acceptance Criteria, Daily Standups and Sprint Review
3. **Test Design & Execution**
   - Apply test design (BVA/EP, Decision Tables, TDD, BDD, ATDD), traceability to User Stories, Acceptance Criteria
   - Bugs are tracked with minimal information but still need root cause
4. **Test Environments**
   - Testing still needs to happen in a production like environment that is under change control
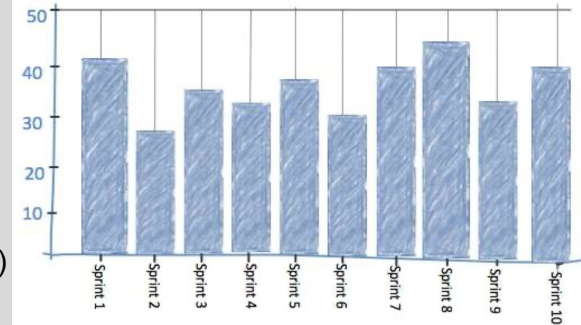
How agile fits into TMMi – Level 3: Defined

1. **Test Organization**
   - Teams are not separated by function but testers should have T-shaped skills (Broad and Deep). Automation expertise is becoming standard
   - Process improvement is accomplished via Sprint Retrospectives
2. **Test Training Program**
   - Testers/Teams should be trained in test driven design techniques (TDD, BDD, ATDD)
3. **Test Lifecycle Integration**
   - How to processes still need be documented concerning policies, tools guidelines
3. **Non-Functional Testing**
   - Apply to performance, security, penetration testing
4. **Peer Reviews**
   - Ensure User Stories meet INVEST criteria

I independent

N negotiable

V valuable

E estimable

S small

T testable

How agile fits into TMMi – Level 4: Measured

1. **Test Measurement**
   o Track defect cycle time, defect spill over to future sprints/releases, automation coverage, root cause, defect leakage to UAT/Production
2. **Product Quality Evaluation**
   o Leverage Definition of Done
3. **Advanced Reviews**
   o INVEST, DoR, DoD

How agile fits into TMMi – Level 5: Optimized

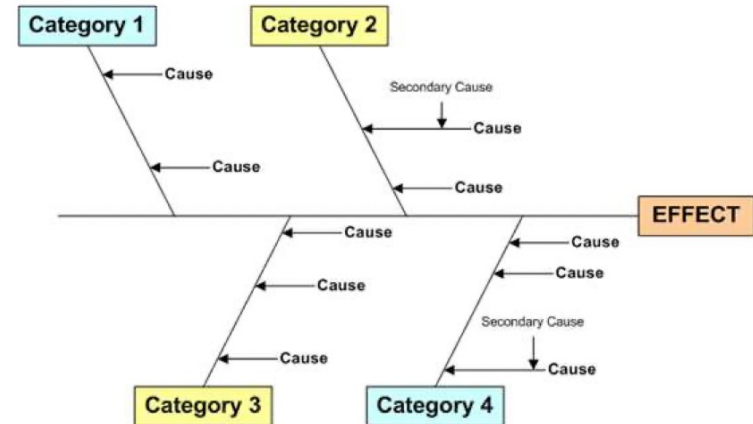1. **Defect Prevention**
   - Apply via Sprint Retrospectives and Root Cause
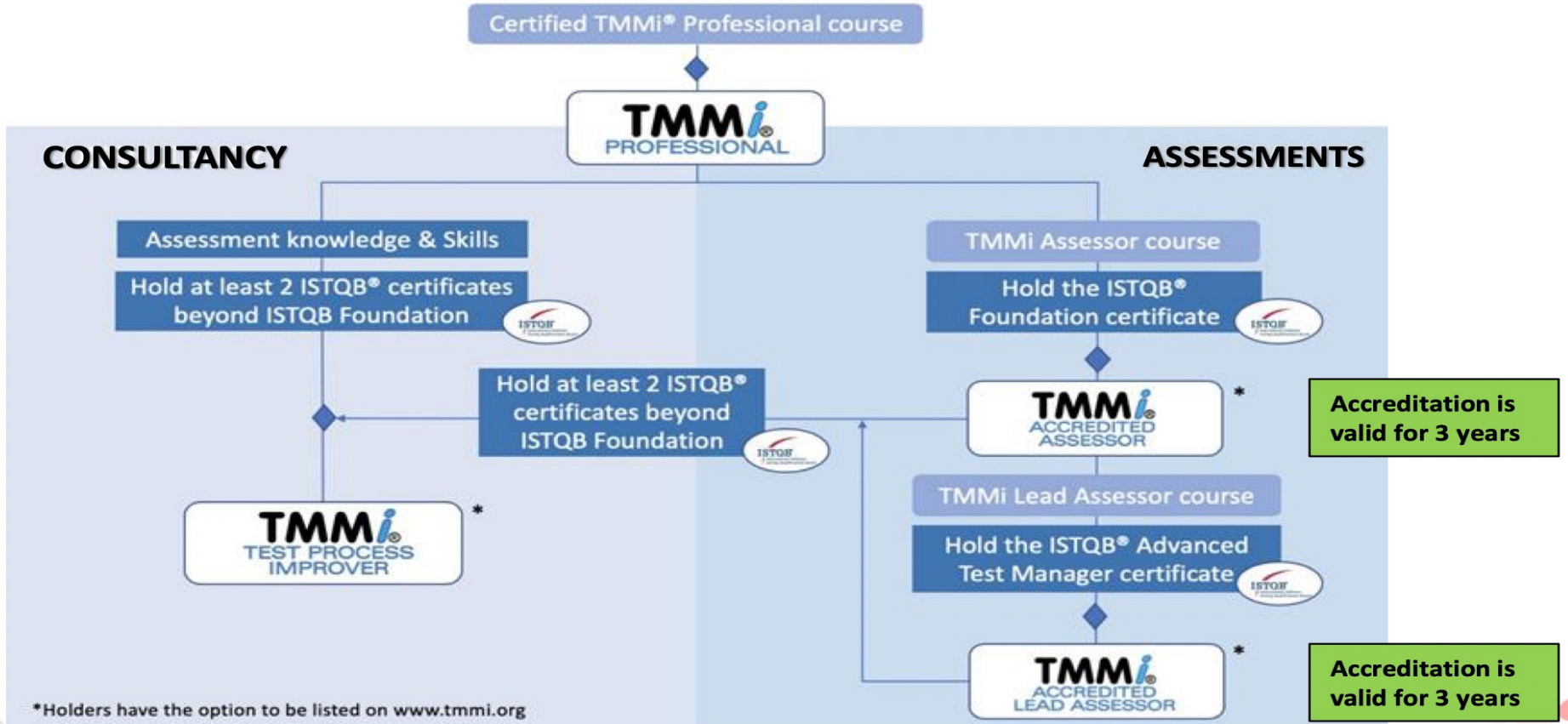2. **Test Process Optimization**
   - Sprint Retrospectives
3. **Quality Control**
   - Establish quality goals for leakage to UAT/Production

Why TMMi is good for you

CONSULTANCY

ASSESSMENTS

Certified TMMi® Professional course

TMMi® PROFESSIONAL

Assessment knowledge & Skills

Hold at least 2 ISTQB® certificates beyond ISTQB Foundation

TMMi Assessor course

Hold the ISTQB® Foundation certificate

Hold at least 2 ISTQB® certificates beyond ISTQB Foundation

TMMi® ACCREDITED ASSESSOR *

Accreditation is valid for 3 years

TMMi® TEST PROCESS IMPROVER *

TMMi Lead Assessor course

Hold the ISTQB® Advanced Test Manager certificate

TMMi® ACCREDITED LEAD ASSESSOR *

Accreditation is valid for 3 years

*Holders have the option to be listed on www.tmmi.org

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