TMMi in an Agile context

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Common Testing Challenges

- Increasing business importance
- Increasing code size and complexity
- Technology advancement
- Systems-of-systems
- Variety of devices and OS’s
- Security vulnerabilities
- Number of defects hardly decreases

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Boeing Identifies Second **Software** Issue on 737 MAX
*Wall Street Journal* - 5 apr. 2019
The latest redesign effort pertains to software issues raised as a ... It also instructed regulators to keep the model grounded until the problem ...

Microsoft's April 2019 Updates are Causing Windows to Freeze
*BleepingComputer* - 11 apr. 2019
Conflicts between antivirus software and the recent Microsoft April 2019 Patch ... According to support articles from Microsoft, Avast, Avira, and Sophos, ... are causing problems, as well as an additional KB4493435 update.

Death by a Thousand Clicks: Where Electronic Health Records Went ...
*Fortune* - 18 mrt. 2019
The software in question was an electronic health records system, ... that eCW's software had major problems—some of which put patients, like ...

**Tesla** Autopilot is steering towards lane dividers again
*TechSpot* - 23 mrt. 2019
After a Model X steered into a lane divider causing a fatal accident last year, Tesla 'fixed' the problem with a subsequent software update, but ...
Test Improvement Directions

We require a balanced approach!
TMMi Foundation

- **2005 TMMi Foundation**
  - TMMi standard developed
  - Framework for TMMi assessments

- **2010 TMMi model published**
  - ISTQB, IEEE, CMMI, best practices
  - Translated into Chinese, French and Spanish

- Independent model

- World leading model for test process improvement

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TMMi Process Areas

2 : Managed
- Test policy and strategy
- Test planning
- Test monitoring and control
- Test design and execution
- Test environment

3 : Integration
- Test organization
- Test training program
- Test life cycle and integration
- Non-Functional testing
- Peer Reviews

4 : Measured
- Product quality evaluation
- Test measurement programme
- Advanced reviews

5 : Optimization
- Test process optimization
- Quality control
- Defect prevention

Helps to set priorities and focus to the test improvement process

74% is at TMMi level 1
TMMi today

- 718 Professionals
- 2230 Certified members
- 59 Certified Organizations
  - 30% growth in 2018!
- 52 Accredited (Lead) Assessors
- 17 TMMi Local Chapters

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- Ability to manage changing priorities
- Increased team productivity
- Improved project visibility
- Increased team motivation
- Better delivery predictability

Source: 11th Annual State of Agile™ Report
What we see happening

- Most often Agile-like
- Only focus on Unit Testing and Test Automation
- Good testing processes thrown overboard
- Problems with scaling up

TMMi reminds you of critical testing practices
How to use TMMi in an Agile context?

- Start from business objectives and goals
- Look for alternative practices - look for the intent
- TMMi reminds you of critical testing practices
- Keep it Simple (this is difficult!)
PA 2.1 Test Policy and Strategy

- **SG 1: Establish a Test Policy**
  - Always! – business objectives
  - Much discussion on new role of testing

- **SG 2: Establish a Test Strategy**
  - What testing is done in iterations?
  - Coherent with non-sprint test levels

- **SG 3: Establish Test Performance Indicators**
  - Could be more broaden (team thinking), but still test related
PA 2.2 Test Planning

- **SG 1: Perform a Product Risk Assessment**
  - Lightweight

- **SG 2: Establish a Test Approach**
  - Exit criteria part of Definition of Done
  - NO entry/exit test levels within iteration

- **SG 3: Establish Test Estimates**
  - Planning Poker with test issues / product risks addressed

- **SG 4: Develop a Test Plan**
  - Ordering of (test) tasks, release/iteration priorities
  - Activities largely still relevant

- **SG 5: Obtain Commitment to the Test Plan**
  - Release and Iteration planning is a team-effort
PA 2.3 Test Monitoring and Control

- **SG 1: Monitor Test Progress against Plan**
  - Burn-down charts & Agile task boards
  - Testing is acceptance criteria and DoD related
  - Daily stand-up meetings
  - Sprint review & Demo’s

- **SG 2: Monitor Product Quality against Plan and Expectations**
  - See SG1
  - Product risks shown by means of charts on the dashboard
  - Test pass/fail rates, defect discovery rates, defects found and fixed

- **SG 3: Manage Corrective Action to Closure**
  - Primarily a responsibility of the self-organizing team
  - Stand-up’s and retrospective meetings

*the plan is not the goal, we welcome change*
PA 2.4 Test Design and Execution

- **SG 1: Perform Test Analysis and Design using TDT**
  - Test charter from Exploratory Testing
  - Master the technique, use it flexible within context
  - Traceability through user stories and acceptance criteria

- **SG 2: Perform Test Implementation**
  - What is needed to be repeatable? Test Charters are developed
  - NO intake test, NO test execution schedule

- **SG 3: Perform Test Execution**
  - Tests executed, Less documentation intense (eg., for test logs)
  - Incident reports written

- **SG 4: Manage Test Incidents to Closure**
  - Defect tracking system, lightweight “process”
  - Role of CCB taken over by empowered team
PA 2.5 Test Environment

- **SG 1: Develop Test Environment Requirements**
  - Still needed & typically iteration

- **SG 2: Perform Test Environment Implementation**
  - Sometimes full plan, sometimes iteration
  - Virtualization of machines, servers and services, the cloud

- **SG 3: Manage and Control Test Environments**
  - Separate group outside the Agile team
  - When done by the Agile team (technical skills & knowledge!) tasks become part of the Agile process

The implementation of a test environment often takes much time and can be highly complex, making it almost impossible to perform this task within the limited cycle time of an iteration [Van der Aalst and Davis]
TMMi Model

TMMi Reference Model – R1.2
This document describes the structure of the TMMi Reference Model including details of each level.

TMMi in the Agile world - V1.2
This document describes how to apply and use TMMi in an Agile context.
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