

Test Process Improvement State-of-the-Practice

Quality makes products
which do not return
and customers who do

Challenges and Benefits Achieved

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- In IT & testing since 1985 working for many different clients and in many different roles
- Author “TMap”, “ISTQB Foundation” and “TMMi” and many other books and papers
- Former Vice-President International Software Testing Qualifications Board (ISTQB)
- TMMi Foundation management executive
- Winner European & ISTQB International Testing Excellence Award

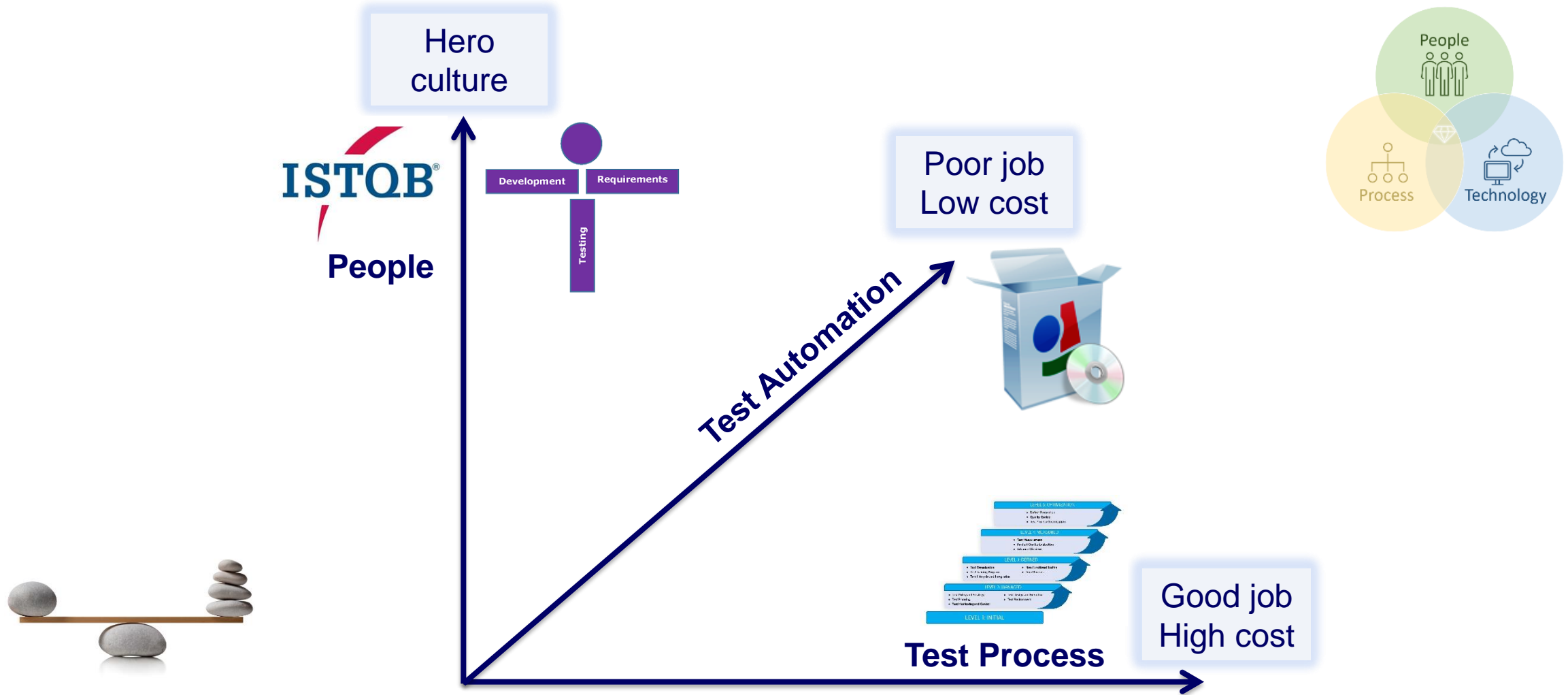


Common Testing Challenges

- Increasing business importance
- Increasing code size and complexity
- New technology
- Systems-of-systems
- Variety of devices, OS's, browsers
- Security vulnerabilities
- Time-to-market critical
- Number of defects hardly decreases

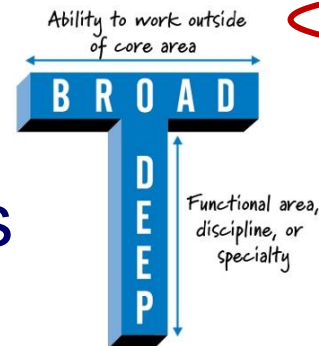


Test Improvement Directions

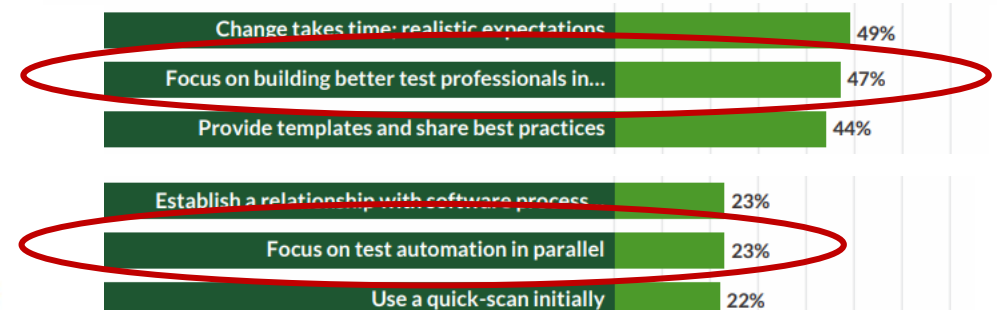


People

- **NOT** just an ISTQB Foundation training
- Meet-up's sharing experiences
- Build a best practices library
- Coaching
- How to ..workshops
- Testing recognized as a profess
- TMMi level 3

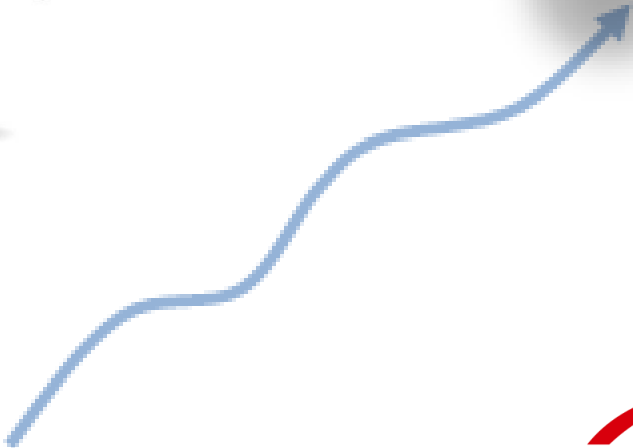


Advice to others



Testing is a difficult and intellectually challenging task

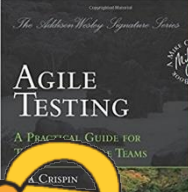
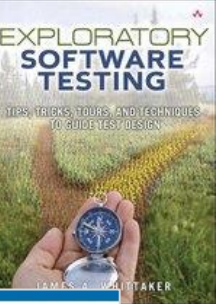
Test Improvement Model?



ISTQB
International Software
Testing Qualifications Board



Content based models



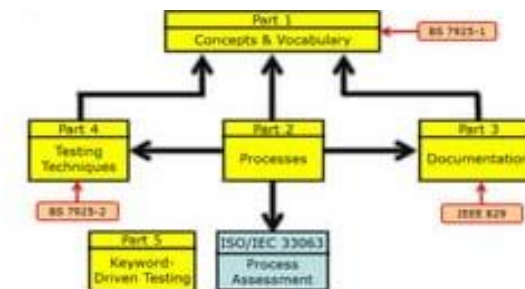
Test Improvement Models



- Test Maturity Model integration (TMMi)
 - TMMi Foundation, Staged, 16 process areas
 - Assessment model & Certification
- TPI Next
 - Sogeti, Continuous, 16 key areas
 - TMap-Next, Assessment model
- ISO 29119
 - ISO/IEC, Series of testing standards
 - Content-based model, replaces std.'s



	Initial	Controlled				Efficient				Optimizing		
1 Stakeholder commitment	A	B	B	C	F	H	H	K	M	M		
2 Degree of involvement	A	B	C	E	H	H	J	L	L	L		
3 Test strategy	A	A	B	E	F	F	H	K	L	L		
4 Test organization	A	D	D	E	I	I	J	J	K	L	L	
5 Communication	B	C	C	D	F	F	J	M	M	M		
6 Reporting	A	C	C	C	F	G	G	K	K	K		
7 Test process management	A	A	B	B	G	H	J	K	M	M		
8 Estimating and planning	B	B	C	C	G	H	I	I	K	L	L	
9 Metrics	C	C	D	D	G	H	H	I	K	K		
10 Defect management	A	A	B	D	F	F	H	J	K	L	L	
11 Testware management	B	B	D	E	I	I	J	L	L	L		
12 Methodology	C	D	E	E	F	H	J	J	M	M		
13 Tester professionalism	D	D	E	E	G	G	I	I	K	K	M	
14 Test case design	A	A	E	E	F	I	I	J	K	K	M	
15 Test tools	E	E	E	E	F	G	G	I	L	M	M	
16 Test environment	C	D	D	E	G	H	J	J	L	M	M	



TMMi vs. TPI Next

	TMMi	TPI Next
<i>Test method</i>	Independent	TMap-Next
<i>Software process improvement</i>	CMMI related	No SPI relationship
<i>Test levels</i>	All (incl. static testing)	Focus on ST/UAT
<i>Terminology</i>	ISTQB	TMap-Next
<i>Stakeholders</i>	Management commitment	Test engineering
<i>Proces maturity</i>	High maturity processes	“Limited” maturity
<i>Certification</i>	Yes	No
<i>Type</i>	Non-profit	Commercial product
<i>Status</i>	On-going development	No further support

Source: ISTQB Expert level ITP syllabus

TMMi vs. ISO 29119




- Not exclusive but complementary!
- To add: ISO 20246 for reviews, ISO 33063 for test assessments

ISO 29119	TMMi
<ul style="list-style-type: none"> - provides a possible implementation for TMMi level 2 - does not fully cover the TMMi level 3 process areas Test Organization, Test Training Program and Non-Functional Testing - does largely not cover the TMMi level 4 and 5 process areas 	<ul style="list-style-type: none"> - provides full coverage for all req.'s of ISO 29119 - TMMi level 3 implies having fulfilled all requirements of ISO 29119 and ISO 20246 - references and re-uses ISO 29119 as examples

TMMi Process Area	SG1	SG2	SG3	SG4	SG5
2.1 Test Policy & Strategy	●	●	◐	n/a	n/a
2.2 Test Planning	◐	●	◐	●	●
2.3 Test Monitoring & Control	◐	◐	●	n/a	n/a
2.4 Test Design & Execution	●	●	●	●	n/a
2.5 Test Environment	◐	●	◐	n/a	n/a
3.1 Test Organisation	◐	◐	○	○	○
3.2 Test Training Program	○	○	n/a	n/a	n/a
3.3 Test Lifecycle & Integration	◐	●	◐	n/a	n/a
3.4 Non-functional Testing	○	◐	◐	◐	◐
3.5 Peer Reviews	◐	●	n/a	n/a	n/a

Source: TMMi and ISO29119: Friends or Foes?

IEEE Study

- Software Test Maturity and Test Process Improvement
 - Based on inclusion criteria 181 sources
 - Most popular models
 1. TMMi 49% (161 case studies), since shown a 30% annual growth rate
 2. TPI Next 15%
 - ISO 29119 “not” used for test process improvement
- ➔ TMMi world leading model 



TIM TOM

Unit Test Maturity Model

TestSpice

Agile Testing Maturity Model

Agile Quality Assurance Model

Personal Test Maturity Matrix

Automated Software Testing Maturity Model

TMMi Foundation

- TMMi Foundation (2005)
 - Develop the TMMi model
 - Framework TMMi assessments (ISO 33020), formal certification
- TMMi model published in 2010
 - ISO & IEEE std.'s, ISTQB, CMMI, TPI, best practice surveys
- Independent model
 - Lifecycle, testing method
- TMMi Local Chapters
 - Local marketing, translations
 - Ensure assessment & training capability

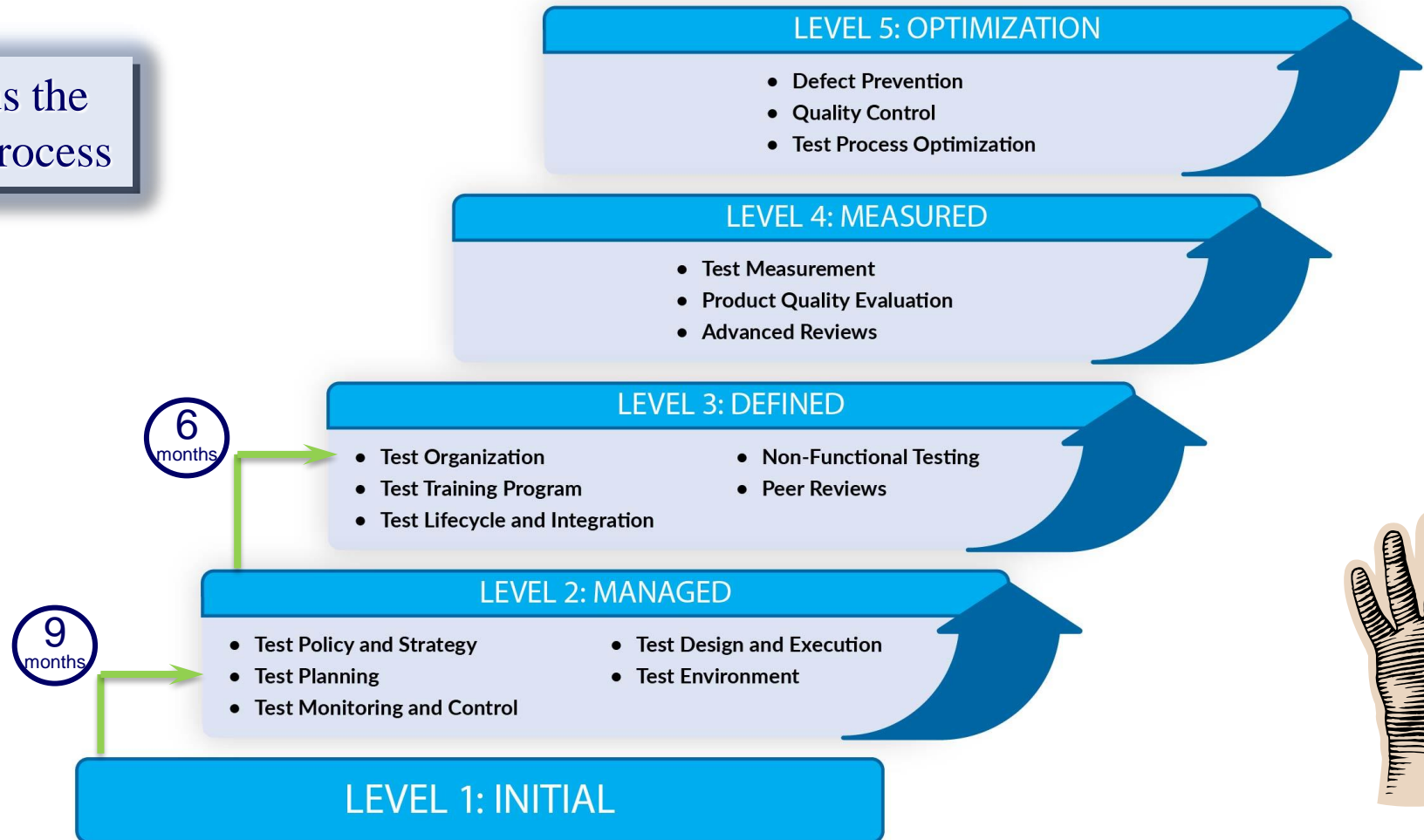


31 LC's covering 83 countries

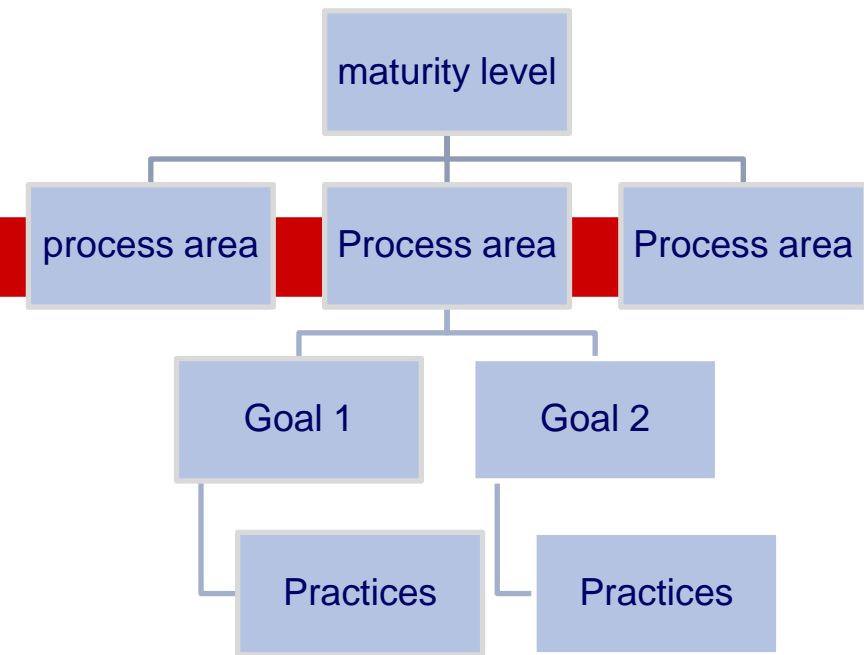
TMMi Process Areas

majority is at TMMi level 1

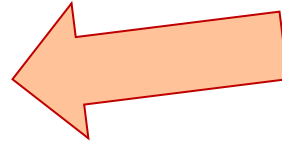
priorities and focus the test improvement process



TMMi Structure Process Areas



- Required: Goals



- Must be achieved to satisfy a process area

- Expected: Practices

Flexibility!!

- Describe what an organization will typically implement to achieve a goal

- Informative: Sub-practices

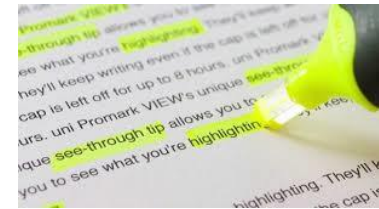
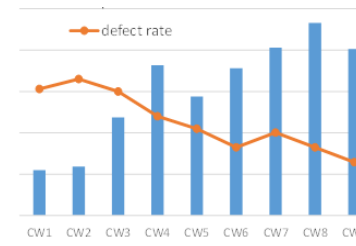
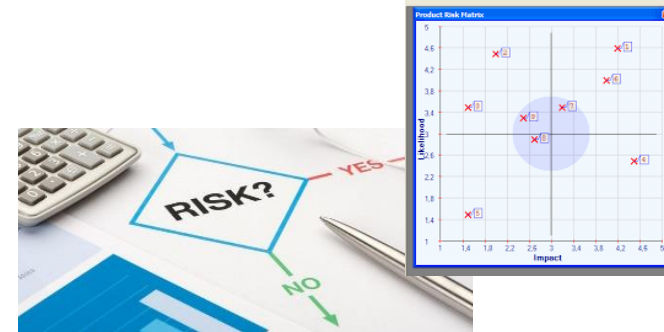
- Provide details to help organizations get started to achieve expected and required components
- Include examples, notes, references



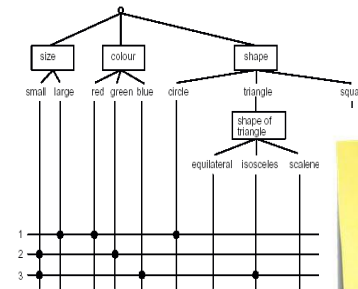
TMMi Level 2: Managed

- Test Policy and Strategy
- Test Planning
- Test Monitoring and Control
- Test Design and Execution
- Test Environment

Project oriented process areas

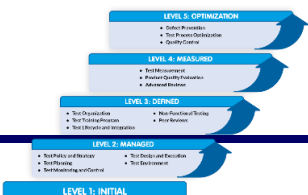


Ensures compliance
Verification & Validation



As a <role>
I want <goal>
So that <benefit>

Acceptance criteria:
...



Typical Business Objectives

Is there a problem?

- Improve product quality
 - Verification, Validation, Performance, Security
- Reduce time-to-market, but maintaining quality levels
- Save money, improve efficiency
- Improve predictability
- Meet customer requirements / Compliance to standards
- Be at a capability level, e.g., for IT companies

Why?

Test Objectives to be aligned with Business Objectives

Test Policy



Testbeleid n 2024

Definitie Testen
Vaststellen of onze producten en diensten aan de klantwensen voldoen en verantwoord in productie kunnen worden genomen met een aanvaardbaar risico.

Missie & Ambitie
Het blijven evolueren naar een meer geïntegreerde en geautomatiseerde aanpak d.m.v. het continue integratie en continue levering (CI/CD) pipelines, het bevorderen van agile/SABEL en het stimuleren van een cultuur van kwaliteit en samenwerking binnen onze organisatie.

Testdoelen
Wat willen we bereiken?
 ✓ Professionele testorganisatie
 ✓ Testmindsset
 ✓ Vergroten binnen onze organisatie
 ✓ Betrouwbare en voorspelbare producten en diensten

Waarden
Wat levert testen ons op?
 ✓ Compliance aan richtlijnen
 ✓ Inzicht softwarekwaliteit
 ✓ Kostenbesparing door vroegtijdig fouten te vinden
 ✓ Imago/financiële schade voorkomen
 ✓ Efficiency door standaardisatie

Stakeholders
Voor wie testen wij?
 ✓ Business
 ✓ Burger
 ✓ Ketnapartners
 ✓ Eindgebruikers
 ✓ IV
 ✓ Compliance

Testvak
Hoe verbeteren wij ons vakgebied?
 ✓ Breed cursusaanbod
 ✓ Onboarding programma
 ✓ Carrièrepaden
 ✓ Actieve volgroep Lidmaatschap TestNet
 ✓ Testconferenties
 ✓ Samenwerking overheidsbreed
 ✓ MT gevraagd en ongevraagd adviseren

Testproces
Hoe testen wij?
 ✓ Agile/SABEL
 ✓ Risico gebaseerd
 ✓ Gestandaardiseerd
 ✓ Geautomatiseerd, tenzij TMMi

InTraffic Testbeleid 2007

Definitie van testen:

- Inzicht geven in kwaliteit en risico's
- Volgens een gespecificeerde methode
- Verificatie en Validatie

*Verificatie: Voldoet het product aan de eisen van deze fase / Is het product goed gemaakt?
 Validatie: Voldoet het product aan de initiële gebruikers wensen / Is het goede product gemaakt?*

Missie / ambitie:

- Beheerst, effectief en efficiënt testproces in projecten
- Testen als dienst in de markt aanbieden

Testdoelen	Medewerkers	Organisatie	Testproces	Klanten
<ul style="list-style-type: none"> Inzicht in kwaliteit en risico's Product voldoet aan: <ul style="list-style-type: none"> Functionele eisen Niet-functionele eisen Regelgeving en standaarden 	<ul style="list-style-type: none"> Vaste groep test-specialisten Functie-beschrijvingen en carrièrepaden specifiek voor testers Alle testers hebben minimaal ISEB foundation 	<ul style="list-style-type: none"> Testen is onderdeel van projecten Projectleider is verantwoordelijk voor kwaliteit Professionaliteit wordt centraal gestuurd vanuit testgroep Testcoördinator escalereert indien nodig m.b.t. kwaliteit 	<ul style="list-style-type: none"> Op risico's gebaseerde testaanpak Gestructureerde testaanpak volgens de TMap* methode Metrics verzamelen m.b.t. kwaliteit van ontwikkel- en testproces Uniforme werkwijze 	<ul style="list-style-type: none"> Betrouwbare producten Geen ernstige fouten na oplevering van een product, te meten na 3 maanden. Teststrategie afstemmen met de klant

Testprocesverbetering:

- Verbeteringen zijn gericht op effectiviteit en efficiëntie van het testen
- Key performance indicators zijn Defect Detection Percentage en Test Execution Lead-Time
- TPI* naar niveau 5 (beheerst proces) voor interne projecten in 2008

Test Policy 2008

Definition of Testing

- Fit-for-use
- Verify against requirements
- Detect defects
- Measure quality

Mission / Ambition

- Structured test process
- Testing early involved
- Professional methods/tools
- Efficiency (balance)
- Transparent and predictable

- Measurable
- Aligned with business
- Quality attributes
- Reviews
- Test strategy

Test targets

- Requirements
- Performance
- Reliable/Robust
- Fit for purpose

Employees

- Test awareness
- Testers as role
- Trained
- Glossary

Organization

- Organized in projects
- Pool of testers by role
- Field support involved
- Test mgmt / coordination
- Foundation training

Process

- Metrics
- Risk based
- Test life cycle
- Test levels (V-model)
- Non / Functional
- Dynamic + static
- Entry / Exit criteria

Customers

- Acceptance - Users - Business - Support
- Improve business requirements
- Reduce live defects

Test Process Improvement

- Set up 'business case' for test improvement project
- Determine improvement goals, e.g. using model like TMM
- Organize test training and agree on terminology
- Establish key performance indicators

Recommendations

PHILIPS

Test Policy PMS – Medical IT

Testing is a life cycle process of planning, preparation and measurement - concurrent to development, to determine the quality of the software product and to demonstrate the difference between the actual and required status.

Focus Areas:

- To provide visibility regarding the quality and outstanding risks of products developed by PMS-MIT;
- To express this visibility by carefully reporting to our stakeholders
- To contribute to the product quality and development cost reduction, by finding defects as early as possible in the product creation process, and to co-operate with all other disciplines to get these defects solved
- To test products following a structured risk-based test process, from unit test until beta test, and to constantly improve this process with respect to effectiveness and efficiency
- To contribute to user/customer satisfaction and meeting user/customer needs/expectations regarding the released products

Key test targets	Employees	Key responsibilities	Key processes	Customers
<ul style="list-style-type: none"> Functionality Performance Interoperability Security Stability 	<ul style="list-style-type: none"> All involved in testing are trained on the required ISEB level Dedicated to all functions and career paths in testing are defined Test engineers hold the ISEB Foundation certificate Test managers hold the ISEB Practitioner certificate 	<ul style="list-style-type: none"> To ensure a mature Test Management discipline that holds the required test testing personnel and skills To ensure that test activities are carried out according to a defined test process To provide visibility on software product quality and support phase transition / release decisions 	<ul style="list-style-type: none"> Test planning based on product risk analysis Testability reviews using a formal procedure & checklist Test design using formal test design techniques Test execution, defect reporting & analysis Test automation, especially for regression testing 	<ul style="list-style-type: none"> The 'key test target' indicate no major problems Reliable products Product according to international standards Products according to business requirements and user/customer needs

Test Performance Improvement
 Test improvement is carried out using the TPI-model, it is performed in the context of the overall MIT improvement program using the CMM-model

Improvement actions will be identified both top-down and bottom-up and are focused at shorter lead-times, defect prevention, higher defect finding effectiveness and improved predictability

Information One-Page Strategy

Our strategic business enablers

- Leadership**
 - Result oriented
 - Customer driven
 - Inspire commitment
- People**
 - Get the right people on the right place
 - Act as one company by improving global teamwork
- Partnerships & resources**
 - Create and extend Partnerships with reference sites and launching reference sites and launching customers are a joint responsibility of Marketing, Sales and Staff
 - Flexibility by hiring test engineers
- Processes**
 - Culturing and tracking of application requirements
 - Testability requirements are equal for the SPS
 - Risk based testing
 - Usability testing
- Policy deployment**
 - Deployment of Handbook of Testing
 - Use the STAR P's and metrics as tool of management

The results we target

- Financials**
 - Deployment costs within budget: 3.4 mil.
 - Reference sites machines and income no longer part of innovation budget
- Customers**
 - Improve product quality at MS 9
 - Defect detector percentage alpha +75%
 - Defect detector percentage beta + 50%
 - Introduce way of working application requirements
 - Reorganize Reference sites on cost and improve information from sales
 - Introduce Usability tests
 - Introduce Workshops & internal audits
- Processes**
 - > 60% of STAR engineers that still customers get an additional assessment related to application requirements
 - Tool selected to track application
 - SPS is reviewed on testability
 - Selected and use usability test techniques in pilot project Q4
 - TMM level 2 & 3
- Competences**
 - Competence and skills matrix deployed
 - Workshops to deploy Handbook of Testing Q3
 - Minimum 4 for each product group

Our strategy

- Drive product and services roadmap towards one platform for the mainstream segment of the market, which can be seamlessly integrated in the customers manufacturing supply chain
- Expanding economic use and enhancing profitability of the installed base of our customers
- Realize profitable growth as medium-speed market segment through partnership agreements

Company Confidential

TESTBELEID

Testdoelen	Waarden	Stakeholders	Testvak	Testproces	Organisatie
<ul style="list-style-type: none"> Wat willen we bereiken? Testen naar een hoger niveau Professionele testorganisatie Testmindsset vergroten binnen de organisatie 	<ul style="list-style-type: none"> Wat levert testen ons op? Betrouwbare testpartner Compliance aan richtlijnen Voorspelbare en voorspelbare producten Imago/financiële schade voorkomen Efficiency door standaardisatie 	<ul style="list-style-type: none"> Voor wie testen wij? Business Gebruikers (intern/buiten) Ketnapartners IV & Data Carrièrepaden Actieve Testcommunity 	<ul style="list-style-type: none"> Hoe verbeteren wij ons vakgebied? Breed cursusaanbod Onboarding programma Carrièrepaden Actieve Testcommunity 	<ul style="list-style-type: none"> Hoe testen wij? Agile Risicogebaseerd Gestandaardiseerd Geautomatiseerd, tenzij TMMi 	<ul style="list-style-type: none"> Hoe komen wij onze professionele testorganisatie? Professioneel werken Aanpak Succesvolles vinden Verantwoordelijk voor testactiviteiten Continuïteit werken de overheid

Testproces verbeteren

Wij streven naar het verbeteren van de kwaliteit en efficiency van het testproces middels een uniforme werkwijze. Door het professionaliseren van ons vakgebied verhogen wij de tevredenheid van testanalisten, en blijven wij onze collega's binden & boeien.

Bij het testproces verbeteren wordt gebruik gemaakt van het Test Maturity Model Integratie (TMMi). Dit implementeren wij in een agile context binnen de DevOps-teams van het CIB. Per einde 2025 willen we TMMi level 3 gecertificeerd zijn.

Performance indicators

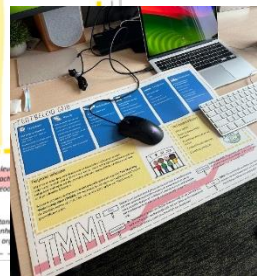
Testersgelek
 Business Reportcijfer
 Kwaliteit
 Percentage gecertificeerde testers
 Testdekking per testoor
 Defects op productie

TMMi

Testen is een gestructureerd proces dat tot het behalen van de kwaliteit van de software systemen inzichtelijk te maken, de productiviteit in een zo vroeg mogelijk stadium of te denken en zodanig met een onafhankelijke test en bijlage te leveren aan de werelde van software systemen bij het CIB.

De Testanalist is bij een DevOps team en heeft als specifieke taak, het mogelijk te maken om de kwaliteit van de software te verbeteren en te behouden, zowel functioneel als non-functioneel.

TMMi: De verantwoordelijke is de Testanalist, die de testactiviteiten en het testproces binnen een team coördineert.



Leadership

Advice to others

Ensure senior management are involved	89%
Involve testers when defining processes	59%
Ensure you interpret the model	57%

- Management commitment is “too easy”
- Managers plan, organize, direct, control, follow the rules
- Leaders inspire, influence, motivate, build, shape



- We require **Leadership !!**
 - This is change management

TMMi – it's simple but not easy!



TMMi Level 3: Defined

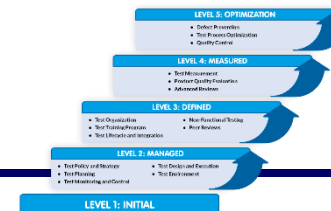
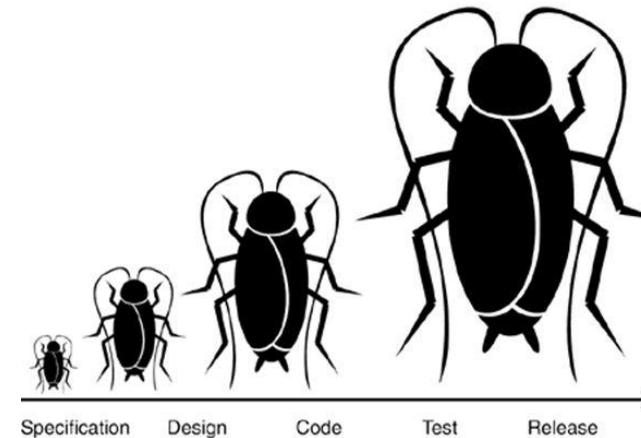
organisational
process areas

- Test Organization
- Test Training Program
- Test Life cycle and Integration
- Non-Functional Testing
- Peer Reviews



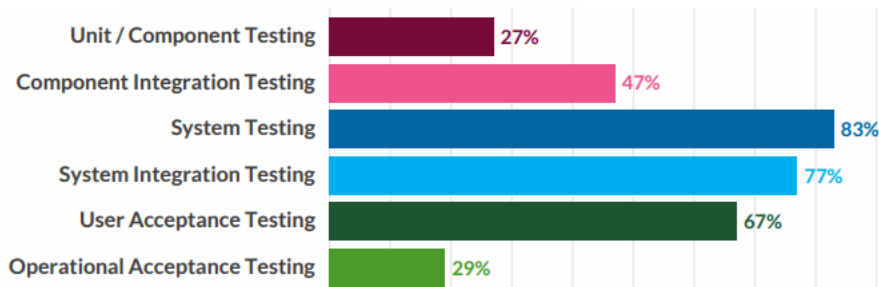
Early involvement

Institutionalization

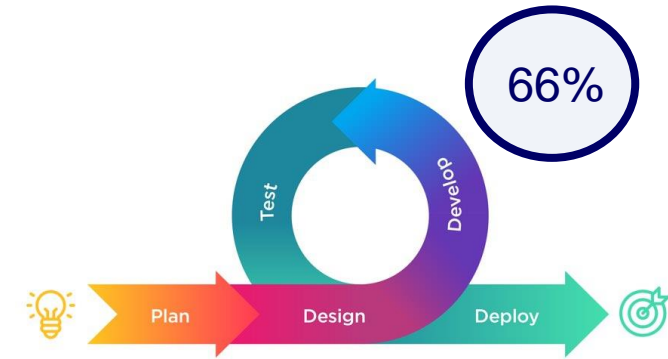


Where is it being used?

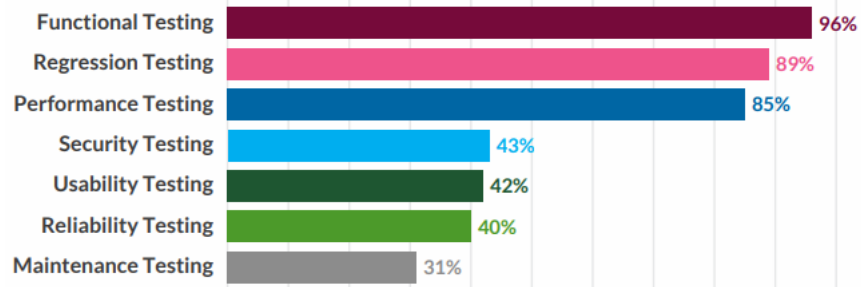
Test Levels



37%



Test Types



46%



Agile Benefits

1. Ability to manage changing priorities
2. Improved project visibility
3. Delivery speed/Time-to-market
4. Increased team motivation
5. Increased team productivity

Source: 15th Annual State of Agile™ Report

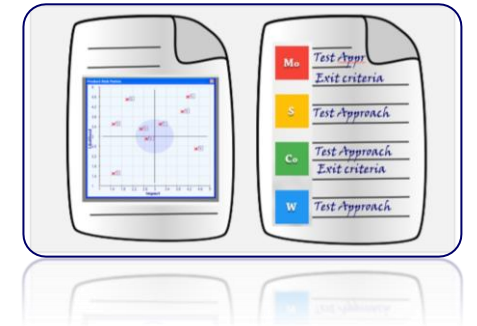
Note, many are Agile-like!



What is missing?

TMMi in Agile context

- Agile brings
 - business value, lean mindset, retrospectives, many iterative steps
- TMMi reminds you of critical testing practices
 - there is more than unit testing, test automation and exploratory testing
- Look for alternative (Agile) practices
 - risk poker, one page test plan, acceptance criteria etc.
- Need some process without loosing Agile culture
- Balancing self-empowered teams with “standard” test process



TMMi Lightning Scan

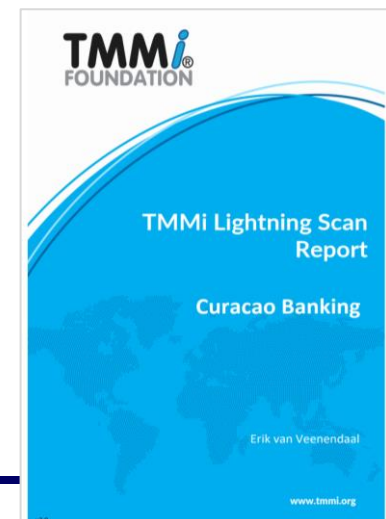
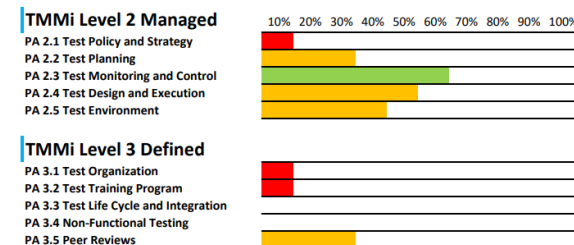


■ Why

- To support an understanding of the TMMi model
- To make the TMMi model more tangible
- To provide a *very quick* evaluation of where you are
- To create buy in from stakeholders to the initiative

■ How

- 5 essential questions per process area of TMMi levels 2 and 3
- Team based exercise
- Scoring: Yes, No, or Partly
- Tool supported and report generated



Now available

www.TMMi.org / TMMi documents

Test Maturity Model integration (TMMi) LIGHTNING SCAN TOOL

TMMi Foundation, v2.4.2



TMMi ライトニングスキャンツール

TMMi ライトニングスキャンツールは、TMMi の理解をサポートし、TMMi モデルをより具体的なものにするために開発されました。これにより、関係者は TMMi モデルに基づいてテストの成熟度を迅速に評価できます。もちろん、ライトニングスキャンは、非公式または公式な TMMi アセスメントによって達成される厳密さと比較するものではありません。現在、TMMi はテストプロセス改善の事実上の世界標準となっています。TMMi の詳細については、www.tmmi.org をご覧ください。

はじめに

ユーザー情報

組織		Japanese
プロジェクト/部門		English
スポンサー		Chinese
評価者		French
日付		Italiano
備考		Nederlands
		Spanish

手順

チェックを入れてください。
レベル 2 とレベル 3 で成熟度モデル統合 (TMMi) をテストします。
常に実行しており、付加価値がある場合は、「はい」を選択します。
時々行う場合、または一部を行う場合、または限られた価値しかない場合は、「部分的に」を選択します。
まったく実行しない場合、または実行してもほとんど価値がない場合は、「いいえ」を選択します。

範囲

どの TMMi レベルおよびレベルのプロセス領域が適用可能

TMMi レベル 2 管理対象

プロセス領域 2.1 テスト方針と戦略

文書化されたテスト方針が存在し、経営陣によって承認されています。

テスト戦略は、各テストレベル、テストタイプ、またはテスト象限の目標、アクティビティ、成果物、および責任を記述して定義されます。

テストエンジニアとソフトウェアエンジニアはテスト方針と定義されたテスト戦略について知らされ、文書はすべての関係者に配布されます。

テストパフォーマンスインジケータの基本セットが定義され、展開されます。

テスト方針とテストパフォーマンスプロセス改善イニシアチブの推進

プロセス領域 2.2 テスト計画

テスト計画は製品リスク評価から始

リスクに基づいて、テストの優先順位の詳細レベル、完了/終了基準、テストの見積もりには、リスク、統一貫して適用されます。

テスト計画は、テスト対象の項目と、テストの人員配置などのトピックをテスト計画は主要な関係者と検討

プロセス領域 2.3 テストの

テストの進捗状況 (スケジュール、

TMMi レベル 3 の定義

プロセス領域 3.1 テスト組織

プロジェクトおよび組織におけるテストの実践をサポートするテスト組織が定義され、確立されます。

職務内容を伴うテスト機能が確立され、テストスペシャリストに割り当てられます。

テストの知識、スキル、ステータス、報酬を向上させるためのテストのキャリアパスが確立され、個人の能力開発計画の基礎として使用されます。

組織のテストプロセスは、長所、短所、改善の機会を特定するために、レトロスペクティブの実施などによって定期的に評価されます。改善に対処するプロセスの変更が計画され、実装されます。

組織の標準テストプロセスとテストプロセス資産 (テンプレートなど) が組織全体に展開され、実践から学んだ教訓が組織の標準テストプロセスに組み込まれます。

プロセス領域 3.2 テストトレーニングプログラム

組織のテストトレーニングのニーズが特定され、定義されます。

組織とプロジェクトの両方からのテストトレーニングのニーズは、誰がどのトレーニングに責任を持つかについて定義された明確な責任と一致しています。テストのための組織的なトレーニング計画が確立され、維持されます。

組織のトレーニングのニーズに対応し、プロジェクト固有のトレーニングのニーズをサポートするために、テストトレーニング機能が確立されています。テスト専門家およびテスト関係者に必要なトレーニングが実施され、これらのトレーニングの記録が確立されます。

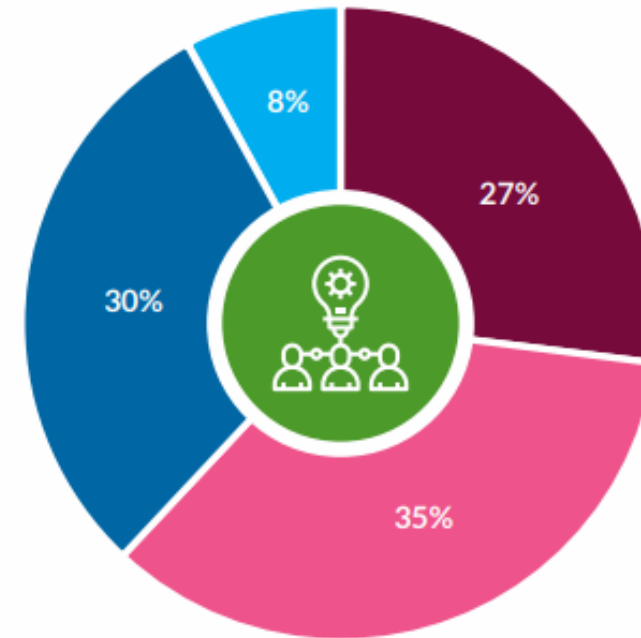
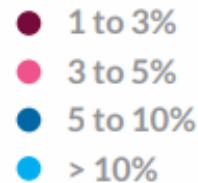
プロセス領域 3.3 テストのライフサイクルと統合

逸脱する必要があるプロジェクトの基準やガイドラインを調整するなど、組織全体にわたる一連の標準テストプロセスが確立および維持されます。

Typical Cost



- Improvement program
 - Typically 5% of testing costs
- Direct costs
 - Test process improver
 - Processes
 - Training
 - How to / Workshops
 - External consultancy
 - Assessment
- Indirect costs
 - Learning curve



TMMi – it's simple but not easy!

TMMi Benefits

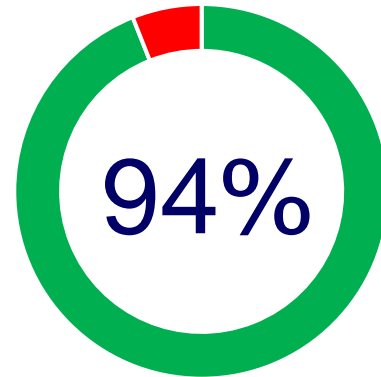


**WORLD-WIDE
USER SURVEY**

2022/2023

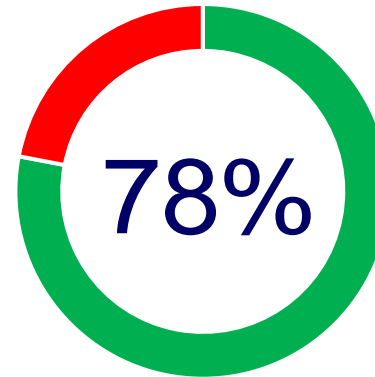
Product Quality

Enhanced product quality
Reduced product risks
Reduced number of defects



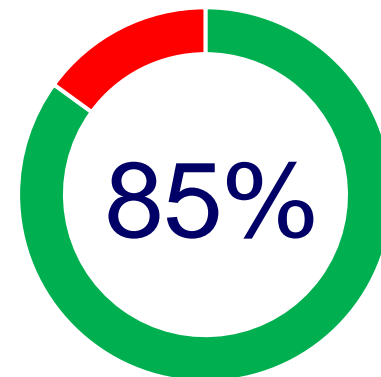
Test Efficiency

Increased test productivity
Accelerated software delivery
Reduced project costs



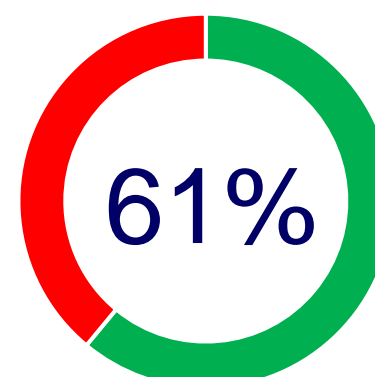
Compliance

Achieved TMMi certification
Achieved standard compliance



People

Improved test engineering discipline
Improved team morale



Individual Benefits Reported

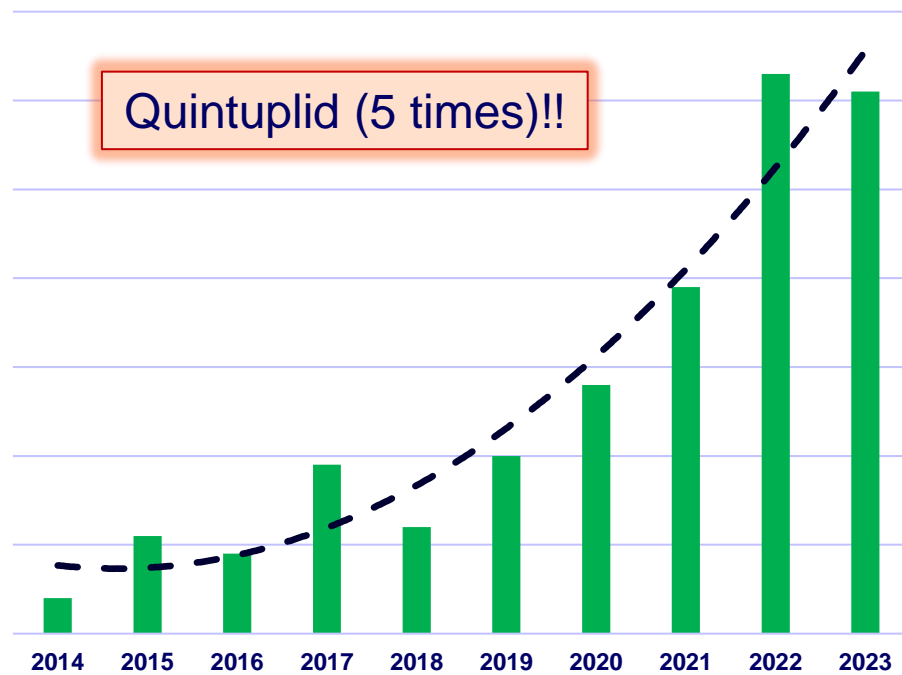
Organization Type	TMMi level	Software Quality benefits reported
Automotive	2	Increased product risk coverage (now at 80%)
Software	2	DDP increased from 60% to 70% at system testing
Bank	3	A 22% increase in defect detection effectiveness
Insurance	3	Production defects (related to testing) close to zero
Bank	3	Defect leaking to production decreased by 15%



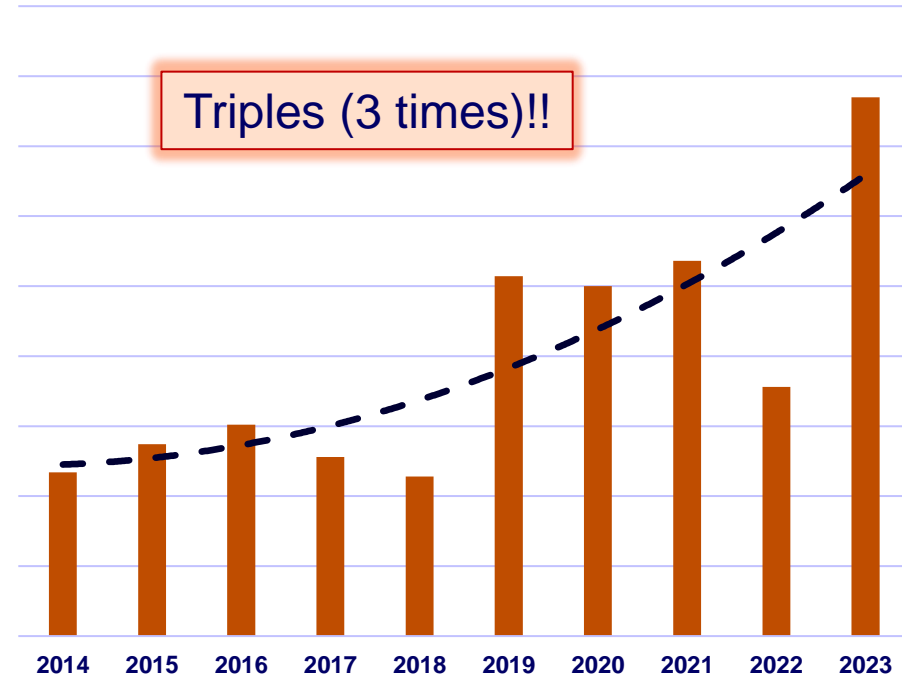
Organization Type	TMMi level	Testing Productivity benefits reported
Software	3	Increased test productivity by 20%
Technology	3	Test execution lead time reduction from 19 to 5 weeks (through early involvement and early testing)
Stock Exchange	3	Percentage of early defects found increased by 25%
Software	3	Time-to-market reduction by 7%



Trends




Number of formal TMMi assessments



Number of TMMi Professional exams

Estimated number of TMMi users: 10.000

TMMi Reminders

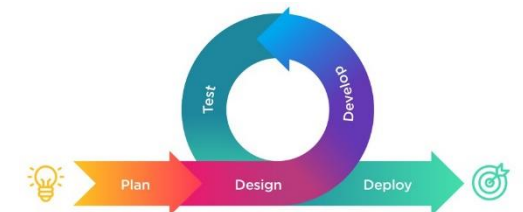
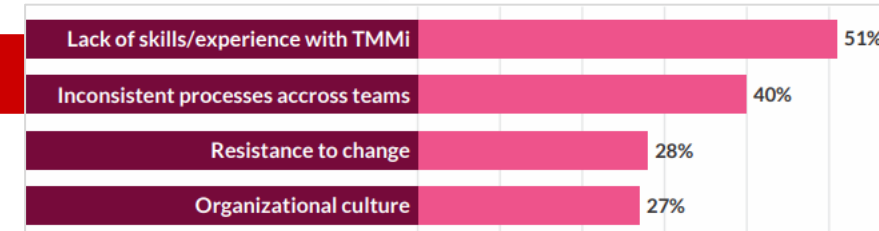
- Start from **business objectives**
- Only goals satisfaction is required
- Study practices, consider **alternative practices** – look for the intent
 - Ask the question, how do we achieve this practice?
- TMMi is not tick-off list 
 - Focus on what has **added value!**
- **Prioritize** the process areas, goals that have most added value
 - Largely achieved is enough
- Myth: TMMi requires large and detailed processes!

Keep it Simple – This is difficult



- Forget about TMMi levels 4 and 5
- **Lightning scan** or Quick scan is enough
- **One page** process descriptions, focus on “how to”
 - Corporate memory, on-boarding, alignment of teams, re-inventing the wheel
- Focus on Templates and **best practices** library
- Less process more training (address **people** in parallel)
- **Critical thinking** (to TMMi)
- Think business/added **value**

Challenges Experienced



TMMi Course Evaluation



- Objective Driven
- ISTQB related
- Well-founded
- Clear Priorities
- Self-Assessments
- Freely Available
- Also to be used with Agile
- Open community
- On-going development





www.erikvanveenendaal.nl

A TMMi page with all documents for download



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Will keep you updated on TMMi

Thank you!

