Makkelijk testontwerp met TMap® HD.

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TEST NET

Makkelijk testontwerp met twee testaanpakken en vier dekkingsgroepen uit TMap HD

Working with the TMap Suite for Test Engineers

Confidence through built-in Quality

Nieuwegein, 24 juni 2014

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Agenda:

9:30	1. Welkom en introductie 2. TMap HD en de TMap Suite 3. De elementen en Test varieties 4. Test approaches & coverage types 5. Workshop sprint 1: ▶ Testen met testontwerptechnieken
11:00	Koffiepauze 1. Workshop sprint 2: ▶ Testen gebaseerd op ervaring 2. Workshop sprint 3:
13:00	▶ De combinatie 3. Afsluiting

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Introductie

Stel je even voor aan de anderen aan jouw tafel

- **Naam**
- **Organisatie**
- **Rol**
- **Test ervaring**

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Even voorstellen: Rik Marselis

Management Consultant Quality & Testing bij SOGETI

Zo'n 35 jaar IT ervaring, zo'n 17 jaar kwaliteit & testen

Adviseur, procesverbeteraar & coach bij vele organisaties

Prince2 Practitioner, CMMI en CISA

Docent voor diverse trainingen, bijv. Agile testen

TMap, TPI en ISTQB geaccrediteerd ISTQB

Research ➔ Auteur div. boeken en artikelen

Fellow van SogetiLabs, Spreker op div. conferenties

En daarnaast:

Voorzitter TEST NET (vereniging voor & door testers, 1700 leden)

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@rikmarselis

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TMap's evolution: the TMap Suite

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TMap HD: What's new?

Salmon fettuccine

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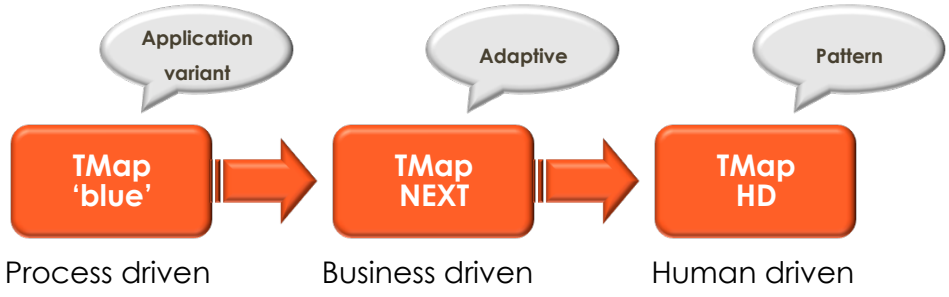
TMap's evolution



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TMap's evolution

So what's new …?

- Human Driven
- Quality Driven
- More than just testing
- The Elements
- Test varieties & approaches
- The Building Blocks

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The TMap Suite

TMap NEXT certificates remain valid!

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New: the Elements

Mr. Mikkel introduces Neil to the elements…

Mr. Mikkel took a deep breath and said: "I'll clarify some essentials in the next five minutes. I'll prepare a short document for you explaining the elements in a bit more detail afterwards. Lean aims for Right-First-Time while pursuing zero defects. This implies that quality must be built into the process, therefore the process is key. Testing is used to show that the process works and the quality is up to par, ensuring Confidence in the end product.

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New: the Elements

Mr. Mikkel introduces Neil to the elements…

"I see," I said, "our momentum is changing. So, starting with Simplify and Integrate, what are the other ones?" Mr. Mikkel walked back, sat down across from me and said: "Two of them are Industrialize and People. When you join those elements and start working according to them, you will reach the fifth element, Confidence. In total they form a quality-driven approach. That approach has several important characteristics, which are based on Lean principles that can be fulfilled using the five elements."

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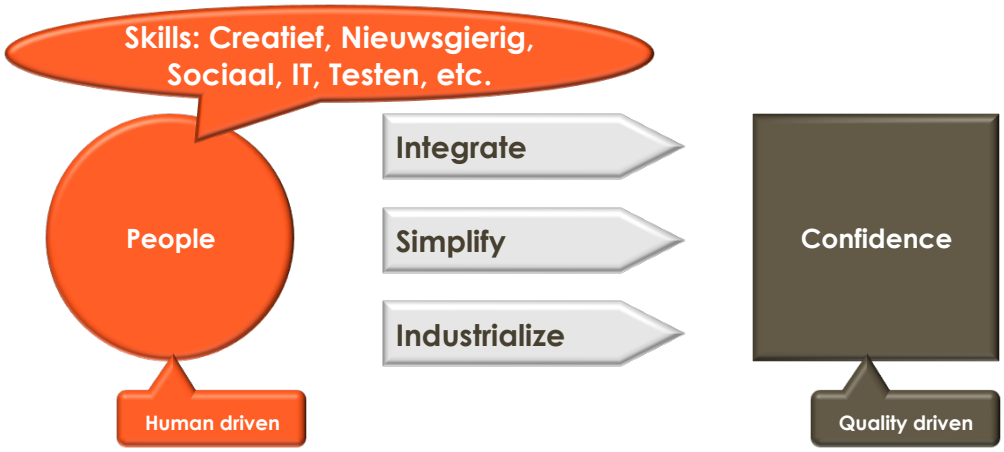
TMap HD: The Elements



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TMap HD
A Quality Driven Approach

Confidence through built-in Quality

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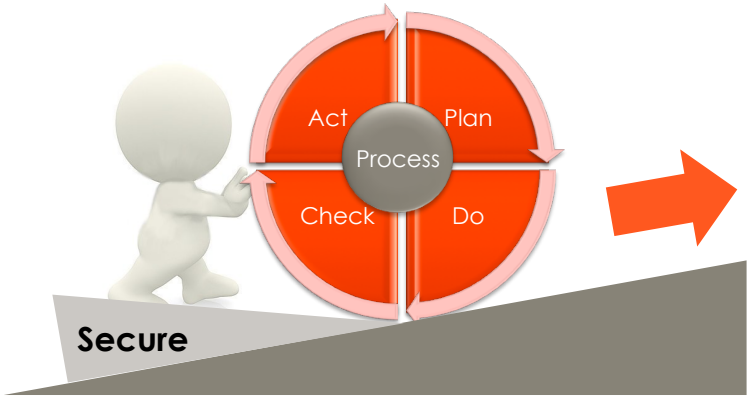
Continuous Improvement



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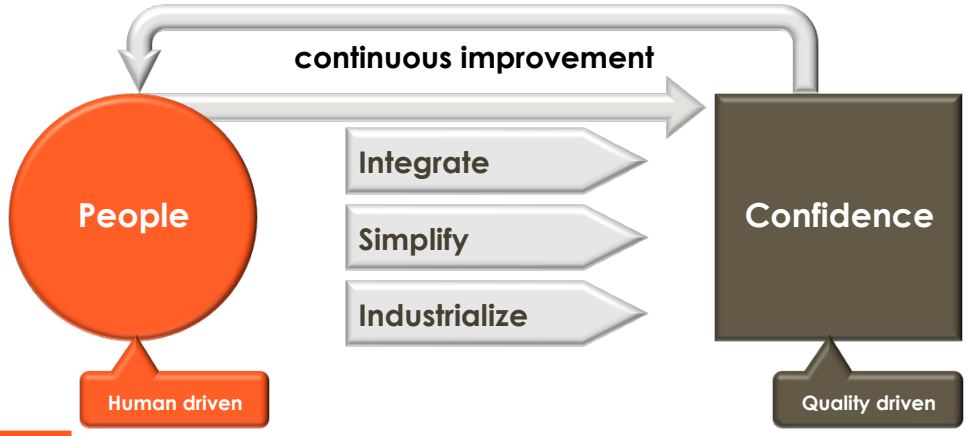
The Elements & Continuous improvement



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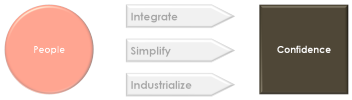
The Final Element: Confidence

The overarching result!

Confidence in:
- The quality of the end product
- The team
  - By the team members and
  - By 'the organization'!
- One self



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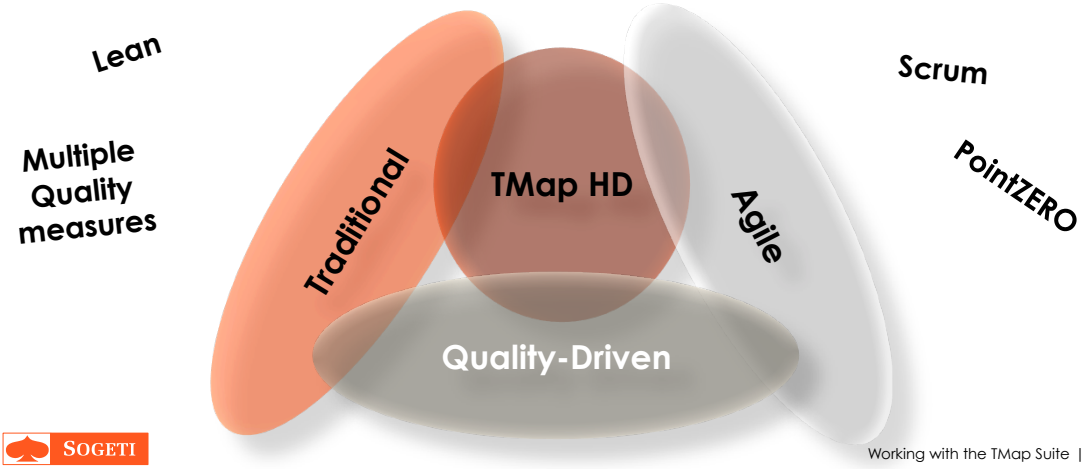
Confidence: Quality Driven



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Building Blocks

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TMap HD: Building Blocks

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Building Blocks: choose what you need…

Described in the book:
Test manager
Assignment
Test organization
Test plan
Product Risk & Benefit Analysis
Test strategy
Performance testing
Test approaches
Crowd testing
Test varieties
Test manager in agile environments
Permanent test organization
Model based testing
Quality policy
Test tools
Quality-driven characteristics
Integrated test organization
Implementing test tools
Reviewing requirements

More will follow at the website !!

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Building Blocks

Quality Driven Approach ➔

- **Start small:**
  It's better to do *one* thing right,
  than three things half …
- **Take your pick**

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Building Block: Test varieties

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Testing needs different angles and views

- Today people are hesitant to use the word 'Test Level' since it seems to imply hierarchy.
- Testers often struggle to distinguish between Test Levels and Test Types.
- What should the focus of testing should be?
- What stakeholders should be involved in testing? Do they have different needs?
- Inexperienced Agile teams often do unit testing only, they forget the need to look from other perspectives

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Test varieties

What should be our focus when organizing testing?
All testing activities must collectively cover all important areas and aspects of the system under test: that is the main objective.

To cope with the confusion around how to distinguish testing tasks, we introduce the term Test Variety.
The term Test Variety aims at making all stakeholders aware that there will always be different needs for testing, and therefore different test varieties will have to be organized. Whether these are organized separately or combined depends on the situation.

There may be many reasons for having different test varieties.

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Test varieties

- **Term Test Variety makes stakeholders aware that for different needs for testing, tests need to be varied. Whether these are organized separately or combined depends on the situation.**
- **Test Variety makes everybody involved aware there are different points of view towards testing activities, and we can make sure that the interests of all stakeholders will be covered by addressing these in a well-considered way.**

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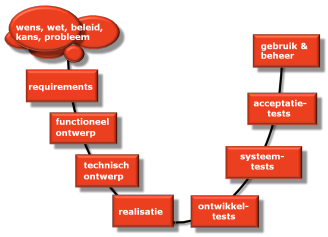
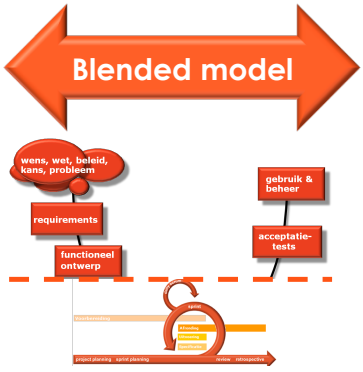
Implementing test varieties

Traditional lifecycles

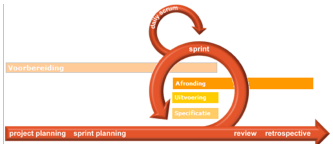
- Test levels
- Test types





Iterative lifecycles

- Test approaches



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Test approaches
- Experience based
- Coverage based

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Test approaches

Experience based **Coverage based**

- **Wat verstaan we hieronder?**
- **Wat is het verschil?**

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Test approaches with TMap HD

Experience based	Coverage based
1. **Checklist** Used for static & dynamic testing	1. **Process** e.g. Proces Cycle Test
2. **Error guessing** Based on previously encountered defects	2. **Conditions** e.g. Elementary Comparison Test of Decision table
3. **Exploratory testing** Learn, design and execute in parallel	3. **Data** e.g. Data Combination Test
	4. **Appearance** e.g. Syntactic or using user profile

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Coverage based testing

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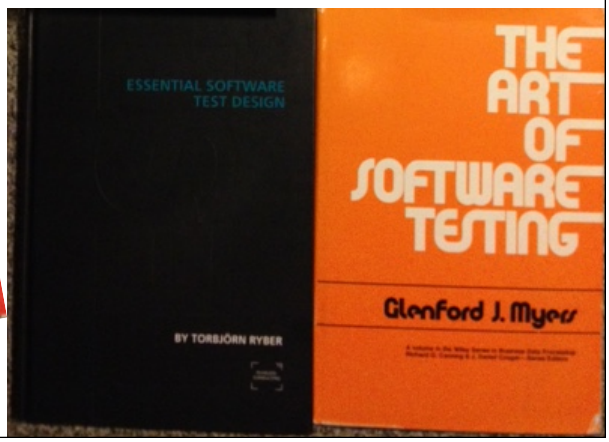
Welke testontwerptechnieken ken je?

ISTQB
International Software Testing Qualifications Board



Testontwerptechnieken / dekkingsvormen

TMap NEXT
- Equivalence classes
- Boundary value analysis
- Decision points (CC, DC, CDC, MCDC, MCC)
- Orthogonal arrays
- Pairwise testing
- Data cycle test (CRUD)
- Statistical usage (op.prof.
- Right paths / Fault paths
- Checklist
- Decision table
- Data Combination Test
- Elementary comparison tst
- Process Cycle test
- Real-life test
- Semantic test
- Syntactic test
- Use case test
- Error Guessing
- Exploratory testing
- Reviews
- Walkthroughs
- Inspections

ISTQB
- Equivalence partitioning
- Boundary value analysis
- Decision table testing
- Cause Effect graphing
- State transition testing
- Use case testing
- User story testing
- Structure based (SC, CC, DC, CDC, MCDC, MCC)
- Error Guessing
- Exploratory testing
- Orthogonal arrays
- Pairwise testing
- Domain analysis
- Defect based techniques
- Checklist
- Combinatorial / Class. tree
- Informal review
- Technical review
- Walkthrough
- Inspection
- Static analysis

Torbjorn Ryber
- Exploratory testing (this is an approach, not a technique)
- Inspection
- Walkthrough
- Technical review
- Informal review
- Modelling
- Equivalence partitions
- Boundary values
- Domain tests
- Business process testing
- Use case testing
- State based testing
- Decision tables & trees
- Elementary comparison
- Combinatorial testing
- Data cycle testing
- Syntax testing
- Time cycle testing
- Program Logic (SC, BC, PC)
- Data flow testing

Boris Beizer
- Control-flow testing
- Loop testing
- Data-flow testing
- Transaction-flow testing
- Domain testing
- Syntax testing
- Finite-state testing

And more…

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Hoe werkt “gebonden testen”?

Ontwerp alle testgevallen met een bepaalde techniek

↓

Voer alle testgevallen uit

↓

Rapporteer over de resultaten

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Waaruit bestaat een testgeval?

Uitgangssituatie

Actie & Input

Verwacht resultaat

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Testsprint 1 (25 minuten)

Maak vooraf testgevallen.

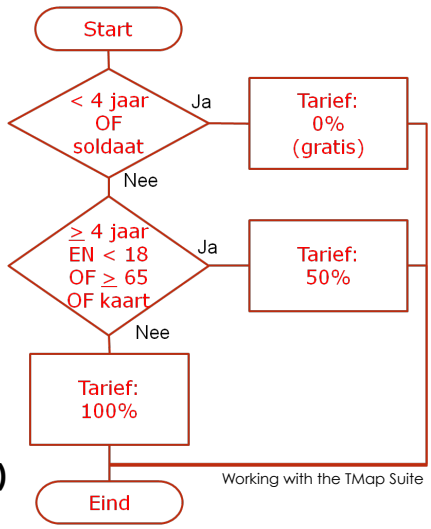
Gebruik één van de volgende technieken: PCT, DCT, EVT, BTT, EK&GWA

Hoeveel testgevallen heb je?

Voer je testgevallen uit op het excel-programma
(van USB-stick of download van www.marselis.eu)

Houd de werkelijke resultaten bij en eventuele bevindingen.

SOGETI **(Klaar? Probeer nog een techniek)**



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Terugkoppeling

Hoeveel testgevallen heb je gemaakt?

Wat is je conclusie m.b.t. de applicatie?

Heb je bevindingen?

Met welk(e) testgevallen heb je de bevinding(en) gevonden?

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TMap HD: Human Driven !!

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How testing is often perceived

Two IT people are cycling up a hill on a tandem-bike.
When they finally reach the summit the one in front, the developer, says:
'It was hard but we made it!'
Then the one at the back, the tester, comments:
'Yes and I hope you appreciate that I was using the brakes all the time because otherwise we would have rolled down the hill backwards'

Use TMap HD to make sure you are a tester that helps cycling up the hill !!

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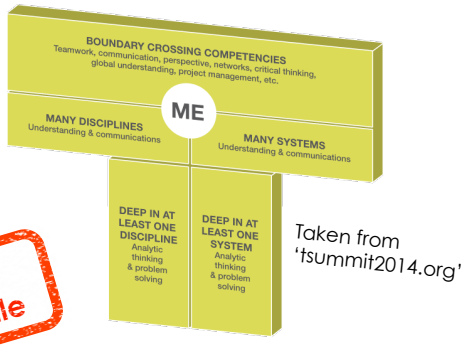
A new kind of tester: the T-shaped professional

The difference between failure and success is in… the People involved

- **Human Driven as opposed to Process Driven**
- **Skills, Knowledge and Experience of the individual are crucial**
- **Team responsibility vs.**
- **Personal responsibility**



Taken from 'tsummit2014.org'

Respect for People – LEAN
People over Process - Agile

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Experience based testing

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Wat is exploratory testing (ET) volgens jou?

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Waarom doe je exploratory testing?

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Definities Error Guessing en Exploratory testing

Error guessing

**Testers gaan,
zonder het gebruik van gedocumenteerde testgevallen,
het systeem ongestructureerd testen ***

It is largely an intuitive and ad-hoc process **

Exploratory testing

Elke vorm van testen waarbij de tester zijn testontwerp maakt tijdens de testuitvoering.

De informatie die wordt verkregen tijdens het testen wordt gebruikt om nieuwe en betere testgevallen te ontwerpen. *

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Source:
* TMap NEXT
** The art of software testing, Glenford J. Myers

Exploratory testing is:

"An approach to software testing that emphasizes the personal freedom and responsibility of each tester to continually optimize the value of his work by treating learning, test design and test execution as mutually supportive activities that run in parallel throughout the project."

"Simultaneously designing and executing tests to learn about the system, using your insights from the last experiment to inform the next."

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Source:
Presentation of Huib Schoots at TestNet

Exploratory testing in TMap NEXT

Pagina	*Onderwerp*
192	ET binnen teststrategie
196	Definitie
236	Veranderende testbasis
258	Ontbrekende testbasis
297	Session based
319	Pairing
567	Testen van "uiterlijk"
675	Vergelijking Error Guessing en Exploratory Testing
677	Definitie en beschrijving

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Exploratory testing = gestructureerd testen !!

Charter met Scope en Timebox

Ontwerp een testgeval en voer het uit

Gebruik een “orakel” voor de uitvoervoorspelling

Log de resultaten, o.a. t.b.v. hertesten en bevindingen

Debriefing

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Exploratory testing ➔ pair-testing

Werk in tweetallen:

- Samen het beste volgende testgeval bedenken
- De één voert de test uit, de ander logt
- Samen het resultaat beoordelen

Hertesten en regressietesten kan door één tester, op basis van log

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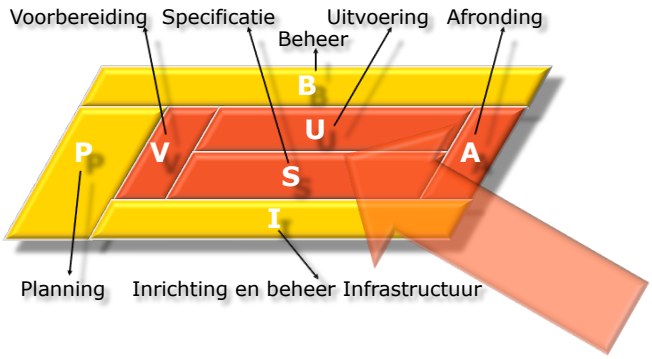
TMap NEXT activiteiten bij Exploratory Testing



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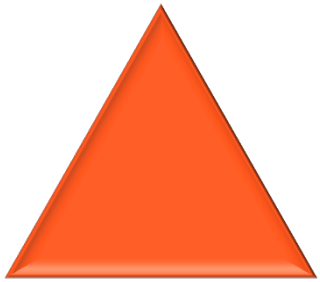
Testsprint 2 (25 minuten)

Exploratory testen

Triangle exercise

Op basis van charter



Voer je test uit op triangle-bach2.exe

(van USB-stick of download van www.marselis.eu)

In tweetallen of groepjes

SOGETI 25 minuten

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Terugkoppeling

Hoeveel testgevallen heb je gemaakt?

Wat is je conclusie m.b.t. de applicatie?

Heb je bevindingen?

Met welk(e) testgevallen heb je de bevinding(en) gevonden?

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Element: Integrate

Building Block: Test Organization

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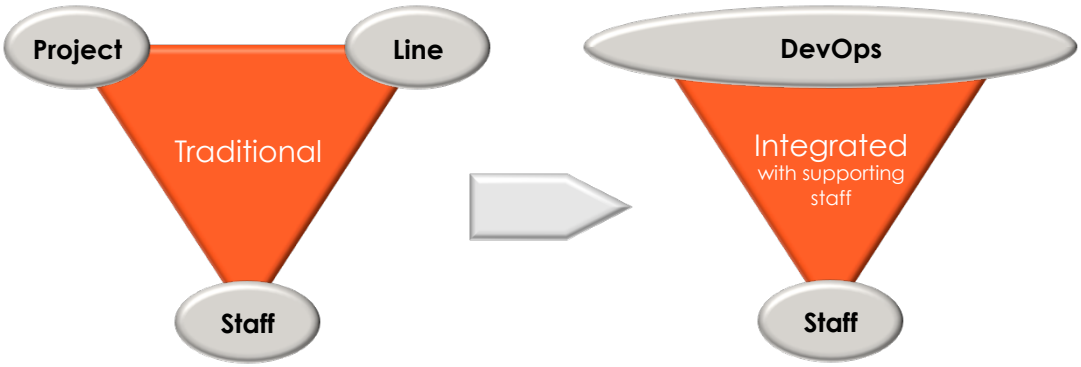
Integrated Test Organization



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Integrate: Test approaches

Experience based

Coverage based

Deze aanpakken kunnen prima gecombineerd worden

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Geïntegreerd gebruik: Experience & Coverage

Beoordeel het probleem dat je krijgt aangereikt

Bepaal je initiële aanpak

Gebruik checklists en exploratory testing om het testobject te verkennen

Pas coverage-based technieken toe afhankelijk van risico en dekking.

Lee Copeland's exercise

Ik heb een object in gedachten
Jullie mogen om beurten een ja/nee vraag stellen
Als je het object weet mag je het roepen

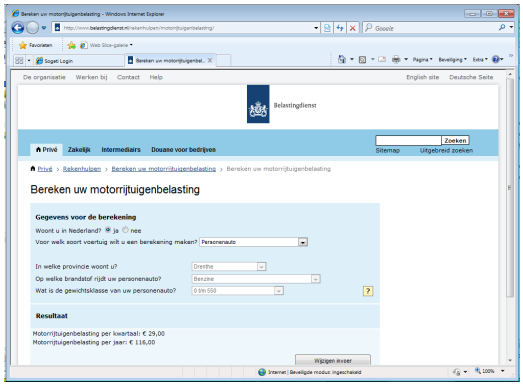
Testsprint 3 (25 minuten)

Maak je eigen charter
(experience & coverage!!)

Voer je charter uit (20 min.)

Doe de debriefing (5 min.)

Testobject:
http://www.belastingdienst.nl/rekenhulpen/motorrijtuigenbelasting/



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Terugkoppeling

Welk "probleem" wilde je aanpakken? En hoe?

Hoeveel testgevallen heb je gemaakt?

Heb je bevindingen?

Met welk(e) testgevallen heb je de bevinding(en) gevonden?

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Samenvatting combi Experience & Coverage

- Charter, met scope en timebox
- Afwisselend: onderzoeken, bedenken te testen situaties, uitvoeren van testen
- Combineren met dekkingsvormen
- In tweetallen
- Loggen van testgevallen en testresultaten

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Afsluiting

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Maar waarom valt dit onder “simplify” ????

1. Bepaal het soort probleem
2. Bepaal de passende aanpak
3. Bepaal de techniek(en)

Experience based	Coverage based
1. Checklist Used for static & dynamic testing	1. Process e.g. Proces Cycle Test
2. Error guessing Based on previously encountered defects	2. Conditions e.g. Elementary Comparison Test of Decision table
3. Exploratory testing Learn, design and execute in parallel	3. Data e.g. Data Combination Test
	4. Appearance e.g. Syntactic or using user profile

Pas niet altijd dezelfde techniek toe
(of nog erger: error guessing)

Ken de overeenkomsten en verschillen van dekkingsvormen en technieken

Zo bereik je:
Effectief en efficiënt testen met een beperkte inspanning

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Conclusie *(TMap HD, Niki van Dreumel, ASR)*

In the hands of experts,

Exploratory Testing is a structured way

to measure the quality of the information system

in a relatively short time

and to reach an objective view on the risks involved.

SOGETI Neil’s Quest for Quality: Pagina 222

Conclusie

Met de TMap Suite ga je van:
Werken volgens TMap

Naar:
Werken met TMap

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The TMap Suite summarized

- TMap HD and
- TMap NEXT and
- tmap.net

- Confidence through built-in Quality

- Not just for 'true' Lean or Agile environments, but also in traditional and hybrid environments.

- Human Driven
- Quality Driven

- Elements
  - People
  - Simplify
  - Integrate
  - Industrialize

  } Confidence

- Building Blocks
  - Patterns

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Meer lezen?

Download vanaf www.marselis.eu of neem een printje mee.

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The end.

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Happy Testing!

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Logging testgevallen

Volg nr.	Leeftijd	Soldaat J/N	Korting-kaart J/N	Verwacht resultaat	Werkelijk resultaat	Opmerking
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Logging testgevallen

Volg nr.	Zijde A	Zijde B	Zijde C	Verwacht resultaat	Werkelijk resultaat	Opmerking
1						
2						
3						
4						
5						
6						
7						
8						
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10						