TPI NEXT

Test process improvement… ***improved***

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Marcel van Oosterwijk

39 år gammal

13 år erfarenhet:

- Automatiserad testing
- Prestandatesting
- Strukturerad testing
- Testprocessförbättring
- Utbildning

15 TPI uppdrag

7 år i Sverige

Kompetensnätverk i Sogeti

Författare TPI Next

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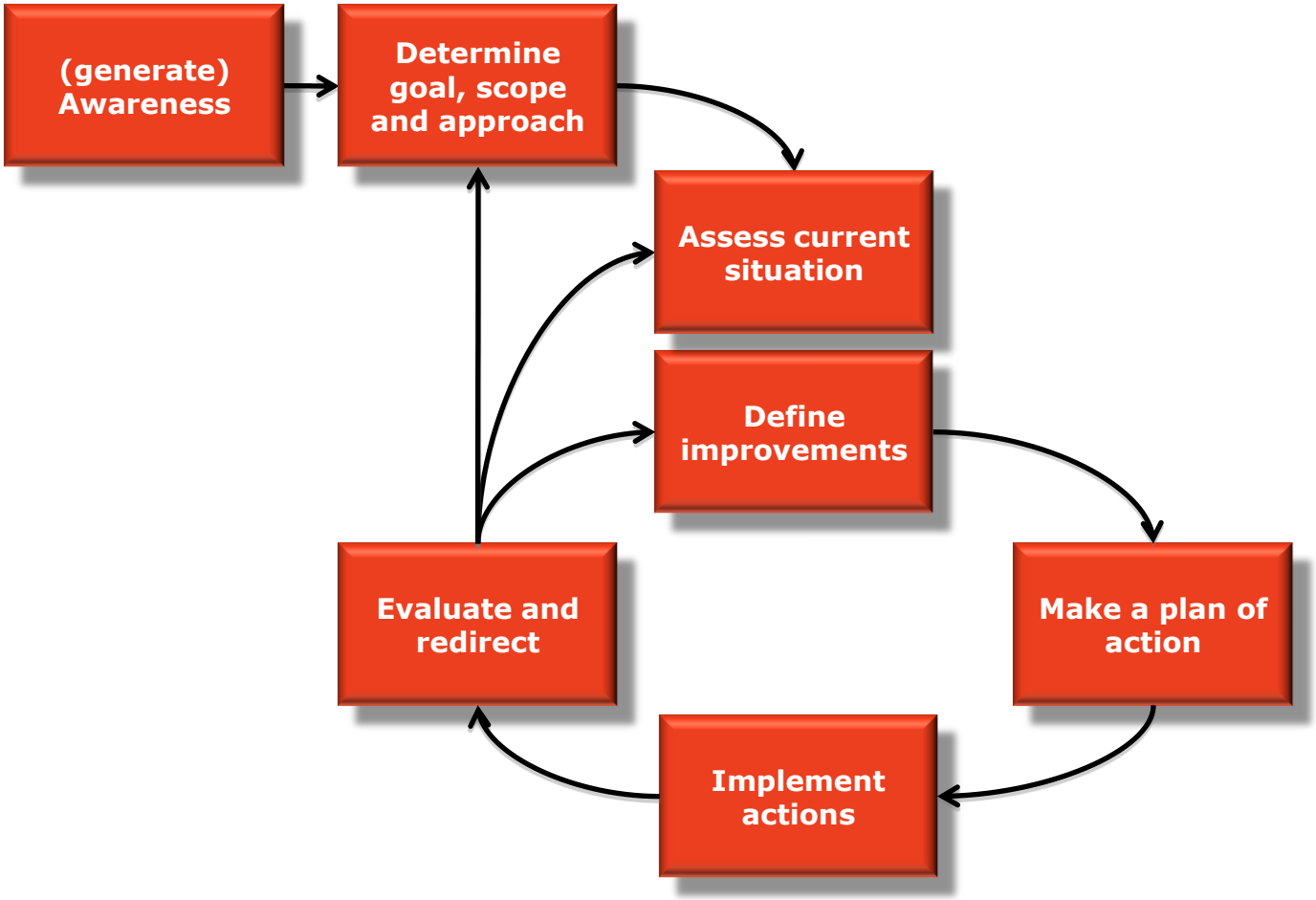
Förändringsprocess



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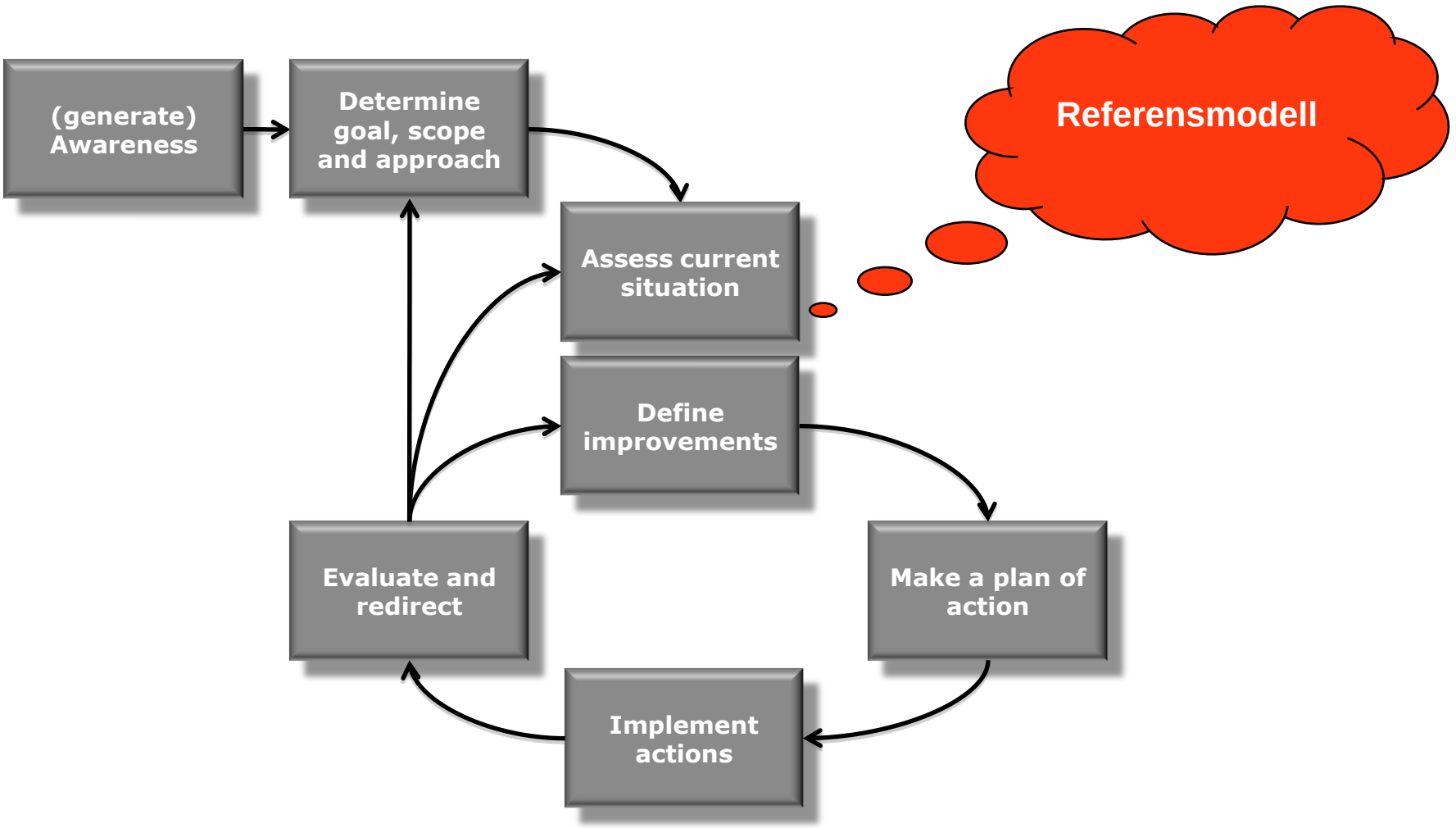
Förändringsprocess



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Krav på modellen

Kontrollerade förbättringssteg

Praktisk

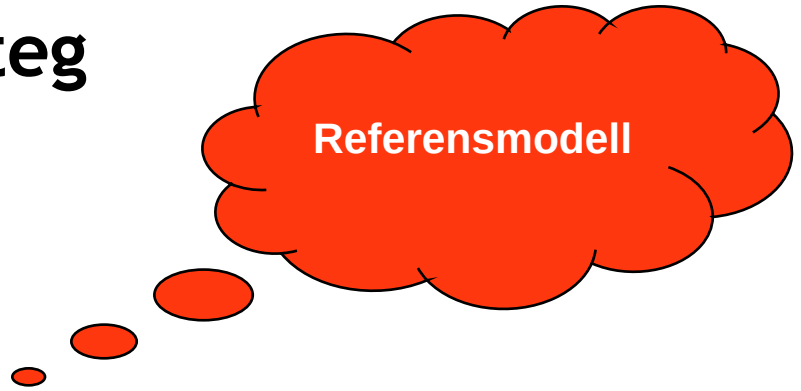
Objektiv

Val och prioriteringar

Detaljerad

Snabb granskning

Oberoende



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Begränsningar gamla TPI modell

Mognadsnivåer inte intuitiva

Lite stöd för bestämma förbättringsmål

Rigid prioritering av förbättringar

Svårt att tillämpa i icke-vattenfall

Lite beröm för delvis strukturerade processer

Ingen fokus på Application Lifecycle Management

Lite fokus på *affärsnytta*

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Anledningar för TPI Next

Nya utvecklingar inom IT

- Iterativ, agil utveckling
- Outsourcing
- Flera testprocesser
- …

Affärsmål för processförbättring

Software Process Improvement

Över 10 års erfarenheter

Fel i den befintliga modellen

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Vad är nytt i TPI NEXT

Key areas och checkpoints

- Process -> resultat-orienterade
- Tillämpbara i flera lägen
- Omdefinierade och omkategoriserade

Enablers kopplar test mot ALM

Affärsmål styr processförbättring

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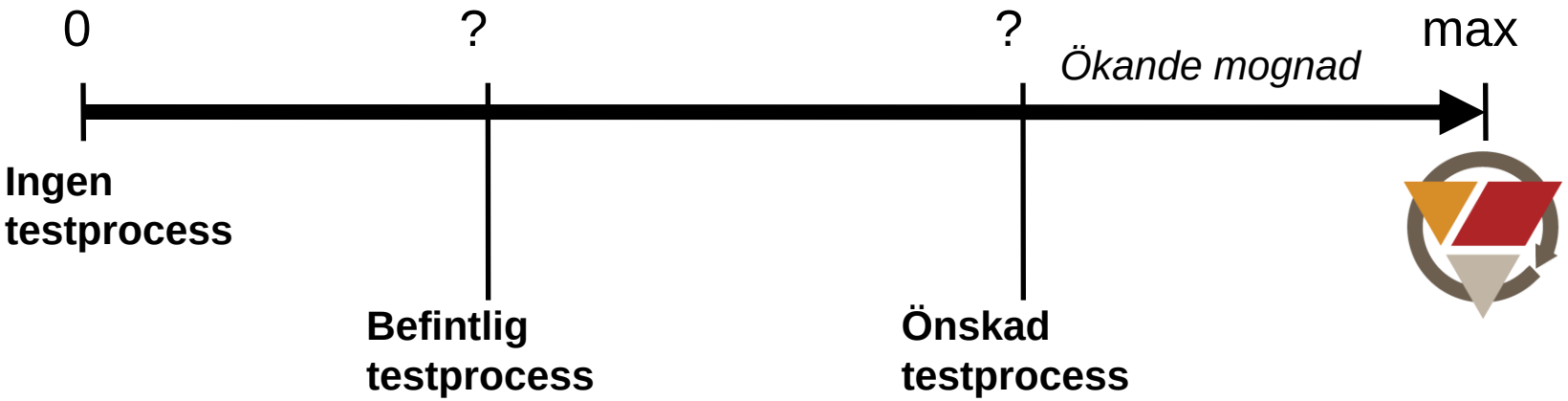
Testprocessens mognad



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Key areas

16

Key areas

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Key areas

Stakeholder Relations	1. Stakeholder commitment 2. Degree of involvement 3. Test strategy 4. Test organisation 5. Communication 6. Reporting
Test Management	7. Test process management 8. Estimating & planning 9. Metrics 10. Defect management 11. Testware management
Test Profession	12. Methodology practice 13. Tester professionalism 14. Test case design 15. Test tools 16. Test environment

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Påstående

Test case design:

”Test case design directs test execution to search for defects according to the test strategy.”

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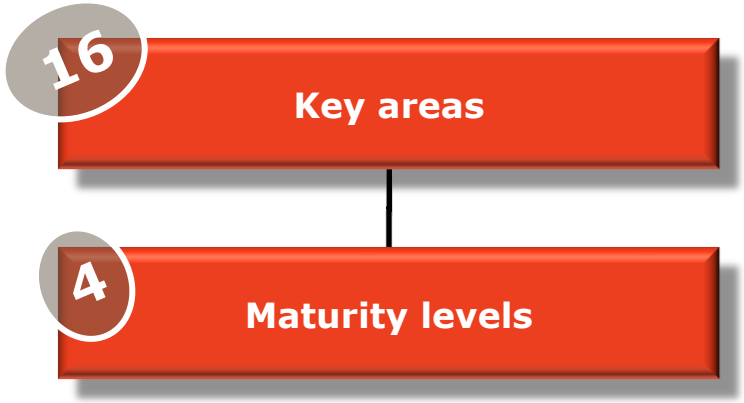
Maturity levels



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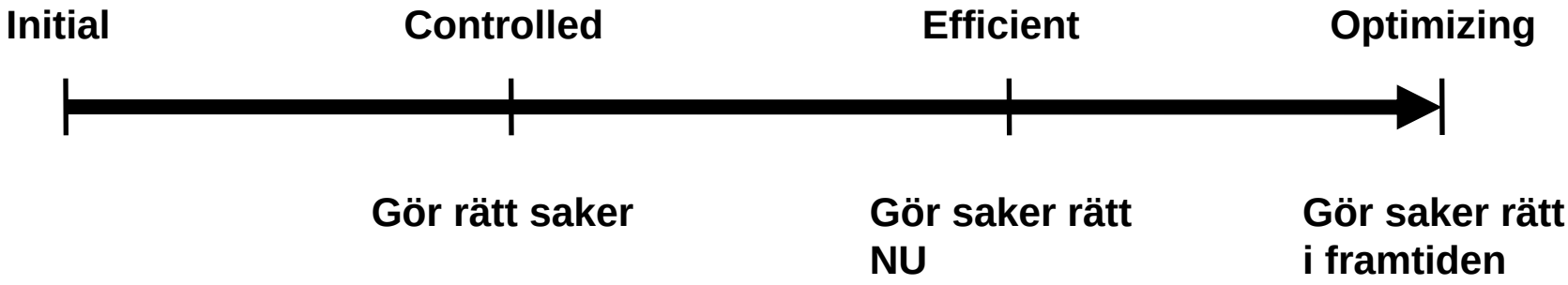
Maturity Levels



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Påståenden Test case design

Controlled:

”The test cases make the test execution repeatable and person independent.”

Efficient:

”Designing test cases that focus on achieving a specific coverage provides a justified elaboration of the test strategy.”

Optimizing:

”Evaluation of test cases, test design techniques and defects provides a way to increase test effectiveness.”

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Testprocessens mognad

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Checkpoints

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Checkpoints Controlled

SOGETI

1. **The test cases are recorded on a logical level.**

2. **The test cases consist of a description of:**

a) initial situation

b) change process = test actions to be performed

c) predicted result.

3. **The test cases provide insight into which part of the test basis, describing a specific system behavior, is subject to the test.**

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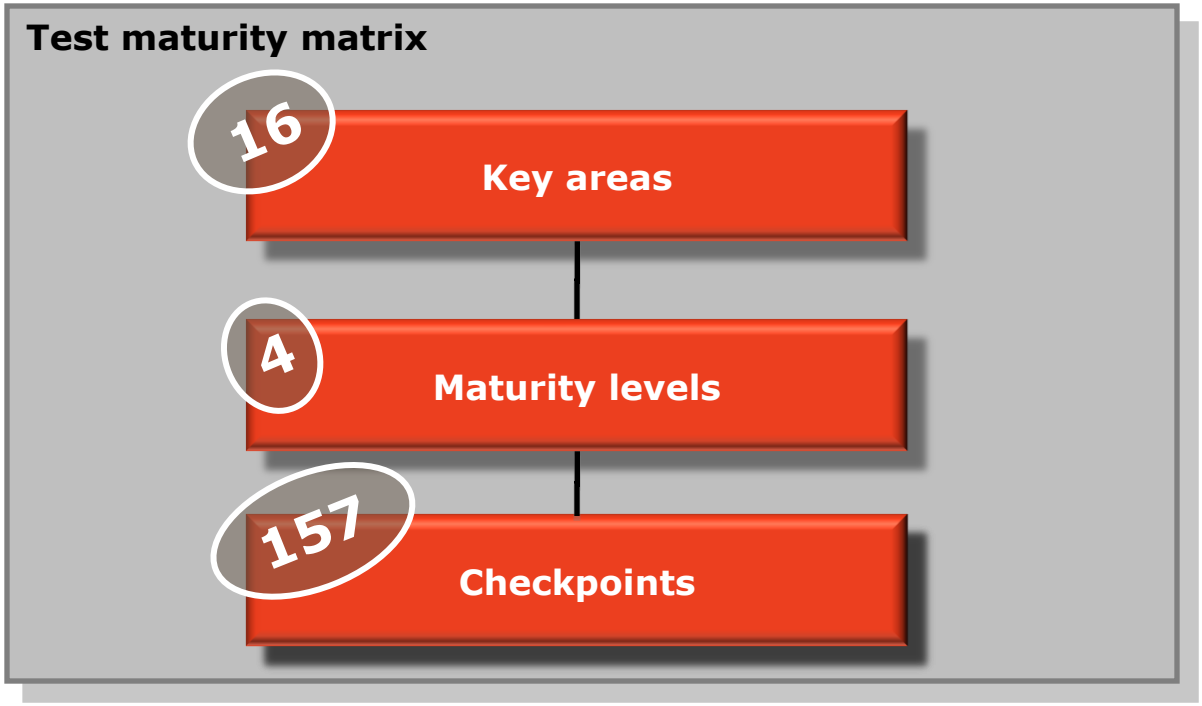
Test Maturity Matrix



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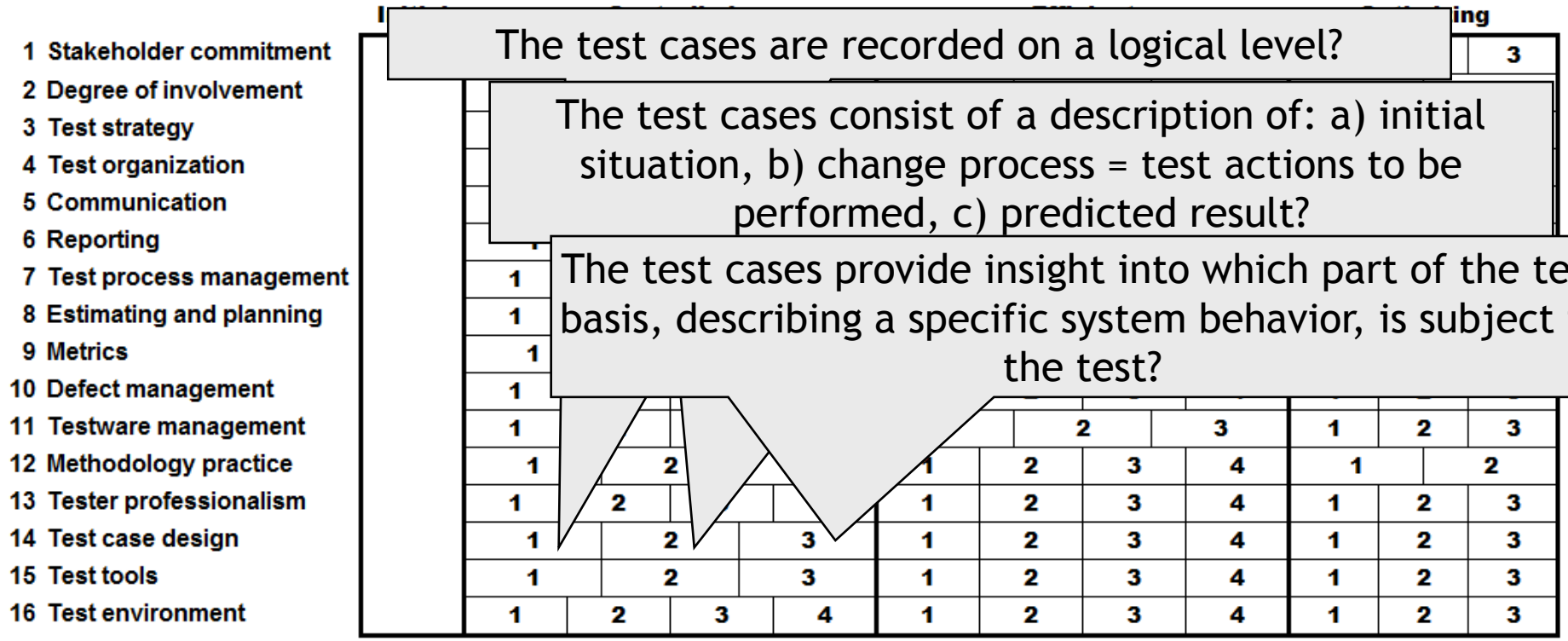
Test Maturity Matrix



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Nuläge (exempel)

	Initial	Controlled				Efficient				Optimizing		
1 Stakeholder commitment		1	2	3	4	1	2	3		1	2	3
2 Degree of involvement		1	2	3	4	1	2	3		1	2	
3 Test strategy		1	2	3	4	1	2	3		1	2	
4 Test organization		1	2	3	4	1	2	3	4	1	2	3
5 Communication		1	2	3	4	1	2	3		1	2	
6 Reporting		1	2	3		1	2	3		1	2	
7 Test process management		1	2	3	4	1	2	3		1	2	
8 Estimating and planning		1	2	3	4	1	2	3	4	1	2	3
9 Metrics		1	2	3		1	2	3	4	1	2	
10 Defect management		1	2	3	4	1	2	3	4	1	2	3
11 Testware management		1	2	3	4	1	2	3		1	2	3
12 Methodology practice		1	2	3		1	2	3	4	1	2	
13 Tester professionalism		1	2	3	4	1	2	3	4	1	2	3
14 Test case design		1	2	3		1	2	3	4	1	2	3
15 Test tools		1	2	3		1	2	3	4	1	2	3
16 Test environment		1	2	3	4	1	2	3	4	1	2	3

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Hur mogen är testprocessen?

Täckningsgrad Controlled (%)

59 checkpoints

Täckningsgrad Efficient (%)

57 checkpoints

Täckningsgrad Optimizing (%)

41 checkpoints

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Rapportera (exempel)

			Initial	Controlled	Efficient	Optimizing
Stakeholder Relations	1	Stakeholder commitment		38%	7%	0%
	2	Degree of involvement				
	3	Test strategy				
	4	Test organization				
	5	Communication				
	6	Reporting				
Test Management	7	Test process management		50%	17%	0%
	8	Estimating and planning				
	9	Metrics				
	10	Defect management				
	11	Testware management				
Test Profession	12	Methodology practice		8%	0%	0%
	13	Tester professionalism				
	14	Test case design				
	15	Test tools				
	16	Test environment				

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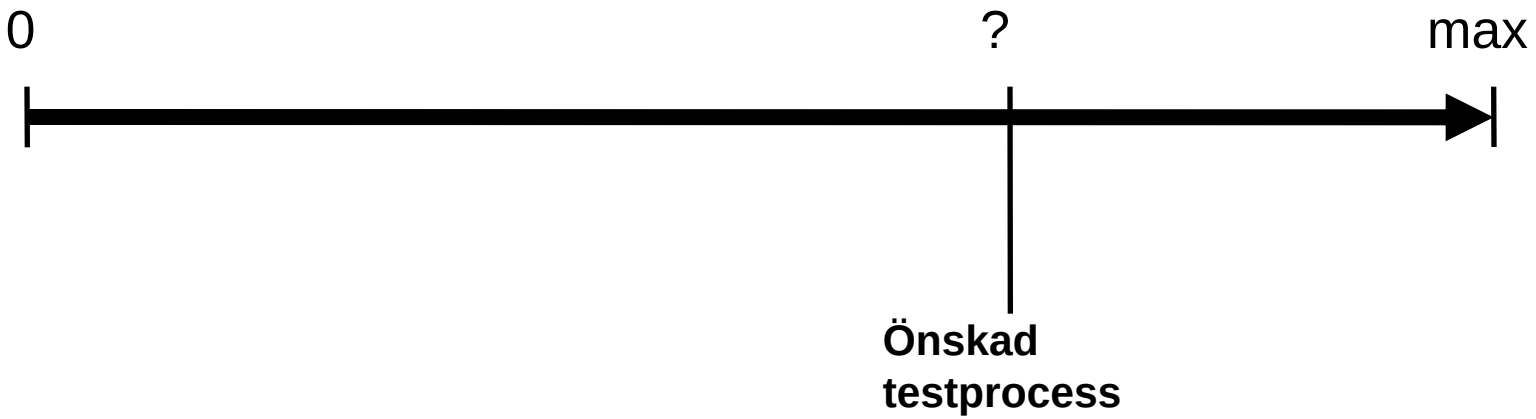
Testprocessens mognad



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Rapportera (exempel)

			Initial	Controlled	Efficient	Optimizing
Stakeholder Relations	1	Stakeholder commitment		100%	74%	0%
	2	Degree of involvement				
	3	Test strategy				
	4	Test organization				
	5	Communication				
	6	Reporting				
Test Management	7	Test process management		100%	44%	0%
	8	Estimating and planning				
	9	Metrics				
	10	Defect management				
	11	Testware management				
Test Profession	12	Methodology practice		100%	38%	0%
	13	Tester professionalism				
	14	Test case design				
	15	Test tools				
	16	Test environment				

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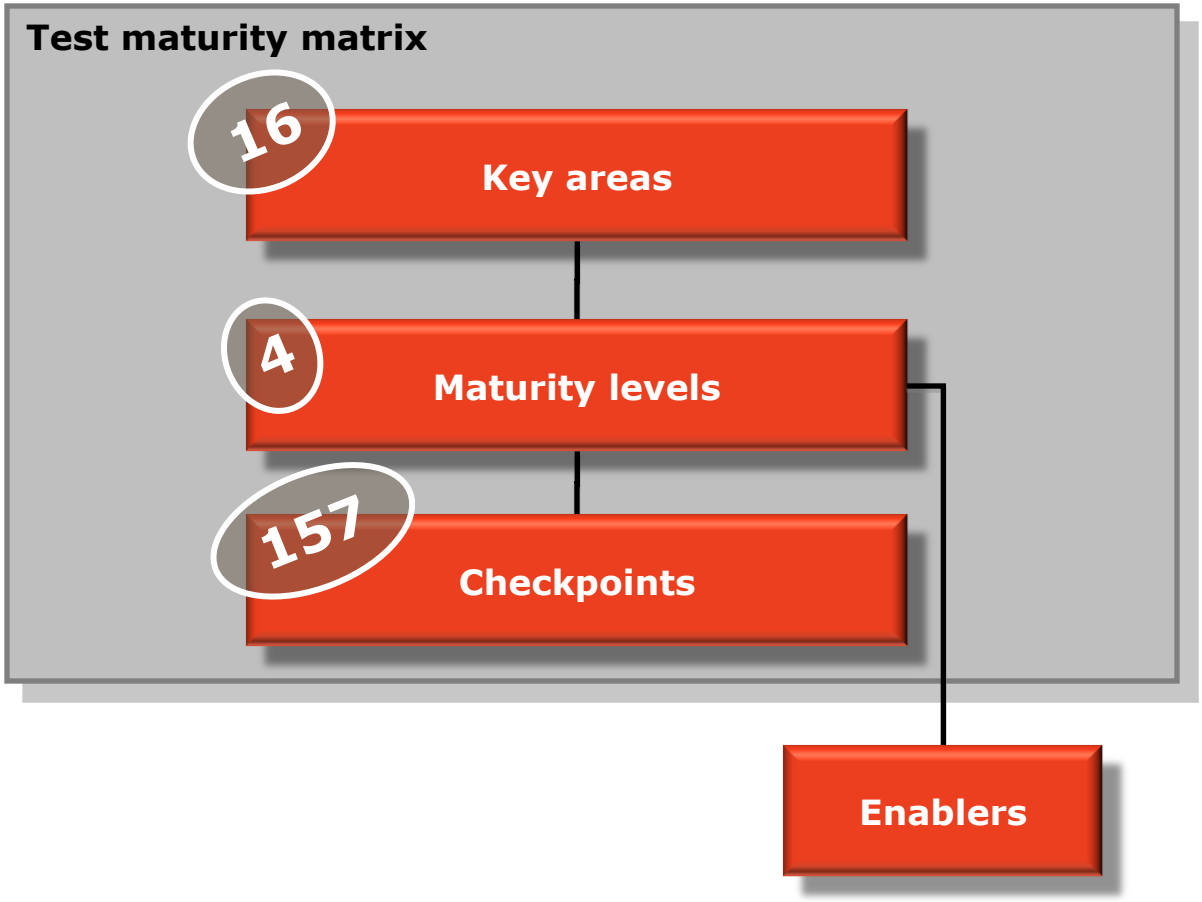
Enablers



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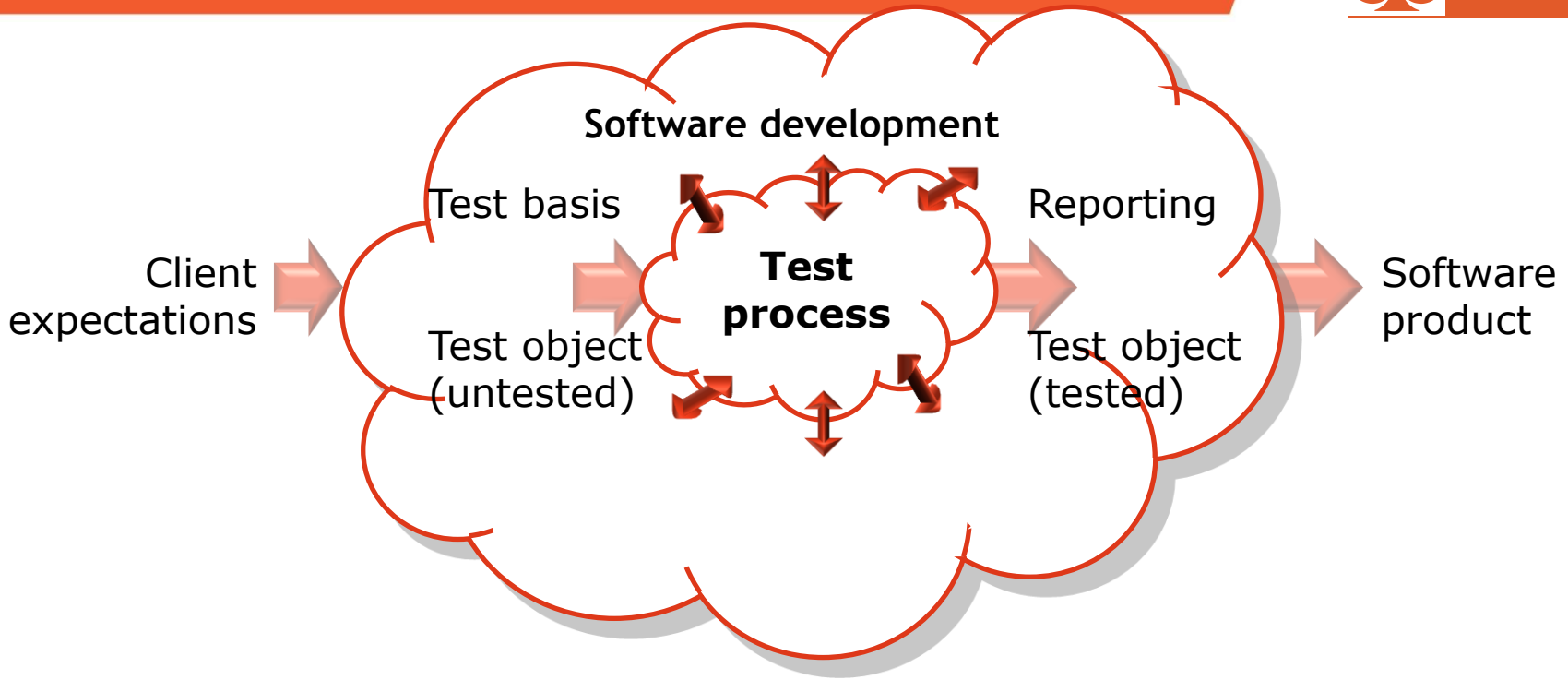
TPI® NEXT: Enablers



Koppling med ALM

CMMI process areas

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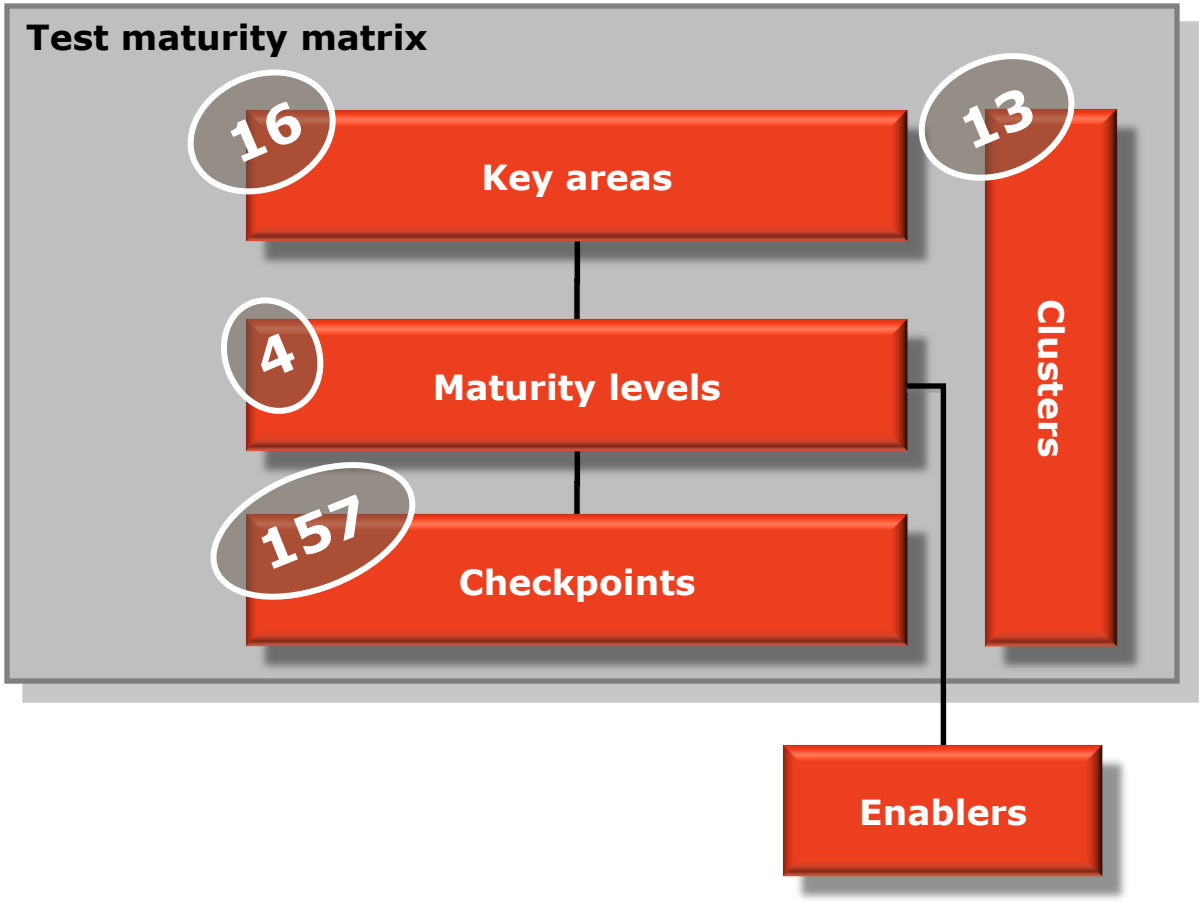
Clusters



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Förbättra testprocessen

Vilka checkpoints först?

Det beror på!

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Förbättringsmål

Processmål

- Högre täckningsgrad

Affärsmål

- Lägre kostnader
- Mindre tid
- Ökad produktkvalitet
- …

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Clusters

Controlled: 5 (A-E)

Efficient: 5 (F-J)

Optimizing: 3 (K-M)

Förbättra testprocessen i *13* steg...

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Base clusters

	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
3 Test strategy		A	A	B	E	F	F	H		K		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
6 Reporting		A	C	C		F	G	G		K		K
7 Test process management		A	A	B	B	G	H	J		K		M
8 Estimating and planning		B	B	C	C	G	H	I	I	K	L	L
9 Metrics		C	C	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 practice		C	D	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		F	I	I	J	K	K	M
15 Test tools		E	E	E		F	G	G	I	L	M	M
16 Test environment		C	D	D	E	G	H	J	J	L	M	M

För processmål

Respekterar gamla dependencies

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Prioritera enligt clustering

	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		
3 Test strategy		A	A	B	E	F	F	H		K	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		
6 Reporting		A	C	C		F	G	G		K	K		
7 Test process management		A	A	B	B	G	H	J		K	M		
8 Estimating and planning		B	B	C	C	G	H	I	I	K	L	L	
9 Metrics		C	C	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 practice		C	D	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		F	I	I	J	K	K	M	
15 Test tools		E	E	E		F	G	G	I	L	M	M	
16 Test environment		C	D	D	E	G	H	J	J	L	M	M	

A → B → C → D → E → ...

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Affärsdriven processförbättring

Prioritera key areas

5 H, 6 N, 5 L

Flytta checkpoints genom clusters

H: Cluster B -> A, C -> B, D -> C, ..., M -> L

N: Inga ändringar

L: Cluster A -> B, B -> C, C -> D, ..., L -> M

Åtgärda ‘hårda’ beroenden mellan checkpoints

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Prioritera key areas

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

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Anpassad clustering

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

1C1: 2C1 och 3C1 beror på denna checkpoint

1E1: Controlled/Efficient/Optimizing har inget betydelse

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Rapportera

Täckningsgrad SR/TM/TP

Täckningsgrad H/N/L

KPI passande till förbättringsmål ->

Välja fortsätta förbättra

Mäta/utvärdera efter varje cluster ->

Business case

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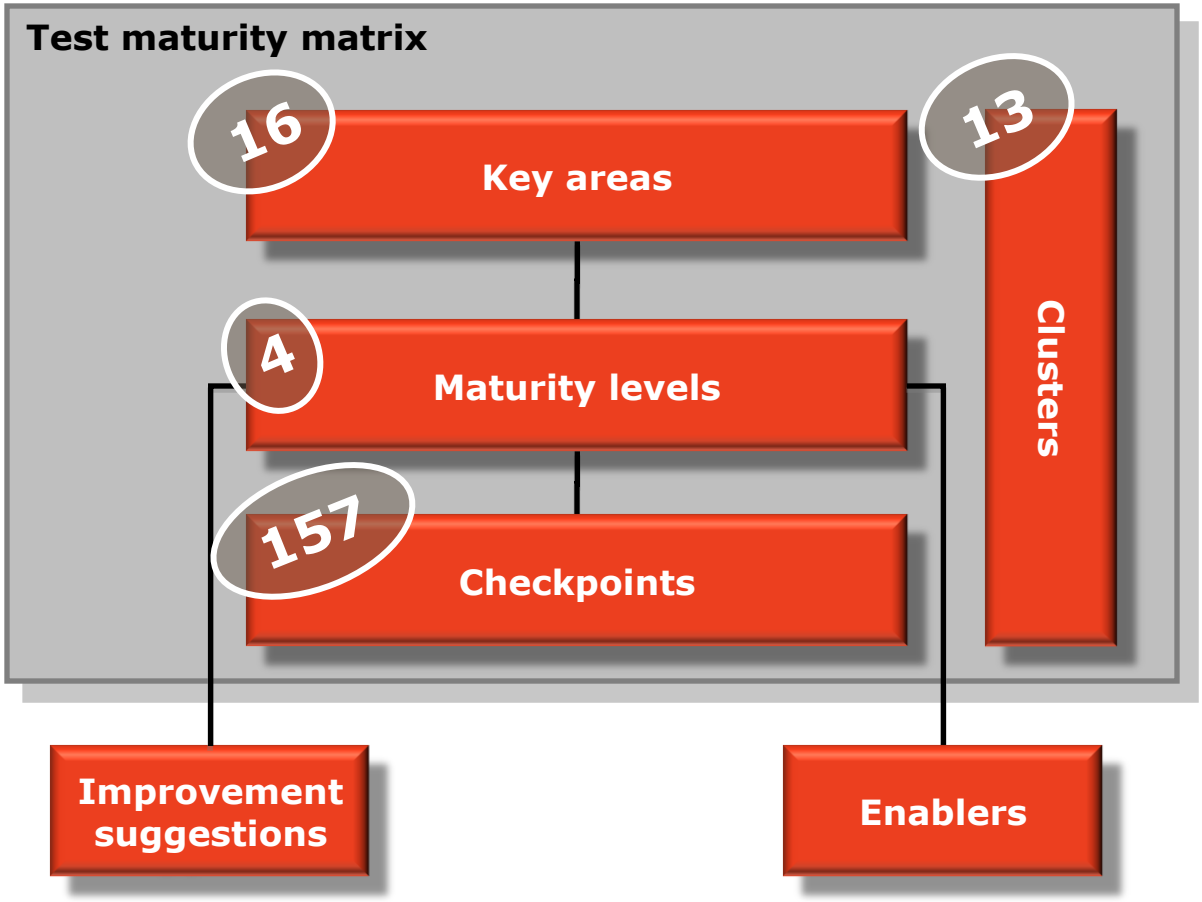
Improvement Suggestions



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Improvement Suggestions

Communication

- Ensure that test results are on the agenda of the project and steering group meetings.

Estimating & planning

- Employ standard ratios in testing, based on experience of similar test projects.

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Hur tillämpa TPI NEXT i

- Iterativ utveckling
- Agil utveckling
- Utvecklingstester
- Integrationstester
- Flera testprocesser
- Drift, underhåll
- Outsourcing, insourcing, offshoring
- Utvecklingsprocessförbättring (CMMI, SPICE)

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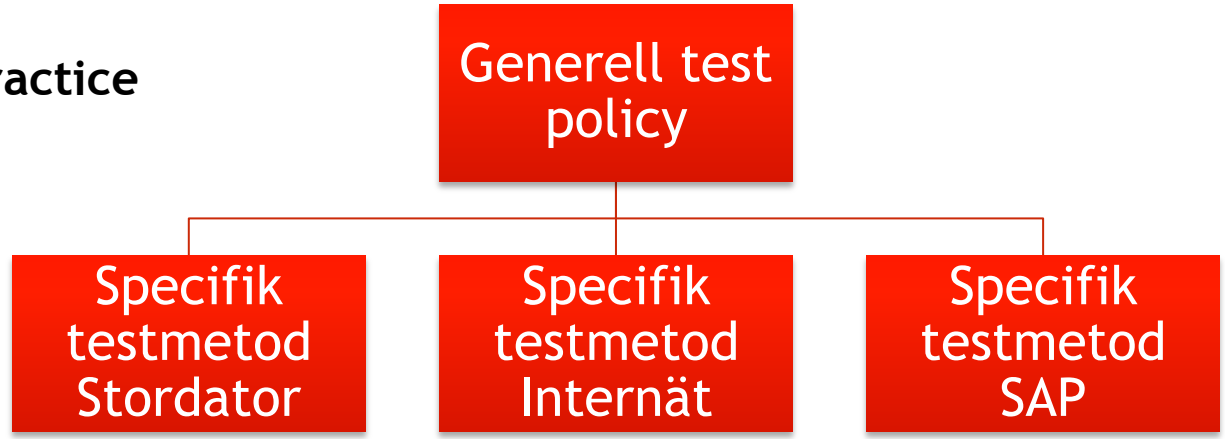
TPI NEXT vid flera testprocesser

Generell test policy

- Stakeholder Commitment
- Test Strategy
- Reporting
- Test Process Management
- Metrics
- Methodology Practice

Specifik testmetod

Alla andra key areas specifika, fast på samma mågnadsnivå



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Sammanfattning

Test Process Improvement *improved*

Nuläge

- Lättare att förstå
- Tillämpbar i flera typer av testprocesser

Förbättringsmål och förbättringsförslag

- Processmål lättare
- Nu konkret stöd för affärsmål

Tillämpning

- Kopplingar med ALM
- Konkreta erfarenheter i specifika lägen

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Fler resurser

Tools:

- TPI NEXT Scoring tool
- Backward compatibility tool

Whitepapers:

- TPI NEXT and CMMI
- TPI NEXT and Agile Development
- …

Internet:

- Tmap.net
- Tpinext.com

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