

FISTB Testing Assembly Test Process Improvement

23rd November 2021

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Assess | Visualise | Transform | Manage | Train

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Introduction

Simon Frankish

- Over 31 years experience in the software testing industry
 - Mixture of in-house test teams and test consultancy
 - Worked in test roles from Test Analyst to Head of Testing
- Currently head of the Process Improvement practice at Experimentus, the world's leading supplier of test process improvement through TMMi
- TMMi Foundation accredited Lead Assessor



Why is testing increasingly important?

- Systems and applications are playing an ever increasing part in every day life (social and business)
- There is a greater emphasis on quality aspects and customers and users are becoming more demanding
- Software failures are much more visible now and can have major impact on day to day activities – economically, socially and internationally etc..
- Testing is becoming even more of a key activity for helping to improve quality, and the performance of the development process



Test Process Improvement – Why?



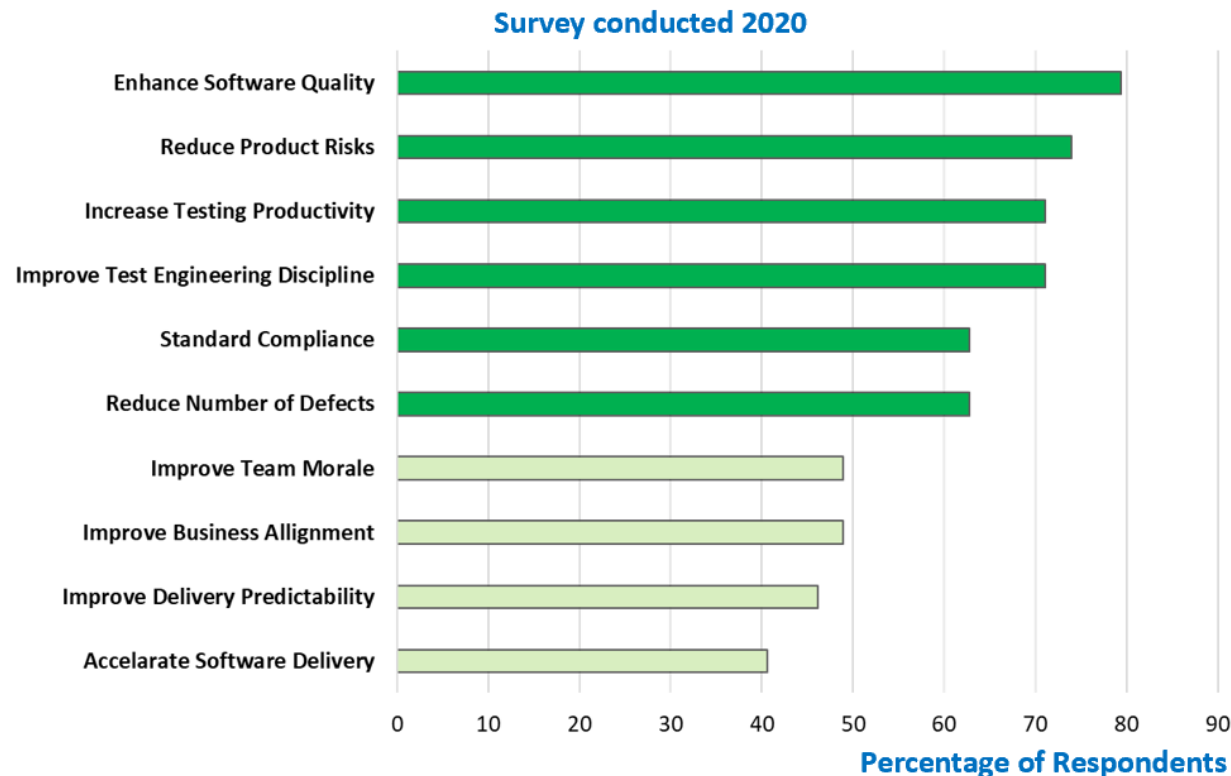
- Testing as a discrete discipline is not that old
- Testing is often still perceived as a “necessary evil”
- Widely used software development maturity models, such as CMMi, do not cover testing in enough detail
- Changing software development methodologies may require new approaches

Aspects Of Testing That Can Be Improved

- There are a number of aspects of testing that can be improved by going through a test process improvement exercise. These may include but not be limited to:
 - Risk based testing approaches
 - Documentation
 - All types of reviews
 - Monitoring and control
 - Test design techniques – functional and non-functional
 - Managing test environments
 - Organisational test measurement
 - Root cause analysis (defect prevention)



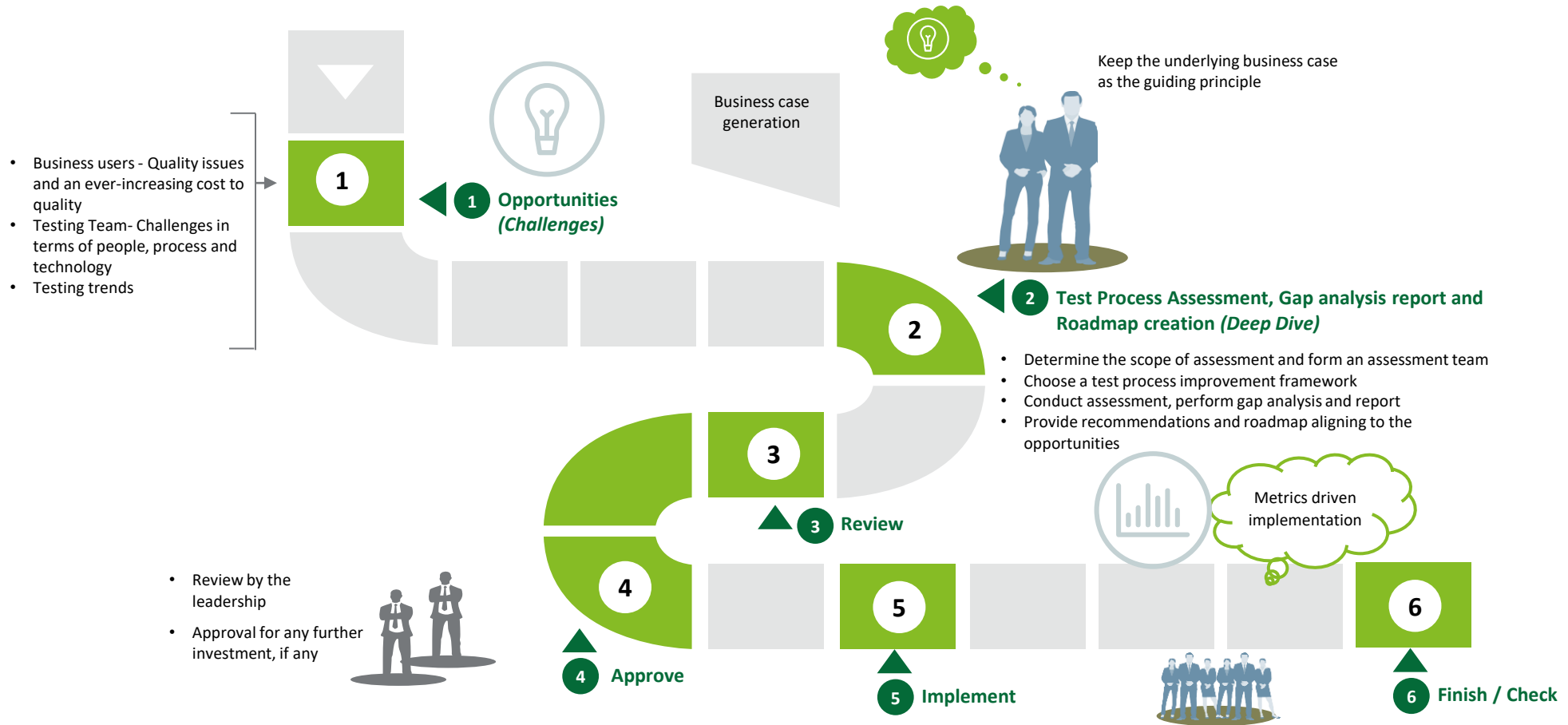
Why do organisations start a test process improvement journey?



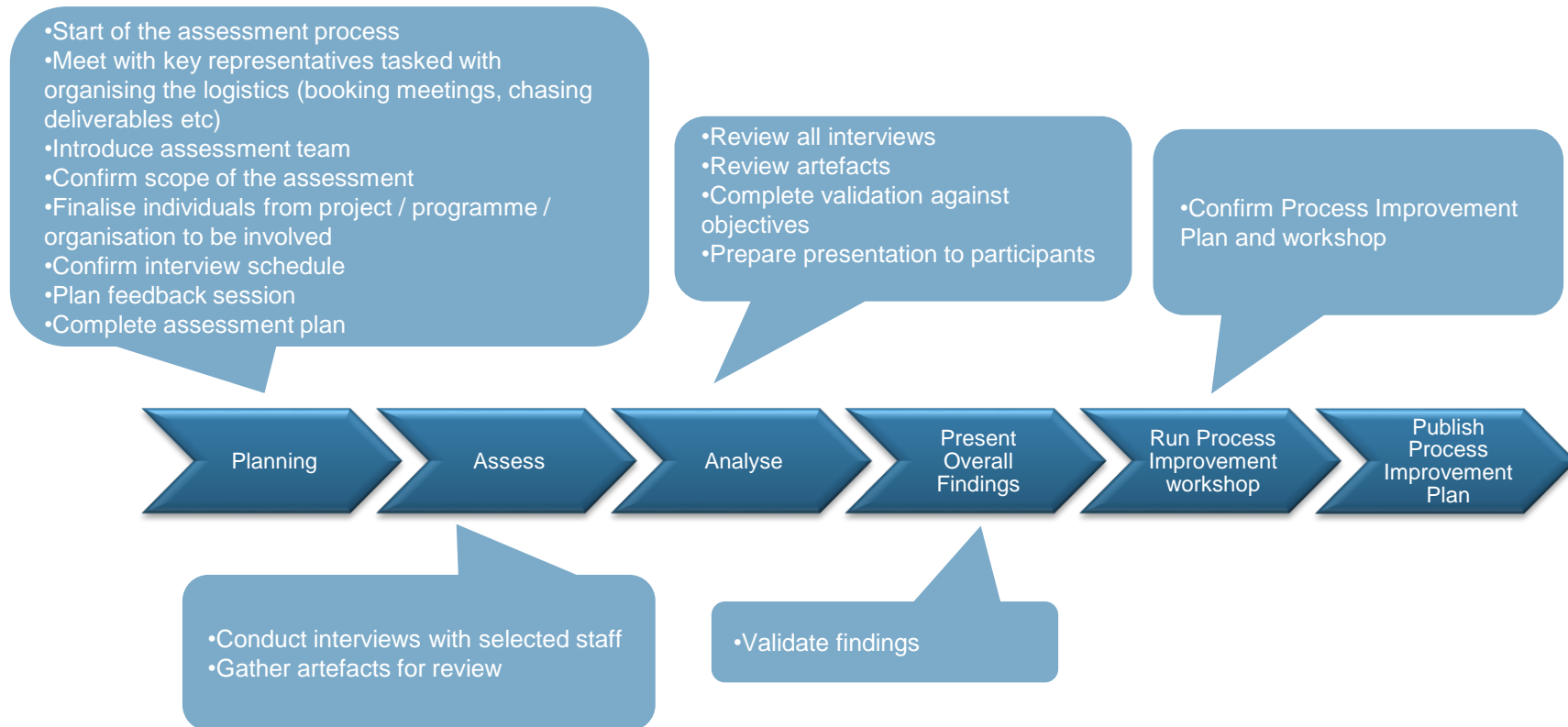
- Wanting to demonstrate to the Business where you are
- Team, organisation or project based
- Working in collaboration with 3rd party suppliers to achieve a common goal
- Validate a 3rd party supplier
- Independent view

Graph provided by TMMi Foundation

Process Improvement Journey – Roadmap example



Test Process Assessment – detailed Gap Analysis phase



Detailed Process Improvement Plan

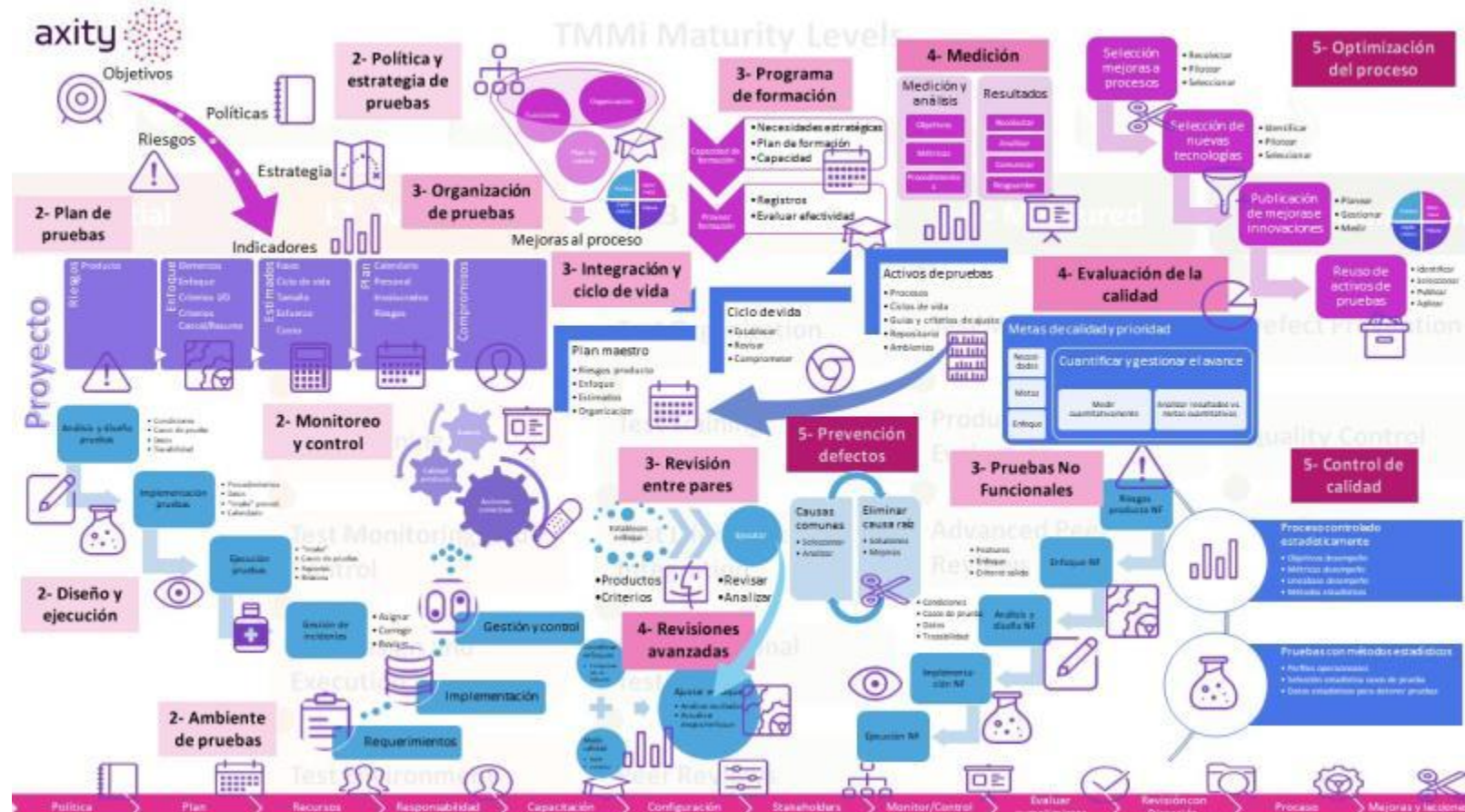
Priority	Item #	Area Classification	Process Area	Specific Goal	Specific Practice	Deficiency	Task to Address Activity	Estimated Effort (# Days)	Action O
1 - High	2	Product Risk	2.2 Test Planning	Perform product risk assessment	Define product risk categories and parameters	Product risk is not broken down into categories in the test plan, not are the parameters of what constitutes a product risk identified.	Categories need to be defined and implemented into the existing test plan template alongside guidance on quantifying likelihood and impact levels.	3	Dave P
1 - High	3	Product Risk	2.2 Test Planning	Perform product risk assessment	Identify product risks	Product risks are identified in a way (as items or features to be tested), but their context, potential consequences and responsible stakeholder are not explicitly identified in the level Test Plan document.	A change needs to be made to the level Test Plan template such that product risks are described in greater detail as per the missing items described above.	1	Chris J
1 - High	4	Product Risk	2.2 Test Planning	Perform product risk assessment	Analyse product risks	There is some prioritisation of product risk, but these are not grouped according to category, nor is a requirements / product risk traceability matrix produced.	Product risks must be categorised as per item #2 in the Test Plan and they must be related to requirements in a traceability matrix.	3	Dave P
2 - Medium	5	Other	2.2 Test Planning	Establish a test approach	Define the test approach	Missing from the level Test Plan are; Specification of test design techniques to be used Definition of the approach to retesting Definition of the approach to regression testing	Sections covering the three identified missing parts to be added to the Test Plan template.	1	Chris J
2 - Medium	6	Other	2.2 Test Planning	Establish a test approach	Define entry criteria	There is no definition of a set of entry criteria related to product quality.	Define a set of entry criteria related to product quality.	1	TBC
2 - Medium	7	Other	2.2 Test Planning	Establish a test approach	Define exit criteria	There is no definition of a set of exit criteria related to product quality.	Define a set of exit criteria related to product quality.	1	Dave P
3 - Low	8	Other	2.2 Test Planning	Establish a test approach	Define suspension and resumption criteria	There is no definition of suspension or resumption criteria in the Test Plan.	Add definitions of suspension/resumption criteria to the Test Plan template.	1	Chris J
3 - Low	9	Other	2.3 Test Monitoring and Control	Monitor test progress against plan	Monitor test project risks	Little evidence observed that test project risks are reviewed and revised as necessary during the test project	Ensure that Test Managers are aware of the need to periodically review test project risks, document the outcome of that review and revise risks as necessary.	1	Simon
3 - Low	10	Other	2.3 Test Monitoring and Control	Monitor test progress against plan	Conduct test progress milestone reviews	No evidence that the outcomes of progress milestone reviews are documented or that the plan is updated to reflect their outcome.	Test progress milestone reviews should be documented and the test plan updated to reflect their outcome where appropriate.	1	Simon
2 - Medium	11	Other	2.3 Test Monitoring and Control	Monitor product quality against the plan and expectations	Check against entry criteria	Significant deviations in compliance to entry criteria are not documented.	Ensure that all significant deviations in compliance to entry criteria are documented by Test Managers as they occur.	1	Simon
3 - Low	12	Other	2.3 Test Monitoring and Control	Monitor product quality against the plan and expectations	Monitor test defects	Expectations of number/severity of defects is not recorded or utilised in monitoring test defects.	Derive a set of expected defect levels for projects that can be used to inform the monitoring of test defects by the Test Manager.	2	Dave P
2 - Medium	13	Product Risk	2.3 Test Monitoring and Control	Monitor product quality against the plan and expectations	Monitor product risks	Expects a level of documentation and traceability of product risk to tests that is not present in the current processes.	Ensure that the documentation of product risk and its traceability is enforced. Requires update to the Test Plan template and education of Test Managers.	2	Chris J
2 - Medium	14	Product Risk	2.3 Test Monitoring and Control	Monitor product quality against the plan and expectations	Monitor exit criteria	There is no definition of a set of exit criteria related to product quality.	Define a set of exit criteria related to product quality and ensure that this is monitored during the test project.	1	Simon

Implementation

Benchmark where you are, where you want to get to and how you are going to measure improvements

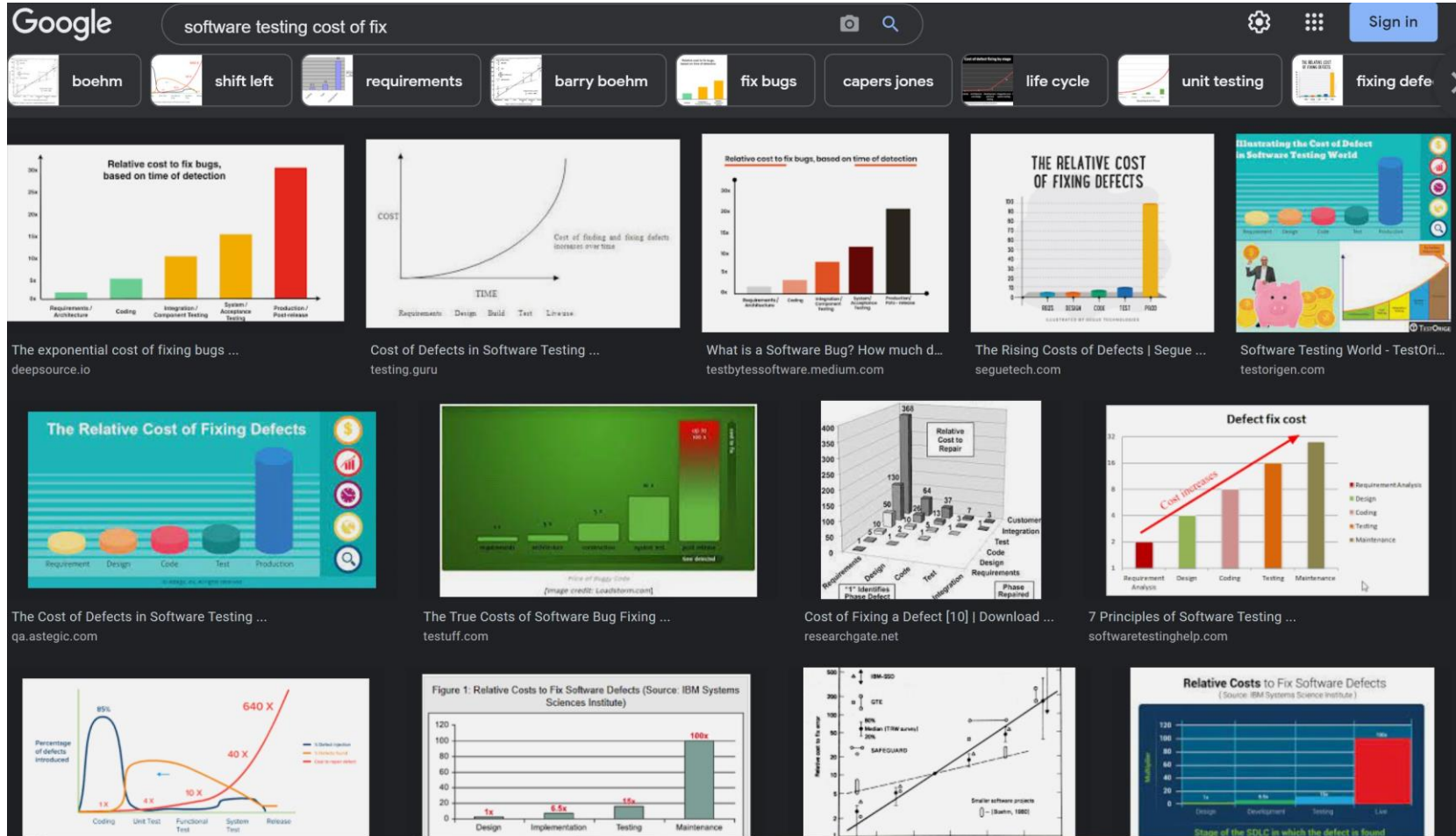
- Plan, prioritise and communicate the journey
- Ensure the relevant people have a good understanding of the test process improvement process and are involved where possible
- Provide specific support and training
- Include any relevant training in your testers' career path
- Involve testers in the development of new processes
- Pilot when possible
- Identify and implement some quick wins

TMMi Journey – Roadmap example

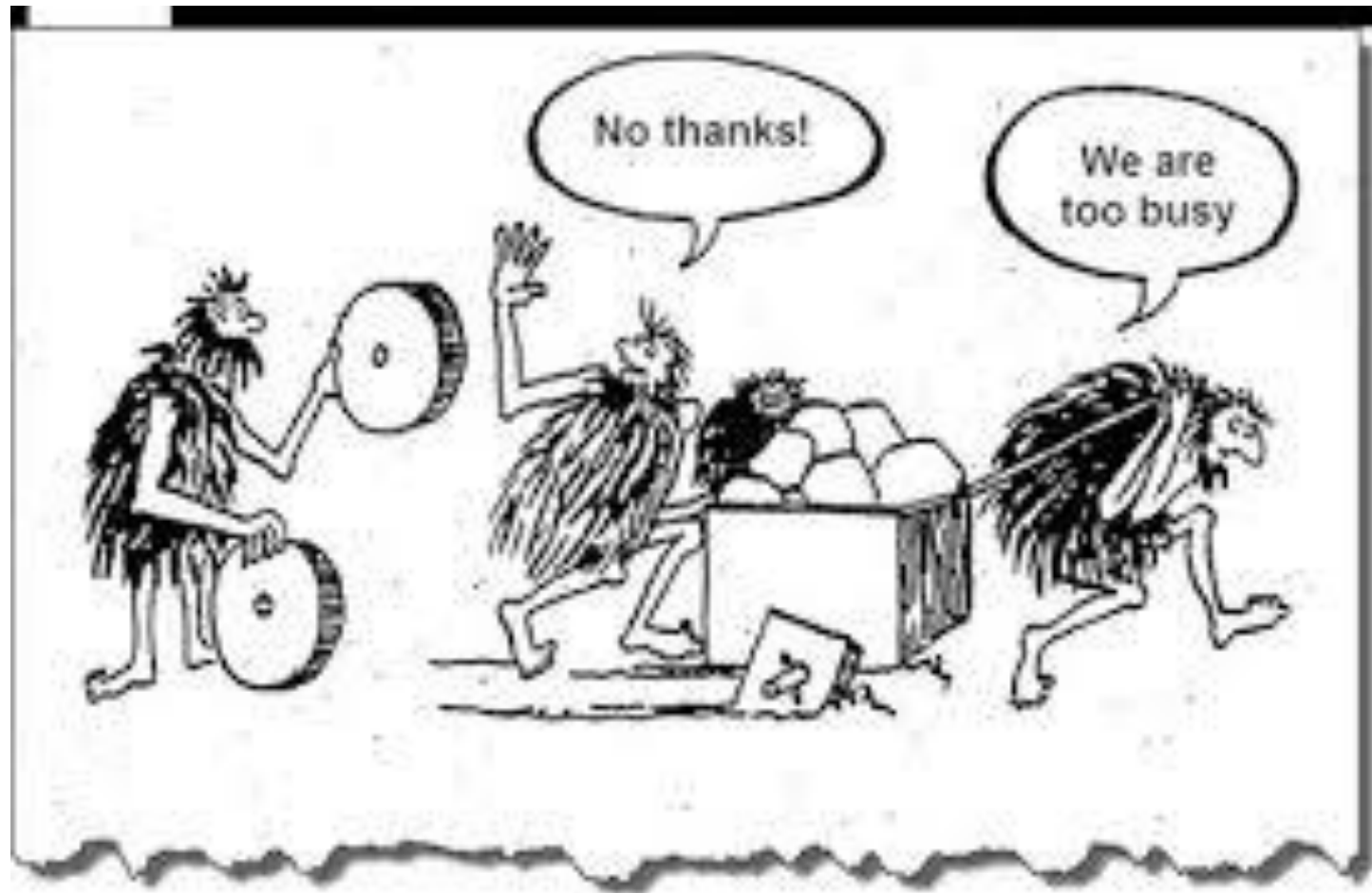


Slide provided by Carlos Perez, Axyti - Mexico

Test Process Improvement - Challenges



Test Process Improvement - Challenges



Test Process Improvement - Challenges

Is test process improvement a valid concept for software development lifecycles such as Agile and DevOps?



**“I suppose I’ll be the one
to mention the elephant in the room.”**

Conclusions

- There are always challenges to overcome!
- The need for test process improvement needs to be identified (and buy-in gained)
- Start by working out where you currently are against a process improvement framework
- Define a roadmap of improvements
- Ensure that changes are agreed and approved prior to starting implementation
- Involve existing staff and implement some quick wins
- Measure improvement effects
- Keep identifying improvements!

Any Comments or Questions



If you are interested in finding out more, please contact:

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