Lean Test Management
Ban Waste, Gain Efficiency

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Professional Testing®

Agenda

- Introduction

- Testing History

- Comparing Lean, Six Sigma
  and Test Management

- Roadmap to
  Lean Test Management

Testing history

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- Toyota Production System – Quicker and more efficient (Lean)

- 7 wastes:
  – Overproduction
  – Waiting
  – Transporting
  – Inappropriate processing
  – Unnecessary inventory
  – Unnecessary / excess motion
  – Defects

- (Lean) Six Sigma – Higher quality and smarter

- 4 key elements [1] :
  – Delight the customer
  – Improve processes
  – Teamwork
  – Data and facts

[1] George, Mike, Rowlands, Dave, and Kastle, Bill. What is Lean Six Sigma? New York. 2004.

Comparing Lean, Six Sigma and Test Management (1)

2)	Lean (Time + Money)	Six Sigma (Quality)	Test Management (Time, Money + Quality)
Goal	Create flow and eliminate waste	Improve process capability and eliminate variation	Manage the test process to measure the quality of the test object, balanced within time and budget
Application	Primarily manufacturing processes	All business processes	All business processes
Approach	Teaching principles and "cookbook style" implementation based on best practice	Teaching a generic problem-solving approach relying on statistics	Teaching principles and "cookbook style" implementation based on best practice. Test improvement based on metrics.
Project selection	Driven by Value Stream Map	Various approaches	Driven by prioritized product risks

2) Integrating Lean and Six Sigma; the power of an integrated roadmap by Thomas Bertels

Comparing Lean, Six Sigma and Test Management (2)

	Lean (Time + Money)	Six Sigma (Quality)	Test Management (Time, Money + Quality)
Length of projects	1 week to 3 months	2 to 6 months	2 to 6 months
Infrastructure	Mostly ad-hoc, no or little formal training	Dedicated resources, broad-based training	Dedicated resources, broad-based training
Training	Learning by doing	Learning by doing	Learning by doing

Roadmap to Lean Test Management

- DMAIC:
  - Define
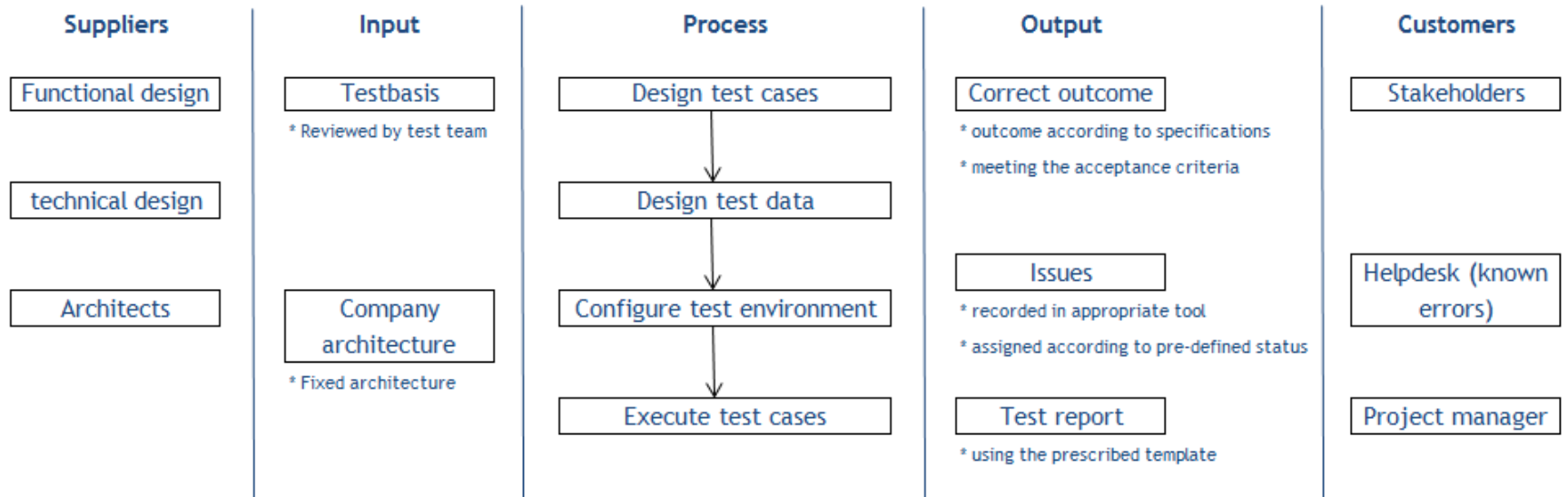 - Measure
  - Analyze
  - Improve
  - Control
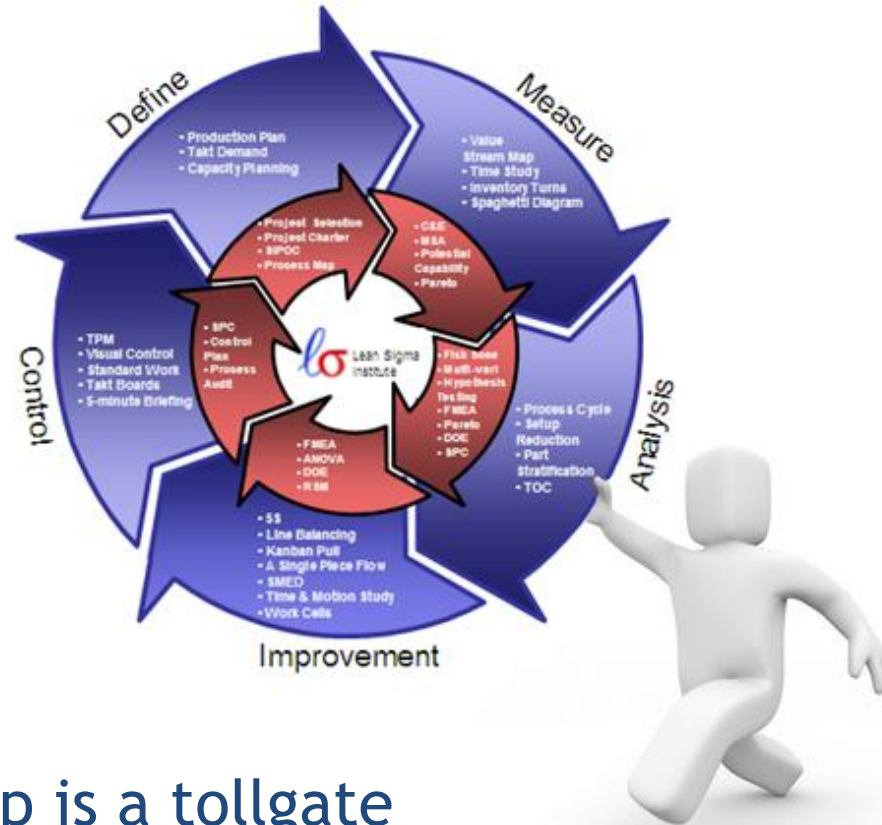
  - Between every step is a tollgate

- Purpose:
  To agree on what the project is.

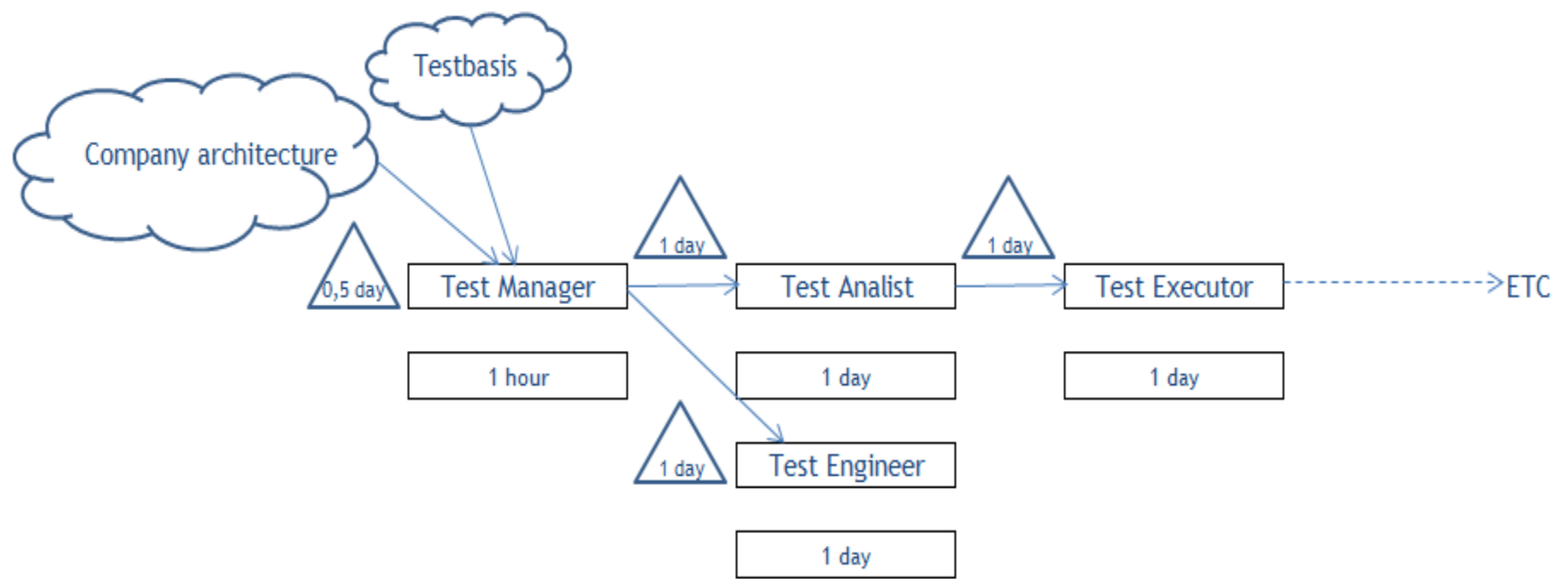- Example tools:
  SIPOC
  Value Stream Map

Define – example SIPOC

Suppliers	Input	Process	Output	Customers
Functional design	Testbasis * Reviewed by test team	Design test cases	Correct outcome * outcome according to specifications * meeting the acceptance criteria	Stakeholders
technical design		Design test data		
Architects	Company architecture * Fixed architecture	Configure test environment	Issues * recorded in appropriate tool * assigned according to pre-defined status	Helpdesk (known errors)
		Execute test cases	Test report * using the prescribed template	Project manager

* Critical-To-Quality indicators (CTQ)

Define – Example Value Stream Map
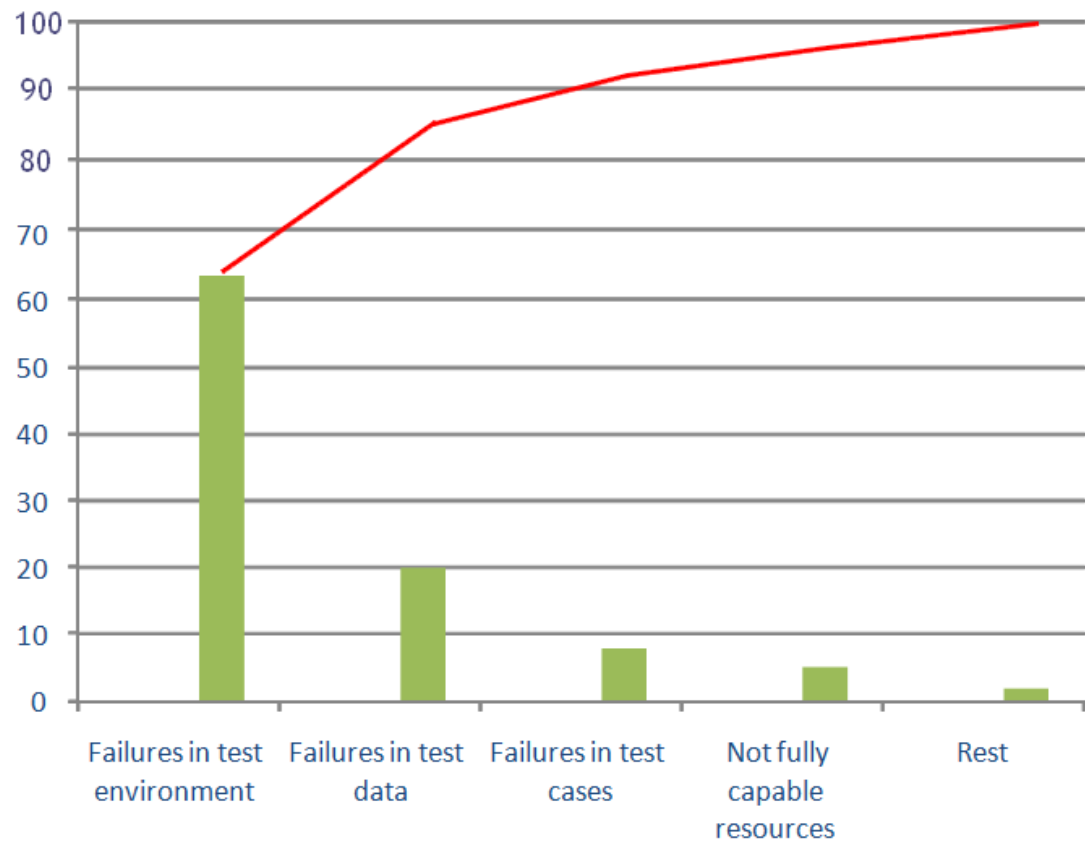
- Purpose:
  Evaluate the existing measurement system, observe the process, gather data, and map the process in more depth.

- Example tool:
  Pareto chart

Measure – Example Pareto chart

Pareto chart for long waiting hours during test execution

- Purpose:

  Use collected data to confirm the source of delays, waste, and poor quality.

- Example tools:

  5 Why's

  Ishikawa diagram

Analyze - Example 5 Why's

1. Why are there long waiting hours during test execution?

2. Why are there failures in the test environment?

3. Why do you often have the wrong version?

4. Why does someone install the wrong version?

Problem Statement:
During test execution there are long waiting hours.

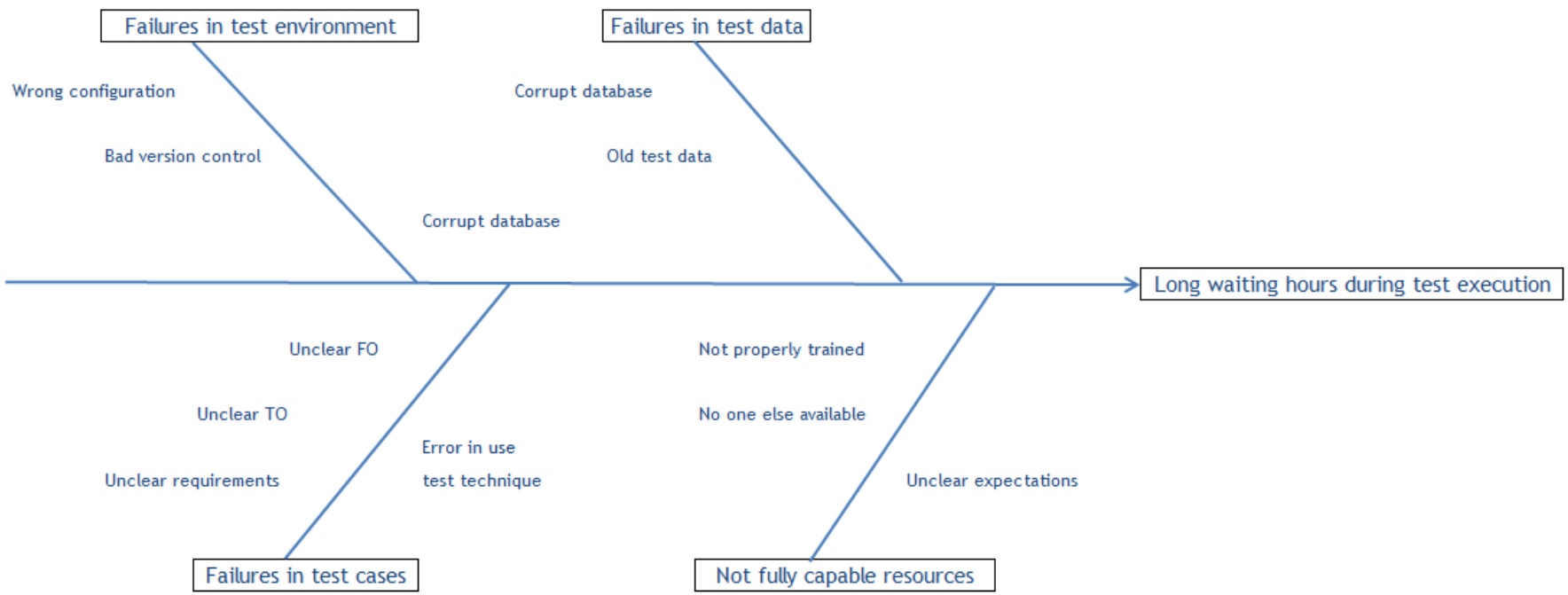1. Because often there are failures in the test environment

2. Because we often seem to have the wrong version of the test object.

3. Because someone installed the wrong version.

4. Because we don't have proper version control.

5. Why don't you have proper version control?

5. Because we never got around to it, but it seems time to do it now.

Analyze - Example Ishikawa diagram

Failures in test environment

Wrong configuration

Bad version control

Corrupt database

Failures in test data

Corrupt database

Old test data

Long waiting hours during test execution

Unclear FO

Unclear TO

Unclear requirements

Error in use
test technique

Failures in test cases

Not properly trained

No one else available

Unclear expectations

Not fully capable resources
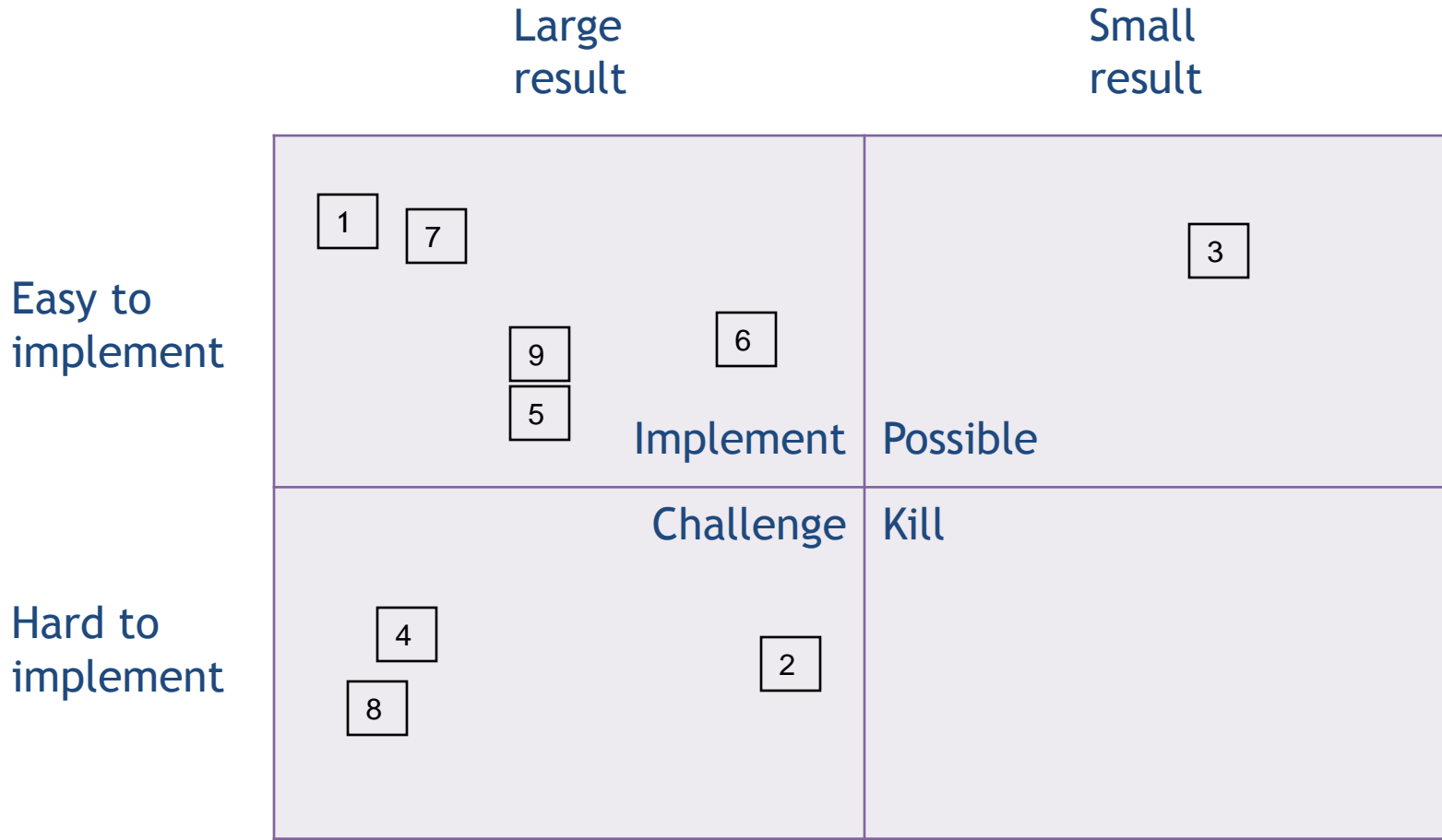
- Purpose:
  To make changes in a process that eliminate defects, waste, cost, etc., which are linked to the customer need identified in the Define phase.
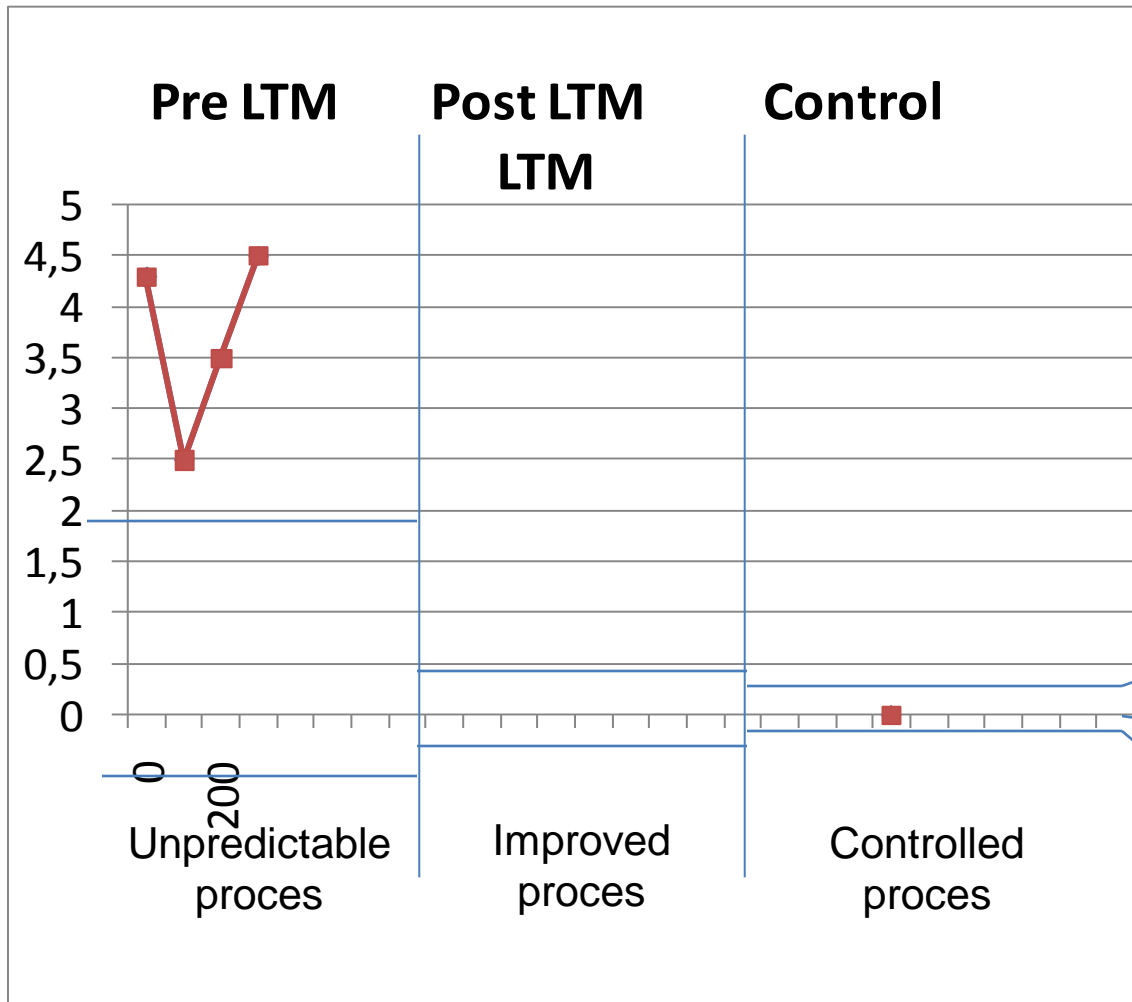
- Example tool:
  Pick chart

Improve – Example Pick chart

- Purpose:
  To make sure that any gains
  a team makes last.

- Example tool:
  Control chart

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Gain	Sigma level
30,85%	1
69,15%	2
93,32%	3
99,38%	4
99,977%	5
99,99966%	6

Upper limit=2,3000
Average=2,1740
Lower limit=1,9000

Triggers for actions

Positioning Lean Test Management

Left pyramid (top to bottom):
- Test Policy
- RRBT
- TMap, TestFrame

Right pyramid (top to bottom):
- Test Policy
- Lean Test Management
- Tmap Next, TestFrame (2009)
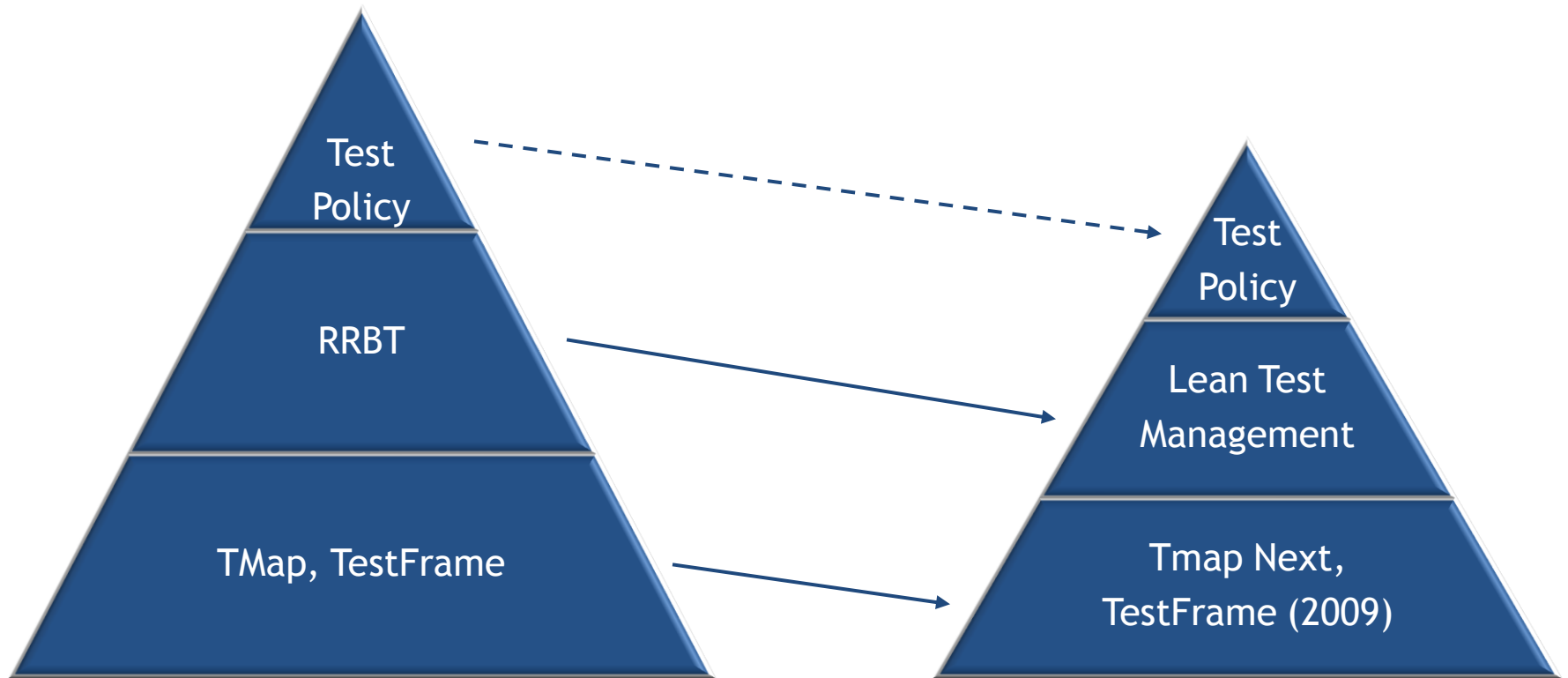
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Questions?

Thank you for your attention

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