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ANZTB Canberra SIGiST: Test Metrics – How they aid the whole Project

Presented by Jenny Kelton

Jenny Kelton – The Tester

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- ✓ Has worked on some of the largest and most complex projects in the Southern Hemisphere
- ✓ Cross-Industry Sector Experience in either Test Manager or Defect Manager Roles
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Defect Metrics - Types

Actual Test Cases Executed vs. planned Test Cases

Test Case Progress Against Requirements

Successful Test Cases vs. Actual Test Cases Executed

Qualification of Outstanding Test Cases:

- Test Cases Not Executed
- Test Cases in Problem Resolution

Defect Metrics:

- Open by Severity
- Open vs. Closed
- Defect Density
- Defect Aging

Actual Test Cases Executed vs. Planned

To clearly document What has been executed, against what was planned. Where there is a discrepancy, an appropriate risk assessment and acceptance of the risk should be performed.

Meaning – you should note reasons that are acceptable to Stakeholders when you make Test Cases – N/A (Not Applicable). No Runs are still expected to be executed. This metric also shows if you are tracking to meet the scheduled end date, including re-work for defect – you must allow time to for re-work.

Test Manager and Test Team Leads uses this to track progress against the schedule. Maintain information for reasons for non-execution for the Test Report (N/A test cases). Estimation of time required to complete testing.
Program / Project Managers use the estimated time to complete to track at a high level if the project is on schedule.
If there is a conflict between schedule and estimated time required to complete then a risk assessment of test cases will need to be undertaken and tests executed in highest to lowest priority.

Test Case Progress Against Requirements

To demonstrate how Test Case execution results correspond to Requirements. The objective is to clearly demonstrate that the SUT (System under Test) meets the Requirements. Checking both Coverage – that all Requirements have 'test coverage' one or more test cases, and that test cases are successful.

Meaning – you should have a Verification Cross Reference Matrix / Requirements Traceability Matrix. This will show relationship between Test Case(s) to Requirement(s). It will also show the Test Case(s) result i.e. Pass/Fail.

Test Manager and Test Team Leads uses this to track test coverage. They will be looking for any component/function that may not have enough coverage.
Program / Project Managers uses this to show that all requirements have been tested and passed in the exercise.

Successful Test Cases vs. Actual Test Cases

Documents the extent that test cases executed achieved their expected results (indication of quality).
If all executed test cases have ‘failed’ then the indication of quality shows that there is no quality. Testing only reflects the quality in the SUT. Also the opposite is also true. Although testers would want to be finding defects to ensure the level of quality is true.

Meaning the total number of passed test cases, less the number made N/A, divided by the number of total test cases give a Pass %.

Test Manager and Test Team Leads uses this to track the quality of the SUT.
Program / Project Managers uses this to show the quality of the SUT and make decisions on Go / No Go on deployment.

Qualification of Outstanding Test Cases

Test Cases Not Executed:

For test cases that were not executed – they should either be:

No Run; or

Not Applicable

No Run means that they are intended to be run in the future prior to completion of the test exercise.

Not Application, means that the test case was found not to be suitable for an acceptable reason that is noted in the Test Summary Report.

Test cases should not be made N/A and left out of the Test Summary Report without the reason for their status being given.

Test Manager and Test Team Leads uses these status and explanations to make up the total number of test cases that were selected for the exercise. All must have reasons for not being run if N/A

Program / Project Managers uses this to quantify the number of test cases remaining i.e. No Run and how many test cases are N/A and the reasons why.

Defect Metrics

Open by Severity

Shows the stability of the solution as testing progresses.

Open vs. Closed

Open vs. Closed should be converge in a ‘healthy’ environment

Defect Density

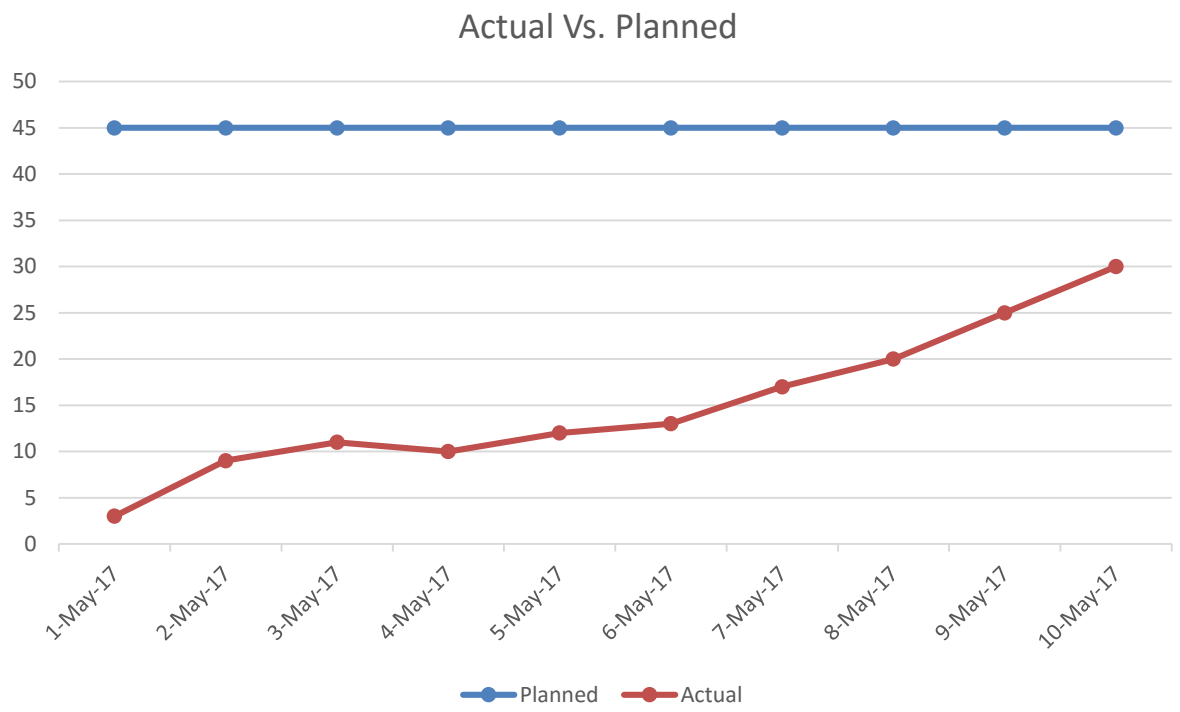
Indicates Functional Area Stability

Defect Aging

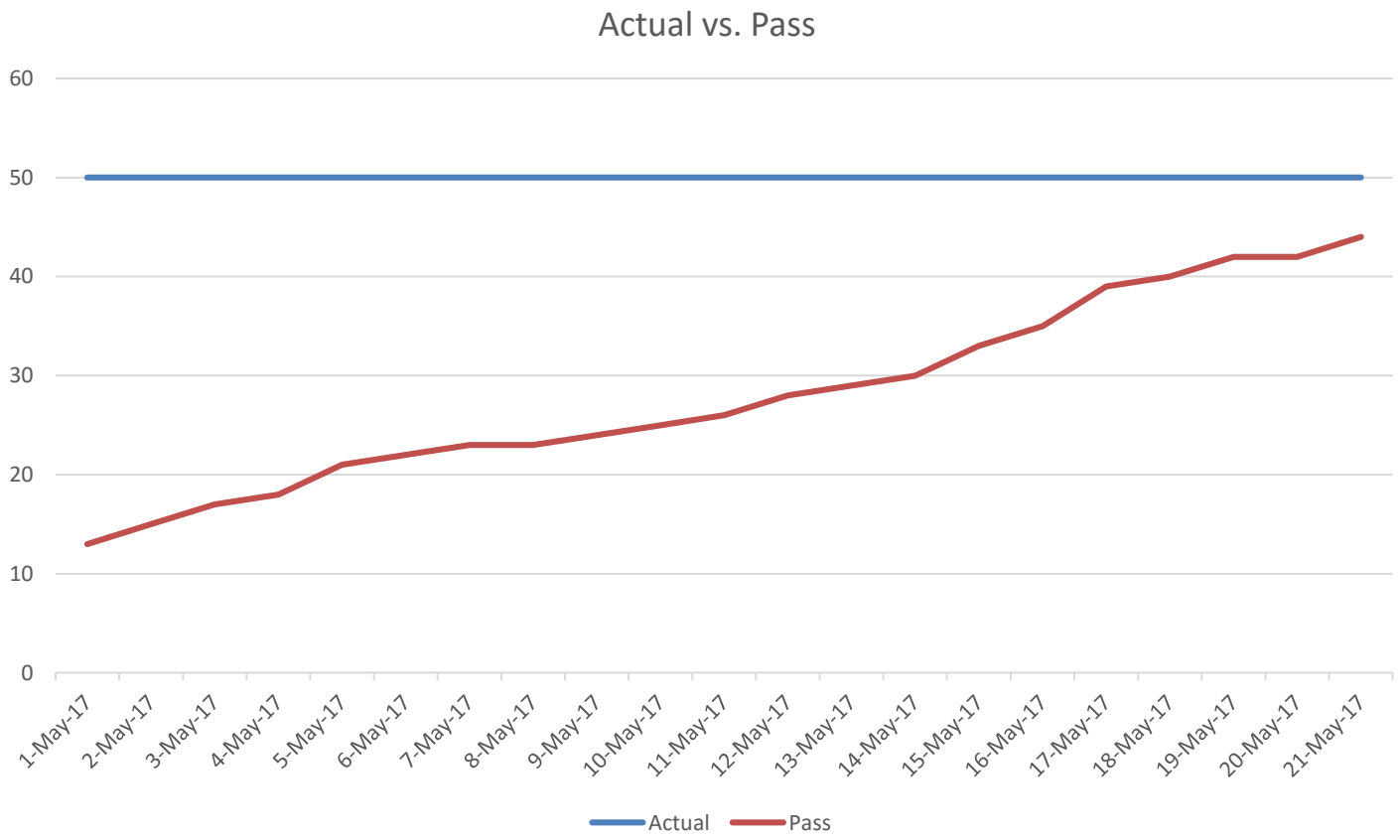
Turnaround Rates

A PICTURE IS WORTH A THOUSAND WORDS…..

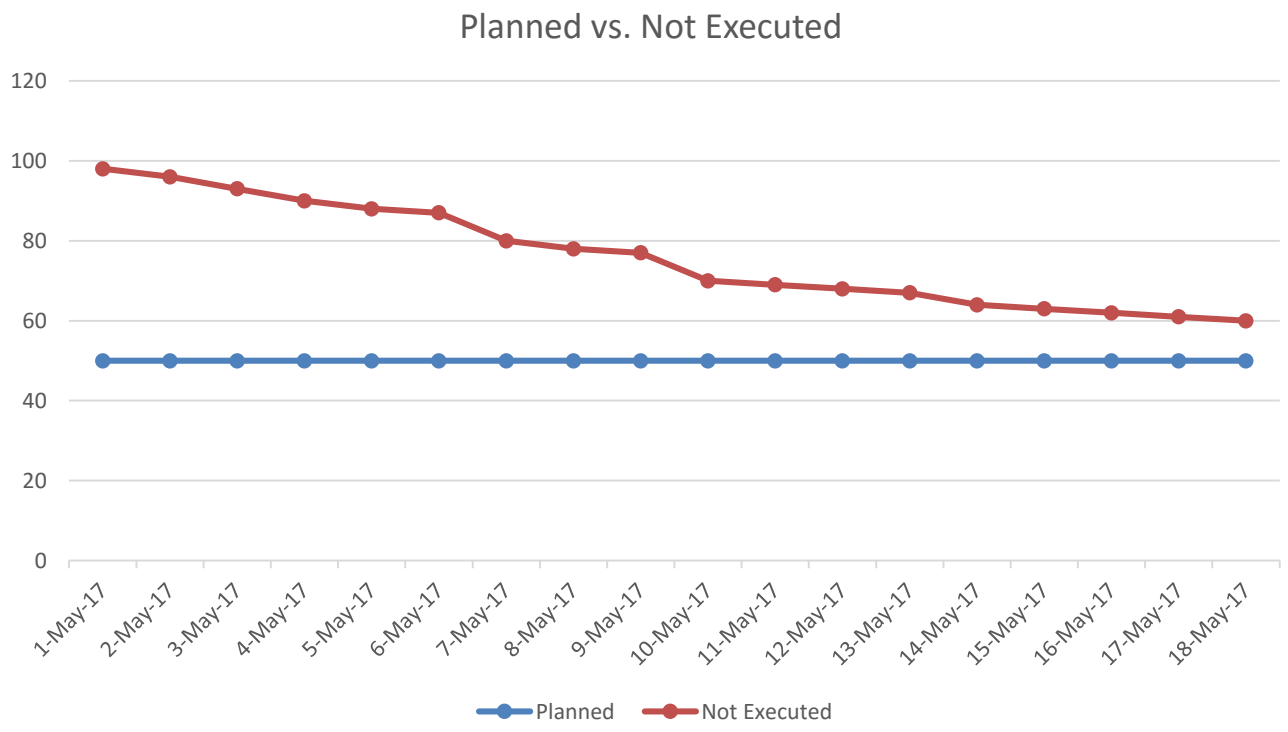
Actual vs. Planned



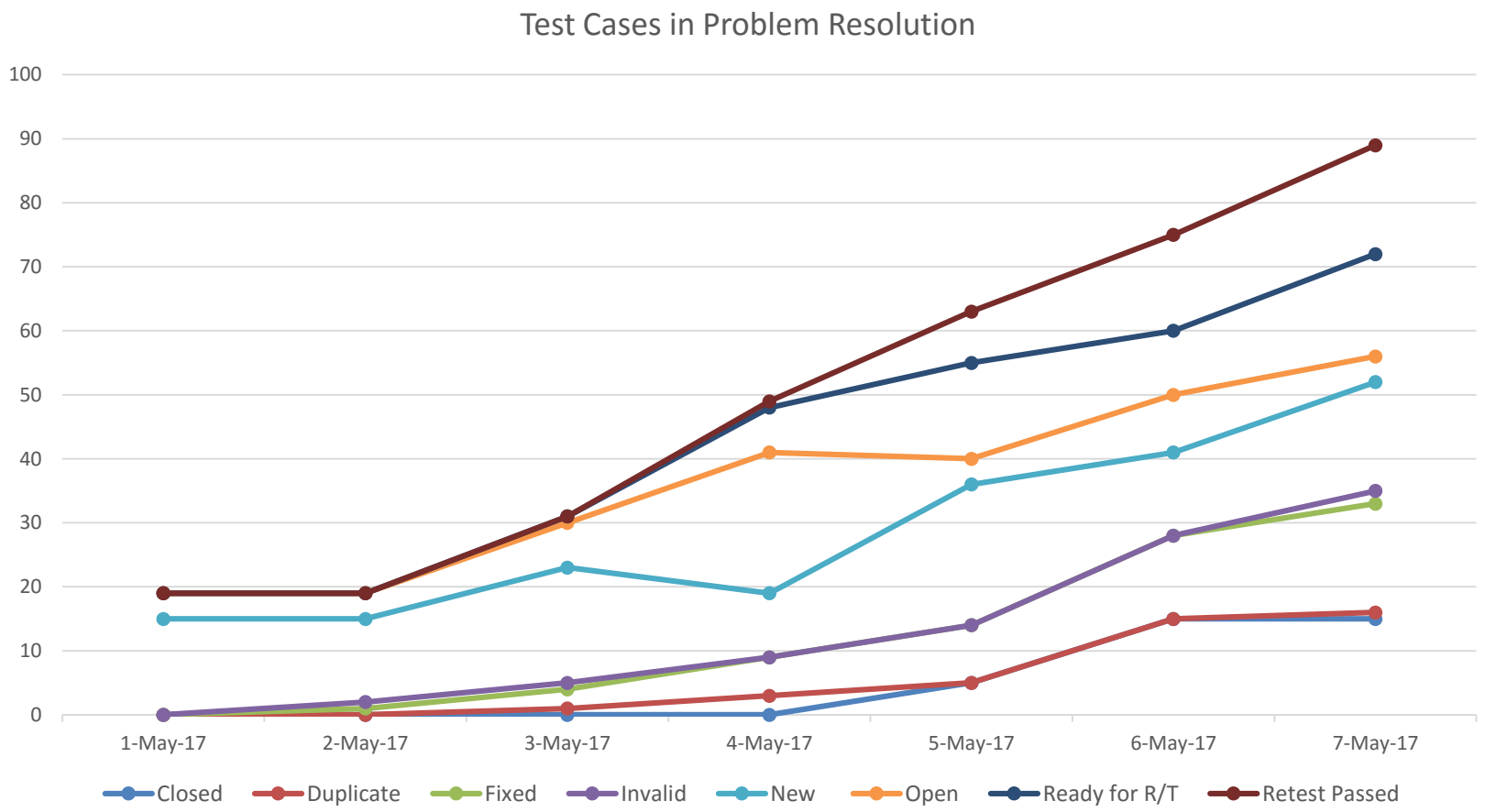
Successful Test Cases Vs. Actual Test Cases



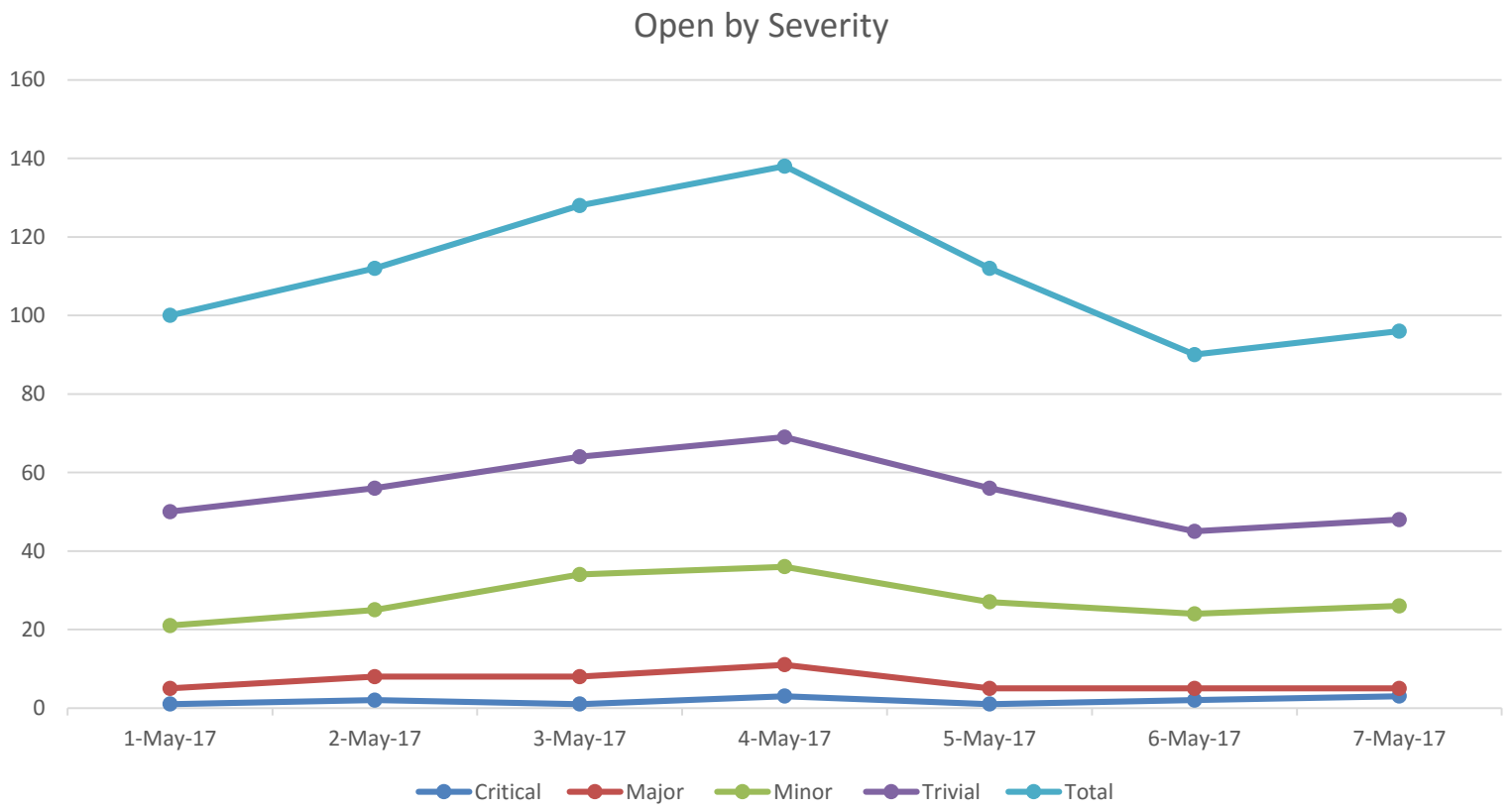
Test Cases Not Executed



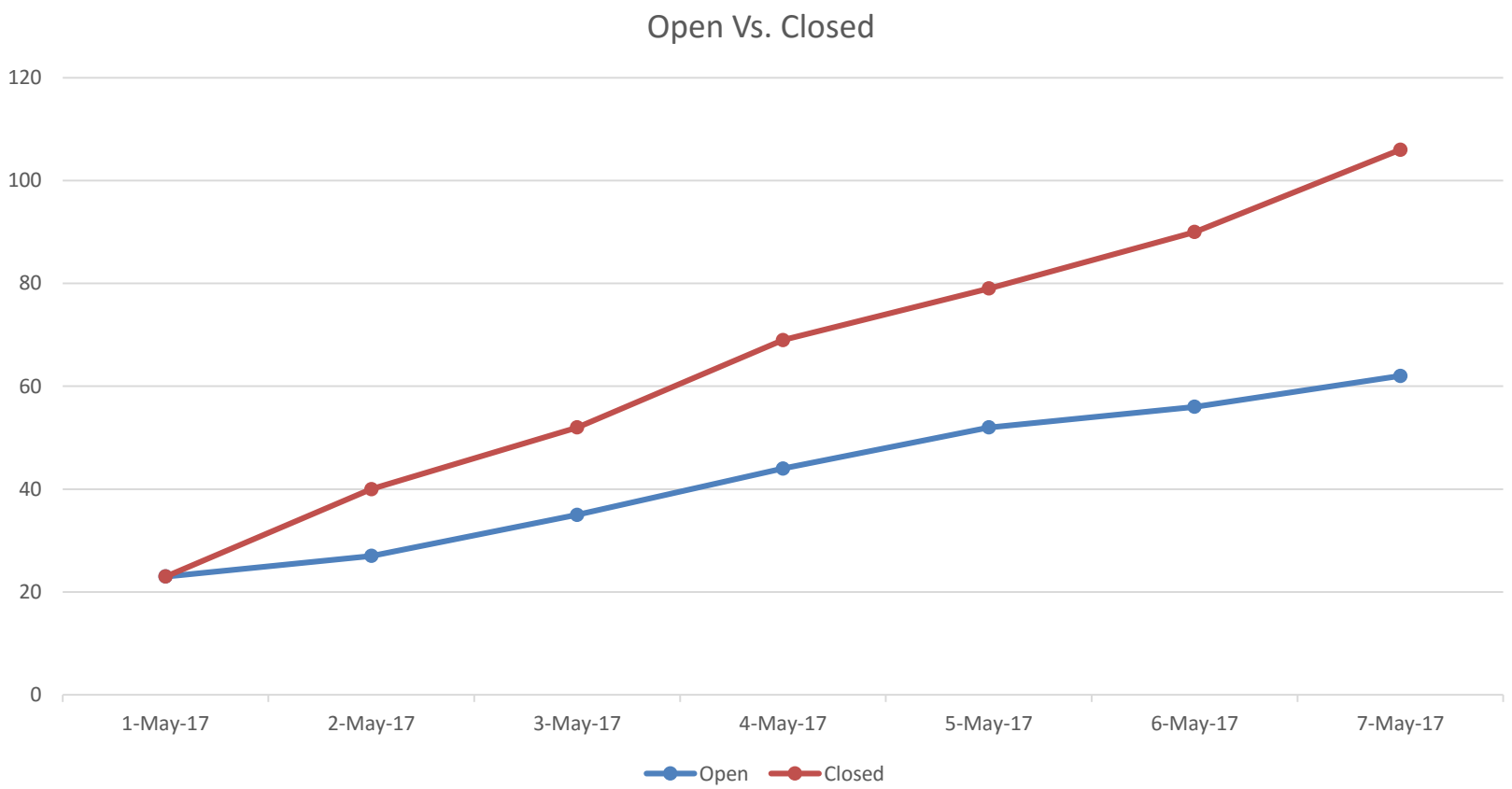
Test Cases in Problem Resolution



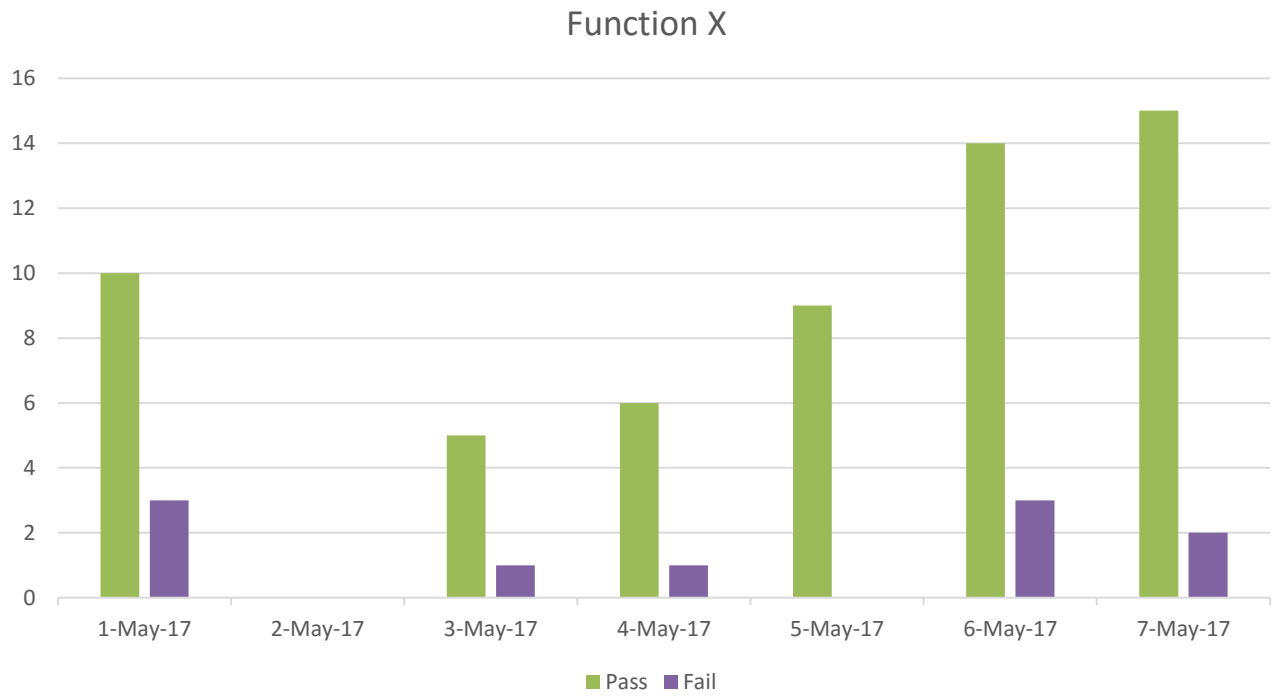
Open by Severity



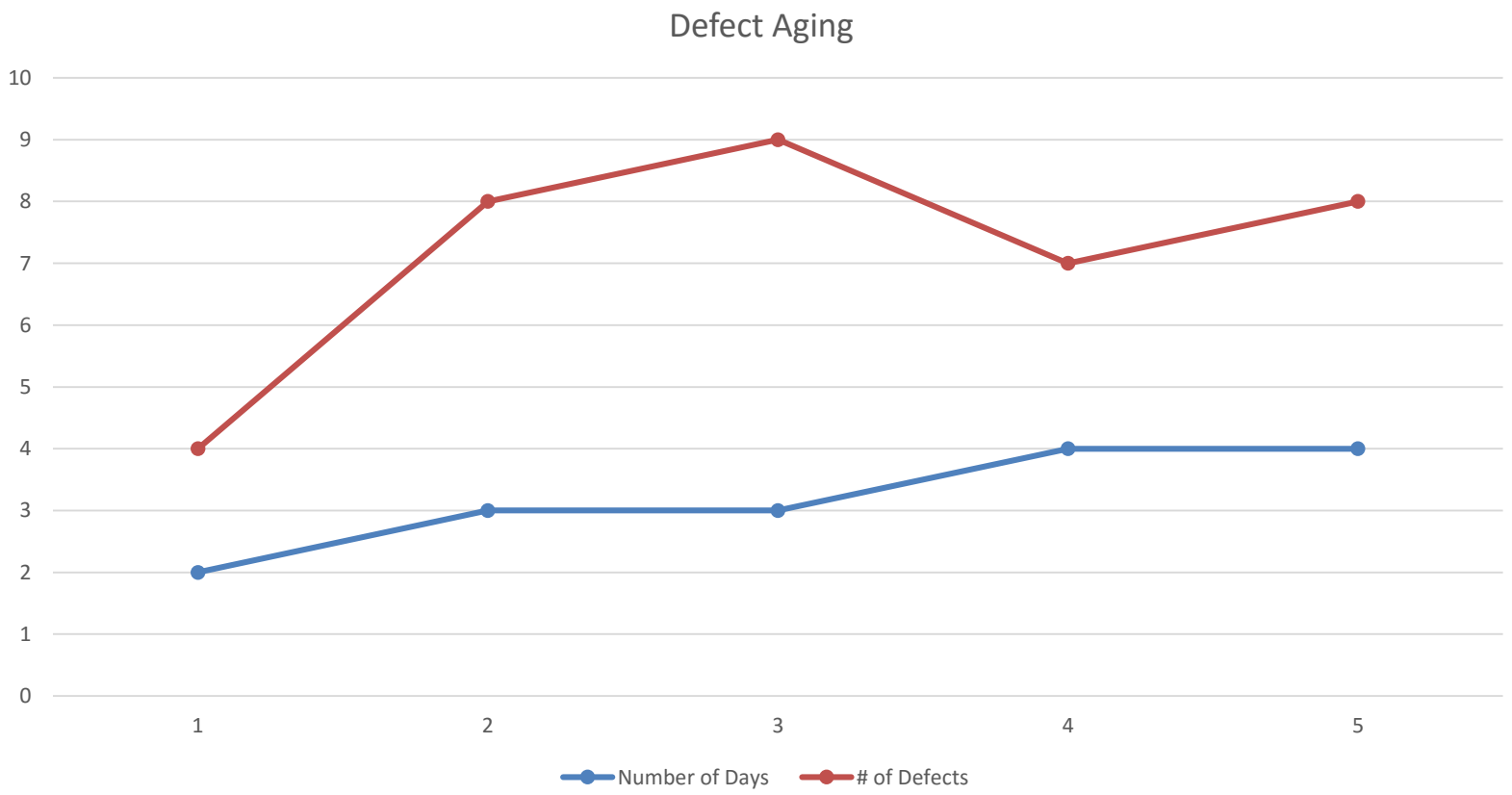
Open Vs. Closed



Defect Density



Defect Aging



Who Uses this Information

Test Manager – Managers Test Exercise

- Number of Defects being fixed
- Number of Test Cases being executed
- Number of Test Cases Passed
- Number of Test Cases Failed and have Defects
- Number of Defects affecting multiple Test Cases
- Which Functionalities are Stable and which are not
- Is Timeframe going to be met

Delivery Manager – Managers Support of Test Exercise

- How many Defects are Outstanding
- Which Functionalities are Stable and which are not
- Are there enough Engineers/Developers Assigned to support test exercise
- Are Delivery Timeframes going to be met

As a Tester – How do I help?

Clear, Concise and Meaningful description of Defect.
All details and supporting collateral included (screen shots, data etc.).
Follow the Severity assignments to the letter – not everything is ‘Critical’.
Move forward past the first Defect, and see if other Defects are lurking in the Test Case.
Think outside the square. Test Cases can only have so much information in them, be aware to look and question everything when you are running a test.
Remember, Testing provides a Quality measurement, Testing does not decide if the SuT is released or not, we provide information only.

Summary

Metrics provide very useful information to Testers, Test Leads, Test Managers and Project Team throughout the Test Life Cycle.

They are used to manage and control the Test Life Cycle, provide information throughout and at the end of the testing life cycle.

Metrics can be used in many different ways by various parties to obtain information during the Test Life Cycle.