

Planit Test Management Solutions

Woodside Test Process Optimisation (TPO) Outcomes Report

2nd August 2017

Version 1.2

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# Document Control

## Authoring

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## Version History

|  |  |  |
| --- | --- | --- |
| **Version** | **Date Issued** | **Comments** |
| 0.1**Author** | 29/05/2017 | Initial draft |
| 0.2 | 02/06 /2017 | Update with findings |
| 0.3 | 06/06/2017 | Reflect commentary |
| 0.4 | 09/06/2017 | Roadmap update and internal review |
| 1.0 | 12/06/2017 | Final version and client review |
| 1.1 | 1/08/2017 | Updated executive summary and removed references to Bi-Modal |
| 1.2 | 2/08/2017 | Updated all the images and roadmap to remove BI-Modal and up the entire document to reflect TcoE instead of TMO. |

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# Introduction

## About Planit

Planit Test Management Solutions (Planit) is a testing service provider that manages the risks and costs associated with testing small, medium and large-scale software systems in government, finance and industry.

Planit’s integrated solutions combine software testing best practices, tester training and certification, implementation and support of market-leading tools and a wide range of professional testing services.

## About Test Process Optimisation

Planit uses the Test Process Optimisation (TPO) framework for the assessment of testing maturity within an organisation, which provides a consistently thorough measurement against industry best practice and suggests improvements that could be implemented to reach each level of maturity within the model. The TPO model is related to Capability Maturity Model Integration (CMMI) and Testing Maturity Model Integration (TMMI) maturity models and is broken down into 20 “Key Areas” covering four categories (Lifecycle, Techniques, Infrastructure and Organisation), graded between one and four levels of achievement (A to D). A breakdown of the Woodside grading against these criteria can be found in [Appendix C](#_Appendix_C_–).

The TPO is specifically designed to measure testing processes, skills and practice across an organisation and its interactions with other teams within the project lifecycle. The power behind it is the ability to specifically point out the ‘maturity’ of current test processes, to identify activities for improvement, resource requirements and milestones and to create a roadmap so Woodside may deliver any future work as efficiently as possible.

The TPO recommendations do not cater for specific methodologies such as Waterfall or Agile. A mature testing organisation should be able to determine the best methodology to use per project; therefore, an understanding of all methodologies is necessary to make an informed decision.

The TPO process involved a series of interviews with key people from within the Woodside organisation and external vendors across Management, Business users; Operations and Project/Environment Management see *Appendix A – Woodside staff interviewed for this report*.

Additional input was taken from documentation supplied for review and by accessing the test management tools to review their current level of usage, see *Appendix B – Reviewed Documentation.*

## Scope

Planit has been engaged by Woodside to undertake a review of its testing practices and propose options to improve their testing efficiency through increased consistency and standardisation of the testing processes.

The Planit proposal included two deliverables:

1. The TPO Assessment including:
   * Interview findings across 20 areas
   * Current test maturity
   * Identification of tangible improvements to increase Woodside testing maturity
   * Roadmap on how to achieve target state
   * Best Practice recommendations
   * Report with detailed findings
   * Next steps
2. TPO Completion Presentation:

* Summary of report findings
* Next steps
* Presented in a succinct format

# Executive Summary

The TPO review of Woodside’s testing maturity showed that Woodside has a motivated team who are willing to change and improve. Speaking to many of the interviewees it became clear that historically Woodside has been overly reliant on highly engaged and diligent individuals who ensured that application quality was maintained. This often relied on the high level of Woodside experience of the systems involved rather than a repeatable, reliable, efficient and scalable testing approach. With the latest transition to an outsourced vendor delivery model, this experience and knowledge has largely been lost. This change of resources involved in testing has further exacerbated the lack of process.

The biggest challenge for delivering testing and quality assurance to the various projects and BAU changes in Woodside is the lack of a consistent and standardised test framework and approach that delivers measurable quality testing to the organisation. Although some SAP projects follow a more rigorous test approach, the majority of the projects have no clear guidelines or framework to deliver against. Certain aspects of the testing process/framework are relatively more mature and yet other aspects require attention. Woodside’s resource model of using contractors and vendors coupled with a lack of standard documentation and cross-portfolio lessons learnt sharing leads to duplication of effort and increased costs.

In the Data Science area, Planit did observe a number of good testing practices. In particular, testing is embedded as part of the development activities as opposed to being an activity that occurs after development. During requirements gathering, prototypes are used to gather user feedback and implement changes based on this. Additionally, the team has a “release early” philosophy to generate production feedback and make changes based on this. This strategy is beneficial to the current context of Data Science but may not be applicable to large-scale waterfall type deliverables.

Planit have identified a series of key recommendations and improvement initiatives that, if implemented, will allow Woodside to establish an efficient, effective and rigorous Testing Centre of Excellence to drive quality outcomes across technology/software based projects.

## Purpose of Review

Woodside engaged Planit to undertake a review of their current testing and quality processes, evaluate these processes against Industry Best Practice and recommend optimisation initiatives.

Woodside is keen to understand how an overall consistent test approach, use of test tools, quality frameworks and testing processes can support faster delivery and increased quality within projects and BAU changes to production.

Woodside is also in the early stages of a new method of delivering testing, using external vendors, who do not have years of Woodside business experience. Woodside is keen to ensure that they are able to assure the work of the vendor and able to provide them with the correct level of information to deliver projects.

The review:

* Included input from the following:
  + Senior stakeholders
  + Business Consultants
  + Project and Delivery Management
  + Business Users
  + Operations and Environment Management
  + Architecture and Infrastructure
  + External Infrastructure and Testing Vendors
* Included reviews of current test documentation and reports (see *Appendix B – Reviewed Documentation*)

As this document has been created utilising the feedback gathered from the above-mentioned stakeholders supported by Woodside provided testing artefacts, the report should be taken as a high-level view. It is recommended that key areas be explored in further detail before implementation.

***[NB:] All interviewees have been extremely receptive to the process and openly expressed their views. There is an indicated willingness to embrace the recommendations as ways to improve.***

## Current Position – Assessment of Woodside Project Testing Maturity

The TPO assesses the current maturity level of implemented testing processes across 20 key areas, and identifies areas for improvement based on the assessment outcomes*.*

The TPO assessment model has determined that Woodside testing processes are consistent with the definitions for **Level “Starting”**. The “Starting” maturity indicates that the related key area has not attained level A, but it should be noted that if any of the checkpoints are not met for level A the key area is considered to still be in the starting state. “Starting” is consistent with CMM Level 1.

Maturity Levels subsequent to “Starting” are:

* Level A - Managed, repeatable process
* Levels B/C - Controlled and measured test process
* Levels C/D - Optimising

Analysis of the 20 TPO Key Areas has identified common themes contributing to the current maturity level, but also a number of positives.

## Positives

The following have been assessed and stated as positives with the current process and procedures:

* All persons interviewed recognise the importance of testing, and are open to change. Planit’s engagement is further evidence of the organisation’s commitment to good testing and quality assurance practices.
* The dedication, hard work and knowledge of Woodside employees past and present has ensured that process and framework gaps have, up to this point, not resulted in catastrophic software failures in production.
* All projects perform some kind of defect management, although not consistent and not always using available approved Woodside test management tools.
* Within Woodside, the office environment and culture fosters a sociable workplace and opportunity for effective and straightforward communication.

## Common Themes Contributing to Current Maturity Level

### Governance

There is no central governance or assurance of testing sitting across all project and BAU testing activities. This leads to inconsistent quality in delivery, less opportunity for efficiency gains and continuous improvement opportunities, inability to look at defects organisationally to support focused remediation.

### Process efficiency

Due to the lack of a high level Woodside test framework and policy, test strategies and test plans are inconsistently implemented across projects and technologies. The result of this inconsistency is inefficient, unclear targets for test coverage, unclear approaches and techniques for test authoring, and inability to report consistently on testing activities, quality and defects across projects.

The result of this inconsistency is inefficient and possibly overlapping test execution between test levels, unclear targets for test coverage, unclear approaches and techniques for test authoring, and inability to report consistently on execution and defects across projects and releases. There is also confusion regarding how project teams should carry out testing and what resource are available to them.

### Communication

Silos of communication exist across Woodside in relation to testing. These silos complete good work in isolation, but the is no mechanism to collate, review and act upon these examples, which leads to inconsistent work and artefacts, limited sharing of knowledge and limited ability to improve testing processes.

### Tools

Test management tools are not consistently implemented at Woodside. Woodside is using a number of different test management toolsets across various projects. Woodside are currently rolling out HP ALM but there is little customisation and no consideration has been given to configuring the tool appropriately. Through standardising and appropriately customising test management tools across Woodside, much more value can be delivered through reporting, with minimal additional cost.

Test automation is not implemented significantly at Woodside and for instances where automation is being conducted, there is no consideration as to whether the toolset being suggested is appropriate.

There is limited focus on non functional testing such as performance and where this has been executed there is no standard approach to tooling. The Performance testing evidence that Planit reviewed did not provide any level of business context or risk assessment

### Risk Mitigation

The limitation of testing to describe and report on test coverage inhibits Woodside’s ability to identify and manage product risk. It is possible that Woodside is currently under/over testing projects because of the lack of understanding of test coverage and requirement traceability. In addition, there is limited product risk identification to drive the Test Strategy.

### Ownership

As there is no central assurance of testing there is an inconsistent approach to quality gates and checks which have the potential to introduce significant risk to Woodside’s production environment and business. This lack of quality visibility hinders the understanding of true progress within the project lifecycle.

Due to undocumented entry criteria for each level and phase of testing, there is no clear responsibility on any party to achieve a specific level of quality before handing over. The only place this entry criterion is defined is for entry into production.

This has fostered a culture where testing is only considered as a “final phase” in project delivery as opposed to a continuous activity that needs to be embedded throughout the software lifecycle.

### Personnel

Woodside has no in-house testing personnel so relies heavily on vendors providing the right people at the right time. This does not support building a knowledge base that understands the Woodside business drivers, technical landscape and tools to provide a broader more intelligent approach. It also means that Woodside are under qualified to ensure vendor processes and deliverables are of a high quality to deliver the outcomes Woodside require.

The testing successes that Woodside experience are due to the heroics of different people in different areas at different times. This is not a sustainable or scalable model. There is significant risk to the organisation that knowledge of systems and processes will be lost should individuals move from their current roles. Additionally, vendor capabilities may be under-utilised or inappropriate for Woodside projects.

## Other Observations

Although all the projects perform a degree of defect management, it is very inconsistent and based on previous experience of people rather than process. There is no standardisation of the tools to be used for managing defect. The result is that reporting and comparisons to other projects are impossible e.g. Planit could not determine the number of defects organisationally found per month and compare it to best practice.

The cost in effort per defect effort (including validation, documentation, clarification, deployment, retest and regression) could therefore not be determined. The total cost of testing in Woodside could not be determined, as there is no specific ownership of testing.

Once the testing framework, assurance function and appropriate tools have been introduced, appropriately configured and enhanced, it will become possible to plan testing engagements in a structured way. This enables structured decision making around how much coverage is appropriate for a change or project, using appropriate testing techniques. The opportunity to explicitly decide on how much test coverage should be delivered could result in less testing being required to deliver the same quality outcome for Woodside.

There is no evidence of Actual Cost vs Planned Cost statistics of testing projects and releases. Without these figures, benchmarking against a best practice “Cost of Testing” as a percentage of Total Cost is almost impossible. It is highly recommended that these statistics be kept in future.

There is little traceability between test cases and requirements which limits the informing powers of test reporting.

Individual issues will be detailed in each of the 20 Key Areas within *Section 5 Issues and Recommendations by Key Area.*

## High Level Improvements

The improvements suggested in this report are not overly complex, and their implementation will see improvements to testing process and efficiency gains for Woodside in software testing through its project delivery.

Planit recognises that Woodside’s preferred end-state is a de-centralised Testing Centre of Excellence. However, based on the current level of testing maturity, a period of centralisation and consolidation is required. Therefore, in order to reach this goal Planit recommends the following:

* Establish the a Testing Centre of Excellence (TCoE) to introduce and manage a consistent organisational test approach with clear guidelines and frameworks to deliver against.
* Develop an organisational test policy and a Agile/Waterfall framework to standardise testing across the board and manage quality.
* Implement a standard test management process that supports traditional and Agile delivery across projects and BAU.
* Define and implement consistent use of the test management toolsets (HP ALM, JIRA) across all projects and BAU activities.
* Implement test automation and performance testing model where it supports efficiency gains and returns on investment.
* Educate the Woodside testing stakeholders on the basics of testing to improve quality and assure testing activities from all vendors and internal teams.
* Monitoring project and process quality by standardising testing metrics and reporting, using current Woodside tools more effectively.

Individual issues are detailed in each of the 20 Key Areas within Section *5 - Issues and Recommendations by Key Area.*

# TPO Assessment Results Data

## Industry Best Practice Comparison

The data collected from Woodside was compared to the industry best practice scores. Although it has been noted that Woodside does not aspire to be best practice status in all areas this comparison has been included to provide some context for the Woodside result. There are two data points recorded in each area from the Woodside scoring.

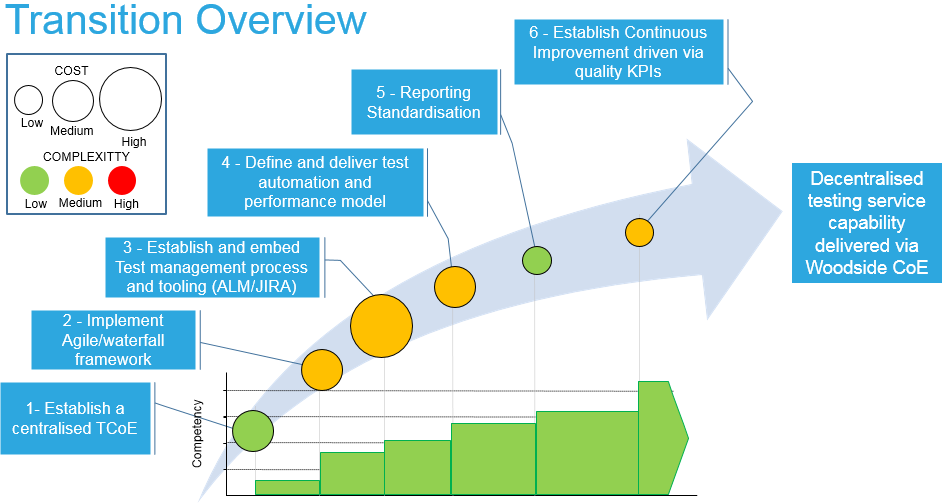
1. The average score which Woodside recorded
2. The highest individual recorded score for each of the 20 areas.

This data has been included to show that while the average score is quite low in most cases there are instances where particular projects are performing well. This highlights the inconsistency in approach to testing.

Woodside does not have a formulated standardised test process or test strategy implemented across the board, which contributed to low levels of maturity as seen above.

## Suggested Optimisation Roadmap

The analysis of the TPO assessment within Woodside shows an organisation which is ready for change and which can deliver significant efficiency gains within a reasonable cost and timeframe. Planit have provided the key initiatives that if implemented correctly, would deliver significant efficiency gains, providing a testing framework to support increased delivery speed without affecting quality as a prioritised backlog list that can be delivered on an iterative basis. This will allow the initiatives to be handpicked to support Woodside’s requirements.



Correct implementation of the six key initiatives described below will enable Woodside to shift from an uncontrolled and unstructured test governance process to a model that provides direction, guidance and quality assurance for all testing activities. These initiatives are:

**1 – Establish a Testing Centre of Excellence (TCoE)**

The creation of a TCoE is the first and foundational initiative that Planit is recommending. Due to the lack of structure and focus in relation to testing, an initial period of centralisation is required. The remit of the TCoE would be to set the agenda, framework and governance for testing and quality assurance within Woodside. It will present a single engagement point and voice for these services. The TCoE will be accountable for defining and rolling out a test policy across Woodside, standardising testing templates and artefacts (including continuous review of use), and coaching and training for testing champions within Woodside.

The TCoE should be a driver of maturity within Woodside. This is a key requirement to ensure that Woodside is able to effectively assure testing activities it’s vendors. Once the other initiatives have been embedded and are delivering results, it is expected that the TCoE will have it’s functions distributed to identified stakeholders and managed via Woodside’s Testing Centre of Excellence.

**2 - Create Agile/Waterfall Test Framework**

Following the establishment of a TCoE, it is recommended that Woodside create and implement a Agile/Waterfall test framework that supports both traditional and Agile delivery methods. The purpose of the framework is to embed quality into project/software delivery from day one, leveraging the artefacts produced by the TCoE to provide a standard set of testing processes, including a set of minimum required standards to be adhered to.

Driven by the TCoE, the Woodside test framework will design and implement testing standards, guidelines, processes and ownership capabilities. The framework delivered will integrate into and complement the existing Woodside Unified Change Process, focussed on managing and delivering to Woodside’s risk appetite. It will ensure that the level of testing is based on the business and organisational risk of the application or feature being delivered.

The framework will also standardise communications and meeting/forums for all those engaged or with a stake in the testing process.

**3 - Establish and embed test management and tooling**

It is key for Woodside to define test management practices across the organisation. This will enable Woodside to monitor and thus manage the effectiveness and cost of testing conducted internally or by vendor partners.

Key deliverables in this area should be a standard estimating model, a defect management process, a process to ensure traceability between requirements/user stories and testing activities, and a consistent approach to regression testing. By implementing these changes, Woodside develops the capability to build meaningful and clear pictures of product/system quality at all stages of the delivery process that can be used for both vendor and internal projects.

Coupled with this is a program of work to identify and standardise the key Woodside test management toolsets to be used. Currently, HP ALM, JIRA, and Excel are primarily used across the portfolio but there is no consistency in the functions used or the information captured. The tools will be configured to support the changes being made by the TCoE, particularly relating to test process, test metrics and test reporting.

**4 - Define and deliver test automation and performance model**

To ensure that Woodside is able to leverage the best value from any automation/performance services it engages, it is crucial to have a robust and rigorous model to support, manage and monitor these activities.

For the majority of projects, it is not expected that Woodside develop internal capability to deliver automation and/or performance testing. Rather, this capability is set up as an advisor/quality assuror of these testing activities.

The model will include guidelines for appropriate tool selection, looking at value for money and technology/task appropriateness, clear standards to create and monitor performance and automation testing requirements and success criteria, and creating a model to ensure that, as far as possible, existing technology assets are re-used and updated.

**5 - Reporting Standardisation**

The reporting of testing activities is crucial in that it both provides information on the quality of the product to all stakeholders and it enables the effectiveness of the testing process, both internal and vendor supplied, to be judged. Currently, any reporting on testing occurring is done on a project-by-project basis or solely at the discretion of the vendor.

Leveraging requirements traceability and the configuration of Woodside’s test management tools, a series of consistent test reporting templates will be developed and published with guidelines on how to create and interpret the information and a frequency time table for when the reports should be issued. These would be applicable for internal and vendor delivered projects.

After a period of review, it is then recommended that Woodside implement a framework to report on testing information in real-time, via a dashboard system.

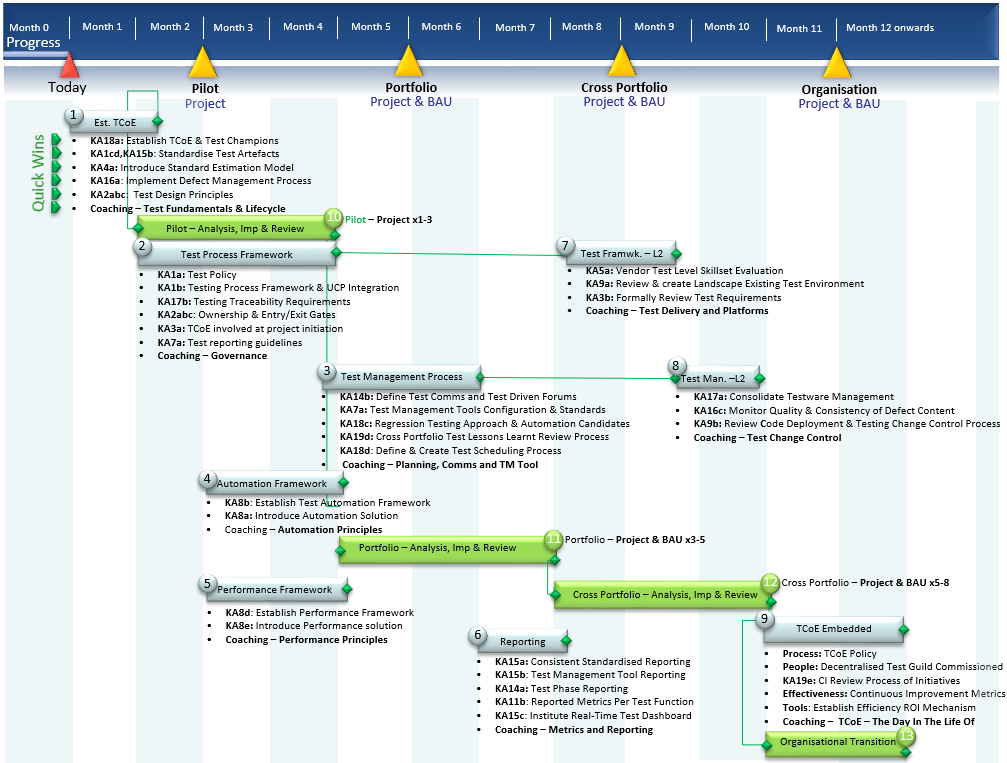
**6 - Establish continuous improvement via quality KPI’s**

The final major initiative recommended is to establish the mechanisms for continuous improvement across testing framework at Woodside. Crucial to this identification and monitoring of key performance indicators that can be used to measure the effectiveness of testing and any implemented changes. This will be leveraged by the test reporting and test management tool use described above.

The Woodside Testing Centre of Excellence will become a distributed and essentially self-service model. Additionally, the framework will achieve full integration to Woodside’s Unified Change Progress for all new work (project and BAU) undertaken.

Further detail on these initiatives can be found in Section 5 [Issues and Recommendations by Key Area](#_Issues_and_Recommendations).

## Suggested Implementation Roadmap



Planit have provided a suggested implementation roadmap as requested, however this should be refined when greater context of Woodside’s delivery model is understood.

These stages facilitate change at Woodside’s cadence and provide an indicative logical sequence to the implementation. The aim is to establish an improvement foundation that drives the process and quality accelerators in order to deliver maximum benefit in the quickest time.

It is imperative that while defining and implementing the strategic improvement initiatives, there is a project delivery mechanism to channel change and provide essential feedback on the effectiveness of the initiatives. At each phase, validation points are in place to manage progress while getting the benefit from the optimised deliverables on emerging inflight projects.

# Issues and Recommendations by Key Area

Each of the 20 Key Areas within this Section will include:

* A summary of the high level industry best practice recommendations for IT companies
* Current issues
* Tailored optimisation recommendations
* Prioritisation of recommendations to support the TPO Initiative Release Plan

It is important to note that Planit has taken into consideration Woodside’s multi-vendor delivery environment and desire to have a testing provider who can support the provision of skilled and experienced resources on-demand.

## Key Area 1 - Test Strategy and Plan documentation

|  |  |
| --- | --- |
| Test Strategy Best Practice | Typically, a Test Strategy would be produced for every major project. This includes a full assessment of the product risks. This would then direct the amount of testing to the level of risk identified. It can also start to list any project risks identified at this stage although this should not be the main focus.  The Test Strategy should be risk-based and aim to find the most important defects as early and as cheaply as possible. Co-ordinating testers and test activities can prevent unintentional overlaps or gaps between tests.  The Strategy needs to be aligned with the industry standard headings. This ensures all facets of testing are considered and dealt with, even if it is decided that they are not applicable.  Also required on a per project basis is the Test Plan. The Strategy should concentrate on the “what” to test focussed on the risks identified, and the Test Plan should detail the “how”.  For smaller projects, these documents are sometimes combined. However, it is important that the thought processes be still undertaken as though the separate documents were being produced.  The Test Strategy and Plan are living documents, and risks should be continually monitored and the documents updated if it changes in light of new risks. Any deviations from the Test Strategy or Plan need to be documented. |

### Current Issues

Woodside currently has not adopted an organisation wide Test Policy that clearly represents the testing philosophy. This would provide a direction, which all participants in testing should adhere to, and follow.

Setting an appropriate test policy provides a robust framework within which testing practitioners can operate.

Woodside has also not currently adopted the full use of standardised test strategy and test plan templates. Some projects produce their own test strategy and test plan documents and some use the current Woodside/vendor templates that results in inconsistent content.

Whilst testing is included as an activity in the Unified Change Process, this is implemented on a case-by-case basis and can vary dramatically depending on the project or change being made.

This inconsistency results in the following impacts:

* Lack of visibility regarding detail of what is to be tested and how that testing should occur.
* Lack of involvement of key stakeholders in the planning of test activities. Lack of upfront risk identification and analysis. Test activities are therefore not correctly focused on the product and technical risks.
* There is limited traceability between business/system requirements and the related test scenarios and scripts. This means that the current state of testing is hard to ascertain and Woodside SMEs are unable to effectively review the proposed testing coverage produced by vendor partners.
* Limited risk analysis occurs as part of testing for change. Any assessment is typically based on gut feel or individual’s system experience, and any rationale for deciding which tests to run for each release is not documented. There is no formal approach or method to determine a risk-based testing approach, there is a lack of real understanding of what this is, and that it should be applied at the test preparation phases as well as during execution. Risk-based testing does not mean if we run out of time we do not run certain tests, but rather that the breadth or depth of testing is based on identified risk. With Woodside’s approach to outsourcing the majority of testing activities, this lack of documentation on product and project risk is exacerbated as the resources typically analysing and executing the testing no longer have substantial Woodside system and business knowledge to draw down from.
* There is no real understanding of formulating and designing test coverage using recognised testing techniques based on the requirements risk.
* Test planning for each project is only focussed on understanding the business processes and verifying these in the new solution.
* Not all aspects that should be considered when planning for testing are considered, e.g.
  + Non-functional testing (e.g. user experience, performance, security, compatibility, usability, disaster recovery) is not stated in the plans and limited evidence is available to confirm whether this was completed.
  + It is only assumed that negative testing is conducted. There is no approach to negative testing/exceptions handling in the documents reviewed.
  + Risks are rarely called out in the documents reviewed. Identifying risks as early as possible allows for mitigations to be put in place.
  + Training and/or coaching for Woodside staff who have a responsibility or accountability for any part of the testing process is not understood. This should be considered to ensure the staff have the right skills required, and enough time is allocated to training. Currently, Woodside’s testing expertise is driven on an individual basis and not focussed on core testing competencies. To ensure Woodside is able to effectively manage and evaluate vendor delivery and performance, this internal knowledge is vital.
  + The co-ordination between Unit Test, System Integration Testing, Regression and User Acceptance Testing is ad-hoc and not formally documented therefore Woodside run the risk of testing duplication and/or gaps. For vendor delivery projects, this means that there is a potential duplication of testing effort between the vendor(s) and the UAT performed by Woodside employees.

### Improvement Recommendations:

Develop and implement a full test process framework for Woodside, focusing on the following key areas:

***KA1a - Create a Woodside Agile/Waterfall***  ***test policy***

* A test policy is a high-level document the purpose of which is to represent the testing philosophy of Woodside as a whole and to provide a direction which testing should adhere to and follow. The test policy is a high-level description of principles, approach and major objectives of the organisation regarding testing.
* The policy will adhere to and help realise the objectives of Woodside’s Digital Strategy.

**KA1b – Create a Woodside *Agile/Waterfall*** **testing process framework**

* Establish and implement an effective test process framework that will enable Woodside to define clear testing deliverables, responsibilities and outcomes for each project/change regardless of the mode of delivery (Agile, Waterfall etc.).
* The framework will clearly define testing’s relationship with the Woodside Unified Change Process.

***KA1c – Define the Woodside Test Strategy template and criteria for when a strategy should be required.***

* Ensure that the relationship between test levels is clearly articulated and that entry and exit criteria are recorded and implemented. Adopt standard terminology to ensure no gaps exist in the testing process.
* Ensure reporting requirements are clearly defined in the strategy and insist that all parties deliver reports consistently.
* Ensure that each role within a project has a clear definition of the responsibilities of that role and ensure that the Woodside Testing Centre of Excellence has overall accountability for testing across all test levels.
* Perform a risk assessment of each project and record the output in the test strategy to determine the amount and coverage of testing required to mitigate the risks.
* A justification for omission of any section of the test strategy and test plan template as ‘not applicable’ should be recorded
* Involve the various interested parties such as vendors, business customer, systems manager, and project teams in determining the test strategy.
* Articulate defined strategy for regression testing to ensure that coverage is adequate and effective use is made of test automation to maximise coverage and minimise execution time.
* For retesting, draw up a working method in which consideration of a full retest, a thin retest (per defect, function, subsystem), or even no retest should be motivated (and recorded) each time.
* Create traceability framework to ensure that system scope is adequately covered by proposed testing coverage.

***KA1d – Create Woodside Test Plan template, and ensure that it is mandatory for every project***

* Planit reviewed various test plans that had been produced for Woodside projects. These template required changes to ensure an effective and repeatable process can be adhered to regardless of the project delivery methodology.
* The Test Plan template will define the minimum standards and information that needs to be captured for delivery. The plan will recognise that differing release models may capture these data items in different formats or not at all.
* Incorporate test plan template into Woodside framework to ensure it is consistently applied to all changes, including BAU, and incorporated as part of the overall standardisation of Unified Change Process.
* A justification for omission of any section of the plan as ‘not applicable’ should be included in the plan.
* Continuous monitoring of test planning is established to drive improvements and ensure the template(s) are being used effectively.

***KA1e – Introduce Non-functional testing***

* Ensure that non-functional testing is considered as part of any testing initiation review and the expected outcomes are defined in alignment with the business outcomes.

## Key Area 2 - Life cycle model

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| Life-cycle Model Best Practice | For each level of testing, planning and preparation, specification (design) and execution activities should be performed. Each of these has defined sub-activities that need to be completed: For each activity aspects such as the following are recorded:  goal, input, process, deliverables, dependencies, techniques and tools, facilities and documentation  In order for improvements in process and planning to be made, these individual activities need to be determined and documented so that all parties have the same understanding of what needs to be achieved and the standard that is expected. It is recommended that these process and procedures are placed on a central intranet and updated as appropriate. |

### Current Issues:

* There is a lack of understanding of what each of the life-cycle activities should contain:
  + Test planning is constrained to the release scope and time-boxed release windows.
  + No formal estimation techniques are used.
  + Test design is assumed to include sufficient test coverage but there are no documented design procedures to be considered nor any documented test design standards or review process.
* Some projects do follow the test process of planning, specification and execution but this is based on the teams’ experience and not due to a structured best practice process. Lack of documentation leads to uncertainty and duplication. Woodside employs vendors for most projects and each project is run based on the experience of the vendor rather than process. Everything is not consistently documented which leads to starting fresh for each new project.
* The level of detail and quality in the testing artefacts isn’t always consistent.
* Some projects/BAU changes do not have a test plan or test scripts, which results in unstructured and unrepeatable testing. This increases production risks for Woodside.
* There does not appear to be any clear expectations set or tracked regarding the quality of delivered functionality.
* There does not appear to be any explicit entry or exit criteria, which relate directly to product quality, nor suspension criteria defined for each test level. Without these, Woodside has no way of communicating their expectation of quality to the developers/vendors.

### Improvement Recommendations:

The definition of the Test Life Cycle to be followed will be contained in the Test Strategy and dependent on the methodology being followed. As the Test Strategy is written, it is important that the following areas be addressed:

***KA2a –Provide guidelines on test case design to support the test function and ensure consistency***

* Provide guidelines to testers from all organisations on the type of content to be included in test design so that test cases are consistent across the organisation (including vendor partners) and new starters can adopt the same design standards.

***KA2b – Ensure ownership of each test level is clear and communicated***

* Define and document Woodside ’s preferred approach to test levels in the test strategy.
* Communicate the strategy to all stakeholders and agree on a timetable for its implementation.
* Include clauses in contracts with external vendors that offer Woodside some form of leverage to ensure the Woodside testing approach is enforceable.

***KA2c – Define acceptable entry and exit criteria and suspension criteria for all projects, which align with Woodside’s expected cost of testing and production quality requirements***

* Definition of the entry and exit criteria and suspension criteria is an effective method to communicate Woodside ’s expectations of delivered quality.

## Key Area 3 - Moment of involvement

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| Moment of Involvement Best Practice | Although the actual test execution usually starts after the realisation of the software, the test process should start earlier. Earlier involvement of testing in the SDLC helps to detect defects as early and/or as easily as possible and even helps to prevent defects. Better coordination between tests is possible, and critical path time of testing can be greatly reduced. Static testing techniques will also identify defects in requirements, code or documentation early.  The cost of an issue can escalate by a factor of 10 as defects are identified in each subsequent phase of the development lifecycle because of rework. |

### Current Issues:

* Planning is not always sufficient within Woodside and sometimes leads to insufficient budget and/or time allocation to perform the testing. Testing activity is often seen as “contingency” and squeezed in an attempt to meet the project implementation date.
* There is an inconsistent approach when it comes to the involvement of testing on projects. On some projects, the testing is involved from initiation, on others, the testers get involved in the project during build/realisation phase or only when test execution is required.

### Improvement Recommendations:

Earlier involvement of testing in the SDLC helps to detect defects as early and/or as easily as possible and even helps to prevent defects. Planit recommends the following improvements:

***KA3a – TCoE to be involved in all projects from initiation***

* The TCoE will coordinate with the different parties to have the required testing involvement at the correct time in the SDLC of the project, to reduce the risk of finding defects later.
* The TCoE can help coordinate the test function and help define a critical path of testing through process and deliverables.

***KA3b – Testers to formally review requirements***

* There is value in formal testing (Static Testing) of the requirements being implemented in a project. The process of Static Testing is somewhat similar to a quality assurance function but delivers contextual feedback as well as the pure process feedback derived from QA. This static testing will help early detection of defects in the requirements documentation and the formality of the process will support the tester in their static testing techniques.
* With the understanding that different systems have different quality and risk profiles in production, engage with the Product Owners to discuss opportunities for defining different quality levels for different systems in production.
* Explicitly report on lower test coverage requirements and savings for systems identified as requiring lower quality.

**KA3c – Embed and establish formal User Experience testing as part of project delivery**

* User Experience (UX) testing can help ensure that the proposed product/solution is actually complimentary to Woodside’s business processes and staff.
* User Experience should be considered at project inception, incorporated into requirements, built and validated through testing to ensure not only the technology is fit for purpose but customer value is realised.

## Key Area 4 - Test Estimation

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| Estimating and Planning Best Practice | Estimates should be the basis for defining which activities are performed, at what moment and how many resources will be needed.  Test estimates should be substantiated. The use of a standard template is recommended. This then drives the planning.  Estimating and planning are monitored, and adjustments are made if needed.  Estimates should be compared to actuals using metrics, which then allows future estimates to be refined, becoming increasingly accurate. |

### Current Issues:

* No formal method to estimate test design or test execution effort and timeframes.
* The current estimation methodology revolves around individuals’ domain knowledge and previous experience, with little supporting processes.
* There is limited visibility of the metrics reported around test estimation and achievement.

### Improvement Recommendations:

***KA4a – Introduce a standard estimation method, backed up by a process[[1]](#footnote-2)***

* Standard estimating method to be implemented. The nature of the method is less critical than the consistency of the method across projects. The TCoE can assist with this process and ensure it is consistently applied for all projects.
* A process which could be relied upon in the future, should testers become unavailable, must underlie the estimating method. This should contain documented rationale behind the estimate. This would mean that this historical data, including the actuals, could then be used to produce estimates that are more accurate in the future.
* Where possible, previous estimates and actuals should be taken into account (see Key Area 7 - Metrics).
* The definition of the estimating method should be contained in the test strategy if produced.

## Key Area 5 - Test Specification Techniques

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| Test Specification Techniques Best Practice | A test design technique is defined as a standardised approach for deriving test cases from documentation.  Usage of these techniques increases insight into the quality and coverage of tests and leads to higher reusability.  At a minimum, the technique at least consists of: a) start situation, b) change process = test actions to be performed, c) expected result.  A substantiated judgment is possible about the level of coverage of the collection of test cases. |

### Current Issues:

* Woodside does not have an organisational accepted process for specification of test cases. Some projects have templates but it is not consistently used across the projects and the level of detail is lacking. Some test teams rely on experience of the system under test to execute the tests.
* As Woodside are heavily reliant on vendors, this does not support a consistent best practise approach.
* No formal techniques are being used to derive test cases from requirements.
* Lack of standardised template hampers the test automation process. Additional analysis is required to automate scripts lacking key details.

### Improvement Recommendations:

The following recommendation takes into consideration Woodside’s multi-vendor delivery approach and desire to have a testing provider who can support the provision of skilled and experienced resources at the right time.

***KA5a – Engage a testing provider or ensure the vendor responsible for a test level utilises resources with the correct skillset to:[[2]](#footnote-3)***

* Formalise and document test techniques e.g. Boundary Value Analysis, Equivalence Partitioning, etc. (of particular relevance may be exploratory techniques and session based testing if using Agile).
* Ensure all levels of testing documents tests to the same guidelines.
* Ensure all applicable levels of testing document the tests in the appropriate test management tool (HP ALM/JIRA).
* Ensure the technique(s) used to derive test cases compliments and satisfies that testing requirement.
* This method will be captured in the test strategy or plan as applicable.

## Key Area 6 - Static Test Techniques

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| Static Test Techniques Best Practice | Not everything can and needs to be tested dynamically, i.e. by running the programmes. The phenomenon of checking products without running the programmes or evaluating specific quality measures is called static testing. Checklists and similar devices are very useful here.  Static test techniques should be used for all documentation review such as Walkthroughs, Informal reviews, Technical reviews and Inspections |

### Current Issues:

* To be testable, a requirement should be clear, unambiguous and independently measurable to ensure clarity of design, development and testing approaches. With potential communication issues with external vendors, the need for clear requirements is paramount.
* There is no consistent process for reviewing requirements and other critical project documentation.
* There is no knowledge or understanding of static testing within Woodside.
* There is no formal process for reviewing requirements and other critical project documentation.
* The documentation stage as the cheapest point where defects can be detected. By not utilising these techniques, Woodside is increasing development and delivery costs through re-work and re-testing.

### Improvement Recommendations:

The following recommendation takes into consideration Woodside’s multi-vendor delivery approach and desire to have a testing provider who can support the provision of skilled and experienced resources at the right time.

***KA6a – Develop static testing artefacts and methods to support the testing function[[3]](#footnote-4)***

* Part of the organisational testing framework will document Woodside’s approach to static testing and will provide artefacts and examples to support the project resources to deliver static testing. By engaging testing early, Woodside will enable building quality in rather than testing it out. This will provide an overall benefit to the project through cost reduction, including finding and fixing defects, even as early as the documented requirements before coding starts.
* Create entry criteria for system testing that static testing of the requirements and detailed design have passed.

## Key Area 7 - Metrics

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| Metrics | Metrics are used in order to manage the test process, support advice being given, and to compare different systems or processes. It helps answer questions such as “why is it that system A has far less failures in production than system B”.  Metrics are particularly important for judging the results of certain continuous improvement actions.  Metrics need to be accurately recorded for further analysis to allow process improvement. |

### Current Issues:

* Key testing metrics are not defined by Woodside.
* Metrics are inconsistently recorded for various test outcomes and these metrics are not visible to all project members and stakeholders and as such offer little support to improve outputs.
* Cross system/portfolio metrics are not published therefore, there is no overall view of organisational quality.
* Metrics that are captured are not utilised effectively to support informed quality risk decision.
* ALM’s native reporting functionality is not yet fully utilised. It is likely that this anomaly has resulted from the inconsistent way ALM is being used within Woodside.

### Improvement Recommendations:

***KA7a – TCoE to ensure test management tools are being used consistently by the testers to enable easy metrics reporting directly from ALM***

* Determine what metrics are actually required; ensure that only data that enables that reporting is being captured, and configure Woodside approved test management tools to deliver the required reporting directly.
* Adjust the testing process to improve the metrics that are reported by standardising the use of ALM in all projects.

***KA7b – Ensure all reporting on testing activities are actively distributed to all testing stakeholders[[4]](#footnote-5)***

* Through education of what metrics are reported upon, management communicate where they want people to focus their work.
* Through continued visibility of metrics being reported, team members gain insight into the influence they can have on delivering success.
* Through continued visibility of metrics being reported, team members gain significant motivation through seeing their success.
* Through continued visibility of metrics being reported, team members may highlight where the metrics being reported may not be giving the best information and might suggest better areas to focus improvement (and therefore report upon).
* Report on Test Coverage metrics (planned vs actual) during execution and at the end of each Project.
* Ensure Test Coverage metrics are broken down by Test Level – this will help highlight where the costs of testing are being allocated.

*NB: Further metrics gathering can be introduced once the output of the initial metrics identifies the need and appetite for more analysis for future improvements.*

*This initiative is aimed at collecting information to better understand the overall testing process in terms of effort involved as well as to measure the current process for ongoing process improvement. This initiative requires management buy-in to allocate staff and time to actively analyse all metrics data.*

## Key Area 8 - Test Automation

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| Test Automation | Automation of the test process can be done in a variety of ways. As a rule, automation serves one of the following goals:  - Reduce time spent on manual regression testing and thus maximising time available to deliver new functionality  - Providing faster feedback on the quality of the product  - Providing consistency of test execution  - Better test coverage  - More flexibility  Use is made of automated tools that support certain activities in the planning and execution phases. |

### Current Issues:

* There is minimal use of automated testing, outside of Agile projects.
* Where automation is being considered, there is little or no understanding within Woodside on the tools selection process. Woodside is entirely reliant on a vendor for this and there is no visibility of the factors considered in selecting the tool.
* There are currently two projects in flight for automation, Planit did not see evidence of a return on investment assessment for either of these.
* There is no automation framework in place. Without this automation projects will be delivered inefficiently in isolation with no consistency of approach.
* Performance testing is rarely considered at the outset of projects. There were some projects where performance testing was executed, however there was no consistent approach to process or tooling.
* The performance testing projects that were executed did not link back to any requirements or provide a level of business risk at the outcome of the project.

### Improvement Recommendations:

***KA8a – Investigate the best automation solution moving forward***

* Define how to make an assessment on which automation tools will deliver the best ROI for a project and or technology.
* Show how to calculate ROI for an automation project.
* Select projects that can be used as a pilot project for each tool.

***KA8b – Establish Test Automation Framework***

* Woodside should establish a test automation framework which will :
  + Provide guidance on how write stable automation scripts, which are easily maintainable as applications evolve.
  + Define the metrics that will be collected and how they will be reported on.
  + Establish mechanism to capture and report on the return on investment for test automation.

***KA8c – Establish an Automation Strategy as part of the Test Strategy***

* Select standard tools supporting different test levels/types (UI, REST, SOAP, DB)
* Understand which test cases are best fit for automation
* Migration of current test cases to automation
* Resourcing model to support tools
* Define how automation is implemented and supports different delivery methodologies (such as Agile)

***KA8d – Establish a Performance Test Framework***

* Create a risk matrix that will help to determine when and how to performance test
* State how to ensure performance testing addresses business risk and requirements
* State how to report on performance test results in the context of business and technical risk

***KA8e – Investigate the best Performance Approach moving forward***

* Define how to make an assessment on which performance tools will deliver the best value for a project and or technology.
* Show how to assess risk for a performance test project

## Key Area 9 - Testing Environment

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| Test Environment Best Practice | The test environment should be sufficiently representative for the level of testing being performed in it. As testing progresses through the levels and the project becomes closer to production the test environment should become reflective of the live environment.  The core qualities of a good test environment are   * Availability * Stability * Contains representative set of test data * Integrated with as many upstream / downstream, systems as appropriate * Under change control * Dedicated to the in-flight project. Shared test environments may result in downtime or conflicting priorities/requirements. * Easy to rollback * Scalable to the project testing needs |

The maturity of the test environments within Woodside and the associated deployment processes is inconsistent and varies based on technology. It is recommended that Woodside ensure they have a thorough understanding of what environments look like, and the implications of any differences to local environments.

### Current Issues:

* There are issues with test environment stability and reflecting the end-state environment.
* The testing environment not logically integrated to meet most testing requirements.
* Test data is of inconsistent quality and standards (manufactured, desensitised and production cut).
* Availability issues with conflicting projects utilising the same environment with different priorities.
* No rollback process with a fix forward approach affecting environment versioning.

### Improvement Recommendations:

***KA9a – Review and create landscape of existing test environment infrastructure***

* Implement a data strategy to manage test data and ensure it is fit for purpose for testing
* Identify the existing test environment infrastructure, including all integration points, for all applications/technologies maintained and used by Woodside.
* Ensure all production patches are applied to relevant test environments to ensure continuity.
* Create a Woodside environment scheduler that clearly documents what projects/releases/fixes are in the test environments at any given time.

***KA9b – Review code deployment and change control process***

* The entry and exit criteria for each test level (which is defined in the test strategy and test plan) must be communicated to the deployment team.
* As a result of the environment review, where possible investigate and institute automated build and deployment technologies (e.g. Octopus Deploy) to enable efficient and fast deployment/rollback.
* Institute a common process to provide release notes for each release that documents all included changes to a minimum standard.
* The deployment team should only deploy packages into the test environments on the approval by the test team or nominated environment owner.
* Prior to testing commencing on a new release to an environment, a skim regression test (preferably automated) should be executed to validate the environment is fit-for-purpose post-deployment.
* Ensure that the testing environment is suitably sized for the test type and number of users which it will be used for.

## Key Area 10 - Office Environment

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| Office environment Best Practice | The office environment is conducive to cross-team collaboration. Communication channels are effective and available.  Technology and tools are available and fit-for-purpose to deliver quality-testing outcomes. |

### Current Issues:

Planit witnessed that the office environment is largely fit for purpose. Issues were noted around the fact that AMS and project delivery resources are no longer co-located on the same floor and are now in tower separate towers. This has made communication more difficult in some cases.

It was also noted that there were communication challenges, both technological and linguistic, between Woodside employees and vendor resources. This has also been compounded by the perceived high turnover of vendor staff.

Most resources had access to the required hardware and software required to support the test effort.

### Improvement Recommendations:

***KA10a – Establish project based teams***

* Co-locate project-based teams and ensure that operations/supports resources embedded into these teams. This is conducive to any potential transition to a DevOps model.
* Review technology/process options to improve communication channels (e.g. Stand-Ups, Messaging/Collaboration toolsets).

***KA10b – Define hardware / software setup as entry criteria for testing***

* Ensure that test hardware / software setup for testing resource workstations are defined as entry criteria in the test plan for all projects.

## Key Area 11 - Commitment and Motivation

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| Commitment and Motivation Best Practice | The management controls testing based on time, money and quality.  The test team is involved in the design and realisation to provide optimal testability of the system ("design for test").  Recommendations of the test team are considered "seriously" by the organisation and/or project.  Test jobs are described at an organisation level, including career possibilities and reward structures.  Co-operation and communication with others in the project results in an efficient process and in earlier involvement. |

### Current Issues:

* Woodside staff has a good team attitude and there is recognition that testing is an area that needs to improve processes/outcomes. This is limited by an inconsistent understanding and availability of testing knowledge within Woodside.
* Large, complex projects may have dedicated test management resources but there is no clear test processes. Smaller, less complex projects with limited testing budget do not have Test Managers or clear guidelines for testing.
* Feedback received that testing is undervalued. Common comments related to the activity being perceived as a roadblock or a check boxing exercise.
* Testing is considered a phase that occurs at the end of delivery, rather than an activity that should occur though out the product lifecycle.
* Test tooling is considered an afterthought and a “silver bullet”. There is no investment or planning and tool use tends to live and die within a project context.
* Testing is cost and time driven, not quality driven.
* Testing timelines are viewed as project delivery contingency.
* Due to the engagement model and lack of a Testing Centre of Excellence (TCoE), continuous improvement of test practices across the organisation is impossible to obtain.
* There is no centralised Woodside testing competency to provide minimum standards, delivery guidelines or governance for testing activities both internal and external to Woodside.
* Lack of testing expertise within Woodside affects management of vendor testing deliverables and processes.
* BAs often write requirements and then test cases to cover them in UAT.

### Improvement Recommendations:

***KA11a – TCoE to provide training, skillset development, and process improvement and drive testing culture***

* Add skillset development to the KPIs for TCoE
* Measure and control the testing effort provided by the different projects
* Celebrate and reward contributions by team members to improve process and skillsets

***KA11b – Provide visibility of reported metrics to the Test Function***

* Ensure members of the test function have ongoing visibility of all metrics which are being reported on, to enable targeted improvement

***KA11c – Educate the business to the value of professional testing outputs***

* Once the efficiency gains from this TPO review have been implemented, present back to the management and business the efficiency gains achieved
* Highlight that further efficiency gains are possible through deeper understanding of formal test approaches and techniques
* Provide opportunity for the Test Team to have input into high level strategies for Risk Mitigation and IT Operations/Software Cost reduction

***KA11d – Provide visibility of reported metrics to the Test Team***

* Ensure all test team members have ongoing visibility of all metrics which are being reported on, to enable targeted improvement

## Key Area 12 - Test Functions and Training

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| Test Functions and Training Best Practice | The test personnel have defined roles and responsibilities.  The test personnel are trained in the subject matter.  (Formal) Methodical, Technical and Functional Support, Management of the test process, testware and infrastructure.  Formal Internal Quality Assurance is conducted by an independent person/team. Most mature organisations will have a Process and Procedures Team, which is also responsible for Quality Assurance and Control. It is recommended that the Test Team be responsible for documenting process and procedure and the associated templates and guidelines. They would then attend all process improvement review meeting to promote continuous improvement. |

NB: It is clear from the review that there is no dedicated testing team or full-time testing resources within Woodside. Planit recognises this is the chosen Woodside delivery model. Therefore, the issues and recommendations below are driven from the perspective of maximising the knowledge of testing as a core competency within Woodside, which can then provide quality assurance on testing outcomes effectively across the organisation.

### Current Issues:

* Woodside resources responsible for assurance over the testing being provided internally and by vendors have limited and varying degrees of understanding of testing to execute this role effectively.
* Vendor testing teams have little exposure or training in Woodside business processes and testing objectives.
* As a result of the above, there is a mis-match of expectations regarding testing outcomes.
* Project Managers have played the role of test managers on projects. Hence, time and cost are typically prioritised over quality.
* Test personnel are often SMEs (as business testers) but may not have adequate training on formal test processes or testing techniques.
* Quality Assurance and controls are inconsistent across projects. Projects with dedicated test managers have better documented processes / procedures / templates. These artefacts are developed on a project-by-project basis according to the experience/skills of that particular PM.
* Lessons Learnt sometimes happen during the project closeout phase, however improvement items are not necessary implemented by new projects.
* Vendors are engaged in a black box fashion, so no visibility nor input into the skillsets of the vendor test team is possible.
* In some projects, there is no independent functional and/or systems testing. The same party builds and tests the software prior to Woodside UAT.

### Improvement Recommendations:

***KA12a – Define and Implement TCoE to define test engagement approach***

* To provide standardised structure of the level of testing required for different projects based on size, complexity, delivery model (Agile, Waterfall) and risk.
* Provide a central knowledge base for all software change that contains minimum standards, template and artefacts needed to deliver testing effectively.
* Allows smaller projects with limited testing budget to engage with test experts to develop test artefacts (Test Plan, Test Cases) without the need to commit for 3 months (minimum typically for contractors).

***KA12b – Ensure time and resources are allocated to the Woodside resources to enable coaching and skillset development***

* Add skillset development to the KPIs for Woodside staff members responsible for assurance of testing activities.

***KA12c – Ensure that Woodside testing IP is current, up-to-date and reflects Woodside Digital Strategy***

* Training of the Woodside resources on the relevant skillset identified in the digital strategy, for process (e.g. Agile team development) and technology (e.g. new potential test and deployment tools).
* Enable mentoring within the Woodside Testing Centre of Excellence, potentially through engaging professional testing consultants to deliver that mentoring or through the use of pairing.
* Encourage collaboration between the various teams across portfolios to capture lessons learned and define tangible continuous improvement opportunities within the testing arena.

***KA12d – Leverage Woodside testing IP to improve relationship and outcomes with vendor partners***

* Ensure that the relationship with the vendor is as a two-way partnership. Developing in-house knowledge of testing allows Woodside to accurately frame its requirements to vendors and thus achieve quality-focussed deliverables.
* Ensure the delivery of testing from Vendors is more visible and shared, not black box.

***KA12e – Implementation of Woodside testing framework***

* Create and establish Woodside testing framework based on minimum standards to be applicable for different projects (size, complexity and delivery model)
* Create and establish a mechanism to provide standardised test processes and continuous improvement through the capture and implementation of lessons learnt reviews.

## Key Area 13 - Scope of Methodology

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| Scope of Methodology Best Practice | The methodology and processes are defined in a generic model for the organisation, which everyone is following.  The aspects described cover at least: description of the full life-cycle model of testing, management of the test process (progress and quality), test product management and test specification techniques to be used.  There is a structured feedback process for improvements to the generic model. |

### Current Issues:

* Woodside has a UCP (Unified Change Process) which defines how a change is made to a production whether that be via a project or a small change (less than 20 days). However, the approach to testing within this process is not defined or not followed consistently.
* Interviewees were asked if a test process was adopted per project or if consideration was given to, a different test process based on project size or complexity and it was confirmed there was no such process.
* Further elaboration and design of a Woodside-specific testing framework is required to define and implement these approaches.

### Improvement Recommendations

***KA13a – Implement an organisation wide test framework***

* This will be resolved if the recommendation for the above section “*Priority 1 – Implementation of Woodside testing framework” is implemented*

## Key Area 14 - Communication

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| Communication Best Practice | In a test process, communication takes place in a number of ways, both between testers as a group, and between testers and other members of the project, such as the developer, the end user and the project manager.  Testing team is always involved in all project meetings.  There is a regular meeting within the test team. This meeting has a fixed agenda and minutes are taken. The objectives of this meeting should be progress, any deviations from the test plan, the quality of the testing including defect review and the quality of the test process.  Testing is involved in change control for judging the impact of change proposals on the test effort. |

### Current Issues:

* There is no single forum for Woodside and vendor testing representatives to meet regularly to discuss testing relating initiatives, projects, deliverables or outcomes.
* There is limited opportunity to discuss test process improvement and achievements. In instances where these do occur, learnings are not documented, shared or implemented across Woodside.
* Reporting on testing activities is not consistent across projects and not actively distributed to the necessary stakeholders.

### Improvement Recommendations:

***KA14a – Ensure all reporting on testing activities are actively distributed to the product/project stakeholders***

* Through education of what metrics are reported upon, management communicate where they want people to focus their work.
* Through continued visibility of metrics being reported, stakeholders and team members gain insight into the influence they can have on delivering success.
* Through continued visibility of metrics being reported, stakeholders and team members gain significant motivation through seeing their success.
* Through continued visibility of metrics being reported, stakeholders and team members may highlight where the metrics being reported may not be giving the best information and might suggest better areas to focus improvement (and therefor report upon).

***KA14b – TCoE to institute regular structured testing meetings between all Woodside and vendor resources involved in testing***

* Institute regular meeting with an agenda to ensure that key areas of testing are reviewed and action items are created and tracked. Example agenda topics may include:
  + Training and coaching needs
  + Test Management support
  + Common problems across projects and portfolios
  + Adherence to Woodside testing framework, for example
    - Test Case peer reviews
    - Release notes from developers
    - Support from other roles stated in the test plan
  + General quality of code being delivered
  + General and on-going issues. (e.g. environment lead times)
  + Continuous improvement opportunities and feedback
  + New and emerging technologies and testing techniques that could realise benefits for Woodside

## Key Area 15 - Reporting

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| Reporting Best Practice | Reporting should provide the project with visibility of the testing status, how this is tracking against the plan. Also identified are risks, issues and any other items that may influence the result of testing.  Reporting should be aimed at giving well-founded advice to the project on the quality of software, and even on the software development process.  Quality judgments and the detected trends are substantiated with metrics (from the defect administration and the progress monitoring).  Advice is given not only in the area of testing but also on other parts of the project |

### Current Issues:

* Test Reporting occurs on most projects. However, there are inconsistent reporting across the different projects due to the lack of a standardised test reporting framework and templates.
* Inconsistency in test reporting as different test tools are used to collate the results including Excel, Spiro Test, SmartSheet, JIRA and HP ALM.
* Outputs from testing reports are not collated across portfolios/projects.
* Information contained in reports does not allow Woodside to make informed decisions based on quality.
* There are no defined minimum standards on the format and information a test report should contain.
* There is no standard definition of classifications contained within test reports.
* Test reports do not consistently track the time/effort spent on testing, across all activities.

### Improvement Recommendations:

***KA15a – Ensure reporting is consistent and adheres to Woodside minimum standards***

* TCoE to define minimum standards for reporting to be used across all projects that supports Woodside’s Agile/Waterfall delivery approach across both types of projects.
* Create a standardised template for test reporting applicable to Agile and Waterfall projects.
* Woodside Testing Centre of Excellence to establish set definitions for defect status, priority, severity classifications and SLAs.
* Implement requirement/user story traceability to ensure that test results can be tracked back to desired outcomes. This enables Woodside to easily reporting on the overall quality of the deliverable.

***KA15b – Derive reports directly from test Management tools***

* Configure test management tools in such a way to enable direct report generation
* Enforce use of Woodside approved test management tools to be used for all projects (by default) to facilitate for a standardised approach and a central repository for test reports.
* Align test management tool data capture with the data required for reporting.

***KA15c – Institute real-time dashboard test reporting***

* Build and configure dash-boarding solution to aggregate and report on all testing activities taking place at Woodside.
* Enable dash board reports to update in real time and enable hierarchical reporting (e.g. Project > Portfolio > Organisation)

## Key Area 16 - Defect Management

|  |  |
| --- | --- |
| Defect Management Best Practice | A good administration should be able to control the lifecycle of a defect. Defect management process facilitates the ownership and associated activities to drive a defect from detection to closure. The process defines the minimum standards of information required to be captured, institutes an audit trail for traceability of actions taken for defect resolution and who performed the action.  There is someone responsible for ensuring that defect administration is carried out properly and consistently.  Authorisations determine that each user can only do what he or she is allowed to do. |

### Current Issues:

* Defect management process is not defined and defects are logged and managed in various different locations (e.g. Excel, HP ALM, SmartSheet, JIRA etc.).
* An ad hoc defect management process is managed on a project-by-project basis and is dependent on the experience of the people engaged on that project.
* Reporting cannot be done from a central location for the different projects.
* The required minimum data captured for the different defects is not defined, which leads to inconsistent reporting.
* Woodside is unable to capture performance quality metrics that provide insight into improvement opportunities internally and with vendor partners.
* Ownership of the defect management process and for the various outcomes within the process is not well defined or consistent.
* There are no standard SLAs on defect resolution.
* There is no standard defect triage process to facilitate the resolution on issues in line with the project risk appetite.
* No standard process for managing deferred defects into the next project phase or BAU support stream(s).

### Improvement Recommendations:

***KA16a – Implement a standard defect management process and document in the Woodside test strategy***

* Document a workflow detailing the required data to be captured, with roles and responsibility clearly defined per status and configure test management toolset to support and enforce this process.
* Document the minimum standard of information to be logged when raising a defect (e.g. steps to replicate, test evidence etc).
* Ensure the defect output, feeds into standard reporting requirements and metrics analysis.
* All defect management should be tracked through a Woodside approved test management rather than Excel or unapproved methods for all new projects and BAU changes as it provides a standard repository for project defects and enables consistent reporting and an audit trail of changes.
* Define key defects SLAs that can be applied to all Woodside projects and measured against contractual obligations.

***KA16b – Test management tool training for project and business users***

* Train all required resources on defect management process and how it is implemented and used within Woodside test management tools to gain efficiency and start utilising the tool more effectively.
* Ensure all team members are skilled to use the traceability function to link the different entities.

***KA16c – Woodside Testing Centre of Excellence to monitor the quality and consistency of defect content***

* Perform regular defect reviews to understand the root cause that will then feed into process improvement activities.
* Implement and support defect triage meetings within project delivery lifecycle.
* Consistently review and evolve the defect management process to address issues with defect quality and changes to Woodside delivery models.

## Key Area 17 - Testware Management

|  |  |
| --- | --- |
| Test ware Management Best Practice | The testware (test cases, starting test databases, etc.), test documentation and test guidelines are managed internally according to a described procedure, containing steps for delivery, registration, and archiving.  Testware should be continually updated so that it can be re-used.  Each requirement and specification is related to one or more test cases in a transparent way, and vice versa including version control. |

### Current Issues:

* The lack of a documented process for managing testware results in rework and duplicated effort to create test artefacts.
* Testware is not consistent in all projects and multiple tools are used (Excel spreadsheets and ALM etc).
* There is no central repository for managing all testware (DRIMS / shared folders / project directory). Some test documentation is stored on local laptops and not accessible for other projects.
* Reusability of test cases may be compromised for projects as there is no standard process for managing test assets across releases, projects and portfolios.
* There is limited traceability between requirements and testware, and when there is traceability, it is not consistently implemented across all projects.
* The framework implemented inside the Woodside test management tools (primarily HP ALM) to manage requirements, defects, test suites, and deliver test plans is not consistent and does not leverage the power of the tool effectively.

### Improvement Recommendations:

***KA17a – Consolidate testware management***

* Document the process for testware management and define Woodside’s approved set of test management tools to be used for all new projects at Woodside (exemption needs to be agreed with Woodside Testing Centre of Excellence).
* Define hierarchy for project/release management within each test management tools to ensure consistency across Woodside.
* Publish testware management policy with clear guidelines on how to search for and re-use existing test assets.
* Review and assess licencing requirements and usage for implemented test management tool set to ensure optimal return on investment.
* As improvements are identified, add them into the configuration of the base ALM. The all-new projects will benefit from the improvement.

***KA17b – Testing should be traceable to requirements[[5]](#footnote-6)***

* Input requirements/user stories into the relevant test management tool.
* Link test cases directly to their associated requirements, and link defects directly to their associated test cases.

## Key Area 18 - Test Process Management

|  |  |
| --- | --- |
| Test Process Management Best Practice | For each planned activity there is an indication of the period in which it runs, the resources (people or means) required and the products to be delivered.  The plan is continually monitored and for deviations, the risks are analysed, documented and adjustments are made, either by adjusting test plan, or by performing activities again according to the plan. The adjustment is substantiated. |

### Current Issues:

* Lack of organisational test strategy leads to inconsistent test processes across all projects within Woodside.
* For Waterfall projects, there is no breakdown of testing activities into analysis, preparation/scripting and executing to allow for detailed management and progress tracking of testing.
* Lack of test templates impacts the quality of test deliverables.
* Where test plans are used deviations are not always tracked.
  + Projects without dedicated test resources have limited test processes and sometimes do not have a test plan
* Quality Assurance (including quality checkpoints) are not enforced on all projects.
* Woodside has no mechanism to track testing progress against planned milestones and to revise scope/resource requirements based on evidence of deviations. Delivery timelines are based solely on time and cost (see Section 12).
* Project level meetings/reporting appears to be the only vehicle used to track against plan and to adjust effort/resources accordingly and there is no dedicated voice of testing in these forums.
* There is no coherent strategy to deal with regression testing. The level of regression testing is implemented on a project by projects basis.

### Improvement Recommendations:

***KA18a- Define and implement a TCoE to enable standardisation of test processes***

* Implement Woodside testing framework and policy, integrating with the Woodside Unified Change Process.
* Implement Woodside test strategy.
* Implement Woodside test templates, supporting a Agile/Waterfall approach, such as test plan, test cases, and test progress report.
* Provide a consistent engagement model for projects/delivery teams to engage testing services and receive quality assurance of deliverables.

***KA18b – Monitor, adjust and report on deviations from test schedule***

* Implement a process to track progress of planned testing activities and scope against actuals. Updates made are communicated to the project stakeholders accordingly. Changes to the plan need to be approved.

***KA18c – Define and implement regression testing approach***

* Establish clear guidelines to evaluate, capture and store regression test scripts.
* Institute regular reviews of regression testing cases to ensure coverage is appropriate and scripts are being executed.
* Optimise manual regression test cases to, as far as possible, utilise test automation.

## Key Area 19 - Evaluation

|  |  |
| --- | --- |
| Evaluation Best Practice | A conscious evaluation of risks takes place throughout and beyond the project lifecycle, by the assessment of major deliverables. E.g. test plan, entry/exit criteria, requirements, test summary reporting, metrics, post implementation reviews etc.  These factors enable informed decisions to be made throughout the project.  Evaluation of the test process takes place so that adjustments and improvements can be made on a continual basis. |

### Current Issues:

* Testing is seen as a time box that occurs at the end of the project rather than an evaluation of quality and risk that should occur throughout the lifecycle of a project/system.
* There is insufficient risk identification throughout the testing levels and activities.
* Post Implementation reviews and lessons learnt are not consistently occurring and typically, these only occur for projects that are conceived as “failures”.
* Closure of the testing phase is typically based on timelines rather than objective quality metrics that have been reviewed and approved by business/product owners.

### Improvement Recommendations:

***KA19a – Include an initial product risk assessment in the test plan, and ensure all risks are reported upon in the Test Summary Report[[6]](#footnote-7)***

* Initial risks must be included in the test plan to determine the amount and coverage of testing required to mitigate the identified risks of system failure if no testing was performed. The initial risks must be maintained in a risk register.
* Subsequently identified risks are added to the risk register.
* Reporting to include an assessment of residual risks at any moment in time.
* The test summary report summarises all identified risks including status during each testing phase (SIT, UAT, performance etc), including analysis and preparation.

***KA19b – Use Woodside approved test management tools to gather appropriate metrics***

* Determine metrics required e.g. test design / review progress, actual vs. planned design time, actual vs. estimated execution time, test effort vs. build effort, requirements coverage, the number of defects per test level / per system, project or function and defect root cause.
* Capture baseline to measure improvements and the effectiveness of recommendations.

***KA19c – Utilise the Woodside Testing Centre of Excellence for higher-level risk mitigation strategies***

* Testing assessment begins at the project inception/business case phase and quality assurance activities, driven and supported by the Woodside testing framework.
* Allow the Test Function to provide input on the most cost effective ways of mitigating risk

***KA19d – Ensure that Lessons Learnt and Post Implementation Reviews are made mandatory for all medium-large complexity projects (Note: Planit has assumed that retrospectives occur for all Agile projects at the end of each iteration)***

* Evaluate the types of defects identified in the different levels of testing.
  + Evaluate the root cause, i.e. requirement, specification design rather than the root cause recorded by the developer
  + Consider what improvements could be made to identify them in earlier levels of testing
* Lessons Learnt to be fed back into the Woodside Testing Centre of Excellence to assign tasks for ongoing improvements and track return of investment and quality metrics

***KA19e – Establish formal review of TPO improvement initiatives introduced by the Woodside Testing Centre of Excellence.***

* Embed regular reviews of initiatives to ensure that Woodside is generating value and improving quality through improvements to the testing process

## Key Area 20 - Low Level Testing

|  |  |
| --- | --- |
| Low-level Testing | A low-level (white box) test is defined by the internal properties of the object using knowledge of internal function. Developers should perform these tests. Unit testing is a well-known example of white box testing.  White box tests are relatively cheap because less communication between systems is required, analysis is easier, and the objects under test tend to be smaller.  There must be a low-level test life cycle: planning, design, and execution are included in a separate test plan.  For the low-level tests, using white box test techniques, it is possible to make a substantiated statement about the level of coverage of the test set, which is documented. |

### Current Issues:

* White box testing is inconsistent across projects
  + The amount of white box (unit) testing done is dependent on project / vendor
  + Some projects store unit tests but not always
* With no visibility of what is happening with white box (Unit) testing, it is impossible to assess the level of risk within the coded system. This results in much more Functional and E2E testing being needed to mitigate that risk than would be considered good practice.

### Improvement Recommendations:

***KA20a – Obtain clear and detailed information from Vendors about their levels of testing***

* Have the development vendor document the white box/unit testing techniques that are to be run in a separate test plan detailing the process and steps to implement e.g. plan, design, execute and the types and level of coverage to be reported to the test function.
* Enable the Woodside test function to review the white box/unit testing results for each release as part of the vendor’s exit criteria to gain trust and assurance around the affected risk mitigation
* Adjust the levels of testing required by Woodside based on the levels of testing executed by the vendors.
* Embed unit testing/test driven development practices in Woodside-based development teams.

***KA20b – Adjust the contracts with vendors***

* Adjust all current and future contracts with vendors to ensure visibility of test methods, test coverage, test artefacts and test results.
* Include the review of the vendor artefacts in the test processes documented in the test strategy.

# Conclusion

## Recognition

Firstly, it should be recognised that despite the limitations identified in the preceding sections there is a strong commitment and willingness within Woodside to embrace change to embed effective testing and quality assurance practices. The recommendations provided are designed to help deliver more efficient testing, to enable both reduced costs, increase and embed quality.

## Greater Efficiency

To help delivery greater efficiency with minimal risk and a sustainable approach, we believe that Woodside needs to focus on progressing from the current non-standardised approach across the organisation (level “Starting”) to at a minimum a managed and repeatable position (“Controlled & Measured”). In areas of particularly high value such as reporting and test automation, the target level should be set at Level B to align with Woodside’s digital strategy.

We recommend establishing a formal review of the TPO improvement activities in 12 months’ time to assess the progress to higher maturity. This will give Woodside direct feedback on the achievements made which can be then measured against the anticipated improvements based on this study.

## Start

We recommend that Woodside immediately invest in putting in place an interim TCoE, developing and implementing a test policy and framework and test strategy, including a comprehensive suite of processes, guidelines, checklists, approaches. This will provide the organisation with a target of how things should be done and will be trialled on selected proof of concept projects to gather fast feedback.

Once full established, these improvements can then be used for communication to projects, vendors, contractors and business departments. At the very least, Woodside will develop a common toolset and language, which will be the first step to having everyone working together with synergy. Without this clear and comprehensive target, it will be impossible to successfully implement any of the other recommendations contained in this report.

## Quick Wins

The definition of a test strategy and proper test planning will enable many of the other recommendations to be formalised and proposals discussed and reviewed among Woodside’s stakeholders. Most of the quick wins will flow directly from this.

Implementing a TCoE and testing framework is a major quick win for Woodside. The TCoE will enable the standardisation of testing across the organisation through templates and socialising of a formalised process, getting double gains from the quick win. The framework will provide a means of propagating the changes across Woodside and embedding the changes across project and BAU changes, regardless of the delivery methodology or technology.

Embedding quality throughout the delivery cycle is a major quick win for Woodside as the move shifts the focus from defect detection to defect prevention. This also enables Woodside to better set expectations on testing outcomes and deliverables from vendors and effectively manage this process.

## Tools

An area that can bring noticeable efficiency gains for Woodside is the configuration and standardisation of Woodside approved test management tools. Once an agreed and consistent test policy and framework has been established, the Woodside ALM instance should be modified to align with this new approach.

Test automation is currently a black box for Woodside, with vendors making all tooling relating decisions. A quick win here is to educate and coach Woodside staff on test automation basics and approaches to enable them to have smart conversations with technology partners on appropriate tool selection. Created test automation assets will be tracked and re-used as part of the testing framework and the return on investment monitored and reported on.

## Coverage

Once the test management toolsets have been enhanced to align with the new test policy and framework, it will be possible to see and report against test requirement coverage. Once the test requirements coverage is understood, it will be possible to produce quality driven metrics to allow Woodside to make informed decisions on project quality. There is also potential to reduce the number of test cases associated with each project without increasing the risk of issues in production. This will reduce effort not only of execution, but also of maintenance and management.

## Ongoing Planit commitment

Planit are committed to assisting with the implementation of your program, and can help by:

* Providing consulting to support the stand-up of the TCoE.
* Providing consulting services to develop and implement the test policy, test framework and test strategies for Woodside.
* Providing support for discussions with vendors regarding industry standards and best practices with testing.
* Implementing test management tools and configuration aligning with Woodside’s reporting requirements as per the test policy and framework.
* Providing support for understanding the concept of Test Coverage and reporting it directly from ALM.
* Supporting with assessment and management of most appropriate test automation toolsets.
* Providing tailored training courses or coaching/mentoring to Woodside’s needs.
* As part of a continuous improvement program undertake a follow-up TPO assessment in approximately twelve months.
* Act as a testing partner providing qualified experienced testing professionals as required by Woodside’s project and BAU demands.

# Appendix A – Woodside staff interviewed for this report

|  |  |
| --- | --- |
| **Name** | **Role** |
| Aaron Boshard | Digital - .Net Development |
| Ben Quartermaine | Digital - Application Transformation |
| Richard Wardrobe | Digital - Applications Technology |
| Zeny Evangelista | Digital - Applications Technology |
| Wes De Pardo | Digital - CoE Lead |
| Daniel Keddie | Digital - IT Ops |
| Kirsten Youngs | Digital - IT Ops |
| Paul Clarke | Digital - IT Ops |
| Willem Ehlers | Digital - IT Ops |
| James Bourne | Digital - Portfolio C&P |
| Kiran Gruin | Digital - Portfolio C&P |
| Tammy Davenport | Digital - Portfolio C&P Lead |
| Clinton Hall | Digital - Portfolio Corporate Lead |
| Jody Collett | Digital - Portfolio Ops |
| Craig Coley | Digital - Portfolio Ops |
| Emma Whitty | Digital - Portfolio Technology Lead |
| Alan McCarthy | Digital - SAP |
| Wessel Viljoen | Digital - SAP |
| Neil Richards | Digital - Science |
| Cameron Robertson | Digital - Strategy & Architecture |
| Gary Green | Digital - Strategy & Architecture |
| Nitin Gambhir | Digital - TCS |
| Allison Blaber | Digital - Testing CoE |
| Ling Heang | Digital - Testing CoE |
| Neil Boardman | Digital - Testing CoE |
| Sunny Barlow | Digital GM |
| Linda Gladwell | DRIMS Project |
| Sarah Munday | DRIMS Project |
| Mahati Goleria | Portfolio F&C - Ariba Wipro |
| Roz Trend | Portfolio HR |
| Adrianne Viney | Portfolio HR - SuccessFactors |
| Pat McGarraghy | Portfolio HR - SuccessFactors |
| Ross Trainer | Portfolio Ops |
| Ryan Conway | Portfolio Ops |
| Sussan Johnson | Strategy Governance & Commercialisation |
| Graham Brookmyer |  |
| Matt Hill | Ops Advisor |

# Appendix B – Reviewed Documentation

As well as interviews of selected stakeholders within Woodside, this TPO assessment reviewed the following documentation:

|  |
| --- |
| **Artefact Name** |
| 10121232\_V3.0\_Testing Strategy-1.pdf |
| 10958855\_V1.0\_Unified Change Process Training Presentation.pptx |
| 1400109747\_V6.0\_ISSoW Software Upgrade Readiness Pack - KGP Sep ....xlsx |
| 1400291756\_V1.1\_J31865 - Global Culture Wizard - Support Maintenance Plan\_FINAL.docx |
| 4264057\_V1.6\_SAP Solutions - Project\_Change Requirements Reference List.doc |
| Ariba Test Strategy.pdf |
| Ariba Testing Plan Progress 05-12-2017.xlsx |
| Ariba Weekly Delivery Assurance - Status Report v05-11-2017.pptx |
| Ariba\_Defect Statusv01.xlsx |
| Ariba\_Test Strategy V06.docx |
| Ariba\_Testing Plan Progress 26-05-2017.xlsx |
| Ariba\_Testing Status -250517.pptx |
| Ariba\_Weekly Delivery Assurance - Status Report v05-25-2017.pptx |
| Copy of J32068 Tender Probity Handover to Support Checklists.xlsx |
| DRIMS2 Document List for Review.msg |
| DRIMS2 ECM\_High\_Level\_Test\_Strategy.xlsx |
| DRIMS\_Performance\_Test\_Completion\_Report\_v0.2.docx |
| IJet Mobile CA progress Update (19th May 2017).msg |
| KGP ISSoW Surpass Upgrade Plan PPT.PPTX |
| LMS Integration Testing Daily Status Report\_15 May 2017.pdf |
| LMS Integration Testing Weekly Report\_16 May 2017.pdf |
| LMS UAT- Test Cases.xlsx |
| MOM\_Unifier Application Walkthrough\_06042017.xlsx |
| RFQ - PROJ - J19841 - Australian Tax Redesign.docx |
| RFQ - PROJ - J32298 Move SAP Procurement data into EDW\_4.doc |
| SF Q2 Release - Test Schedule.xlsx |
| Test Plan-Success Factors LMS Integration.docx |
| Test Plan-Unifier Performance Test\_v1.2.pdf |
| Test Strategy-Success Factors LMS Integration.docx |
| Unifier Performance\_Test\_Completion\_Report\_v0 3.docx |
| W0000PK9347731\_2\_Information Technology Change Management Procedure.pdf |
| WM0000MG9292475\_1\_Information Technology Change Management Guidelines.pdf |
| Woodside IT PMO- CSAT Interview - TCS Response to RFQ for Deploying AD into AWS and Azure\_Final Version\_Andy.xlsx |

# Appendix C – Woodside TPO Scores

The table below shows the breakdown of all TPO areas with the associated rating achieved by Woodside.

There are two data points recorded in each area from the Woodside scoring.

1. The average score which Woodside recorded
2. The highest individual recorded score for each of the 20 areas.

This data has been included to show that while the average score is quite low in most cases there are instances where particular projects are performing well. This highlights the inconsistency in approach to testing.

|  |  |  |
| --- | --- | --- |
| **Area of assessment** | **Woodside average rating** | **Highest individual recorded score** |
| [Key Area 1 - Test Strategy](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea1) | Starting | Starting |
| [Key Area 2 - Life-cycle model](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea2) | Starting | Level A |
| [Key Area 3 - Moment of involvement](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea3) | Starting | Level D |
| [Key Area 4 - Estimating and planning](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea4) | Starting | Level B |
| [Key Area 5 - Test specification techniques](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea5) | Level A | Level B |
| [Key Area 6 - Static test techniques](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea6) | Starting | Level A |
| [Key Area 7 - Metrics](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea7) | Starting | Starting |
| [Key Area 8 - Test automation](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea8) | Level A | Level B |
| [Key Area 9 - Test environment](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea9) | Starting | Level C |
| [Key Area 10 - Office environment](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea10) | Level A | Level A |
| [Key Area 11 - Commitment and motivation](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea11) | Starting | Starting |
| [Key Area 12 - Test functions and training](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea12) | Starting | Starting |
| [Key Area 13 - Scope of Methodology](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea13) | Starting | Level A |
| [Key Area 14 - Communication](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea14) | Level A | Level A |
| [Key Area 15 - Reporting](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea15) | Level A | Level B |
| [Key Area 16 - Defect management](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea16) | Level A | Level B |
| [Key Area 17 - Testware Management](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea17) | Starting | Starting |
| [Key Area 18 - Test process management](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea18) | Level A | Level A |
| [Key Area 19 - Evaluation](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea19) | Starting | Starting |
| [Key Area 20 - Low-level testing](file:///C:\Users\kchapman\Documents\Woodside\TPI\TPI%20score%20summary%20v2.xlsx#RANGE!KeyArea20) | Starting | Level A |

# Appendix D – Tool Assessment

**Introduction**

As part of the interview process Planit had the opportunity to gather information on the testing tools used within Woodside. It was recognised that test tool usage was still in its infancy within Woodside and historically there has been no consistent approach to tool usage.

At present, Woodside’s applications are a combination of Web, Desktop, including but not limited to Woodside Website, Document Management Systems (DRIMS), SAP Modules and Sharepoint.

**Test Management**

For Test Management a decision at a project level has been historically been made based on what the PM recommends and costs. Tools used have ranged from Excel, Spiratest to JIRA. Following the decision to work with new vendors HPE ALM has been suggested is now being used however decisions to use this are being made on a project basis and there is little knowledge within Woodside on how to use the tool or its benefits.

The following information is recorded in ALM for recent projects

Test Cases

Test Defects

Test Plan

There is currently no requirements for any project being loaded into ALM therefore information on requirements coverage is not available.

**Test Automation**

There is little use of Automation currently within Woodside, although two projects (Ariba and Successfactors) seems to be starting along the Automation journey. There appears to a default tools selection of HPE UFT for these automation projects, without any consideration to return on investment. Consideration needs to be given to not only if a particular tool is capable of performing testing but also the value for money it offers in terms of cost and repeatability, as well as integration with Continuous Integration processes.

**Performance Testing**

Based on the evidence gathered by Planit during this process, Performance testing is not considered for many projects. Where it is considered then the choice of tools seems to have been made based on the project manager’s experience or from ad hoc google searches. Following the move to external vendors HPE Performance Centre has been used for at least project. Planit would recommended introducing a process so that a variety of tools can used depending on the performance testing project in question. Consideration needs to be given to not only if a particular tool is capable of performing testing but also the value for money it offers in terms of cost and repeatability, as well as integration with Continuous Integration processes.

1. See also **5.1** Key Area 1 - Test Strategy and Plan documentation [↑](#footnote-ref-2)
2. See also Key Area 1 - Test Strategy and Plan documentation [↑](#footnote-ref-3)
3. See also Key Area 3 - Moment of involvement & See also Key Area 1 - Test Strategy and Plan documentation [↑](#footnote-ref-4)
4. See also Key Area 14 - Communication [↑](#footnote-ref-5)
5. See also Key Area 19 - Evaluation [↑](#footnote-ref-6)
6. See also Key Area 1 - Test Strategy and Plan documentation & see also Key Area 15 - Reporting [↑](#footnote-ref-7)