



Government of **Western Australia**
Department of **Training**
and **Workforce Development**

WA Department of Training and Workforce Development
Student Business Process Reform Project
NMT Cutover Post-Implementation Review
Version: 2.0

Prepared by: [REDACTED]
Prepared for: Anthony Nocciolino
Date: April 2018

DOCUMENT HISTORY

Revision	Revision date	Summary of Changes
v1.0	4 April 2018	Initial draft reviewed with Anthony Nocciolino.
v1.1	11 April 2018	Updated following internal reviews.
V2.0	18 April	Final report updated with final Executive interviews.

Distribution	This document will be distributed to:		
Name	Title	Date	Version
Anthony Nocciolino	SBPRP Project Director, DTWD		
Michelle Hoad	Managing Director, North Metropolitan TAFE		
Darren Pointer	CIO, DTWD		
Graham Thompson	Executive Director Corporate, DTWD		

Contents

1. Executive Summary	4
2. Background & Document Purpose	4
3. Review Summary	5
3.1 Objectives	5
3.2 Scope & Approach	5
4. Key Findings	5
4.1. Technical Scope Delivered	5
4.2. NMT Business Preparation & Adoption (including OCM & User Training).....	6
4.3. NMT Cutover Closeout	7
4.4. Benefits Identification	7
4.5. Ongoing Business & IT Support Model	8
4.6. Ongoing Business Governance Model	8
4.7. Future TAFE Cutovers	9
4.8. Comparison to similar business transformation projects	9
5. Key Recommendations	10
5.1. NMT Technical Closeout	10
5.2. Remaining Project Delivery	10
5.3. Ongoing Business & IT Support Model	11
5.4. Ongoing Business Governance Model	12

1. Executive Summary

This NMT post-implementation review of the Student Business Process Reform Project identified the following:

- A. NMT cutover in January 2018 is a significant and successful achievement for DTWD and NMT
 - B. Success due to strong business sponsorship by NMT Managing Director, pragmatic focus on core objectives and collaborative Project Team with 'skin in the game'.
 - C. Delivery overcame a 'perfect storm' of delivery obstacles to business transformation: unsuccessful DTWD project delivery history, replacement of entrenched legacy processes and technology, implementing commercial-off-the-shelf systems and concurrent organisational reforms.
 - D. Misperceptions of previous CIT SMS Project being near-completion added significant scope to SBPR project without increased budget or schedule.
 - E. Post-cutover issues are inevitable in initial business cutovers for complex business and technology transformation projects. NMT cutover compares better than analogous projects.
 - F. Process automation has eliminated manual data entry, errors and reconciliation activities, however these are rarely highlighted by impacted staff. However, associated benefits are only unrealised when proactively acted upon. Conversely, processes that require additional effort are quickly vocalised.
 - G. Perceived workarounds are: (1) interim processes whilst project technical scope is delivered, and (2) new processes that are simply the way the new system works. Neither are documented and remain contentious.
 - H. Interim support model is responsive to day-to-day issue resolution, but requires short and medium-term improvements to medium-term planning, business prioritisation and a product roadmap for the next 1-3 years. Issues are recorded and progressed, but insufficient visibility, prioritisation and communication is causing stakeholder frustration.
 - I. Support activity is appropriate, but lacks medium-term planning based on business priority and impact and upcoming student lifecycle functionality. The sector also lacks a clear medium term.
 - J. In-house systems support team has insufficient maturity and skills in managing support transition to a longer-term model, specific to a commercial-off-the-shelf product, product releases and managing a 3rd party product vendor. This capability does exist in some areas of the wider ICT organisation.
- [REDACTED]
- L. Governance forums that delivered NMT cutover must now evolve to deliver both project outcomes and business support, and ensure all TAFEs adopt and advance the standardised processes and systems.
 - M. Remaining TAFEs are informally engaging NMT to understand lessons learnt, however, more formal mechanisms would more effectively leverage these learnings for their own implementation success.
 - N. Leadership and clarity provided by the NMT Managing Director must be reproduced by the remaining TAFE Managing Directors. This leadership, in addition to an active Project Sponsor, is critical to the ongoing success of the project, remaining TAFE implementations and a standardised sector-wide solution.

2. Background & Document Purpose

The Student Business Process Reform Project (SBPRP) is implementing a new student management solution (SMS) for all TAFE Colleges and the Department of Training and Workforce Development (DTWD). The project delivers both technical software and business processes and standardizes one student management solution across the sector. The implementation requires significant business process changes across all TAFE Colleges and some central DTWD teams. These changes are essential to realize the opportunities the new solution offers.

In January 2018, North Metropolitan TAFE (NMT) were the first to commence operational use of SMS. Regional and South Metropolitan TAFEs will move to SMS in future phases mid-2018 and in January 2019.

Following NMT cutover in January 2018, Anthony Nocciolino (DTWD SBPRP Project Director) commissioned a review of the cutover. The review has been undertaken by an independent specialist, [REDACTED], who interviewed key NMT, DTWD and Project stakeholders and reviewed key project documentation during March and April 2018. This report outlines the findings and recommendations of this review.

3. Review Summary

3.1 Objectives

The Project Team have already completed NMT cutover Lessons Learnt and implemented key learnings in addition to working with internal and external audits. The review focussed on answering three core questions to both review NMT Cutover to date, and recommend options to optimise future TAFE cutovers and ongoing business support.

- (1) Project scope delivered to NMT to date and what is outstanding (*"Where are we now"*)?
- (2) Factors that impacted the project and NMT stakeholders (*"How did we get here"*)?
- (3) Recommend options to evolve the project delivery and NMT business support arrangements, as well as future TAFE cutovers (*"Where do we go next"*)?

3.2 Scope & Approach

The review was commissioned to focus on NMT cutover only, although findings and recommendations relating to ongoing project delivery, business support and governance are included in this report.

The review was completed through independent review of key project documents, structured interviews with key stakeholders, and comparison to challenges faced by similar business transformation projects. Interviews were completed with the following NMT, DTWD and Project team stakeholders:

- Michelle Hoad, Managing Director, North Metropolitan TAFE
- Graham Thompson, Executive Director Corporate, DTWD
- Brett Dorney, Project Director, General Manager, Organizational Services North Metropolitan TAFE
- Jennie Timms, Project Manager, Director Client Services, North Metropolitan TAFE
- Julie Zappa, General Manager Training Services
- Darren Pointer, CIO, DTWD
- Russell Coad, General Manager, Corporate Services
- Nathan Swindail, Finance Manager, North Metropolitan TAFE
- Anthony Nocciolino, SBPRP Project Director
- Martyn Edwards, Timetabling Project Manager
- Key Project Team members as required

4. Key Findings

The key findings of this review have been aligned to the following organisational or project attributes:

1. Technical Scope Delivered
2. NMT Business Preparation & Adoption (including OCM & User Training)
3. NMT Cutover Closeout
4. Ongoing Business & IT Support Model
5. Ongoing Business Governance
6. Future TAFE Cutovers
7. Comparison to challenges faced by similar business transformation projects

4.1. Technical Scope Delivered

- a) **NMT Cutover:** The project has delivered the primary cutover objective of enabling students to enrol in January 2018. Complex business transformation projects must always balance delivering 'minimal viable product' to meet initial project goals against the danger of continuous delays in the pursuit of perfection. Whilst there will always be some gaps in non-essential functionality and expectations, the decision to cutover NMT to support enrolment appears appropriate. However, a number of manual processes and workarounds remain in place while some in-scope interfaces are finalised and implemented. Outstanding

interfaces and changes are managed in a combined Contract & Project Issues Register by the Project Team and business stakeholders.

- b) **Pre-NMT Cutover System Availability:** In line with similar projects introducing new technology, users had limited or no access to a functional and end-to-end system prior to UAT, training and cutover. As a result, early operational use raised differences between expectations and reality. Subsequent cutovers allow users to access operational systems and processes in parallel to UAT and training, thus reducing the issue.
- c) **Unmet System Expectations:** Despite inherent cultural challenges with commercial-off-the-shelf products, some key users feel the system fails to deliver to expectations set by the product vendor on specific capability. Some areas do provide the stated functionality but via cumbersome manual workarounds, while other functionality is simply not part of the delivered product to date.
- d) **Vendor Delivery** [REDACTED]
- e) **System Integration Effort:** The amount of integration effort required was greater than estimated at the start of the project. This was due to limited opportunity to review which interfaces were required and not included in the selected product or project estimates.
- f) **FinanceOne Integration:** The Project and Finance Teams recognise that insufficient UAT was undertaken prior to cutover, leading to a higher number of post-cutover Finance-related issues than expected. This was caused by a mix of factors including: (1) Finance's ability to start UAT on schedule, compressing UAT duration, (2) Finance testers not sufficiently familiar with detailed financial processes and requirements, and (3) SMS to FinanceOne interface not available within UAT timeframes.

4.2.NMT Business Preparation & Adoption (including OCM & User Training)

- a) **Business Sponsorship:** The project's success was a direct result of exceptionally strong business sponsorship and consistent commitment to deliver. There is clear evidence of business leader's willingness to compromise to achieve standardisation of process and technology, and to deliver as much scope as possible within available budget and time. The NMT Executive Team deserve credit for focussing on core business objectives and working through challenges pragmatically. These attributes are critical to successfully delivering business transformation projects and should be recognised accordingly.
- b) **Resource Profile:** Seconding key NMT personnel to the Project Team was a positive decision that drives a customer-centric culture ensuring key performers have 'skin in the game'.
- c) **Change Fatigue:** Business design and adoption of new processes was done in parallel to other significant changes such as TAFE Reform, Sector Reform, standardisation and legacy system replacement. Consequently, already scarce project-capable resources are spread thinner across multiple initiatives, with change fatigue further eroding project delivery capacity.
- d) **Capability Gaps:** Project and training delivery, business process design and change management are not commonly abundant skills and experience in NMT and other TAFEs, which places stress on resources allocated to projects, especially when in addition to operational responsibilities.
- e) **Process Design Timing:** NMT and Finance business process design appears to have been started later in the project than scheduled. This inhibited the project's ability to ensure system configuration and training materials fully aligned to the new processes, and highlight potential misalignment and discrepancies. This led to greater change requests in both business process and technologies post-cutover.
- f) **User Acceptance Testing:** The lack of a fully functional, end-to-end environment during UAT impacted testing effectiveness, and increased the likelihood of UAT not identifying key issues.

- g) **Training:** Feedback on the quality of early user training content and delivery was poor. This was a result of (1) using uncertified and inexperienced IT resources for 'train the trainers', (2) Non-availability of an end-to-end system to support training delivery and materials, (3) Lack of available business processes and NMT terminology, (4) Lack of understanding of the criticality of accurate input data and end-to-end data flow (no manual adjustments), and (5) Training content was of a poor quality and not targeted to user roles meaning many users were given extensive and irrelevant system overviews. Consequently NMT and the SBPR Project secured trainers and training quality improved, although delivery was often hampered by network issues.
- h) **Standardised versus TAFE-Specific business processes:** Historically, each TAFEs utilised bespoke business processes and systems. The SBPR Project drives standardisation. This review identified early indications that some TAFEs still seek bespoke customisation that will erode intended standardisation benefits. Standardisation during the remainder of the SBPR Project and ongoing will require ongoing executive sponsorship and leadership. This will be provided by the Project Steering Committee during the project. Post-project, it is expected any change to systems will need to be approved by the 'Business Governance Group' before ICT make system changes. Process change in TAFEs is more difficult to control, although the same governance should be applied, supported by executive commitment.

4.3.NMT Cutover Closeout

- a) **NMT Cutover Acceptance Criteria:** The NMT Cutover Acceptance Criteria v7 in December 2017 approved four outstanding interfaces and four Known Issues.
- b) **Interfaces:** Three of the four outstanding interfaces (Finance, Identity Management and CELCAT) have been completed and implemented, while the Apprentice Training Records System (TRS) interface is due to be implemented in April 2018.
- c) **Known Issues:** (1) TRS Interface – Interface received, testing due to complete late March, (2) Class Registration – functionality disabled, may be addressed in future SMS releases, (3) AVETMISS Reporting – deployment expected late March 2018 and (4) TGA Interface – interim manual process provided by project team, interface being developed).
- d) **Tracking:** Tracking of progress against outstanding Acceptance Criteria is managed through existing project processes. Progress is reported to stakeholders through regular review meetings until closure.

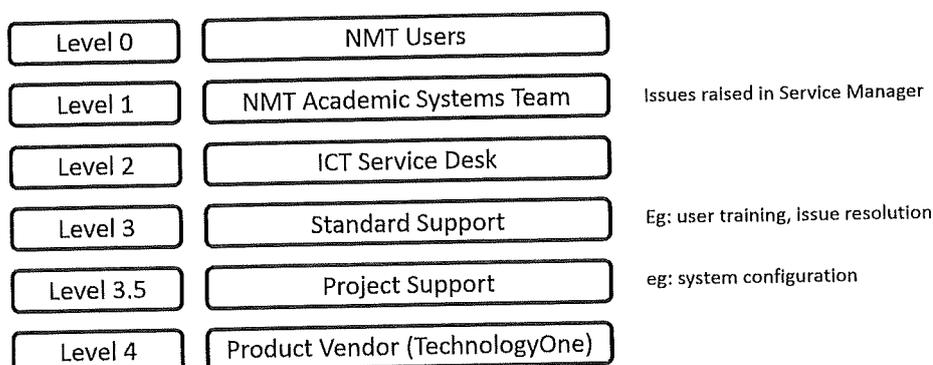
4.4.Benefits Identification

- a) **Squeaky Wheels:** Staff will always highlight changes that cause additional effort. Information provided in interviews show the majority of additional NMT effort is due to learning or adopting new processes, or attempting to maintain old processes with new systems. Some processes in the new solution do take longer than UE etc, however, these are a minority.
- b) **Reduced Effort:** Automation delivered in initial NMT cutover has already delivered specific reduction in effort in eliminating and reducing manual data entry, errors reconciliation (examples below). In contrast, staff rarely communicate when manual effort is reduced or eliminated by automation or process simplification. This means post-cutover feedback is dominated by processes that take longer to complete, while far greater manual effort reductions are overlooked.
- Student Services Front Counter Staff: Staff were previously required to double entry into UE and Receipts systems. Now the ECR interface passes this data (without the previous manual errors) automatically.
 - TBS: 80% of the manual keying of duplicate data into 3rd party invoicing has been eliminated. This has eliminated not only manual effort, but also errors and manual reconciliation of systems.
 - Daily Banking: Previously staff manually maintained a spreadsheet, the need for which has been eliminated as data is automatically passed between ECR, FinanceOne and SMS. Again eliminating manual effort, errors and reconciliation.

4.5. Ongoing Business & IT Support Model

a) Post-Cutover Business Support within Project Team:

Support for NMT post-cutover is a hybrid of DTWD, ICT and Project teams, which is a commonly used model in multi-phased business transformation projects. Key benefits include: (1) Business users receive continuity of knowledgeable support resources, (2) Business feedback is fed immediately into project delivery and, (3) Finite project resources can flex between project delivery (e.g. cutovers) and business support without incurring additional short-term costs. Current support can be summarised as follows – Levels 3 and 3.5 are currently provided by the SBPR Project:



b) Interim Support Findings:

The review identified the following key areas for improvement: (1) multiple issues logs and registers are maintained rather than a centralised issue repository (e.g. ServiceManager), (2) users are unable to view issue status on demand, causing frustration, perceived lack of progress and responsiveness, and duplicate issues, (3) issue prioritisation responsibility sits with the Project Team, under Steering Committee guidance, although users may not understand this, and (4) similar projects often publish issue trend analysis, however the SBPR project does not currently share this with stakeholders.

c) Design and Transition to Long-Term Support:

The long-term ICT support model is currently under review, however the needs of the SBPR project (timelines, commercial-off-the-shelf product and 3rd party vendor) mean the project may need additional support in designing its interim support model and processes, which can then be reviewed in light of any future ICT Support Model agreed. There is a need to review tools, processes and accountabilities to ensure all TAFEs remain supported for the remainder of the SBPR Project.

d) Transition from post-cutover Project Hypercare:

The transition from project hypercare following NMT cutover appears to have been relatively smooth, albeit with some minor misaligned user expectations. However NMT lessons learnt on setting clear stakeholder expectations and communications have been implemented for future TAFE cutovers.

4.6. Ongoing Business Governance Model

a) **Project Governance:** The SBPR Project Steering Committee and Working Groups meet monthly with clearly defined 'Terms of Reference'. These forums have directly contributed to the project's delivery success to date. Some duplication exist between these forums in terms of status reporting, recommendation making and decision authority. Since NMT cutover, these forums need to transition to additionally govern User Support and Guardianship of standardised processes and systems.

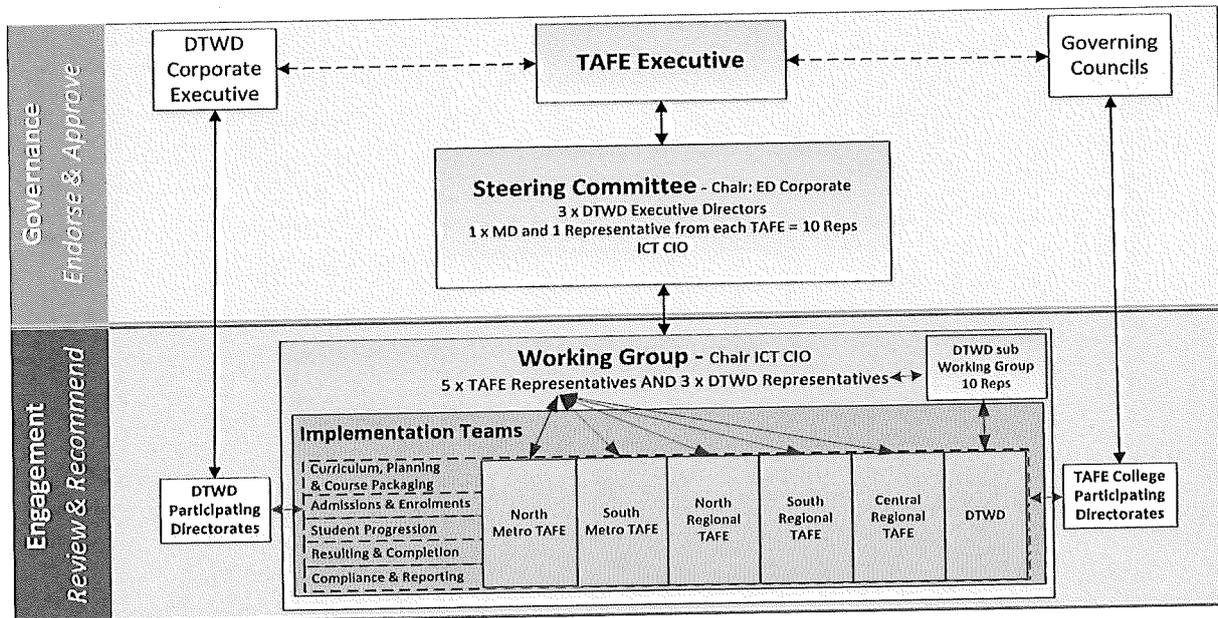
b) **Business Governance:** The SBPR project remains responsible for managing system change for the duration of the project. However as the overall solution (processes and technology) is now operational, it is critical TAFEs and other key user groups actively lead the raising, assessing, prioritising and delivery of change across the now common solution. This is key to ensuring the solution remains standardised and achieves the intended business benefits. The existing Steering Committee and Working Group are expected to transition to this leadership and governance role post-project closure.

4.7.Future TAFE Cutovers

- a) **SBPR Project Management:** Since NMT cutover, the SBPR Project now manages both project delivery and user support. Consequently, support related roles within the project should transition to meet these ongoing needs, ideally by reviewing the support model tiers and key position roles and responsibilities.
- b) **User Training and Change Management:** Changes implemented in NMT execution appear successful and will continue to be improved through project team lessons learnt for remaining TAFEs.
- c) **Accumulated Project Workload:** Multi-phased projects often accumulate unseen workload as each phase adds new business units and new functionality is utilised. For the SBPR Project, NMT are now using all functionality operationally, and are expected to reduce their support demand on the project team. This reduced demand will be replaced by remaining TAFE cutovers, which should be lower than NMT as the system is more available and stable pre-cutover. Therefore, overall project workload may not significantly increase, however ongoing review and monitoring should be exercised by the Project Team.



- d) **Project and NMT Communication:** As expected, communications between NMT and project teams were daily prior to cutover and hypercare, becoming less frequent as systems and processes stabilise. In addition to monthly Steering Committee and Working Groups, and a NMT Working Group, tactical project delivery was managed via weekly NMT Executive meetings and weekly NMT Operations meetings. These forums are appropriate to deliver complex business and system transformation projects and should be continued for each individual TAFE implementation. Since cutover, the weekly NMT Operations meeting continues to be regarded positively as it discusses the most topical concerns impacting NMT.



4.8.Comparison to similar business transformation projects

- a) Overall, the challenges experienced since NMT Cutover are typical of complex business transformation projects. These challenges are particularly accentuated when the transformation includes one or more of the following factors:
 - o Transformation includes both significant technology and business process change.
 - o Legacy technologies and processes are heavily entrenched.
 - o Significant duration since previous business transformation within the organisation.
 - o Transformation drives standardisation of process and technology.

- Standardisation replaces highly diverse business units ways of working.
 - Transformation is concurrent with (or closely preceded by) other business disruption (e.g. TAFE Reform, Sector Reform, Capability Review, change in State ruling party)
- b) Business transformation projects are typically more successful when delivered via a multi-phased approach. This balances project constraints (budget, schedule, scope) against the ability of the first cutover (NMT) to continue business operations with the change in place (e.g. enrol students in January 2018). Most projects that initially adopt a 'Big Bang' approach (e.g. all TAFEs and Sector cutover concurrently) most often fail to reach cutover and are postponed unless they revert to a multi-phase approach.
- c) Secondment to the project of key TAFE resources with experience in project management and extensive SMS product knowledge was (and remains) critical to project delivery and the solution's fit-for-purpose for stakeholders, as key performers retain 'skin in the game'.
- d) Commitment to the projects core objectives of standardised processes and technologies was key to project's successful cutover, and remains vital to ongoing project delivery, business support and post-project benefit realisation.
- e) Initial technical cutovers are always the most challenging. Users rarely see a final, end-to-end system before testing and training, which causes misalignment in expectations, even with the most extensive documentation, communication and training. Subsequent cutovers benefit as users can see solutions (technology and processes) used operationally which aligns expectations and cutover preparations.

5. Key Recommendations

This review recommends the following actions to optimise ongoing project, TAFEs and Sector success:

5.1.NMT Technical Closeout

It is recommended that all designated project partners formally close each project phase. This supports continued credibility and trust between stakeholders, and is important for ongoing governance and delivery momentum.

- a) **Acceptance Criteria:** Report progress and resolution of each outstanding item through existing Project Steering Committee and Working Group reporting until closure, to formalise closure of NMT Cutover as a project phase.
- b) **'Process Workarounds':** Project and stakeholders to focus on delivering in-scope changes to replace associated interim processes. In parallel, the Steering Committee could initiate activities to collate all new processes that are perceived as problematic and 'temporary workarounds' ('band-aids'), and agree whether to invest in one of three approaches: (1) change the common system, (2) change the business processes or (3) accept the process as BAU.

5.2.Remaining Project Delivery

- a) **Business Delivery Commitment and Sponsorship:** Successful delivery so far is due to exceptionally strong and visible business commitment to deliver by the NMT Managing Director. Without similar commitment by the Managing Directors of the remaining TAFEs, ongoing TAFE are at significant risk of problematic cutovers, costly delays, or not implementing at all.
- b) **Project Business Sponsorship:** All complex business transformation projects needs an active Project Sponsor. Multi-phase projects have inherent risk of 'Executive distraction' once an initial, higher-risk phase is successfully completed (i.e. NMT cutover). Sponsors and Executive Teams often become complacent and shift focus to other projects and/or operational issues, which is typically a precursor to once-successful projects becoming a problem child, and not achieving standardisation.

- c) **Resource Profile:** Continue to second key TAFE personnel to the Project Team to continue a customer-centric culture and 'skin in the game'.
- d) **TAFE Lessons Learnt Sharing:** Whilst informal peer-to-peer learning is being shared between TAFEs, it is recommended TAFEs implement more structure in formally understanding and adopting key NMT lessons learnt to avoid repeating similar challenges.
- e) **Project and TAFE Communication:** Given NMT adoption of new processes and systems, it is recommended the existing meetings are continued until 30 June at which point they should be re-reviewed. The project team and the remaining TAFEs should establish similar meetings as used by NMT. As the NMT Meeting often overruns on schedule, it is recommended a more formal agenda is implemented, and issues discussed are those with higher priorities using ServiceManager as the single source of truth.

5.3.Ongoing Business & IT Support Model

The initial business cutover in a multi-phased project is of critical importance as the project team become responsible for both ongoing project delivery and operational support. Each of these responsibilities require different skills, processes, tools and goals. Consequently, since NMT cutover the SBPR Project must now retain those strengths that delivered project success while evolving to meet new business expectations and needs.

- a) **Project-based Business Support:** For the duration of the project, it is recommended the current support model within the project team remains in place to maintain strong business support relationships, ongoing project delivery and retain crucial system knowledge that does not exist outside the project team.
- b) **Support Resources:** Similar to project delivery, it is recommended the Sector continue to second key TAFE personnel to the Project Team to ensure support remains customer-centric, system knowledgeable and with 'skin in the game', to maintain the exceptionally strong stakeholder relationships currently in place.
- c) **Support Issue Tracking:** All system and support requests should be logged in a central repository, regardless of whether these are deemed out of project scope or future enhancements. Over time, this repository may transition to a common ICT toolset, however, the current ServiceManager does not support the needs of the project nor business users due to the lack of self-service and on-demand progress tracking. Maintaining a interim single repository of issues allows the Steering Committee and Working Groups to take greater ownership in business prioritisation and agreeing a Sector-wide roadmap. A centralised repository also supports root cause problem analysis, above tactical incident resolution, and sharing issue trend analysis.
- d) **Business Issue Prioritisation:** It is unclear from the project documentation reviewed and interviews conducted how issues are prioritised by business stakeholders, and therefore which issues are allocated resources. Prioritisation becomes particularly significant when resources are required for both NMT support and remaining TAFE cutovers. It is recommended that prioritisation criteria are created/refreshed for the combined project and support environment, and this is communicated in a clear format so all stakeholders are clear on who decides priority and on the criteria the decision is made.
- e) **Differing Project and TAFE Needs:** The project priority is for all TAFEs to adopt the standardised system and processes, before any significant enhancements or future product releases can be implemented. The project has been granted discretionary authority on such changes in order to protect delivery. However, it is inevitable NMT will quickly mature usage and seek system changes. The Steering Committee and Project Director should continue to only consider implementing enhancements or future product releases if they deliver agreed project scope or resolve existing issues.
- f) **Transition Steps to Long-Term Support Model:** The longer-term ICT support model is currently under review, however SBPR project timelines and the 3rd party commercial-off-the-shelf product and vendor mean the project may need to transition to an interim support model and processes, before the agreed long-term ICT Support Model is implemented. It is recommended the current project-based support model is

reviewed in light of the above recommendations, and improvements made where possible as 'stepping stones' towards a longer-term ICT model.

5.4. Ongoing Business Governance Model

- a) **Governance (Project Execution):** Retain the Project Steering Committee and Working Groups, as well as each TAFE Working Group as these remain sufficiently effective. However, the Terms of Reference for both groups should be reviewed and updated to focus on: (1) remaining TAFE project delivery, (2) ongoing TAFE support, (3) maintaining and optimising the standardised processes and system, (4) and leveraging NMT lessons learnt. The Project Steering Committee remains the custodian of standardised processes and systems, whereas the Project remains responsible for managing all systems change for the duration of the project.
- b) **Governance (Post-Project Execution):** Once the project completes in 2019, the Project Steering Committee and Working Groups should transition to Sector Steering Committee and Working Groups to focus on managing the standardised processes and system, and driving Sector efficiencies through prioritisation of process and system change.

Department of Training and Workforce Development

Internal Audit Report

Student Management System – Functionality Review

1718-IA11-01

December 2017

Prepared By: Blue Zoo

TABLE OF CONTENTS

Description	Page Number
1. Executive Summary	2
2. Detailed Findings.....	5
3. Background.....	8
4. Objectives	8
5. Scope.....	9
6. Risk Ratings.....	10

1. Executive Summary

Internal Audit has completed its independent review of the Student Management System (SMS).

- ✓ Fee calculations are calculated using a robust model that implements the Fees Policy 2017 which should carry over to future fees policies. The ongoing governance of fees and rules in the SMS appears to be of a different approach to the way the organisation governs the fees and rules as a whole.
- ✓ The Student Bank Account interface is implemented using contemporary, secure and appropriate methods.
- ✓ VET/Department reporting has an excellent 'belt and braces' control approach using the SVD system.
- ✓ For student information there appears to be appropriate controls for provisioning and access by users (staff and students) to the system. However, auditability of the system has not been appropriately configured.

1.1 Overview

The Department of Training and Workforce Development (Department) is in the process of implementing an off-the-shelf SMS to replace the current legacy system. The SMS is expected to be rolled out firstly in the North Metropolitan Campus (NMT) in early January 2018 followed by the rest of the WA TAFE campuses within the next few years.

The Department engaged Blue Zoo to audit specific key areas of the SMS to examine controls in four key areas and provide an independent opinion on the readiness of the system, prior to its proposed go-live.

1.2 Overall Perspective

For the purposes of audit context, the overall business criticality of the SMS to the ongoing operations of NMT is estimated as HIGH and the risk profile of the information being managed by the system deemed as HIGH, considering that the system collects and stores sensitive data (sensitive information such as bank account numbers, personal contact details and digital

document such as disability concession cards, passports, driving licence). As the SMS is pivotal to establishing the colleges funding, application and enrolment management and student life cycle management by both external and internal users, after it goes live, the Department should ensure high availability and consistent access controls to information.

The project has implemented reasonable controls for data capture, segregation of duties, data integrity and fraud prevention. Access to the system will be controlled by the overarching policy of the Department through the Identity Management System.

Immediately after the go-live, Users' functionality rights will be managed and controlled by the Project team under the coordination of the Development Transition Manager (Support Manager). This is whilst the database will be managed by the Project Database Administrator under the supervision of the Project Manager and in line with Department ICT database environment protocols.

External users (Applicants & Students) will be issued with unique user identification and will set their own password when applying (Applicant) and are forced to change the system generated password when they are enrolled (Student).

1.3 Observations

On a positive note, audit observed that:

- Using the State Validation Database (SVD) is an **excellent** control for validating:
 - the SMS compliance reports;
 - the data migration outcomes; and
 - the business rules within SMS.

Note: The scientific validity and independence built into the control was such that most of the planned audit testing became just a formality. Given the criticality of SMS and how powerful this control is, internal audit would suggest that the risk profile of the system would go up significantly if the SVD was not used.

- The project team is organised by the individual functions e.g. Fee calculation, Reports, User Access Management, Data migration, etc., and the champions in each area excelled in achieving the individual objectives. The risk associated with

such a structure appears to have been managed well thought cross team involvement and through independent testing at both unit and end-to-end process (e.g. regression level) testing.

- The User Acceptance Test (UAT) has been a joint effort by the business and project team with good independence and maintained a healthy balance between the 'real life scenarios' and system capabilities.
- The project team has been performing dual roles since June 2017 i.e. supporting some components in the production environment and testing the full SMS and this scenario is expected to scale up with the proposed go-live.

Audit found three (3) issues which will require management attention within a short time after go-live:

1. Limited and ad-hoc audit trails – **Medium Risk**
2. Lack of segregation of duties in the System configuration and Audit configuration – **Medium Risk**
3. Lack of governance on SMS Fees model – **Medium Risk**

Internal audit do not believe that any of these issues should impact the proposed go-live, and could be pragmatically implemented quite quickly. This is further explained in the detailed findings section.

1.4 Audit Work Performed

The work performed included document review, staff interviews and sample testing in the UAT environment covering the agreed audit scope.

2. Detailed Findings

Finding number	Observation	Implication and risk	Recommendation	Management comments	Risk rating
1	<p>Limited and ad-hoc audit trails</p> <p>It was observed that the system is not setup to capture access to or changes to data the organisation considers critical or sensitive. These included:</p> <ul style="list-style-type: none"> • master data, • formulas and formula constants used for fee calculations, • transactional data, and • activities and events i.e. assessor’s activities such as approvals or changes. <p>It was revealed that the business requirements did not include specific rules on system auditability, hence, the system currently functions with ‘out of the box’ audit configuration.</p> <p>Internal audit have explored the system functionality with DBA from the project team and identified that once the requirements are identified it is relatively easy to configure the system.</p>	<p>Meaningful audit trails provide a record of events related to records and becomes a vital piece of compliance evidence (either confirming or contradicting).</p> <p>The absence of it will expose the system to errors that may not be able to detected or corrected.</p>	<ol style="list-style-type: none"> 1. Key stakeholders work with the project team to understand and identify the audit requirements related to the processes, functionality, events, activities and vital data. 2. Implement and verify the identified requirements. 	<p>The project team will work with the Colleges and system vendor to develop and implement a standard audit model.</p> <p>Sensitive and priority areas of the system will be addressed first.</p> <p>This will be an ongoing process as new functionality evolves and risk levels change.</p> <p>Responsible Officer – Director ICT</p> <p>Completion Date – 31 December 2018</p>	<p style="text-align: center;">M</p>

Finding number	Observation	Implication and risk	Recommendation	Management comments	Risk rating
2	<p>Lack of segregation of duties between System Configuration and Audit Configuration</p> <p>Audit observed that the Access Control Roles that enable individuals to perform system configuration tasks (e.g. change the fee rates and formulas) can also configure the Audit Configuration.</p> <p>For example - The Fees model is configured and maintained by the resource who manages the auditability of the same function.</p>	<p>Audit logs cannot be trusted to identify malicious behaviour.</p> <p>It is acknowledged that the likelihood of this risk is low, however the impact of this risk would be significant.</p>	<p>1. Segregate the Audit Configuration activities into specific roles that are allocated to individuals that are independent from those that perform System Configuration activities.</p>	<p>The Project Team will work with the vendor to develop a model of acceptable access control roles that does not impact the business usability of the system.</p> <p>This will be an ongoing process that will require annual review.</p> <p>Responsible Officer – Director ICT</p> <p>Completion Date – 31 December 2018</p>	<p style="text-align: center;">M</p>

Finding number	Observation	Implication and risk	Recommendation	Management comments	Risk rating
3	<p>Lack of governance on fees model in SMS</p> <p>Audit observed that the ongoing governance of fees in the SMS appears to be of a different approach than the way the organisation governs the fees and rules as a whole.</p> <p>For example - The whole corporate executive authorise the Fees Policy vs one authorised individual (currently in IT) can enter and change the fees and there is no audit record of this.</p> <p>Internal audit have discussed this with the project team and identified that the Fee Rollover process could be formalised to include this control.</p>	<p>Because of the fee calculation model it is possible for an authorised individual to make an error in one place that impacts a large percentage of the overall fees and there is no ability to establish what happened.</p>	<p>1. Formalise a process to ensure proper governance of the fee rates and formulas in SMS.</p> <p>It is recommended that business system owner (or their delegate) validate as a minimum the:</p> <ul style="list-style-type: none"> • ~21 'Formula Constraints'; and • ~40 'Fee Liabilities'. 	<p>The Project team will implement a process with the colleges to verify the fees setup in the system for the remaining college implementation.</p> <p>ICT will implement a process with the colleges to verify the yearly fee rollovers and changes in the system.</p> <p>Responsible Officer – Director ICT</p> <p>Completion Date – 30 June 2018</p>	<p style="text-align: center;">M</p>

3. Background

As part of WA Training Sector Reform, 11 State Training Provider's (STP's) transitioned into 5 TAFE Colleges effective 11 April 2016.

Hence a number of database migrations (or database mergers) had to occur to reflect this transition.

One of these migrations was College source data into a new Technology One Student Management System (SMS). The scope of this data migration included:

- Curriculum data;
- Course fees;
- Student details;
- Awards; and
- Enrolments and Results etc.

The primary objective of this new SMS is to improve overall student experience. This SMS is a purchased 'off-the-shelf' system with only re-configuration applied (i.e. no customisation).

As at 1 November 2017, User Acceptance Testing (UAT) of the SMS configuration is complete with North Metropolitan TAFE (NMT) currently undergoing simulation testing.

Upon completion of NMT simulation testing, an NMT copy would then be applied to the other 4 Colleges.

4. Objectives

The objectives of the review were to:

- Determining the accuracy, completeness and security of the mapping of student course fees within SMS;
- Determining the accuracy, completeness and security of the student bank account interface within SMS;
- Determining the accuracy, completeness, availability and reliability of VET/Department Reports; and
- Determining the accuracy, completeness and security of student details within SMS.

5. Scope

The review examined:

i. Fee calculations — specifically:

- A reconciliation of mapping to the agreed Business Rules / Fees Policy

(Business Rules / Fees Policy being the agreed fee charges to be applied to each course across all 3000+ WA qualifications)

NOTE — due to the almost infinite number of fee calculation scenarios, the review was limited to:

- Reviewing existing working papers and placing reliance on the design, configuration and tests that have already been performed; and
- Testing a random sample of selected scenarios, specifically:
 - A general industry training student (with and without concession);
 - A short course (fee for service);
 - An international student; and
 - Variations: Fee waiver and refund.

ii. Student Bank Account Interface — specifically:

- That SMS prevents the mishandling, retention or misuse of customer credit card and banking details. This included the interface between the SMS payment module and the online banking portal.

iii. VET/Department Reporting — specifically:

- Review of the VET Management Information Statistical Standard (AVETMISS) and WA AVETMISS reporting produced by the SMS. The new SMS must produce compliant data sets (NAT files) for state and federal VET activity reporting.

iv. Student Information — specifically:

- Student access to College online services is correctly provisioned to prevent unauthorised access to College resources and systems.
- This included pre-enrolment (an applicant), enrolled (an active student including sanctions) and post enrolment (when the student has finished studying) stages.

6. Risk Ratings

A risk rating is assigned to each finding raised during the course of the review. These risk ratings indicate our assessment of the severity of the finding at the time of the review and the urgency of required action.

Findings and recommendations have been discussed with key management personnel. Findings have been classified as High, Medium, Low or highlighted as an opportunity for improvement.

The following legend stipulates the ratings that could be potentially assigned:
Risk ratings

- | | |
|---|---|
|  | Issue of High risk requiring immediate remedial action. |
| <hr/> | |
|  | Issue of Medium risk requiring remedial action as soon as practicable. |
| <hr/> | |
|  | Issue of Low risk, which should be considered for future remedial action. |
| <hr/> | |
|  | Opportunity for improvement. (Opportunities identified will not be captured in the Internal Audit Recommendations Register for future acquittal). |