Auditor-General of Queensland

Report to Parliament No. 7 for 2010

Information systems governance and control, including the Queensland Health Implementation of Continuity Project

Financial and Compliance audits

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QUEENSLAND

Prepared under Part 3 Division 3 of the *Auditor-General Act 2009*

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Auditor-General of Queensland

June 2010

The Honourable R J Mickel MP
Speaker of the Legislative Assembly
Parliament House
BRISBANE QLD 4000

Dear Mr Speaker

This report is prepared under Part 3 Division 3 of the *Auditor-General Act 2009*, and is titled Information systems governance and control, including the Queensland Health Implementation of Continuity Project. It is number seven in the series of Auditor-General Reports to Parliament for 2010.

In accordance with s.67 of the Act, would you please arrange for the report to be tabled in the Legislative Assembly.

Yours sincerely

Glenn Poole
Auditor-General

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1.1 Auditor-General's overview

Information systems are critical in all areas of government business. Good information technology program management can provide among other benefits, achievement of strategic outcomes, optimised costs and better management of risks.

The audit program this year included an audit of three whole of government information and communication technology (ICT) programs at the Department of Public Works, as the whole of government ICT provider (Corporate Solutions Program, ICT Consolidation Program and Identity, Directory and Email Services Program). A major audit of the Queensland Health Implementation of Continuity Project (SAP HR and payroll) was also undertaken. Other information systems audits covered information technology governance within the Department of Education and Training, patient information security within Queensland Health and information technology network security.

The development and implementation of ICT systems and solutions designed to address the current business requirements of government are large, complex and expensive projects. In this environment, it can be expected that projects may experience changes in personnel, technology, scope and legislative frameworks. These issues need to be adequately managed.

In general, the results of these audits further emphasise the need for significant improvement in program and project governance, including up front and ongoing scope management, vigorous controls over budgets, and comprehensive testing and implementation regimes. Specific attention must also be given to the development of robust benefit management plans to ensure that the Government achieves appropriate returns on these multi million dollar investments.

1.1.1 Queensland Health Implementation of Continuity Project

The Corporate Solutions Program, a CorpTech managed program established to implement the whole of government finance and HR systems, was included in the program management audit. Queensland Health's new payroll and rostering system is one of the projects within this program.

Significant problems have been experienced by the department since the Go-Live date of this payroll system on 14 March 2010.

A Payroll Stabilisation Project has been established and action to identify and correct payment irregularities is expected to continue for some time. The audit of these actions will be a significant issue which will be further examined during the finalisation of the auditor's opinion for the 2009-10 financial statements for Queensland Health.

The experience from the audit of this project leads me to conclude that there is no clear understanding of the accountabilities of individual Accountable Officers impacted by the Shared Service Initiative. Whilst the accountability for payment of staff within Queensland Health ultimately lies with the Director-General, Queensland Health, I consider that the governance of the project was unclear between his responsibilities and the responsibilities of the Director-General, Department of Public Works as the Accountable Officer responsible for the management of CorpTech and its responsibility for the implementation of the whole of government HR solution. This confusion limited Queensland Health's ability to influence some of the decisions affecting the outcome of the project as well as limiting transparency of decision making for parts of the project.

The roles and responsibilities of Accountable Officers in this environment should be clarified as a high priority.

This system's significance is highlighted by the fact that to the end of March 2010, approximately $65m of costs can be directly attributed to it. Audit found that project governance, including managing relationships with key stakeholders was not effective in ensuring roles and responsibilities were clearly articulated and in ensuring there was clear accountability for the efficient and effective implementation of the system.

Prior to the introduction of the new system, Queensland Health used the LATTICE payroll and the ESP rostering systems, which had been in place since 1997. It was recognised that the LATTICE payroll system needed to be replaced as it would no longer be supported by its supplier from July 2008. In addition, there were difficulties in implementing new payroll requirements arising from new employment agreements and other payroll related changes.

CorpTech, through the services of a prime contractor, was undertaking the implementation of a standardised SAP HR system across the Queensland public sector. This was a continuation of the Shared Services process which had commenced in 2002. Queensland Health was originally scheduled to receive the new system in 2006, however the whole of government implementation process had been delayed.

A decision was made in late 2007 by Queensland Health and CorpTech to escalate the implementation of the Queensland Health payroll system due to the risks associated with the continued use of the LATTICE payroll system.

Figure 1A provides details of the key participants and their roles within the project. A timeline of the key events is included in Section 5.5.

Figure 1A – Key project participants

Agency	Role
CorpTech	Specialised business unit of Treasury Department and subsequently Department of Public Works providing a whole of government role over the acquisition of information technology. CorpTech is the owner of the SAP HR and WorkBrain systems. The primary responsibility during this project was to manage the prime contract.
IBM	Prime contractor to CorpTech selected under a formal tender arrangement to direct, manage and control the project and to implement SAP HR and WorkBrain solution to replace LATTICE.
Queensland Health	Business user of the SAP HR and WorkBrain systems responsible for the payment of Queensland Health employee entitlements. Primarily responsible for ensuring business requirements were reflected in the scope of works, undertake data cleansing and migration, user acceptance processes, staff training and ensure business processes and practices were ready to utilise the new system.

Key findings from the audit of the system implementation include:

- The Queensland Health payroll system has complex award structures. There are 13 awards and multiple industrial agreements which provide for over 200 different allowances, and in excess of 24,000 different combinations of calculation groups and rules for Queensland Health employees who on average total around 78,000.
- The governance structure for the system implementation, as it related to CorpTech, the prime contractor and Queensland Health, was not clear, causing confusion over the roles and responsibilities of the various parties.
- There was inadequate documentation of business requirements at the commencement of the project.
- The time taken to reach Go-Live status increased from eight months to 26 months.
- The absence of a periodic review of the business needs contributed to subsequent difficulties with system testing and the implementation of a system which did not meet the needs of Queensland Health's operating environment.
- System and process testing prior to Go-Live had not identified a number of significant implementation risks and therefore the extent of the potential impact on the effective operation of the payroll system had not been fully understood and quantified.
- System useability testing and the validation of the new processes in the business environment was not performed. As a result, Queensland Health had not determined whether systems, processes and infrastructure were in place for the effective operation of the new system.
- A number of critical business readiness activities and practices were not fully developed prior to the implementation of the new system. This was in part a reflection of the view of Queensland Health staff that the project involved a 'like for like' replacement of the LATTICE system and the lack of an awareness of the full impact of the business rules configured into the new system.
- Business continuity plans were not available and able to be quickly implemented to address payroll issues as they emerged.
- Key system performance reports for use by CorpTech were not available during the completion of the initial payroll processing.
- Several changes to the payroll administration practices, such as a new fax server and a re-allocation of processing duties within the Queensland Health Shared Services Provider, were introduced at the same time as the release of the SAP HR and WorkBrain systems.

There are many lessons to be learnt from the experience of the Queensland Health Implementation of Continuity Project for future systems implementations. The following issues should be considered for future payroll system implementations:

- Where possible, simplify award structures prior to implementing a new payroll system to remove complexities which will impact on the effectiveness and efficiency of the payroll process.
- Establish clear lines of accountability and roles and responsibilities at the initiation of the project to ensure an end to end governance structure.
- Ensure the full impact of system change is assessed on the end to end business process.
- Ensure the ultimate decision to Go-Live is based on the readiness of the business and that the system's application within the business is fully tested.
- Identify all project and systems risks and have in place robust contingency plans and risk management strategies to address risks in the event of unexpected system issues.

1.1.2 Program management and governance

Program management is the coordinated organisation, direction and implementation of a group of projects and activities that together achieve the outcomes and realise benefits that are of strategic importance. An audit was undertaken of three whole of government information and communication technology (ICT) programs at the Department of Public Works as the whole of government ICT provider. While the audit found that the Queensland Government Program Management Methodology was being progressively implemented, all programs were behind schedule.

Overall, the governance of IT program management across all three programs needed improvement. The department could not demonstrate to audit whether the government would realise the full benefits, including savings, that were expected from the large scale investment of an estimated $545m across all three programs. In addition there was a lack of transparency in relation to key decisions and the way these decisions would impact on client agencies. Action needs to be taken by the Department of Public Works to address the identified deficiencies.

1.1.3 Information system security audits

In addition to the audit of information technology program management and governance, this year's audit program also included an examination of the controls within public sector entities' information technology environments. I have reported to Parliament over an extended period on information systems security and general computer control issues. By failing to address fundamental control weaknesses, public sector entities leave themselves vulnerable to computer system failures, unauthorised access to information, loss of information and fraudulent activity.

In *Auditor-General Report No 4 for 2009 – Results of audits at 31 May 2009*, I reported on the results of an audit of information technology network security and made a number of recommendations for improvement. This year, the progress of the implementation of the recommendations by the audited entities has been followed up and is reported in Section 4.2. While there has been some improvement in control with 34 per cent of the recommendations implemented, it is disappointing that more urgent action has not been taken by individual agencies to address the issues. Some entities are continuing to place insufficient priority on the importance of effectively managing and protecting their information networks. At a whole of government level, an information technology security committee was established in October 2009 with specific goals to implement network security risk mitigation strategies. I encourage all agencies to participate in the whole of government program by implementing the controls in accordance with the plans.

An audit was conducted of the security of patient information within the information technology environment for which Queensland Health is responsible to determine whether there are suitable systems and frameworks in place to ensure the effective safeguarding of patient information. The scope of this audit was limited to security of patient information within the information technology environment at the corporate office in Brisbane and the Emergency Departments at Princess Alexandra and Redland Hospitals.

It is critical that the privacy of patient information is assured. As outlined in Section 4.1, the audit found that there are some opportunities to improve the efficiency and effectiveness of the collection, retrieval and storage of patient information. In particular, the paper based clinical information recorded and maintained separately by each hospital carries an inherent risk of delays in retrieving records when a patient presents at the hospital. It was found that this risk is significantly higher when patient records are stored at a different Queensland Health facility.

Although Queensland Health has advised that the e-Health strategy, when implemented, should improve the availability and accessibility of patient information, the department should ensure that any risks are adequately addressed in the interim.

1.1.4 Information technology governance

An audit in 2009 of information technology governance at the Department of Education and Training found that the information technology governance framework, including risk management, project management and business continuity management across the whole of the department required strengthening.

The latest audit in 2010 found that action is being taken by the Department of Education and Training to address all the recommendations made during the previous audit. Information technology governance has been assessed by audit as being at a developing stage with the initial steps for the establishment of an information technology governance framework having been undertaken. The status of information technology governance and the OneSchool project is discussed further in Section 3.2.

1.2 Recommendations

1.2.1 Queensland Health Implementation of Continuity Project

Queensland Health

1. **The current action to stabilise the Queensland Health payroll and rostering systems be continued to ensure Queensland Health employees are correctly paid.**

   Any mismatches between business practices and business rules configured within the system need to be analysed and appropriate changes made to address defects or to improve the accuracy or effectiveness of the payroll output.

   Technological changes should be performed through strict change management processes and testing regimes to ensure that system stability is maintained.
2. **Queensland Health should reconsider its current business model to determine the most effective and efficient strategy to deliver payroll services. To mitigate the risk of payroll inaccuracies, simplification of award structures and pay rules need to be considered.**

   Reengineering the payroll process should be undertaken to provide an appropriate blend of local decision making and action and the efficiencies of centralised processing. System reporting to enable effective performance management for both local and central processing hubs is an essential component of any business process reengineering.

   It is suggested that a staged approach be used for the implementation of any new business model.

Shared Services

3. **The roles and responsibilities of departmental Accountable Officers involved in the Shared Service Initiative be reviewed so that the ultimate responsibility of departmental Accountable Officers for all expenditure by their departments is reinforced. The agreed responsibilities should be clarified in either the *Financial Accountability Act 2009* or in the *Financial and Performance Management Standard 2009*.**

1.2.2 Information technology governance and security

4. **The Queensland Government Chief Information Office program and project management methodologies be rigorously applied for the development and implementation of all new information system programs. Some of the critical success factors include:**
   - **Formal documentation of roles, responsibilities, accountabilities and key performance indicators of all relevant parties which should be signed by all key stakeholders. This document needs to be a living document that is periodically reviewed and updated for relevance.**
   - **Formal documentation of the program being divided into tranches (groups of projects that deliver the final outcome). End of tranche reviews need to be performed to assess the ongoing viability of programs and to assess the effectiveness of program processes in managing risks, issues, benefits, program management activities and lessons learnt.**
   - **Clear definition of the project scope and timeline, including key stakeholder sign off. The project scope needs to be tightly managed throughout the life of the project.**
   - **Large projects should be divided into stages, with each stage clearly planned, controlled and end stage reviews performed. The end stage reports should provide an input into the planning processes for the next stage(s). Some examples of Queensland Health project stages could include: project scope definition; business requirements definition; system development; user acceptance testing; parallel testing; system useability test and validation of business processes; business process re-definition; Go-Live and post-implementation processes.**
   - **Quality assurance role of the Project Board needs to be clearly documented and implemented. The quality assurance processes need to be implemented at all levels of programs and projects.**
   - **Rigorous budget management processes should be implemented with budgets approved and monitored by the relevant governance boards.**
5. **Information technology governance frameworks, practices and processes need to be implemented at a whole of government level so that business outcomes and benefits from IT programs are achieved, measured and reported by individual agencies using a consistent approach. These can then be consolidated at the whole of government level through the recently established ICT governance committees for improved transparency of ICT programs and projects.**
6. **For whole of government programs/projects, specific attention needs to be placed on ensuring that end to end governance structures are implemented and ensuring that there is transparency of decisions that are made and the impact of those decisions on government agencies.**
7. **Information technology security risk assessment, mitigation strategies and control mechanisms need to be documented and implemented at the agency level and co-ordinated at the whole of government level through the recently established information security committee.**

1.3 Stakeholders' responses

1.3.1 Department of Public Works and Queensland Health

The Director-General, Department of Public Works and the Director-General, Queensland Health provided the following response:

Section 1.1 Auditor-General's overview

It is acknowledged that governance improvements can be made in respect of all programs audited. As the Chief Information Officer I am committed to the rigorous implementation of the QGCIO program and project methodologies. My officers will work collaboratively with all agencies to ensure these methodologies are applied to existing and future system implementations so that expected benefits are realised from the significant investments being made by government.

Section 1.1.1 Queensland Health Implementation of Continuity Project

The project was complex and faced the challenge of an ageing payroll system that was in urgent need of replacement with the withdrawal of vendor support. This influenced deliberations of the Project Board as there was the constant risk of catastrophic payroll failure and the possibility of all Queensland Health employees not being paid.

As indicated in the report, Queensland Health has established the Payroll Stabilisation Project to ensure that the issues that have occurred post Go-Live, particularly pay-related issues, are addressed as quickly as possible. CorpTech is supporting Queensland Health in its endeavours to ensure that all Queensland Health employees are paid correctly.

In addition, Queensland Health has engaged KPMG to provide advice regarding the options for the Payroll Operating Model, and the development of a roadmap that describes the way the preferred model should be implemented. CorpTech will work closely with Queensland Health to action any necessary computing system changes required to support the Queensland Health revised Payroll Operating Model once approved.

Recommendations 1 and 2 – Health Payroll

1. *Queensland Health has put the Payroll Stabilisation Project in place to stabilise the current solution, address defects within the system and identify and implement improvements that can be made in current business practices.*
2. *A payroll process reengineering activity forms part of the Payroll Stabilisation Project. Queensland Health notes the suggestion regarding the simplification of award structures and pay rules. Queensland Health also notes the suggestion regarding a staged approach for the implementation of any future new business models.*

Section 2 - Queensland Health Implementation of Continuity Project

Project Governance

It is acknowledged that the governance arrangement for this project could have been improved and clarified. The transition from a whole of government implementation governance arrangement to a project governance arrangement in June 2009 did provide for a clearer focus for oversight of the project related work programs of IBM, Queensland Health and CorpTech and the associated decisions by the Project Board members.

CorpTech has reviewed the governance arrangements for the delivery of the Corporate Solutions Program which will see the establishment of revised formats for program and project boards. There will be an induction program conducted to ensure members have an understanding and sign off on their roles, responsibilities and accountabilities.

Prime Contract Management and stakeholder engagement

CorpTech agrees that there is a need to ensure that there is appropriate involvement of stakeholders. CorpTech did undertake significant consultation and engagement of stakeholders throughout the project.

Procedural changes will be made to ensure that stakeholders formally sign-off deliverables and contract variations as this will reinforce the understanding of roles, responsibilities and accountabilities.

Business Readiness Activities

The view that the QHIC Project replacement would be implemented with minimal business process change was constantly reinforced during the project through a number of artefacts:

- *IBM's original scope statement;*
- *Deloitte's Change Strategy; and*
- *IBM's Impact Assessment Completion report.*

A range of activities were put in place to ensure business readiness. These included:

- *Presentations to Line Managers and senior staff to outline the new and changed processes were held in all Districts;*
- *Line Managers were sent a "Manager Information Pack" on all new processes and forms;*
- *A DVD "Information for Managers" was sent to all Line Managers;*
- *A Payroll and Rostering intranet site was available for all staff explaining the new forms and processes; and*
- *Line Manager Updates and information sheets were provided and were available on the project's intranet site.*

Parallel and user acceptance testing

It needs to be noted that a number of testing activities were carried out including:

- *Parallel Payroll Run Test on a sample of 10% of employee population;*
- *Four iterations of User Acceptance Testing (UAT);*
- *Five iterations of Payroll Performance Validation (PPV);*
- *Several iterations of Stress & Volume testing (S&V);*
- *Two iterations of Pay Cycle Validation (PCV) tests; and*
- *Penetration testing (security assurance).*

Business Go-Live decision

The members of the QHIC Board were faced with a difficult choice of accepting the new solution with residual risks or deferring the implementation. The Go-Live decision was based on a number of factors including:

- *Advice received from IBM and CorpTech on the technical readiness of the solution;*
- *Advice from the business that the management plan for the outstanding defects was acceptable;*
- *Advice from a risk and assurance consultant contracted to provide independent assessment affirming Go-Live risk was less than continuing the project given the risk of failure of the old system, LATTICE; and*
- *Significant contractual and commercial challenges if the project was further delayed.*

Queensland Health acknowledges that there were performance issues during the processing of the first pay run, and wishes to clarify that there was a contingency plan in place. All key project participants had weekly meetings to monitor the progress of the plan. The cutover plan also included a roll back strategy for the first pay period that allowed for a roll back to the LATTICE system up to the first pay production. Also during the payroll processing cycle a number of simulations occurred to allow error correction. However, the poor system performance especially that of WorkBrain, led to a compressed payroll processing window immediately following cut over resulting in an additional backlog of adjustments.

Post Go-Live issues

Queensland Health acknowledges the comments made in relation to the post Go-Live issues. The report acknowledges much of the corrective action that Queensland Health has put in place since 14 March 2010 to address issues that arose with the implementation of the system. Queensland Health has put in place the Payroll Stabilisation Project to address business issues with the assistance of KPMG.

Section 1.1.2 Program management and governance

As previously acknowledged, governance improvements can and will be made in respect of the three programs audited.

With respect to both the ICT Consolidation Program (ICTC) and the Identity, Directory and Email Services (IDES) Program, a Benefits Management Framework is being developed in accordance with the QGCIO methodology. This Framework will identify and quantify program benefits to demonstrate significant benefits resulting from the investment being made by government in these programs.

In relation to ICTC, the following action has been taken:

External Board representation –

- *A Program Board has been reconstituted with representation from agencies (Queensland Health, Education and Training, Infrastructure and Planning),*
- *The Board's terms of reference have been revised to reflect the revised role of the Board; and*
- *The first meeting of the reconstituted Board was held on 13 May 2010.*

Formal reviews of program –

- *Four End-of-Tranche Reviews were conducted throughout the program prior to its transition to CITEC;*
- *A decision was made not to conduct a review in October 2009 as the scope and definition of the Program was under review;*
- *An End -of-Tranche Review was conducted in May 2010 by Deloittes; and*
- *Internal Audit has recently conducted a review of the procurement process, probity and governance around the Foundation Infrastructure Program tenders.*

Formal process to measure and monitor stakeholder engagement -

- *The Strategic Programs Board (SPB - internal to CITEC) reviews progress of the Program on a fortnightly/monthly basis;*
- *To date in excess of 70 workshops have been conducted on establishing a Consolidation Strategy for each agency; and*
- *Four agencies have completed Consolidation Strategy Documentation and three of these agencies have commenced detailed migration planning.*

In relation to IDES, the following action has been taken:

External Board representation –

- *The program Board has been reconstituted with representation from external agencies (DEEDI, Queensland Police Service, Department of Community Safety);*
- *The first meeting of the reconstituted Board was held on 27 May 2009; and*
- *The terms of reference have been amended to reflect the revised role of the Board.*

Formal review of Program effectiveness –

- *Reviews of the program performance were conducted in November 2009 relating to program strategy, financial analysis and operational feasibility; and*
- *The Strategic Programs Board (CITEC internal) are held fortnightly/monthly and monitor program status, milestones, risks and issues.*

With respect to the Corporate Solutions Program (CSP), program and project management controls are being enhanced and continue to progressively work towards meeting the Program and Project maturity targets set by the Public Sector ICT Development Office.

Recommendation 3

Agree with the recommendation however with respect to matters impacting either the Financial Accountability Act 2009 or the Financial and Performance Management Standard 2009 it is suggested discussions be held between the Auditor-General and the Under Treasurer.

Recommendations 4, 5 and 6

Agree with the recommendations. As previously stated, the Department is committed to the rigorous implementation of the QGCIO program and project methodologies and will work towards ensuring these methodologies are applied to these current system implementations.

Section 1.1.3 Information system security audits

The importance of comprehensive and robust controls in relation to network security is acknowledged. In addition to the establishment of a whole of Government security committee in late 2009 to improve such controls across the sector, the Department has also undertaken a review of the assessment of security controls published by the Cyber Security Operations Centre, Defence Signals Directorate, Department of Defence (CSOC) in February 2010. It is proposed to investigate the most effective prevention and detection controls identified by CSOC for application to the systems concerned. In addition, the finalisation of the Foundation Infrastructure Project (FIP) procurement phase, part of the whole-of-Government Consolidation (ICTC) Program, will also establish a supply panel for security incident detection and management tools to address this issue.

Recommendation 7

Agree with recommendation.

Section 4.1 Management and security of patient information

Queensland Health notes that the report also contains information regarding audit findings from the Queensland Audit Office's (QAO's) audit of the security of patient information which was commenced in March 2010.

Queensland Health acknowledges and welcomes the QAO opinion that the department "appears to have established a satisfactory control environment".

Queensland Health is implementing a number of the enhancements proposed and investigating further opportunities for continuous improvement, and has adopted a risk-based approach to the management and security of its patient information. The Department has sought to balance the appropriate and timely access to confidential information, for the best patient healthcare outcomes, with the need to maintain public trust in the systems used to safeguard that same information and meet legislative requirements.

It should also be noted that traditional methods of ensuring patient safety have always relied upon the vigilance of clinical practitioners, and are based on taking a comprehensive medical history and examination of the patient. This continues to be a professional benchmark to which clinicians are measured.

As the report acknowledges, there may be delays in retrieving paper based records at hospitals and this will be more of a risk after normal business hours or on weekends. Hospitals have a system in place for the delivery of records for patient treatment specifically within the Emergency Department with timeframes for delivery ranging from immediate to within 60 minutes. Doctors also have the ability to speak to colleagues at other hospitals to have relevant information provided over the telephone or faxed to them.

Queensland Health is currently investing in a significant e-Health Program, which will result in a stronger reliance on electronic records, rather than paper documents, with the associated benefits of improving access to the "right information to the right person (e.g. clinician) at the right time". The Department acknowledges the subsequent need for improved security of systems, including people, processes and technology operating effectively together, to underpin high-quality patient healthcare services. In response, Queensland Health is actively working towards planning and implementing secure information management practices which can be relied upon to meet these requirements.

It is pleasing to see that the audit acknowledges that preventative controls for external network access are in place. Queensland Health will continue to base business decisions for its information system and networks on a cost benefit and risk based approach.'

1.3.2 Department of Education and Training

The Director-General provided the following response:

I am pleased to note that the QAO has assessed that appropriate action is being taken by the Department to address all recommendations made during the 2009 audit. The Information and Technologies Branch (ITB) have made a concerted effort towards improving ICT Governance and Project Management.

Information Technology Governance

The ITS completed the Business Continuity and Disaster Recovery Plans in May. These plans are now progressing through the internal governance processes for endorsement and approval. In addition, a new Business Continuity and. Risk Unit has been established within the Application Services unit to formalise responses and ensure continuity of service to business units, schools and TAFEs.

Action has been taken to address the implementation of operational security responsibilities. An ITB information Security Committee has been initiated and is reviewing risks, Issues and business continuity and disaster recovery planning requirements.

The new Manager, Operational Security has been working with the Manager, Information Security Policy to ensure the Information Security action plan addresses both operational and policy requirements. The Operational Security Plan and draft Security Policy Action Plan are being merged into a single plan and will be presented to the ITB Information Security Committee for endorsement at the June 2010 committee meeting.

The Department's Information Security policy has been redrafted to reflect the separation of duties between policy and operational security roles. The policy is currently with the ITB information Security Committee for comment, and will be presented at the July 2010 Information Steering Committee meeting for endorsement.

Information Technology Project Management

I was pleased to note, in the follow up review conducted on the project management of OneSchool, that the QAO found satisfactory progress has been made towards implementing audit recommendations. The inclusion of all key documentation into the OneSchool Document Register and the Department's electronic document records management system is progressing and will be completed by 30 June 2010…

…The Department of Education and Training is committed, to ensuring that sound ICT governance and project management practices are in place to enable achievement of the Department's information and knowledge goal of creating a capable, agile and sustainable organisation where innovative and efficient business solutions underpin the achievement of priorities.

1.3.3 IBM Australia Limited

Relevant extracts of the report were provided to IBM Australia Limited for their information. The comments received from the company have been considered in the finalisation of this report.

2 | Queensland Health Implementation of Continuity Project

Summary

Background

On 14 March 2010, Queensland Health went live with a new payroll system (SAP HR) for the processing of payments for all departmental employees. Difficulties were experienced with the system implementation and an audit has been undertaken of the major factors which adversely impacted on the system implementation.

Key findings

- The Queensland Health payroll system has complex award structures. The system needs to address the requirements of 13 awards and multiple industrial agreements which provide for over 200 different allowances and in excess of 24,000 different combinations of calculation groups and rules for the approximately 78,000 Queensland Health employees.
- The governance structure for the system implementation by CorpTech and IBM, the prime contractor and Queensland Health was not clear, causing confusion over the roles and responsibilities of the various parties.
- Inadequate documentation and agreement of business requirements contributed to the significant increase in the system development costs and timeframe.
- System and process testing had not identified a number of significant implementation risks. Therefore the extent of the potential impact on the effective operation of the payroll system had not been fully understood and quantified prior to Go-Live.
- System useability testing and the validation of the new processes in the business environment was not performed. As a result, Queensland Health had not determined whether systems, processes and infrastructure were in place for the effective operation of the new system.
- Key system performance reports for use by CorpTech were not available during the completion of the initial payroll processing.
- Several changes to the payroll administration practices such as the deployment of a new fax server and a re-allocation of processing duties within the Queensland Health Shared Services Provider were introduced at the same time as the release of the SAP HR and WorkBrain system.

2.1 Project overview

Queensland Health pays its workforce, of approximately 78,000 people, every second Wednesday, for all work completed and allowances owing in the fortnight ending at midnight on the previous Sunday. The logistics of achieving this include having all rosters, shift changes, allowances, sick and recreation leave entered into the payroll system for all transactions up until midnight Sunday for the payroll fortnight. The actual pay run to generate and calculate the fortnightly pay commences on Sunday. This allows information to be provided to a contracted firm to produce printed payslips. Queensland Health is one of the few government departments that produce a printed payslip as not all of the department's workforce regularly use a computer. This was an employee condition agreed with the various Unions that represent Queensland Health's workforce.

Pay day occurs less than 48 hours after the pay run finishes. There is a small time period available on Monday and Tuesday mornings to perform pay run corrections and ad hoc pay runs for cases where adjustments are required due to late shift changes or missing documentation. An electronic file is produced on Tuesday and provided to the various banking institutions for employees pay to be distributed to their nominated bank accounts. While the majority of banks distribute the cash to employees' nominated bank accounts either immediately or within a few hours, it can take up to two or three days with some banking institutions.

The ability to run ad hoc pays on Monday and Tuesday morning before the electronic bank transfer file is finalised results in some employees receiving a payslip which indicates net pay that is different to the amount deposited in an employee's account. This is because the payslip has already been generated by the normal Sunday pay run. (Ad hoc pay runs do not result in the production of a new payslip. The payslip is produced in a subsequent pay run.). Ad hoc pays and differences between the net pay shown on the payslip and the amount deposited in the employee's bank account have been a normal part of the Queensland Health payroll process. In the current environment of increased uncertainty, this issue has led to an increase in the rate of errors reported by employees. Queensland Health's policy is to ensure the payment of wages closely follows the actual performance of the work. This practice is a contributing factor in the significant number of ad hoc pay runs. Figure 2A highlights the variables that affect Queensland Health's payroll.

Figure 2A – Payroll variables*

Variables	Statistics
Approximate number of Queensland Health employees paid in an average fortnightly payroll run	78,000
Average fortnightly gross payroll amount	$210m
Approximate number of individual work sites where Queensland Health employees are located (includes 183 hospitals)	300
Number of awards	13
Number of industrial agreements	5
Number of separate allowances across the awards and agreements	205
Number of different calculation groups of Queensland Health employees	223
Number of different calculation rules that can apply to each calculation group	146
Approximate number of different combinations of calculation groups and rules	24,000
Average number of 'reworks' required after each pay run in a pre-SAP/HR payroll	15,000
Approximate number of new starters and leavers in a standard fortnight	1070

*All the figures provided by Queensland Health.

As the LATTICE payroll system had a smaller defined rule set and less structure, a significant amount of manual intervention was required. Such manual intervention (referred to as rework) was open to interpretation of awards and allowances by payroll staff. Due to the limitations of the LATTICE payroll system and the underlying complexity of the Queensland Health awards and allowances, a significant number of pays produced in each pay cycle under the previous system required adjustment or rework. The final eight pay cycles in LATTICE, before cut-over to SAP HR, had an average rework rate of approximately 20 per cent of total payees. Given the high number of employees paid in each pay cycle, the burden of this rework rate was significant and the situation needed to be addressed.

In addition, vendor support for the LATTICE payroll system had expired in June 2008 and there were no viable vendor supplied technical upgrades. Queensland Health organised for extended vendor support until September 2008. This meant that legislative and other substantive payroll changes including revised payroll taxes and new enterprise bargaining provisions would not be supplied by the vendor after September 2008. Consequently, there was an urgent need for Queensland Health to replace this system.

2.2 LATTICE system replacement project

As part of the Shared Service Initiative established to design and build a whole of government finance and human resources (HR) solution, Queensland Government agencies were mandated to implement a standard software suite, including SAP HR, WorkBrain rostering software and SAP Finance. The first SAP HR system within this initiative was implemented as a pilot project at the then Department of Housing in March 2007.

Queensland Health payroll and rostering systems were selected to be the next implementation within the Shared Service Initiative. Following a tender process, IBM was selected as the prime contractor to both manage and implement systems for the remaining Queensland Government agencies within the Shared Services model. The State Government contract with the prime contractor was signed on 5 December 2007.

Key aspects arising from project included:

- Under the contract, the first phase for Release 6 of the program was for the implementation of SAP HR at four agencies and completing the implementation of SAP Finance at one agency that was then underway.
- While the prime contractor was estimating the level of work to be performed in the implementation of the SAP systems at four agencies, planning work was also underway by the prime contractor on the project for replacing the LATTICE payroll system and the ESP rostering system. The strategy for replacing Queensland Health's payroll system was to implement the Department of Housing model of SAP HR with very little customisation, and full WorkBrain rostering functionality. It was envisaged that the interim solution would be transitioned onto the whole of government solution as part of the overall program schedule.
- The initial planning and scoping of the LATTICE replacement interim solution was approved by CorpTech and subsequently undertaken and completed during November 2007 to January 2008.
- Basic rostering functions were documented in a Statement of Work (No. 12) and used as a basis for the Queensland Health implementation. In addition, basic award interpretation was built under Statement of Work (No. 5) however, a contract change request was processed to move some components of the award interpretation build to the specific Statement of Work related to Queensland Health.

- The design, configuration, build, testing and implementation specification was documented in a Statement of Work for the LATTICE replacement interim solution. This Statement of Work was approved by CorpTech on 18 January 2008, with system completion initially scheduled for August 2008 at a cost of $6.19m for work to be completed by IBM. Queensland Health and CorpTech would meet their own additional costs.
- In June 2008, IBM submitted a proposal to implement the full LATTICE replacement system for Queensland Health. This change request reset the scope and final cost of the project.
- During October 2008, detailed planning revealed that the size, complexity and scope of this phase of the program had been severely underestimated, with the consequence that its revised implementation cost estimates significantly exceeded the original tender proposal.
- A key component of the reviewed implementation approach noted by the Cabinet Budget Review Committee in August 2009 was for the prime contractor to only complete the implementation of Queensland Health's payroll system.
- From February 2008 to March 2010, the prime contractor submitted over 47 change requests which were approved by CorpTech. In general, these change requests were mainly due to the business requirements not being clearly articulated and agreed to at the outset of the project. As a result, the solution deployed for user acceptance testing continued to fail the test criteria and there were delays in the project schedule.
- The effective Go-Live date for the LATTICE replacement interim system was 14 March 2010, following approval provided by the Queensland Health Implementation of Continuity Project Board. The system implementation was over 18 months after the scheduled Go-Live date and approximately 300 per cent over the original cost budget for the prime contractor to deliver the interim LATTICE replacement solution. To date, amounts paid to the prime contractor for the implementation have totalled over $21m.
- Total program implementation costs incurred by all agencies in the development of the Queensland Health HR LATTICE replacement project are $64.5m. In addition, a further $37.5m has been paid to IBM for activities related to the whole of government system solutions.

Key aspects arising from the system implementation include:

- Difficulties in system development resulted in delays in the finalisation of parallel and user acceptance testing that impacted on the quality of testing.
- Exception reports were not provided to business for the first payroll process to determine any anomalies produced by the new system.
- No contingency plans were prepared for business cut-over and no testing was undertaken in the production environment to determine whether the pays were correct prior to the first live payroll being produced.
- Some of the Enterprise Bargaining Agreement conditions and business policies placed an unrealistic pressure on the time available for payroll processing.
- The new system has far tighter business rules for many of the processes undertaken during the pay cycle. The full impact of those stricter business rules was not identified and included in the changed business practices needed for the new system.

2.3 Audit scope

The audit assessed whether suitable controls and mechanisms were in place at the Department of Public Works and Queensland Health to support the effective delivery of the Queensland Health Implementation of Continuity Project.

The scope of this audit was to evaluate the effectiveness of the Department of Public Work's program and project management processes, and Queensland Health's processes, in relation to the business readiness of, and transition to, new systems. The audit examined:

- the operation of program and project governance processes established to monitor and control the project and related aspects of the Department of Public Work's Corporate Solutions Program
- a high level review of business process issues encountered after the system was implemented.

The audit tested project management controls at the Department of Public Works and Queensland Health, including examining:

- project governance
- contract management of the prime contractor
- user acceptance and data conversion testing
- system and business readiness at the time of the Go-Live decision
- lessons learnt that could be applied to other government projects.

While discussions have taken place with IBM, this audit did not include assessment of specific project processes and procedures undertaken within IBM. The management of IBM's role is a responsibility of CorpTech.

The audit assessed whether the information technology governance practices employed were consistent with practices outlined in international standards, and Queensland Government Information Standards. References used in the development of audit criteria included:

- *Australian Standard 8015:2005 – Corporate Governance of Information and Communication Technology (ICT)*
- *Australian Standard 4360:2004 – Risk Management*
- *ISO/IEC 38500:2008 – Corporate Governance of Information Technology*
- *Queensland Government Program Management Methodology*
- *Managing Successful Programs, Office of Government Commerce, United Kingdom*
- *Queensland Government Project Management Methodology.*

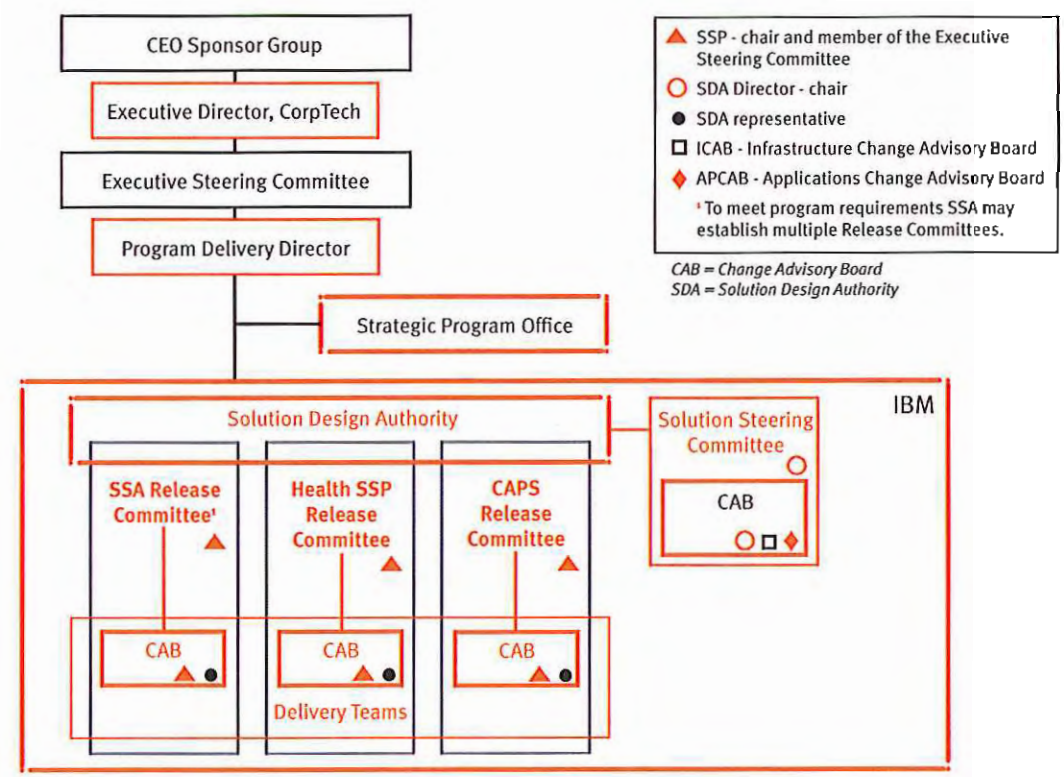
2.4 Audit findings

2.4.1 Project governance

Background

The governance structures of this project were complicated and in my view ineffective in establishing a shared understanding of stakeholder expectations in relation to the quality of project deliverables. When questioned by audit about the governance structure and the changes to the structure over the life of the project, different responses were provided by each stakeholder. Various versions documenting the governance structures were found to exist. The documented governance structure shown in Figure 2B was presented to and approved by the Executive Steering Committee (established in February 2008) on 19 June 2008.

Figure 2B – Structure approved by Executive Steering Committee

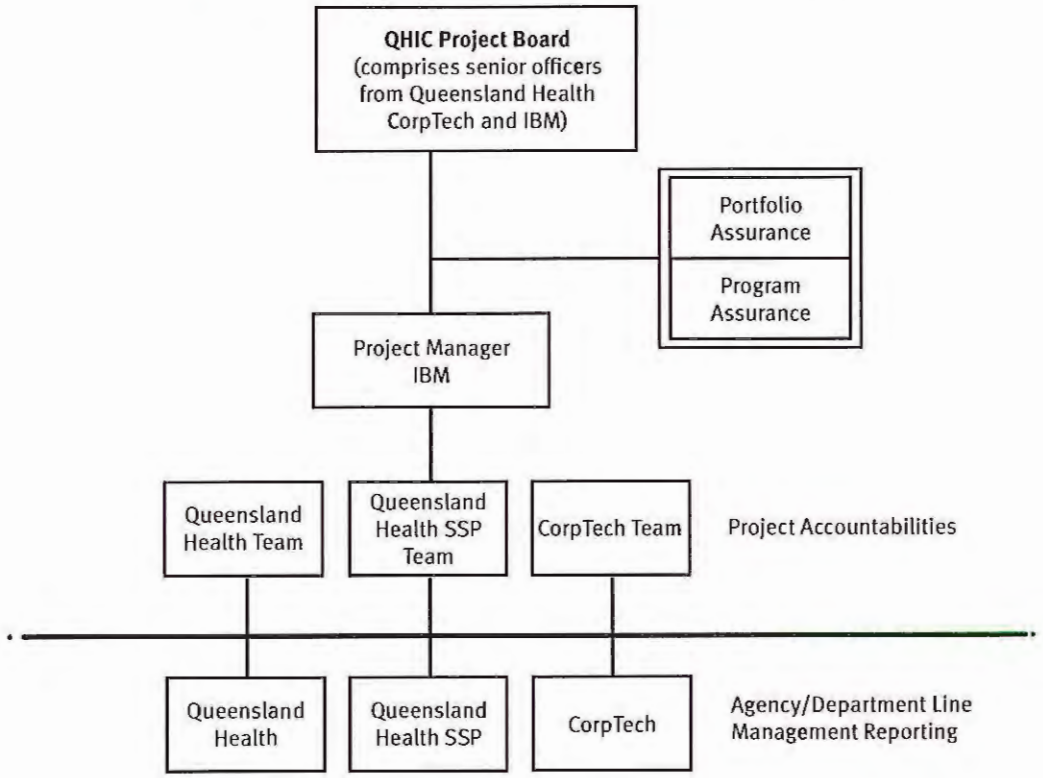


This governance structure was established to oversee the prime contractor model for the whole of government implementation. In October 2008, IBM advised that they had underestimated the size, complexity and scope of the whole of government implementation and that the revised cost estimate significantly exceeded its tendered cost and allocated funds. This later resulted in IBM's role being revised to only the implementation of LATTICE replacement for Queensland Health.

As the project progressed, it was found that the LATTICE replacement was a major project and therefore the whole of government organisational structure was not effective in controlling the Queensland Health project.

A new structure was established in June 2009, with the governing board known as the Queensland Health Implementation of Continuity (QHIC) Project Board. The Go-Live decision was made by the QHIC Project Board which became responsible for project delivery. The board comprised senior executives from Queensland Health, CorpTech and the prime contractor. Figure 2C shows the revised structure based on the documentation in the IBM contract change request.

Figure 2C – Governing structure from June 2009 to March 2010



Who was responsible?

The program delivery office within IBM was responsible under the Prime Contractor Head Agreement for the whole of government HR and finance implementation, to take responsibility for stakeholder management, resource management, quality management and scope/change control management. For each agency implementation, a project governance structure was required to be established. One governance structure was documented in a Project Execution Plan produced by the prime contractor and signed off by CorpTech. Evidence of this document being circulated to Queensland Health representatives was not recorded in the document.

CorpTech provides a whole of government role over the acquisition of information technology and is the owner of the SAP HR and WorkBrain systems. CorpTech's role was to manage the prime contract with the prime contractor and be responsible for ensuring that deliverables from the prime contractor met the required time, cost and quality criteria for the agreed scope. As CorpTech or the prime contractor did not have authority over the Queensland Health project team, the implementation of governance structures was challenging.

Queensland Health was the customer responsible for providing input to IBM in defining and negotiating business requirements and receiving the products after they met the quality criteria of CorpTech, the contract manager. The role of Queensland Health within the project included:

- to negotiate and sign off on business requirements
- to perform user acceptance testing ensuring that the system met the agreed business requirements
- to perform data conversion testing ensuring that data from the LATTICE payroll system had been completely and accurately converted to the new SAP HR and WorkBrain systems
- to train staff in using the SAP HR and WorkBrain systems
- to ensure the business readiness and action plan had been executed
- to ensure that the end user interface and system was suitable to support the Queensland Health Shared Services business model and processes.

In addition, Queensland Health was responsible for ensuring that all employees would be correctly paid in accordance with award agreements.

What went wrong?

The responsibility for implementation and effective operation of the governance structures should be performed by government agencies involved in the project. The responsibility for development and implementation of project governance structures was included in the IBM contract. It is acknowledged that CorpTech took leadership and established the Executive Steering Committee in February 2008.

The prime contractor was responsible for both managing the project and being the main supplier of services (including the establishment of business scope and requirements, developing project schedule, developing and configuring the system) to the project. Audit's observation is that this type of arrangement creates difficulties in resolving issues that arise in contract management and there is also a potential for conflict of interest.

With the exception of the Project Steering Committee and the Executive Steering Committee, there was no evidence of documented and approved terms of reference for various project related committees. Roles, responsibilities, accountabilities and authorities in relation to system ownership, data and processes were not clearly articulated and communicated to all parties at the outset of the project.

A specific project management methodology was not applied throughout the life of the project by either the Department of Public Works or Queensland Health. Coupled with the complex tripartite arrangement consisting of IBM as the prime contractor, CorpTech and Queensland Health, resulted in various parties not always being clear about their responsibilities, authority and accountabilities. As a result there was at times confusion surrounding control and approval processes of the project.

Shared Services is a complex arrangement. While numerous attempts were made to clarify roles and responsibilities, there still existed some tension between Queensland Health as owners of data and business processes, and the Department of Public Works as owner of the system.

Responsibilities for different parts of the project were shared and in my opinion, it was not clear which Accountable Officer had responsibility for the overall governance and successful completion of the whole project.

There was also disagreement within Queensland Health, as the key stakeholder agency, and the Queensland Health Shared Service Provider relating to ownership of HR and finance data, processes, and supporting systems and interfaces. This caused additional confusion among stakeholders in relation to roles and responsibilities, accountabilities and coordination.

Customer or key stakeholder buy-in has been described as a key success factor in project management, software development and implementation methodologies. The identification of the customer in this project was confusing. CorpTech signed all contract and project documents with the prime contractor. Sign-offs from Queensland Health for changes to the formal contract approved by CorpTech and project deliverables were not readily evident. For example, the conditions within contracts were signed by CorpTech, the prime contractor and the project scope document was signed by CorpTech and the prime contractor, with no documented endorsement by Queensland Health.

The project scope was not formally agreed to by Queensland Health, and negotiations over the scope occurred throughout the project, resulting in over 47 change requests. In general, these change requests were required mainly due to the business requirements not being clearly articulated and agreed to at the outset of the project. As a result, the solution deployed for user acceptance testing continued to fail the test criteria, and there were delays in the project schedule, increasing the total IBM contract price from $6.19m to $24m. The concept of a fixed price contract in order to deliver certainty over cost to government was severely compromised due to the absence of an agreed scope from all key stakeholders from the beginning of the project.

Learnings for future agency implementations

- For Shared Services systems implementation to be efficient and effective, the governance structure should cover all related parties. An end to end governance structure, including a project board, should be established at the outset of the project. The Queensland Government project management methodology should be used to guide the project through a controlled, well managed, transparent set of activities, to achieve the desired results. The membership of the project board should be carefully selected to include business transition or change managers to ensure smooth business transition occurs with the implementation of new systems.
- The governance structure, including roles, responsibilities, accountabilities and key performance indicators of all parties needs to be documented and signed by all key stakeholders. This should be approved and communicated effectively to all key stakeholders to ensure that everyone is clear about the intended outcome, how the outcomes are to be achieved and what responsibilities each party needs to fulfil in order to deliver those outcomes.
- A key component of the role of a project manager is to control the budget, schedule and most importantly, the scope of the project. In a large multi-million dollar project, it is important to implement segregation of duties between the senior supplier and the project manager to minimise the risk of a potential for conflict of interest.
- Complex relationships exist within Shared Services. Roles, responsibilities and accountabilities need to be clearly articulated and revisited throughout the life of the project to ensure there is continued clarity. The role of the Department of Public Works as the system owner needs to be exercised with rigour to ensure good practice systems development methodology is used to develop systems that can be supported and maintained efficiently. The role of the owner of relevant business processes, in this case the Queensland Health Shared Service Provider, need to be clearly articulated and exercised rigorously to ensure the smooth transition of business processes to new systems. The Queensland Health agency role as owner of their own related business processes and the party with the sole responsibility of ensuring that business outcomes are achieved needs to be clearly articulated and understood by all parties. A leadership role should be undertaken by each of the parties and any competing interests need to be resolved appropriately and in a timely manner so that the overall outcomes of the project can be achieved successfully.

- A formal and structured project organisation change management process needs to be implemented. For example, when changes are made to governance structures, it should be clearly documented, approved and communicated to all parties so that there is a shared understanding of roles and responsibilities at all stages of the project.
- In accordance with the Queensland Government project management methodology, higher risk projects need to be periodically reviewed to ensure that risks are controlled and the project is on track. To provide a mechanism for this, the project needs to be broken up in to stages. End-stage reviews can then be performed so that the Project Board and departmental senior management can monitor and assess the continued viability of the project.
- In order to implement the review process, a structured project management methodology, such as the Queensland Government project management methodology needs to be implemented. This will enable consistency in the application of project management principles and an efficient and easy review process.

2.4.2 Prime contract management and stakeholder engagement

Background

In August 2007, a review of the Shared Services implementation program known as the Corporate Solutions Program found that there were problems with the governance of the program and that the project timeframes would not be met within the original estimated budget. The review recommended that an experienced external organisation be appointed to complete the remaining system implementations required to consolidate finance and payroll systems. One of the key drivers for adopting the 'prime contractor' approach was to introduce higher certainty in both the time and cost to complete the Shared Services HR and finance implementation program.

Following a tender process, IBM was selected as the preferred contractor under this 'prime contractor' approach in November 2007. The prime contractor's responsibility was to take over the administrative role for project management, as well as the role of configuring and implementing the systems. The contract included a Head Agreement which documented the responsibilities of the parties, and that each piece of work would be conducted under a number of Statements of Works, which were appended to the contract.

It was envisaged that the HR solution for Queensland Health would be based on the Department of Housing's SAP payroll system, with minimal changes required for Queensland Health. In addition, there was the complexity of integrating the new SAP systems and the old Queensland Health finance system.

To accelerate the implementation, the prime contractor proposed the use of the WorkBrain Awards Interpreter engine, which IBM advised would significantly reduce the development effort required to configure awards. WorkBrain interprets all the conditions of employment required to pay an employee's entitlement.

The Department of Housing experience was also included in the prime contractor's contract. Specifically, the prime contractor undertook to put in place strategies in the Queensland Health project in relation to the following issues that were noted as learnings from the Department of Housing implementation. These included:

- the Department of Housing was not adequately advised of the implementation activities and did not fully understand the impact of the change.
- post Go-Live support was not adequate and large numbers of adjustment transactions were not processed prior to Go-Live.
- payroll run times were too long and effectively locked users out of the system.

All of the above issues manifested again in the Queensland Health payroll system implementation.

What went wrong?

The structure of the contract between the State and the prime contractor, managed by CorpTech, greatly contributed to the confusion of roles, responsibilities and execution of the project. As the contract administrator, CorpTech had the sole relationship with the prime contractor. This made Queensland Health's roles and responsibility as a key stakeholder in the project unclear. For example, it was noted that change request documents only contained signed approvals from CorpTech and the prime contractor, with no approval or endorsement by Queensland Health.

Stakeholder engagement was a key issue within the project. There was no process in place to ensure that Queensland Health signed off on key deliverables and therefore a shared understanding of each party's requirements was not achieved.

The prime contractor developed a statement of scope as one of the first deliverables and provided a best estimate of $6.13m to replace Queensland Health's LATTICE payroll system. The assumption was that there would be a 'like for like' replacement, using the Department of Housing's SAP system with very little customisation. Audit notes that the requirements of Queensland Health were significantly more complex than that of the Department of Housing because of the number of staff to be paid and the more complex award and rostering requirements of Queensland Health.

The prime contractor then performed more detailed analysis of the work that would be required and developed, at a cost of $0.926m, the Statement of Work for LATTICE payroll system replacement. It is noted that after $0.926m of planning, the assumptions of 'like for like' replacement and very little customisation of the Department of Housing's SAP system did not change. A fixed price contract for $6.194m was entered in to. The concept of a fixed price contract in order to deliver certainty over cost to government was not effective due to the absence of a fixed and signed off scope by Queensland Health from the outset of the project.

The prime contractor did not meet the November 2008 implementation date. There was a lack of understanding and documentation of the comprehensive set of user requirements, and a new implementation date of May 2009 was established.

However, an excessive number of high severity defects existed and the system was not stable.

June, August and November 2009 implementation dates were also missed and the system was finally implemented in March 2010. The cost estimates escalated and at March 2010, the cost of the contract with the prime contractor for the delivery of the project was estimated to be in excess of $24m. IBM advised that there was significant tension in negotiating and managing the defect categorisation and resolution. In addition, IBM confirmed that there was a lack of clarity of roles and responsibilities of various stakeholders.

The prime contractor also performed preparatory work for future implementations of the standard systems. As a result, a range of SAP libraries that CorpTech advised can potentially be used in future finance and HR implementation was delivered as part of the prime contractor's engagement.

Learnings for future implementations

- The structure of any future contracts within Shared Services needs to be carefully designed so that all key stakeholders have responsibilities assigned to them for the acceptance and sign-off of deliverables. As the Shared Services environment is complex, it is important to use structured methodology that allow for sophisticated relationships and complex co-ordination activities to be managed appropriately.
- Assumptions in the planning phase of projects need to be challenged rigorously by all stakeholders at various stages of the project.
- Statements of Works should be clearly articulated so that there is a shared understanding of both deliverables and key performance indicators.
- There needs to be tight controls over signing of scopes and requirements when entering into a contract for a third party.

2.4.3 Business requirement and scope change control

Background

The initial specification of the business requirements for Queensland Health developed prior to the request for tender was inadequate. Within a systems development life cycle, there are many opportunities throughout the project, including the planning and design phases, to verify the requirements and re-assess assumptions. However, this process did not result in corrections to the original assumptions. The business requirements and business process mapping were not documented and signed off.

What went wrong?

The underlying assumption stated by IBM in the Statement of Scope was: '*Our understanding is that there is a relatively small amount of functionality required as a minimum to make the interim solution functional for Queensland Health that it is relatively small in nature'.*[1] This assumption proved invalid mainly due to differences in the Queensland Health business requirements, including varied and complex award structures. While the Department of Housing's implementation involved 1200-1300 employees and one award structure, the Queensland Health payroll system implementation entailed approximately 78,000 employees and multiple award structures.

Another key assumption was that the solution would be a 'like for like' replacement for the previous LATTICE payroll system. This assumption proved invalid as the foundation business rules of both systems are different. For example, more rigour and discipline is required in ensuring all rosters are uploaded into SAP HR before payments are made. In addition, there were a significant number of workarounds in processing pays through the LATTICE payroll system. These included other peripheral systems, which were not included in the 'like for like' system replacement.

A planning exercise was undertaken to develop a Statement of Work for the LATTICE payroll system replacement project. This was an opportunity to challenge and revise original assumptions. These assumptions were not revised.

A fixed price contract for this work was then entered into with IBM at a cost of $6.19m. However, the scope definition document that was delivered to form the basis of this fixed price document was not approved by all key stakeholders. CorpTech accepted the scope definition deliverable to enable work to progress, leaving scope clarification to be a matter of continued negotiation through change requests. The fixed price contract clearly documented that there were open issues, and further change requests would be required to clarify scope.

It was not until September 2009, 20 months after the commencement of the project that the scope definition was formally approved by Queensland Health. The most significant change request was for an increase of $9m. This request was approved by the Department of Public Works on 30 June 2009. However, audit noted that the documentation of the scope change justifying the increase of $9m was delivered by the prime contractor after this date, on 17 July 2009, and was only formally accepted by the Queensland Health Project Directorate on 29 September 2009. Audit was advised that these time delays were the result of ongoing change requests in the interim.

When the project moved into design phase, there was further opportunity to clarify scope however, this also proved to be ineffective. During user acceptance testing, a large number of defects were identified and there was frequent tension between the parties over whether the defects were actual defects or changes in business requirements, which ultimately led to further change requests and increased project costs.

[1] Statement of Scope 1 LATTICE Replacement Design, Implement, and Deploy.

Learnings for future implementations

- Project scope is a critical component of the project initiation document within the Queensland Government project management methodology. It should be agreed upon and signed off by all key stakeholders as part of the project initiation phase.
- Business requirements should be clearly articulated, agreed upon and understood by all key stakeholders as part of the project initiation document. The business requirements and a draft contract should be included in the request for tender.
- The inherent risks with a 'like for like' replacement of one system with a different system should be analysed and managed. In particular, business process mapping needs to be performed to analyse the impact of the new system and assess how well the existing business processes, including any system workarounds, will be supported.
- A more effective contractual structure that required formal agreement of detailed design prior to system implementation would have identified a more accurate estimation of the expected costs of system implementation, prior to work being commenced.
- The Queensland Health SAP HR system being implemented as a separate instance, with a range of processes that are different from other agencies, is a clear example of the difficulties in standardising systems and processes. Large departments, like Queensland Health, need to review business processes with a view to standardising them across the department in the first instance and then, to the extent possible, with the rest of government agencies. In addition, manual processes, such as those currently used for leave applications, should be reviewed with a view to increased automation.

2.4.4 Cost control and accountability

Background

Funding of $153m was approved by the Cabinet Budget Review Committee for program costs for the implementation of new financial and human resource systems (Corporate Solutions Program) across the Queensland Government on 22 November 2007. During this program, it was initially expected that a new HR system would be implemented at four agencies, together with the completion of the financial system implementations then underway. Subject to funding, HR and finance system implementations in a further four agencies were also expected to occur.

Following detailed planning undertaken by the prime contractor, which was finalised in October 2008, a significantly reduced implementation approach was noted by the Cabinet Budget Review Committee on 21 September 2009, with the prime contractor to only complete the implementation of Queensland Health's payroll system.

Over the course of the project, CorpTech and Queensland Health were incurring, managing and monitoring their own project costs. This was in addition to CorpTech making progress payments to the prime contractor for their services.

What has the project cost?

Figure 2D provides a summary of project implementation and other program costs incurred by all agencies. The effective Go-Live date for the LATTICE payroll system replacement was 14 March 2010. The amounts paid to the prime contractor for the implementation have totalled over $21m, as indicated in Figure 2D.

An amount of $3.3m is outstanding for commitments due upon system acceptance. The Go-Live date was 18 months after the original Go-Live date of August 2008 and approximately 300 per cent over the original cost budget of $6.19m.

Figure 2D – Project implementation costs

Agency	Purpose	Amounts paid to date $m
CorpTech	CorpTech resources provided	$4.004
	Statement of Works 7 – Define the project scope	$0.576
	Statement of Works 8 and 8A – Implement LATTICE replacement	$21.029
Queensland Health	Health resources provided	$38.900
QHIC costs		**$64.509**
Paid to the prime contractor (other works)	Statement of Works 1, 2, 3, 4, 5, 6, 11, 11A, 11B, 12, 13, 15, 24, and 40	$37.449
Total costs to end of March 2010		**$101.958**

For the total cost of over $101.958m, the LATTICE replacement HR system at Queensland Health, together with a range of SAP technical libraries which could be used in future finance and HR systems implementation, have been delivered. CorpTech advised that these libraries have not translated into actual implementations at this stage.

What went wrong?

There was no one entity or officer monitoring and managing total project budget versus costs being incurred by all of the various stakeholders for the LATTICE payroll system replacement implementation. Therefore value for money and overall accountability for the project costs have not been regularly assessed and managed.

Learnings for future implementations

- In accordance with the better practices outlined in the Queensland Government project management methodology, cost estimates should be based on the project's product breakdown structure. That is, cost estimates should be dissected and outlined for each product in the product breakdown structure. These costs should then be monitored and reviewed at several points during the system implementation process. The allocation of total project funding to individual products in accordance with planned production schedules is a key control measure.
- Full project costs should be regularly reviewed and monitored by the Project Board.

2.4.5 Parallel and user acceptance testing

Background

Parallel payroll testing was performed at the same time as user acceptance testing in July 2009. This parallel test included individual pay comparisons between the LATTICE payroll system and the SAP HR system for a sample of ten per cent of employees across all employee types. Two additional parallel testing activities were performed but individual pays were not compared, rather the average of the fortnightly totals was compared. There was a $1.2m discrepancy after adjustments between the two systems after the first stage of parallel testing was conducted. The second stage of parallel testing performed in February 2010 did not include casuals and overtime and the average gross fortnightly totals difference was only $30,000. It is noted that since Go-Live, significant issues have been reported by casual staff in relation to the process of their roster and pay details.

User acceptance testing was primarily performed to enable Queensland Health users to test the end to end functionality of the system and to provide them with the confidence that the system met the business requirements. The user acceptance testing was performed over an estimated coverage of 60 per cent of the functionality of the new system, which was considered best practice by the independent software testing consultants engaged by Queensland Health. The methods employed throughout user acceptance testing included the use of automated testing tools such as Mercury Quality Centre and the execution of a substantial volume of test scripts created by business users.

Defects found during the user acceptance testing were classified against a number of severity definitions which helped the project to prioritise their resolution. These definitions were:

- Severity 1 defect – show stopper
- Severity 2 defect – major
- Severity 3 defect – minor
- Severity 4 defect – cosmetic.

During the third iteration of user acceptance testing, the Project Board agreed at their 9 July 2009 meeting to revise the defect severity definitions. This decision resulted in a number of Severity 2 defects being downgraded to Severity 3 defects. The Project Board also agreed to change the exit criteria for the fourth iteration of user acceptance testing to identifying no Severity 1 defects and putting in place a comprehensive management plan (Solution and Defect Management Plan) for Severity 2, 3 and 4 defects. The Project Board was of the opinion that a number of Severity 2 defects had acceptable workarounds and would not result in incorrect pay calculations.

These changes had a significant effect on allowing the project to pass the exit criteria for user acceptance testing. The outstanding Severity 2, 3 and 4 defects were to be resolved progressively post Go-Live with the first fixes to be implemented in production prior to the first pay run.

What went wrong?

The parallel testing to verify individual pays was conducted over eight months before the Go-Live date of 14 March 2010. Many changes were made to the system after this testing however, no further parallel tests were done to compare individual employee pays.

SAP recommended a full parallel pay run comparison between the LATTICE payroll system and the SAP HR system be planned and implemented prior to Go-Live. This recommendation was not accepted by the Project Board due to the size and complexity of undertaking this task. The Project Board assessed that there was no ability to do this on a standard pay run, and fortnightly average gross totals were compared. In making this decision, the Project Board did not implement other compensating assurance processes as to the capacity of the SAP HR system to operate as required in the processing of the departmental payroll. The absence of this level of assurance was not addressed through the preparation of specific performance reports and business contingency plans prior to the commencement of the new system.

User acceptance testing was conducted for an extensive period. It was originally planned for 11 weeks commencing from 28 November 2008, but continued during the period to 10 February 2010. Significant time was spent on testing defects rather than on developing core business processes or functions to support the system. As the business requirements were not adequately defined, there was tension over whether the failed tests were actual defects or were a change in project scope.

During execution of user acceptance testing, a significant number of defects were identified. Four iterations of user acceptance testing were carried out, with each attempt revealing many defects and user acceptance testing not meeting exit criteria. It is important to note that each iteration of user acceptance testing was performed within tight timeframes. In addition, the Project Board agreed to revise the definition of Severity 1 and Severity 2 defects that must be fixed prior to Go-Live to those defects affecting 'pay only', to help the project to pass the exit criteria for the fourth iteration of user acceptance testing. A defect management plan including manual workarounds was developed to overcome the impact of the outstanding defects.

A testing specialist company was engaged by Queensland Health and was responsible for overseeing the management of user acceptance testing. In their completion report presented to the Queensland Health Project Directorate, they made the observation that there were too many functional defects in a system that was handed over as ready to Go-Live. In addition, they commented that planning and execution of testing was inefficient due to the drive to fix defects and perform testing in parallel.

In January 2010, the testing company concluded the rollout could either be delayed until a full system and integration test was conducted or to accept the risk that functional scenarios not tested may not perform as expected. On 22 January 2010, the Project Board agreed to formally exit the fourth iteration of user acceptance testing and move onto technical cut-over activities.

Learnings for future implementations

- Considering the number of defects identified in the eight month period prior to Go-Live and the subsequent changes to the system, there should have been an additional parallel test performed to compare individual pay results for a sample of employees.
- Business requirements, functional specification and technical design documents should be clearly documented and signed off. These should be used as the basis for preparing test plans.
- Adequate time should be allowed for data preparation and data migration.
- A more detailed risk analysis should be performed and documented prior to changing ratings on user acceptance criteria.
- Strict change control procedures should be implemented so that a stable user acceptance testing environment can be maintained for its duration.
- System useability testing of end to end business processes is absolutely essential in implementing a payroll system of this size and complexity. This testing would ensure that those users who prepare data for entry into the system are also involved in the testing phase and the system is tested in the environment similar to that in place once the system is implemented.

2.4.6 System Go-Live decision

Background

After user acceptance testing exit criteria were met, the project moved into cut-over activities. These cut-over activities formed the basis for the final decision to Go-Live with the new system. The Project Board responsible for the Go-Live decision assessed that the three specific 'gates' and associated criteria were achieved in order for the system to Go-Live. The first gate was the approval to proceed to technical cut-over, followed by the gate to proceed into business cut-over and finally the gate to proceed to Go-Live.

What went wrong?

While a small number of criteria were not completed, the Project Board, on advice from the Project Directorate, agreed to progress to technical cut-over on the basis that these criteria were manageable risks and could be completed in time for the final Go-Live. A full risk profile and subsequent mitigation plan were created by the Project Directorate and presented to the Project Board for approval. However, the risks were not quantified to indicate the extent of the problem, should the risk materialise, that is, how many or what category of staff may not be paid.

Recommendations for action in relation to the performance of WorkBrain were made and the risks relating to the scalability of WorkBrain were also accepted.

Outstanding defects were transferred to the Defect and Solution Management Plan with critical fixes to the code to be migrated into the production environment after the system went live, and before the first pay run. It is not considered good practice to migrate code fixes into the production environment prior to the business cut-over. This increased the risk that the live system could become unstable, as only limited testing can be performed within a short period of time.

Learnings for future implementations

- Outstanding defects should be carefully considered with a risk and impact analysis to be performed for each defect. The risk should be quantified so that appropriate contingency plans can be developed and implemented.
- System performance issues should be actioned and properly tested, especially in systems that process large volumes of data.
- Post Go-Live code changes should be subjected to rigorous testing prior to business Go-Live until the system is stable and operating effectively.

2.4.7 Business Go-Live decision

Background

It has been noted that significant rework has occurred as normal business practice within Queensland Health's payroll processing. For example, in the eight pay periods prior to Go-Live, there was approximately 20 per cent rework of pays to ensure that pays were correct and in accordance with the Enterprise Bargaining Agreement. Staff were familiar with the LATTICE payroll system reports and the subsequent workarounds therefore recognising rework requirements and the subsequent procedures were performed as a routine task under the LATTICE payroll system.

A number of different forms are used by districts for time sheets and rosters. Payroll staff using the LATTICE payroll system were familiar with these forms, therefore data entry was reasonably efficient in the LATTICE payroll system. The lack of familiarity of payroll staff with the changes resulting from the new system contributed to the slow processing that was experienced in the first few pay runs.

What went wrong?

Exception reports were not provided to business for the first pay run to determine anomalies in individual pays. In addition, staff were not familiar with the new system and procedures. As a result, anomalies in pay were not identified or rectified in time. Exception reports are now being produced and more checking is occurring to identify issues and make alternate arrangements for paying affected staff. A Payroll Stabilisation Project has been established for this purpose.

There was no contingency planning for business cut-over. For example, there was no planning to test for different categories of staff or awards in the production environment when the system went live to determine whether the pays were correct and then subsequently, for handling 'no pays' or 'incorrect pays' should this risk materialise. These processes have now been put in place through the Payroll Stabilisation Project.

Queensland Health processes in relation to preparing data for input into the system are dispersed across the State. A number of different forms for timesheets and rosters are used by various districts and sent to the Queensland Health Shared Service Provider for processing. The forms are not standardised therefore, with a new system that had a different 'look' and 'feel', the process of data entry became slower.

Some of the current Enterprise Bargaining Agreements put unrealistic pressure on the time available for payroll processing. Some awards are complex and not able to be interpreted fully by the system, requiring an increased number of workarounds and adjustments which need to be made in each pay cycle within the short period between the pay run and the time that the pay needs to be banked. There are also 24,000 different combinations of how Queensland Health staff can be paid.

There were significant pressures on the Queensland Health Shared Service Provider to process payroll transactions for the first pay under the new system within a reduced processing window of one week instead of two weeks. Although the processing window for the first use of a new payroll system would normally be reduced, the need for the implementation of some system changes to address anomalies identified in testing further reduced the effective time available for data entry for the first pay run. This resulted in a significant backlog of unprocessed transactions at the time the system was implemented on 14 March 2010.

The new system has strict business rules and does not allow processing to continue unless there is compliance with these rules. For example, 'no roster, no pay', was a key message sent out to payroll processing areas and yet there were still a number of rosters that had not been entered into the system prior to the Go-Live implementation. Also, if the rostered hours are more than award requirements, the roster will be rejected. This issue is referred to line managers who must change the rosters before they can be re-entered into the system. Additionally, if staff movements and new hires are not processed in SAP HR, a valid roster could not be generated in WorkBrain. These activities are time consuming and have contributed to the continued backlog in payroll processing.

Learnings for Queensland Health and future implementations

- Trial pay runs and exception reports are key internal controls and should form an integral component of system development and implementation along with the related business processes.
- A production testing plan should be put in place and performed alongside normal operations, after Go-Live for a pre-defined number of cycles to ensure accuracy and completeness of the system results. Critical systems implementation like payroll should have extensive business continuity plans developed and implemented prior to Go-Live.
- Processing backlogs should be minimised prior to Go-Live with a new system. This was a key issue which also impacted the Department of Housing implementation.
- Queensland Health payroll processes, including forms, need to be reviewed for consistency. Processes should be automated as much as possible to improve efficiency. For example, other government departments have implemented Employee Self Service, which allows for simple tasks like leave applications to be completed on-line.
- Consideration needs to be given to simplifying the award structures so that they can be fully automated. The number of payroll calculation groups and pay rules should also be examined with a view to reducing the number of different combinations in which an employee can be paid. This will increase the effectiveness and efficiency of the payroll process.

2.5 Post Go-Live issues

There are a number of serious issues which existed at the time of implementation of the system on 14 March 2010 which have or are in the process of being addressed by Queensland Health. These include:

- The rostering system had serious performance issues during the processing of the first pay run. It was running slowly in some regional centres, significantly increasing the time taken to load employee rosters. A defect relating to the performance of WorkBrain when publishing rosters was identified as a Severity 2 defect but downgraded to Severity 3 in the defect management plan. This defect had not been fixed prior to Go-Live, but has since been fixed. It was found to be a contributor in slow WorkBrain performance at the time of Go-Live.
- Rostering to payroll integration issues resulted from slow system performance. The system has now been adjusted and there has been some improvement in performance.
- Overnight batch jobs were taking longer than expected, and larger than expected numbers of records were being processed, reducing the available time for Queensland Health staff to enter payroll adjustments. This batch processing time is now being monitored closely and has been improved in order to complete processes within acceptable timeframes.
- Due to payroll processing issues, there was a backlog of exceptions, new starters, terminations and staff movements to be processed by the Queensland Health Shared Service Provider. The backlog is currently being addressed through the Payroll Stabilisation Project.
- The Queensland Health Shared Service Provider changed some key business processes as part of Go-Live of the system, including the introduction of new fax servers to transmit roster information to the payroll processing hubs and separating employee duties between rostering and payroll systems. These issues had the effect of reducing the ability of Queensland Health regional staff to respond quickly to local pay queries and issues from staff.
- There was incorrect classification of some employees within the SAP HR enterprise structure and calculation groups. If an employee was not in the correct enterprise structure and calculation group, the employee would not have been paid correctly. This issue has now been addressed.
- There were some data conversion issues whereby temporary employees did not have their employment end dates updated and these employees did not get paid. This issue has now been addressed.
- A sample of the payroll anomalies identified by Queensland Health staff since Go-Live has been reviewed by audit. These anomalies have occurred in a pressured environment where the number of payroll staff has been significantly increased in a relatively short period of time to address the workload volume. The causes of the issues generally related to:
  - Adjustments not being processed prior to a pay run due to the work backlog at the Queensland Health Shared Service Provider. The pays for subsequent periods have then been incorrect until the adjustment notification is processed and corrections made for the whole period.
  - Roster and other pay adjustments being incorrectly processed into the system due to a number of causes.
  - Manual adjustments to reflect non-standard payment conditions being made incorrectly due to error.
  - Difficulties in the interpretation of award and roster provisions and their application for individual employees whose entitlements may vary from period to period.

  - Difficulty for staff in understanding the complexity of the information contained in the payslip.
  - The lack of clarity for some staff about the implications of the ad hoc pay arrangements and the reconciliation between the receipt of payment in one pay cycle and the related payslips which are received in a different pay cycle.
- It has been noted that the post Go-Live governance structures lack a clear end to end process focus which can make decisions at a whole of program level to ensure proper accountabilities for resolution of business issues, technical system modifications and management of the prime contractor in the post Go-Live environment.
- It is noted that CorpTech is pursing remedies available to the State under the contractual arrangements with the prime contractor for this project.

The Payroll Stabilisation Project has addressed a range of issues resulting in inaccurate payments to staff. The extent of incorrect payments to individual staff continues to be identified. Action to identify and correct these payments is expected to continue for some time. The audit of this action will be a significant issue which will be further examined during the finalisation of the auditor's opinion for the 2009-10 financial statements for Queensland Health.

3 | Program management and governance

Summary

Background

Program management is the coordinated organisation, direction and implementation of a group of projects and activities that together achieve the outcomes and realise benefits that are of strategic importance. The projects in the program should be managed in a coordinated way to obtain benefits and a level of control not available from managing the projects individually.

Programs should be designed to deliver both outcomes and benefits. Outcomes are delivered through implementation of project outputs and may eventually lead to benefits such as improvement in performance or capacity. Program management requires resourcing with appropriately skilled and experienced individuals, in order to take on the responsibilities and carry out the management activities involved in successful performance.

Key findings

- Program management at Department of Public Works: The audit of three major programs examined at Department of Public Works found that the Queensland Government Program Management Methodology was being progressively implemented. However, all programs were behind schedule and governance of the programs needed improvement. The implementation of governance processes that are visible to key stakeholders will improve the transparency of decisions made and ensure that management action can be taken at key points in the program. In addition, whole of government programs need to have comprehensive benefits management frameworks and processes in place to measure and report overall business value achieved by the Government.
- Information technology project governance and project management at Department of Education and Training: Following the 2009 audit, information technology governance at Department of Education and Training is developing with the initial steps for the establishment of a governance framework being undertaken. The implementation of recommendations to improve OneSchool's project management is progressing satisfactorily with action taken to address all issues.

3.1 Program management at Department of Public Works

3.1.1 Audit overview

Large corporations and government have recognised the need to define program management methodologies to ensure related projects deliver synergies and tangible business benefits. Historically, information technology related programs and projects have experienced a high failure rate and so are of significant interest.

A program often consists of several inter-related projects with each project designed to deliver a specific capability. Effective program management entails the coordination of a number of projects and oversees the realisation of the benefit from the investment, such as ensuring the right capabilities are delivered and are integrated into the organisation.

The governance and management controls of three programs at the Department of Public Works were audited as at February 2010. The Queensland Government Program Management Methodology was used as a good practice benchmark against which each of the programs was assessed. These programs were established to manage expenditure of approximately $545m in information technology related capabilities. The programs were initiated with the expectation of significant financial savings and other benefits to government.

3.1.2 Audit opinion

Overall, the audit found that the Queensland Government Program Management Methodology was being progressively implemented. However, all three programs were behind schedule and the governance needed improvement. Key mechanisms to ensure that the programs remained viable, and that government obtained the full benefits from the investments, were not fully implemented. As a result, the department could not demonstrate to audit whether the government would realise the full benefits, including savings that were expected from the estimated $545m of expenditure.

In particular, the governance frameworks for two of the programs were established at the business unit level and were largely focused on implementing the technology rather than delivering whole of government business outcomes. In addition, the program boards of these two programs did not include representative stakeholders that had the authority to drive the program forward and to enable the necessary end to end business transformation. This also resulted in a lack of transparency in relation to reasons for key decisions and the way that these decisions would impact on client agencies.

The governance structure for the third program was set up differently, with more input from the client agencies on business outcomes. However, from a program perspective, it appeared to be a series of separate projects rather than a coordinated program. This program has undergone significant changes in its delivery methods and this has resulted in significant delays in achieving outcomes. During the audit, it was noted that management had recognised and was committed to strengthening the governance arrangements for the next phase of this program.

3.1.3 Audit scope

The objectives of the audit were to determine whether appropriate governance and management controls were implemented over three major programs. The main focus was to ascertain whether processes existed to ensure corresponding benefits were realised from the major investments.

The following programs were examined:

- ICT Consolidation Program (ICTC), previously known as the Technology Transformation Program (TTP)
- Identity, Directory and Email Services (IDES)
- Corporate Solutions Program (CSP).

The scope of the audit did not include examining the probity of procurement decisions made as part of managing these projects.

3.1.4 Audit findings

While each of the programs were established to achieve different outcomes, the governance issues noted were similar across all three programs albeit at varying degrees of significance within the range of control aspects that were audited. The key findings included:

- Each program was delayed from its original completion date, as shown in Figure 3A. It should be noted that all of the programs have changed direction, scope and methods of delivery since inception, this has contributed significantly to the delays.

Figure 3A – Completion dates of programs audited

Program	Program description	Original completion date	Current estimated completion date
ICTC (formerly TTP)	CITEC managed program to establish foundation infrastructure to enable whole of government consolidation of CBD data centres, networks and infrastructure services.	July 2010	October 2011
IDES	CITEC managed program to deliver whole of government email, identity management and authentication service.	December 2009	June 2011
CSP	CorpTech managed program to implement whole of government finance and HR systems and system support processes.	2006	2015

- Many of the controls within all three programs were typical of a project management scheme to manage schedules, capabilities and costs.
- The governance of investments at the program levels was insufficient to demonstrate that the delivery of benefits, including savings to government, was a key driver within the programs. The baselines, recording, monitoring and reporting of benefits did not form part of program documentation. In addition, there was no evidence of a correlation of the savings to costs incurred in achieving those savings.
- The ICTC program had undergone significant changes after its original business case was documented. A financial assumptions paper was prepared for the program and approval was obtained from the Treasurer for an outlay of $44m for the program. However, a formal business case was not developed and presented to the Cabinet Budget Review Committee.

- Program boards for ICTC and IDES did not include stakeholder representatives that had the authority and responsibility to drive the program forward and to deliver the business outcomes and benefits at a whole of government level.
- While project reviews were performed, there were no regular reviews of the effectiveness of program level controls.
- Risk management processes in terms of scope, consistency and executive management reporting were not consistently applied across each of the three programs.
- While the program governance structure did not include sponsoring groups, Department of Public Works was in the process of implementing new governance arrangements to support the whole of government ICT strategy (*Toward Q2 through ICT*). The department informed that one of the sub-committees within this governance structure would be empowered to ensure the alignment of the programs to whole of government strategic objectives and to confirm the successful delivery and sign-offs of the programs.

3.1.5 ICT Consolidation Program (ICTC)

Program background

In response to the Service Delivery and Performance Commission's Report on *ICT Governance in the Queensland Government (October 2006)*, (SDPC Report), a business case was developed for full consolidation of the government ICT environment. The funding outlay for full consolidation was considered to be high, and in 2008, the Cabinet Budget Review Committee requested an accelerated technology consolidation program that would return savings to government. The aim of the ICTC program was to establish the foundation infrastructure to enable whole of government consolidation of CBD data centres, networks and infrastructure services. The program was expected to run for two years and to deliver recurrent benefits of $8.2m from July 2010. In the meantime, the government acquired a new data centre and the ICTC program focussed on implementing a transitional network that would enable use of the new data centre.

The program includes the following projects:

- Organisational change management – preparing departments for consolidation by facilitating people management and associated industry engagement.
- Consolidation planning and transition – planning and executing migration to the consolidated environment using roadmaps and application renationalisation tools.
- Foundation infrastructure and procurement – planning, buying and building the products that deliver whole of government consolidation.

In September 2009, the ICTC program was transitioned to CITEC from the Office of Government Chief Information Officer to continue implementing the government's ICT consolidation agenda, with an expected timeframe of two years to October 2011. When the program was revised, it was not clear whether the monetary benefit of $8.2m was still achievable. This was because future costs that CITEC was expected to charge clients had not been determined.

The original program had a budget of $44m approved by the Treasurer. At January 2010, program funds spent were $12.17m ($9.34m in operating expenditure, and $2.83m in capital expenditure). Audit was advised that the program was expected to be completed within the original financial budget, but with an extended timeframe.

Audit findings

In its current form, this program is not designed or structured to achieve full technology consolidation. While a new data centre and a transitional network was established, significant work was still to be performed to further consolidate various layers of technology, and to gain agency uptake for those services. The direction of the current program was to implement infrastructure that would enable agencies to consolidate and rationalise their ICT environment at their own discretion.

- An approved business case that clearly identified the benefits to be realised could not be identified. The program was expected to realise benefits of $8.2m annually from July 2010. However, as at January 2010, there was no method of identifying, recording, tracking and reporting demonstrable financial benefits for the ICTC program.
- An ICTC program board was being established at the time of audit. A program board with adequate stakeholder representation, that had the authority to drive the program forward and to deliver the outcomes and benefits, was not in place since the program began in June 2008, and subsequently transferred to CITEC in September 2009.
- There were no formal reviews of the program being performed at regular intervals since the project was transitioned to CITEC. The reporting of program costs did not contain sufficient detail to match milestones compared to funds spent. In addition, there was no evidence of a formal process to measure and monitor stakeholder engagement.
- A clear set of measurable benefits expected to be realised were identified at a program level. However, specific measures had not been defined, and there was no benefits management plan to consolidate benefits measures for all stakeholders impacted by the program. It was also identified that benefits reporting focused on agency uptake of the program's solution, and not on benefits to stakeholders of the program. Consequently, the benefits analysis did not directly link to the program benefits.

3.1.6 Identity, Directory and Email Services (IDES)

Program background

The IDES program aims to deliver a whole of government email, identity management and authentication service, managed and operated by CITEC, to facilitate secure access to data and applications for Queensland Government employees across the State.

The IDES program was created in response to a recommendation in the SDPC report in 2006 that identified the need to examine the costs and benefits of taking a shared approach to the delivery of various 'essential ancillary services' including: identity and directory services, authentication, security certificates and email services. A business case for IDES was completed by the Department of Public Works in October 2007. It identified that estimated savings of $123m could be achieved over ten years, compared to the cost of agencies operating on separate platforms.

Cabinet approved expenditure of $252m over ten years for the IDES program in December 2007. At this time the program was transferred to CITEC for implementation.

Audit findings

The IDES program is a key program for the Queensland Government in driving efficiency through ICT. It is imperative that on a program of this size and significance that strong program governance controls are operating to ensure that management action can be taken at key points in the program and that the program remains on track. Controls over governance and benefits realisation need to be improved to ensure that the program delivers both the expected capability and benefit to Queensland Government.

- IDES was expected to transition all existing Microsoft Exchange agencies to the whole of government platform within 24 months (i.e. by December 2009). Delays were experienced and the program's expected completion date was extended to June 2011. The implementation phase plan was originally expected to be completed and approved by 8 December 2008. However, actual delivery of this milestone occurred on 18 September 2009.
- The funding for the program's costs of $252m was sourced from CITEC fees to agencies from using the new service offering, and a loan of $45m to cover the shortfall from fees collected and program costs within the first three years of the program. As a result of delays in implementation, losses would also be incurred in year four. However, the loan was expected to be repaid with interest within nine years, from revenues collected for the new service offering to agencies. This was based on the assumption that IDES would deliver 80,000 seats by June 2011.
- As at January 2010, the IDES program had recorded expenditure of $14m. The original business case expected expenditure within the first three years of the program (2007-08 to 2009-10) to be $43m. The department reported that the significantly lower level of expenditure than originally expected was related to the delays the program had experienced.
- While processes were in place for progress reporting and monitoring, there was no program board with adequate stakeholder representation that had the authority to drive the program forward and to deliver the outcomes and benefits. Changes to the program's schedule were not made in accordance with the program's change control process. As a result of the lack of stakeholder representation on the governance board, only CITEC was involved in decisions regarding the program's schedule. In addition, there were no formal, regular reviews being performed of the program's effectiveness over processes relating to risks, issue, benefits, and program management activities.
- The governance framework in place at the time of audit was focused more on delivering capability, rather than delivering capability and benefits. A good framework for the management of benefits realisation was identified for the IDES program, with clear linkage between benefits, investment objectives, benefits measures, changes required to realise the benefits, and a documented Benefits Realisation Plan. However, the effectiveness of this process was limited as baseline and target measures were not defined for each stakeholder. As a result, it was not clear when and how benefits were expected to be realised, and whether the magnitude of benefits initially expected to be realised remained realistic.
- As the governance arrangements did not include the role of a Business Change Manager, the CITEC Board that was in place for IDES could not drive the delivery of both capability and benefits. Under such arrangements, there is a risk the program may deliver on capability that may not translate into benefits.

3.1.7 Corporate Solutions Program (CSP)

Program background

In August 2005, the Shared Services Solution was established to design and build a whole of government finance and HR solution with a capital budget of $125m. This budget was later revised to $190m in 2006 and then to $249m in 2007.

The original business case for the Shared Service Initiative projected annual savings of $100m once fully implemented. Full implementation would represent one standard finance and HR solution supported by standard business processes. Implementation of a standard solution across all departments proved to be a slow and challenging process. The original implementation date was 2006, but due to the size and complexity of the finance and HR solution, timetables were adjusted.

A review of the program commissioned by the Shared Service Program and Policy Office in 2007 identified that there were problems with the governance of the program and that the project timeframes would not be met within the original estimated funding requirement. Following a tender process, IBM was selected as the prime contractor and funding of $153m was approved by Cabinet Budget Review Committee for Phase 1 of the Corporate Solutions Program (CSP) in November 2007.

During Phase 1 of the program, it was expected that a new HR system would be implemented for four agencies and the finance system implementation that was then underway would be completed. Subject to funding, HR and finance implementations in a further four agencies were also expected to occur. In September 2009, the prime contractor's role was changed to only include the replacement of Queensland Health's payroll system.

A revised implementation approach was developed. This proposed approach changed the program direction from a single standard HR and finance environment to a multiple-systems HR and finance environment. The key components of this approach included:

- the prime contractor to complete the implementation of the Queensland Health Payroll system
- Department of Education and Training to remain on its existing HR and payroll system
- consolidation of existing agencies to a smaller number of supported HR and finance systems.

As at March 2010, 12 implementations of the new finance system and one implementation of the new human resource system were completed. There were eight Legacy SAP systems, four Aurion payroll systems, three LATTICE Payroll systems, and one TSS payroll system still to be consolidated. In addition, separate instances of SAP and Aurion were maintained by CITEC as its business systems. These systems are shown in Figure 3B. At the time of this audit, a program roadmap in line with the new direction was being developed.

The $100m in annual savings originally expected to be realised by 2006 are expected to be achieved by 2012-2013.

Figure 3B – Systems implemented by Shared Services

System instance	Communities	Community Safety	Education and Training	Employment, Economic Development and Innovation	Environment and Resource Management	Infrastructure and Planning	Justice and Attorney-General	Premier and Cabinet	Public Works	Transport and Main Roads	Health	Police	Treasury
ECC5	✓	✓	✓	✓		✓	✓	✓				✓	
ECC5 HR Health											✓		
SAP 3.1i PWP									✓				
SAP 4.6C CSA	✓												
SAP 4.6C HQP	✓												
SAP 4.6C CSP				✓	✓				✓				
SAP 4.6C TPP										✓			
SAP 4.6C CITEC									✓				
SAP 4.6B QTP				✓					✓				✓
SAP 4.6B Health											✓		
Aurion – ACE				✓	✓	✓	✓	✓					
Aurion – DPW									✓				
Aurion – DET				✓									

System instance	Communities	Community Safety	Education and Training	Employment, Economic Development and Innovation	Environment and Resource Management	Infrastructure and Planning	Justice and Attorney-General	Premier and Cabinet	Public Works	Transport and Main Roads	Health	Police	Treasury
Aurion – QPS												✓	
Aurion – CITEC									✓				
TSS			✓										
LATTICE – Corrective Services		✓											
LATTICE – Emergency Services		✓											

Audit findings

To maximise the value proposition within Shared services, the concept needs to be better understood at all levels within agencies and Shared Service Providers. It has been approximately eight years since its inception and there are still a number of different systems. A recent implementation of Queensland Health Payroll was a separate instance of SAP HR. With all the problems that have been experienced during the implementation, it is unlikely that Queensland Health payroll will be migrated to a whole of government solution. It is understandable that there are complexities in implementing a single system for all agencies. However, continuous effort needs to be made in agencies examining their business processes and business rules, with a view to simplifying and to standardising them across the agency in the first instance and then, where possible, across government.

In addition, the following was noted:

- *Visibility of program-level risks to key stakeholders* – Program-level risks specific to CorpTech were only visible to CorpTech management and were not monitored by a governance board that had representation from key stakeholders.
- *Documentation of program-level controls* – The monitoring and control processes for the overall program had not been consolidated into a formal program plan.
- *Benefits realisation process* – There was no overall management of benefits realisation to identify, track and report total program benefits, including benefits to stakeholders and benefits to CorpTech as a service provider.
- *Program reviews* – Whilst project reviews did occur, there were no formal, regular reviews being performed of the effectiveness of the overall program's processes reported to a governance board with stakeholder representation.
- *Stakeholder engagement* – The communication plan for the program did not adequately address how the program would engage with stakeholders. In addition, the plan was not formally approved by management.

Given the magnitude of the CSP and its significance to the whole of government, stakeholder confidence in the program is key to its success. Implementation of governance processes that are visible to key stakeholders will improve the transparency of decisions made and ensure that management action can be taken at key points in the program.

3.2 Information technology project governance and project management at Department of Education and Training

3.2.1 Audit overview

In early 2009, a high level audit was performed of information technology governance processes at the Department of Education and Training. It was extended to include a follow up of a prior year audit on project management within the OneSchool program. The audit identified that an information technology governance framework across the department had not been documented. As a result, there was no shared understanding of the roles, responsibilities and accountabilities of the various stakeholders including the department's Shared Service Provider, Corporate and Professional Services.

A follow up audit has been performed to ascertain the status of the implementation of prior year audit recommendations relating to information technology governance and the OneSchool program. In May 2009, the department restructured the delivery of corporate services and Corporate and Professional Services, Department of Education and Training's Shared Services provider, was disbanded. The information technology function previously provided by Corporate and Professional Services now form part of the Department of Education and Training's Information and Technologies Branch.

3.2.2 Audit opinion

Appropriate action is being taken by the Department of Education and Training to address all the recommendations made during the 2009 audit. Specific action taken by the department in relation to information technology governance and OneSchool's information technology project management is discussed below.

Information technology governance

Information technology governance at the Department of Education and Training is still at the developing stage. The initial steps for the establishment of an information technology governance framework have been undertaken, including documentation of the framework and the creation of governance committees. Implementation of some aspects of the framework was in progress, as shown below:

- A role has been created for the coordination of information technology related business continuity however, the information technology Business Continuity Plan and Disaster Recovery Plan were not finalised. Audit was advised that changes to the Department of Education and Training's organisational environment during the third and fourth quarter of 2008-09 impacted on the release of these documents.
- Regular Information Security Committee (ISC) meetings were held quarterly. Reporting to the ISC commenced on the key areas of risks, security, information technology spend and key projects. The ISC had only received one report at the time of the audit.

- Roles were created to segregate the management and operational functions of security however, the implementation of operational security responsibilities and the compliance function had not occurred. An action plan addressing the implementation had been developed but was pending approval by ISC.

The 2009 audit resulted in eight issues, including 18 audit recommendations, being raised with management. The overall status of the implementation of the audit recommendations by the Department of Education and Training is as follows:

- Five recommendations were implemented and one recommendation partially implemented. The implementation of these recommendations addressed weaknesses in relation to project management, business continuity planning and security management.
- Issues relating to six recommendations were re-raised during this follow up audit. Management advised that they were in the process of implementing these recommendations. These related to information technology business continuity and disaster recovery planning, project portfolio management, the effectiveness of the information steering committee and the implementation of operational security processes.
- No conclusion could be made on the operational effectiveness of the remaining six recommendations as enough time had not passed to allow gathering of appropriate audit evidence.

Information technology project management

In mid 2008 a high level audit of OneSchool was performed against better practice project management principles. The audit highlighted that the OneSchool's governance framework could be enhanced through improving controls relating to scope, time, cost and quality. Seven issues, including 18 audit recommendations, were raised as a result of the audit. The follow up audit in 2009 had identified that 11 recommendations remained outstanding.

Satisfactory progress is being made by the Department of Education and Training on implementing the audit recommendations. The overall status of the implementation of the audit recommendations is as follows:

- Six recommendations were implemented and one recommendation was in the process of being implemented. The implementation of these recommendations addressed weaknesses in relation to the project governance structure and the creation and approval of key project documents.
- An issue has been re-raised in relation to key project documentation that could not be located within the OneSchool Document Register. This recommendation was in the process of being addressed.

For the remaining three recommendations about project status reporting, quality management of supplier contracts and project variations, no conclusion could be made on their operational effectiveness as sufficient time had not passed since their implementation to enable the gathering of appropriate audit evidence.

4 | Information security

Summary

Background

Information systems are relied upon for efficient and effective service delivery. Security of information within these systems and infrastructure are integral components of day-to-day business.

Information security means protecting information and information systems from unauthorised access, use, disclosure, disruption, modification or destruction.

Key activities

- Patient information security at Queensland Health: Suitable systems and frameworks are in place to ensure effective safeguarding of patient information however, some control gaps were identified that could impact on the security and privacy of patient information.
- Information technology network security: Although all eight entities had acted to improve network security following the 2009 audit with 34 per cent of the issues now resolved, action has yet to be taken on a number of significant recommendations. Urgent action is needed to address these issues.

4.1 Patient information security at Queensland Health

4.1.1 Audit overview

Patient information plays an essential role in Queensland Health's service delivery, including planning and decision making, patient consultation, treatment and clinical practice and research. The effective safeguard of this information is therefore vital to the service that Queensland Health provides to the general public and helps to sustain confidence in the public health system.

To improve the effectiveness of service delivery, Queensland Health is shifting its focus to enterprise wide systems and an integrated health system (including internal and external working partnerships) through various initiatives including the e-Health program. It is anticipated that this will improve service delivery but will require enhanced information system environments with additional layers of complexity, increasing the need for improved security of the systems holding patient information. The increasing dependence on computerised medical records will also require Queensland Health to provide assurance that their systems are resilient in the presence of a fault or other adverse event.

The *Queensland Information Privacy Act 2009* (The Privacy Act) provides a right for individuals to access and amend their own personal information and provides rules for how agencies handle personal information. In accordance with the Privacy Act, special provisions are included for Queensland Health to comply with the National Privacy Principles. Prior to 1 July 2009, the mandatory principles of *Queensland Government Information Standard 42A* provided for similar requirements.

The audit examined whether there were suitable systems and frameworks in place to ensure effective safeguarding of patient information. The scope of this audit was limited to security of patient information within the information technology environment at the corporate office in Brisbane and the Emergency Departments at Princess Alexandra and Redland Hospitals.

4.1.2 Audit opinion

Overall, Queensland Health appears to have established a satisfactory control environment for both patient information repositories and the information technology infrastructure. Suitable systems and frameworks are in place to ensure effective safeguarding of patient information. The maturity of some aspects of the control environment compares favourably to other departments, while some control gaps existed that could impact on the security and privacy of patient information. Information handling practices could be further enhanced to prevent an information privacy incident occurring.

The audit found that there were some opportunities to improve the efficiency and effectiveness of the collection, retrieval and storage of patient information. In particular, the paper based clinical information that is recorded and maintained separately by each hospital carries an inherent risk of delays in retrieving records when a patient presents at the hospital. This risk of delay is significantly higher when patient records are stored at a different Queensland Health facility.

Queensland Health reported that the e-Health strategy, when implemented, should improve the availability and accessibility of patient information to clinicians. As part of this e-Health strategy, a state-wide medical records system is to be implemented. Princess Alexandra Hospital will be one of the first facilities to implement the integrated medical record system.

4.1.3 Audit scope

This audit examined whether there were suitable systems and frameworks in place to ensure effective safeguarding of patient information. The focus of this audit was the security of patient information within the information technology environment for which Queensland Health is responsible. The audit included the corporate office in Brisbane and two hospitals being the Princess Alexandra and Redland Hospitals.

The scope of the audit within the hospitals was confined to patient data captured within the Emergency Department and one ward. The audit examined information management, security processes and network security in relation to the patient information systems, manual patient files at the two hospitals and some of the other support systems that were used to record and share patient information between hospitals and external third parties.

The audit was conducted under the following two broad objectives:

- to determine whether the areas of Queensland Health examined as part of the audit had efficient and effective systems for managing patient information throughout the patient lifecycle, in particular, the availability of systems to capture and safeguard patient information when information was shared between hospitals and external third parties.
- to determine whether Queensland Health had effective systems for protecting patient information from internal and external threats, specifically, whether there were appropriate and effective policies and systems and controls to safeguard Queensland Health's network from intruders.

4.1.4 Audit findings

The two hospitals that were audited relied on a combination of computer based patient information systems and extensive paper records. Patient information was entered multiple times into paper forms and several different information systems. Clinical practices included converting electronic patient information to paper records when transferring patients to other Queensland Health facilities. The data re-entry led to inefficiencies and there was an increased risk of date entry errors. Clinicians reported that the retrieval of paper based patient records from another Queensland Health facility could take up to two days.

At the Princess Alexandra Hospital, specific processes were set up to record and monitor patient files that were not found at the last recorded location. While Queensland Health reported that none of these files were deemed to be lost, this issue still posed a risk to patient information security. Also at the Princess Alexandra Hospital, access of former staff was not removed from the system that manages radiology images for the past three years, reportedly due to termination notices not being provided by the Human Resources section on a regular basis. In addition, physical security controls over medical storage facilities could be improved at both hospitals.

A key control that needs to be addressed in this area is the periodic review of persons with physical access to the storage facilities, to ensure that these are commensurate with business requirements. Audit found that at one of the hospitals, there were 460 access cards with permission to enter the primary medical records area. This was considered to be excessive given that there were approximately 140 hospital information management staff.

It was also noted that there were a significant number of local databases and spreadsheets possibly containing confidential patient information managed by clinicians. These repositories were created mainly because information systems were not satisfying the immediate needs of the business. Queensland Health informed that the e-Health Program will include implementation of enterprise level systems that will encompass a wider range of business requirements.

This audit also investigated information system and network management controls that protect the security and availability of patient information. The audit found that the preventative controls for external network access were established and only minor improvement opportunities existed. However, there was insufficient monitoring to reasonably detect unauthorised external access to Queensland Health information resources. Audit recommended that a capability to detect any security incidents that may bypass the internet firewalls be developed and implemented, and that a network intrusion detection sensor that monitors all external based access to the network be installed. Queensland Health has agreed to consider the audit recommendation as part of their risk assessment process.

The audit found that there was an appreciable amount of technology and management attention targeted at ensuring the reliability of key clinical information systems however, there was insufficient planning or metrics to monitor and manage how these systems will perform in the event of a disaster. Audit has recommended that Queensland Health define the resilience requirements for all information systems processing patient information and associated technical infrastructure. In addition, Queensland Health needs to consider developing and implementing a formal overarching business continuity framework that encapsulates and links various existing business continuity policies and plans.

4.2 Information technology network security

4.2.1 Audit overview

The Queensland Government is increasingly relying on information technology systems for efficient and effective service delivery, driving efficiency through enhanced online services. In this environment, it is critical that computer networks continue to operate reliably and the information assets and government processes accessed through these networks are protected against theft, misuse, disruption and unauthorised access.

The results of an audit of network security at eight entities was reported in the *Auditor-General Report to Parliament No. 4 for 2009 – Results of audits at 31 May 2009,* tabled in Parliament on 30 June 2009. These entities were audited prior to the 26 March 2009 machinery of government changes.

The network environments audited are shown in Figure 4A.

Figure 4A : Network environments audited

Entities	
Department of Public Works – CITEC	Queensland Corrective Services
Department of Transport	Queensland Police Service and Public Safety Network Management Centre
Department of Main Roads	Department of Local Government Sport and Recreation
Department of Justice and Attorney-General (JAG)	Department of Public Works - Shared Services Agency (Work performed by Internal Audit and reviewed by QAO)

As a result of the machinery of government changes, Department of Main Roads and Department of Transport were merged, Queensland Corrective Services merged into Department of Community Safety and the Department of Local Government Sport and Recreation merged into the Department of Infrastructure and Planning. At the time of the audit, their network environments were in the process of being reorganised.

4.2.2 Audit opinion

The 2009 audit disclosed that while a significant number of security technologies and associated controls had been deployed, the resilience of network security controls needed to be strengthened at all agencies audited. The audit found that the strength of the overall network security environment varied across the eight entities and there was a clear indication that an ongoing focus on continuous improvement towards best practice security standards was required.

With the exception of one entity, the security level was consistent with that of medium size business rather than a more complex State Government Department holding and processing sensitive information.

The issues raised in *Auditor-General Report to Parliament No. 4 for 2009 – Results of audits at 31 October 2009* are summarised below:

- inadequate controls over firewalls and internet gateways
- intrusion detection or prevention mechanisms not implemented
- security levels required from third party suppliers not clearly defined
- security weaknesses due to poor network design
- inadequate network systems documentation
- inadequate vulnerability management processes
- network security policy guidelines not documented
- inadequate network disaster recovery infrastructure
- equipment out of vendor support
- formal processes for security incident management not in place.

Audit has reviewed agency progress regarding the resolution of the issues raised in the previous audit. Due to the machinery of government changes, some of the networks were being merged into other departmental networks. The follow up audit disclosed that varying degrees of action had been taken to improve network security relating to all of the networks audited in the prior year. Thirty four percent of the issues were resolved by the end of February 2010. While management formally accepted the need to improve the control environment, implementation in selected agencies did not appear to be given a high priority. Some agencies did not have a formal implementation plan until audit commenced a follow up review. The implementation of recommendations relating to 25 issues missed the original implementation timeframes by an average of four months.

In particular, limited progress was made towards implementing controls that protect financial information and transaction processing systems to detect problems as they occur. Detective controls are essential, as perfect preventive controls are cost prohibitive. Early detection facilitates damage minimisation steps to be initiated. A high assurance of the security of government networks cannot be obtained until the majority of the security improvements are implemented and are operational. Urgent action is needed to address these issues.

It is encouraging to note that the Queensland Government Chief Information Office had developed a plan to address these issues at a whole of government level. In addition, a whole of government information security committee was established in October 2009 and the Queensland Government Chief Information Office plan has been revised to address the security issues raised in the prior year audit. It should be noted that QAO audits of network security controls are performed at a point in time. Therefore, agencies need to have information security risk management processes that are of a holistic nature and assess the effectiveness of both preventative and detective controls in tandem. In addition, these need to be in alignment with current issues, trends and technological changes.

As of February 2010, no serious security incidents have been reported. However, the network security arrangements must move to a robust level of control if the likelihood of these incidents occurring is to become negligible.

Although many weaknesses in controls have been raised, the entities audited had not reported any major incidents of exploitation of these weaknesses. Following the tabling of *Auditor-General Report to Parliament No. 4 for 2009*, in September 2009, the Queensland Government Chief Information Office proposed a scheme be implemented for the central reporting of information and security incidents and the establishment of an incident response capability. This scheme was being implemented at the time of the audit. When this registry is established, it will be possible to determine the frequency and significance of incidents across government.

5 | Appendices

5.1 What is an information systems audit?

Information systems are critical in all areas of government business, not just for the traditional uses of payment of employees and suppliers but as a repository of private and public information. Computerised systems are pervasive through government and virtually all citizens are reliant on the accuracy and reliability of information generated by and stored within computerised information systems.

Using computers to record information changes the way in which that information is processed and stored. This affects the procedures used by an entity to achieve adequate internal control. An information systems audit examines controls within an organisation's information technology environment and evaluates evidence of its information systems, practices, and operations. The evaluation of evidence obtained determines if the information systems are safeguarding assets, maintaining data integrity, and operating effectively to achieve the organisation's objectives.

An information systems audit is different from a financial statement audit. While a financial audit's purpose is to evaluate whether an organisation is adhering to standard accounting practices, the purpose of an information systems audit is to evaluate the system's internal control design and effectiveness. This includes, but is not limited to, information systems security, development processes and information technology governance. An information systems audit focuses on determining risks that are relevant to information, and in assessing controls in order to mitigate these risks. By implementing controls, the effect of risks can be minimised.

5.2 Acronyms

CSP	Corporate Solutions Program
HR	Human Resources
ICT	Information and Communication Technology
ICTC	ICT Consolidation Program
IDES	Identity, Directory and Email Services Program
ISC	Information Steering Committee
IT	Information Technology
QAO	Queensland Audit Office
QHIC	Queensland Health Implementation of Continuity Project
SDPC	Service Delivery and Performance Commission

5.3 Glossary

Accountability

Responsibility on public sector entities to achieve their objectives, about the reliability of financial reporting, effectiveness and efficiency of operations, compliance with applicable laws, and reporting to interested parties.

Auditor's opinion

Positive written expression within a specified framework indicating the auditor's overall conclusion on the financial report based on audit evidence obtained.

Disaster recovery plan

Also referred to as a business continuity plan. It describes how an organisation is to deal with potential disasters. A disaster recovery plan consists of the precautions taken so that the effects of a disaster will be minimised and the organisation will be able to either maintain or quickly resume mission-critical functions. Typically, disaster recovery planning involves an analysis of business processes and continuity needs; it may also include a significant focus on disaster prevention.

Effectiveness

The achievement of objectives or other intended effects of activities at a program or entity level.

Efficiency

The use of resources such that output is optimised for any given set of resource inputs, or input is minimised for any given quantity and quality of output.

Governance

The role of persons charged with the oversight, control and direction of an entity.

Independent auditor's report

Issued as a result of an audit and contains a clear expression of the auditor's opinion on the entity's financial report.

Information technology governance

Information technology governance is the framework that ensures that processes and standards are in place to direct and control the investment in information technology.

Program management

Program management is the coordinated organisation, direction and implementation of a group of projects and activities that together achieve the outcomes and realise benefits that are of strategic importance.

Qualified opinion

Type of modified auditor's opinion expressed when, except for the effect of a disagreement with those charged with governance, a conflict between applicable financial reporting frameworks or a limitation on scope that is considered material to an element of the financial report, the rest of the financial report can be relied upon.

5.4 References

- *Australian Standard 8015:200 – Corporate Governance of Information & Communication Technology*
- *Australian Standard 4360:2004 – Risk Management*
- *ISO/IEC 38500:2008 – Corporate Governance of Information Technology*
- *Queensland Government Program Management Methodology*
- *Managing Successful Programs, Office of Government Commerce, United Kingdom*
- *Queensland Government Project Management Methodology.*

5.5 Corporate Solutions Program timeline of key events

Date	Event
August 2002	Whole of government reviews of Corporate Services – Aligning Services and Priorities (ASAP) The Cabinet Budget Review Committee considers the Aligning Services and Priorities whole of government reviews. These included the Review of Corporate Services.
December 2002	The Shared Service Initiative is approved by the Cabinet Budget Review Committee.
1 July 2003	CorpTech is established within Treasury Department as a Shared Service Provider.
September 2005	SAP Finance solution pilot preparation commences.
July 2006	The first SAP Finance pilot implementation goes live at the Department of Justice.
March 2007	The first SAP agency human resource implementation goes live within the then Department of Housing.
May 2007 – August 2007	Capital budget for the program is revised to $249m following an independent review, which found that the delivery model was sub-optimal for a program of this size and scale. The review recommends that an experienced external ICT organisation be appointed to lead subsequent implementations and to accelerate the implementations.
October 2007	The Treasurer and the Minister for Public Works and Housing, following a competitive tender process, jointly approve commencing negotiations with IBM.
November 2007	IBM tendered a price of $78.5m (excluding GST) for Phase 1. CorpTech's Phase 1 costs were estimated at $74.5m (excluding GST), including a contingency provision of $15.2m, resulting in a total Phase 1 program cost of $153m.
5 December 2007	The Under Treasurer on behalf of the State of Queensland enters into a contract with IBM.
January 2008	IBM officially commences the implementation of the payroll system for Queensland Health
1 July 2008	CorpTech transitions to the Department of Public Works. The original Go-Live date for Queensland Health HR system is missed. The system is not ready and business requirements are still being developed.
September 2008	Second Go-Live date for Queensland Health HR system is missed. The system is not ready and business requirements are still being developed.
October 2008	It was determined that the size, complexity and scope of the Phase 1 implementation was underestimated and that the revised implementation cost estimates significantly exceed its tendered cost and allocated funds.
November 2008	Third Go-Live date for Queensland Health HR System is missed. The system is not ready and business requirements are still being developed.
May 2009	Fourth Go-Live date for Queensland Health HR System is missed. There are an excessive number of defects and the system is not stable.
June 2009	Fifth Go-Live date for Queensland Health HR System is missed. There are an excessive number of defects and the system is not stable. Implementation of revised Queensland Health HR system project governance model as the previous governance model was designed for the whole of government HR and financial implementation.
August 2009	Sixth Go-Live date for Queensland Health HR System is missed.
September 2009	The scope of the IBM Prime Contractor contract is revised to Queensland Health HR solution only. IBM formally advised that they no longer fulfil the role of the prime contractor for the whole of government implementation.
October 2009	Queensland Health Implementation of Continuity (QHIC) Project Board determines that the Go-Live date is to be deferred to early 2010.
14 March 2010	Queensland Health payroll and rostering systems went live for the first payrun date of 24 March.

6 | Auditor-General Reports to Parliament

6.1 Tabled in 2010

Report No.	Subject	Date tabled in Legislative Assembly
1	*Auditor-General Report to Parliament No. 1 for 2010* *Audit of A1 Grand Prix Agreements* A Financial and Compliance audit	4 February 2010
2	*Auditor-General Report to Parliament No. 2 for 2010* *Follow-up of selected audits tabled in 2007* A Performance Management Systems audit	23 March 2010
3	*Auditor-General Report to Parliament No. 3 for 2010* *Administration of Magistrate Court Services in Queensland* A Performance Management Systems audit	13 April 2010
4	*Auditor-General Report to Parliament No. 4 for 2010* *Results of local government audits* Financial and Compliance audits	21 April 2010
5	*Auditor-General Report to Parliament No. 5 for 2010* *Performance reviews – Using performance information to improve service delivery* A Performance Management Systems audit	18 May 2010
6	*Auditor-General Report to Parliament No. 6 for 2010* *Using student information to inform teaching and learning* A Performance Management Systems audit	20 May 2010
7	*Auditor-General Report to Parliament No. 7 for 2010* *Information systems governance and control, including the Queensland Health Implementation of Continuity Project* Financial and Compliance audits	June 2010

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