



Queensland Government ICT Audit

October 2012



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Annexes

This report has a number of supporting annexes:

Application and technology duplication

Application sourcing approaches

Business case assessment

Total ICT replacement cost

Demand, cost and service performance of ICT

Initiatives

Legacy ICT

Procurement

Security

Significant and high risk systems

Strategy, governance and service delivery

Strategy, governance and service delivery – Agency profiles

Workforce capability

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Executive summary

The Queensland Government has conducted an extensive audit of ICT across all core departments (the Audit). The Audit reviewed all aspects of ICT including:

- strategy and governance
- initiatives
- procurement
- assets and services
- service delivery models.

The Audit comprised the following activities involving all agencies, including: extensive data collection and data quality improvement; analysis of the data; extensive consultation to validate the data and the analysis findings; and, multiple reports to the Minister culminating in this final report.

A focus was placed on identifying:

- savings and waste
- risks and issues
- performance and accountability.

Savings and waste

The Audit identified significant annual savings available to the government of between \$98 million and \$185 million per annum across a number of different opportunity areas. The analysis attached a high degree of confidence to the delivery of at least \$106 million per annum in savings.

The opportunities were progressively investigated throughout the Audit to confirm their viability, the quantum of savings, and to identify appropriate accountability for achievement. Several of these opportunities have already been actioned.

Quick win savings with a probable realisation within six months have been identified to deliver between \$18 million and \$25 million per annum with a high degree of confidence associated with the delivery of at least \$20 million.

Medium-term savings opportunities with a probable realisation within 6 to 24 months are estimated at between \$17 million and \$21 million per annum.

A number of other savings opportunities requiring further investigation are estimated to deliver between \$63 million and \$138 million per annum.

The savings opportunities identified in the Audit have been detailed in terms of what is required to deliver them as well as which government entity should be responsible for delivery.

Risks and issues

The visibility achieved in the Audit provided a unique view of the current state of ICT across the government. It has revealed a portfolio of ICT systems in a state of decline as a result of a long period of fragmented and minimally constrained growth, combined with chronic underfunding.

Underfunding has translated into minimal maintenance and upgrades of existing ICT platforms, resulting in ICT environments which are ageing and difficult to maintain. The fragmentation and lack of constraints has resulted in an eclectic mix of technologies and systems that complicate the management and upgrade of the total ICT portfolio.

The complex, under-maintained and ageing environment has collectively reached a state of decline, where 90% of the current ICT portfolio requires replacement within five years - leaving the government with a total replacement cost of at least \$7.4 billion. The task of addressing this issue is complex and expensive and has created a systemic business risk for government.

Lack of Transparency

Lack of transparency is the single biggest cause of the poor state of government ICT. Without appropriate levels of transparency, it has been near impossible to identify what high risk and ageing systems exist, where they are, what has or hasn't been done to address them, and what their impact is to government. Lack of transparency also prevents government from understanding the range of initiatives underway – their performance, priority, risk profile and business rationale.

Poor visibility of the shape and size of the ICT workforce has inhibited the ability to ensure we have the correct skills and capacity profile needed to transform front line services through innovation, deliver successful projects and business outcomes, and ensure procured services are always delivering the best value for money.

This lack of transparency significantly inhibits the government's ability to make informed decisions.

The Audit revealed a number of systems that present a critical risk to government. These systems are typically long overdue for replacement, large and complex, and underpin critical activities. These systems will require urgent attention to avoid rendering key parts of government inoperable.

ICT-enabled initiatives

The government's ICT portfolio is not static. Over 1,100 initiatives were reported by agencies as they actively work to manage and maintain the systems under their control. The initiatives range from business transformation through to the upgrade and replacement of existing systems and infrastructure.

While agencies are maturing in their ability to successfully manage initiatives, the Audit found that many projects are still showing poor project outcomes with cost and scheduling overruns. In addition, business case development expertise is varied, and benefits management maturity across the government is low.

There is a lack of transparency of the progress of high risk initiatives at the executive level of government. The existing lack of transparency has implications in how well the government can make informed decisions to ensure the right initiatives are being done at the right time, and how effectively the available resources are allocated and utilised.

Ongoing transparency of initiatives is critical – the government needs to remain fully informed of its current and planned initiative portfolio, including their condition and performance – especially for high risk initiatives.

The Audit recommends a significant change

Government must find ways to reduce the complexity of its business and the complexity of the ICT systems and technologies that underpin it. The Audit recommends a review of the business services of government be undertaken across all departments - looking for alternative business models of delivery, and for reductions in business size and complexity. Along with a reduction in business complexity, an alignment of the related ICT systems, both within the agency and across government, will deliver significant reductions in the level of ICT complexity that is required to service the business.

The future for ICT is firmly headed toward consumption of commodity ICT as a service in a pay-for-what-you-use utility model. The government needs a mechanism to transition to make maximum use of this model. However, this has a significant impact on the delivery of ICT within government and the internal-to-government ICT service providers.

In line with the above objectives (reduction in complexity of the business and its systems, and a move to commodity ICT as a service), the Audit recommends an integrated set of initiatives be undertaken to deal with the parlous state of the existing ICT portfolio.

- Conduct a government wide review of services aimed at redefining the business of government. This process will identify the ICT requirements for the future.
- After the above review, make the necessary changes to the ICT applications portfolio to support the new way government will operate.

- In parallel with the above initiatives move the government's infrastructure to an 'as-a-Service' model – essentially moving the government out of the business of owning and running commodity ICT infrastructure.
- Begin the process to exit CITEC from the business of owning and running commodity infrastructure.
- Begin the process to exit Queensland Shared Services from the business of owning and running commodity applications.

Completing the above steps in a sequential manner will not allow the government time to deal with the ageing ICT portfolio. The above parallel process is absolutely mandatory as is the urgency. Debating subtle nuances of the approach will waste precious time that the government simply does not have.

The Audit recommends that government begin transitioning to a commodity model. This will remove the need to retain both CITEC and Queensland Shared Services within three years. This requires a fairly aggressive agenda to transform the way the government currently procures its commodity ICT services.

In addition to impacts on the internal-to-government ICT service providers, the proposed approach will also transform ICT delivery within agencies. Agencies will no longer be engaged in owning, operating or managing commodity ICT.

To ensure that the ICT service delivery reform agenda is delivered, the Audit proposes the appointment of two new CEO-level Service Executives with the responsibility and authority to drive the necessary change agenda both across agencies and internal-to-government service providers. One Service Executive will be responsible for commodity ICT infrastructure transition and the other for commodity ICT applications transition.

Successful transition will also require contribution from the ICT industry. This presents a significant opportunity to industry. In consultation with the Audit, representatives from leading industry organisations gave a commitment to work with the Queensland Government to achieve the kinds of transformational outcomes proposed in this report. The ICT industry will now have to position itself to deliver on this commitment.

The Audit proposes to meet the challenges of the current ICT landscape in the Queensland Government through significant reform of its delivery both internally and from industry.

Governance and visibility

The Audit has provided incredible visibility of ICT across the Queensland Government. This would not have been possible without the commitment and support of a large number of people across all agencies, especially the Chief Information Officers (CIOs). The visibility has revealed for the first time the true nature of the problems faced.

Instead of being defensive, CIOs have shown leadership throughout this exercise by accepting their part and looking for a collective solution.

The role of the CIO now becomes even more critical. CIOs are the vital link to ensure continued visibility of the state of ICT assets and initiatives, and to partner with the business areas of government to deliver ICT capability appropriate for the business.

It is vital that CIOs are elevated to provide input to, and be a part of, the executive decision-making process in agencies.

On the whole, governance arrangements were found to be less effective than they should be both within agencies and at the whole-of-government level.

Challenges of the Audit

It is important to keep the Audit in context. To deliver against the timeline set by Cabinet it was necessary to balance three factors: time, coverage and quality. The Audit therefore took a pragmatic approach to quality, and carefully limited the coverage of the Audit to bring focus to those elements of government ICT that are of prime importance in the current environment.

Based on the assumption that time was of the essence, the Audit, with assistance from agencies, sought to deliver a timely assessment of the current state of government ICT – one which would allow for any remedial actions to be started sooner rather than later.

In formulating the findings and recommendations of the Audit, an enormous amount of information was processed, analysed and synthesised. As an example, over 19,000 documents were reviewed, 1,100 initiatives were assessed, 1,730 existing applications were reviewed along with 4,848 infrastructure technologies, 7,160 ICT-related staff positions were identified and analysed, 296 agency contracts were examined, and 140,881 chargeable items were evaluated across 1,303 Telstra mobile and voice telecommunications accounts.

Post-Audit Challenges

The Audit is recommending some substantial changes to the way government procures and uses ICT services. Existing models that perpetuate government owning and running non-core, or commodity ICT services, and where industry assume year on year revenue growth are simply not sustainable.

Change of this nature will mean that not every vendor will be better off. Some vendors will seek to continue to play to their current strengths and commercial imperatives. The Queensland Government must be prepared to resist a degree of industry pressure to maintain the status quo.

New ICT as-a-Service models will take advantage of current market capabilities and commercial opportunities. This will present a huge opportunity to industry which has previously stated they are able to meet the challenge. The government will now need industry to step up and deliver.

Under these new models there are ample opportunities for Small to Medium Enterprises to make meaningful contributions. It will be up to these businesses to identify the areas where they believe they can make a real contribution.

It is imperative that the newfound level of transparency over government ICT is not lost. As stated earlier, lack of transparency is the single biggest cause of the current situation. There is value in conducting future audits of a similar type, across other government entities, and in operationalising and embedding improved transparency across agencies.

In addition, the Audit also makes a number of recommendations and findings which will require some level of resourcing for the Queensland Government Chief Information Office (QGCIO) to provide oversight, plus agency resourcing to implement – in addition to existing QGCIO and agency capacity and priorities.

Recommendations

Savings and Waste

Recommendation	Objective	Lead
<p>1 Establish and run a program to deliver the unrealised short-term savings opportunities (up to \$25M per annum) identified including, but not limited to:</p> <p>Cancellation of mobile and fixed telephone services no longer required (up to \$9M)</p> <p>Optimisation of mobile data plans (up to \$4M)</p> <p>Efficiencies in the use of printers (up to \$3M)</p> <p>Consolidation of telecommunications accounts (up to \$2M).</p>	Harvest easy to capture savings	DSITIA
<p>2 Assign owners for the delivery of unrealised medium and long-term savings opportunities (up to \$159M per annum) and to oversight the planning for, and harvesting of, savings including, but not limited to:</p> <p>Shifting services to Internet delivery channels (up to \$20M)</p> <p>Migrating to cloud based email (up to \$17M)</p> <p>Decommissioning of systems no longer required (up to \$10M)</p> <p>Exiting arrangements for the use of the Travel Management System (up to \$9M).</p>	Ensure medium term savings are captured through a structured measurable process.	DSITIA

Critical Business Systems

Recommendation	Objective	Lead
3 Establish and run projects to perform minimal necessary upgrades on essential business systems and technologies for which time remaining to upgrade or replace is now critical.	Reduce the risk profile for critical high risk systems. Enable suitable timeframes to develop longer-term strategies.	Agencies and QSS
4 Conduct a review of government services across every agency to identify services that must continue to be delivered and services that can be discontinued or scaled back. Identify options for improving service delivery and the business of government.	Simplify the business of Government before fixing ageing ICT systems.	Public Service Commissioner
5 In conjunction with the review of business services across government, determine the ICT solution options to underpin those business services required to be delivered by government.	Take advantage of emerging ICT delivery options.	QGCIO
6 In conjunction with the review of services and supporting ICT solutions, perform financial modelling to understand the funding requirements for alternate delivery approaches identified.	Ensure initiatives can be paid for.	Treasury with QGCIO
7 Prioritise the implementation of service and ICT reform programs taking into account business priority, risk, dependencies, capacity to fund and capacity to deliver.	Ensure initiatives can be delivered.	Public Service Commissioner with QGCIO
8 Prepare a submission for funding of the resultant program for business transformation and ICT systems.	Obtain approval from government.	Public Service Commissioner with QGCIO

Recommendation	Objective	Lead
9 Establish and run the resultant business transformation and associated ICT programs.	Implement necessary changes.	Agencies with governance oversight by QGCIO

High Risk Systems

Recommendation	Objective	Lead
10 Initiate and maintain a program of rigorous application of business continuity planning for all business critical systems. The programs must include all parts of the service provider chain, documented in service level agreements and contracts, and must be regularly tested.	Ensure critical systems have robust failsafe mechanisms.	Agencies

High Risk Initiatives

Recommendation		Objective	Lead
11	Ensure high risk ICT-enabled projects engage project management personnel of the highest calibre, including the replacement of less capable personnel for projects that have become high risk during their execution.	Ensure projects do not fail because of inappropriate staffing.	Agencies
12	Mandate the rigorous application of the Queensland Government Project and Program Assurance Methodology for all ICT-enabled initiatives.	Ensure projects do not fail because of poor hygiene.	QGCIO
13	Obtain independent project assurance for all high risk ICT-enabled initiatives. Assurance reports for all high risk initiatives to be endorsed by the QGCIO and submitted to the CEO Leadership Team for approval before projects proceed beyond predetermined gates. Monthly summaries of approvals and risk profiles to be provided to the Premier.	Ensure a 'One Government' approach to ALL high risk agency ICT initiatives.	Agencies with QGCIO and CEO Leadership Team
14	Establish and operate a reporting regime to provide visibility and transparency of all initiatives with a total expenditure over \$1 million.	Bring transparency to the progress of all ICT initiatives.	QGCIO with agencies

Commodity Applications

Recommendation	Objective	Lead
15 Appoint a CEO level Service Executive for commodity applications with responsibility and authority to drive the forward agenda across government. The Service Executive for Commodity Applications will be responsible for the delivery of outcomes in the transition of government to derive maximum value from its approach and investment in commodity applications.	Ensure dedicated CEO level accountability to get the job done. (Note: This is a full time role and not a background job for an existing ICT executive.)	DPC
16 Establish technical roadmaps for applications in each of the commodity domains that include implementation patterns, and product and sourcing preferences. Limit tightly coupled integration of applications.	Provide direction to government and industry.	QGCIO
17 Establish mandates to constrain agency sourcing activity in commodity application domains including constraining the platforms on which they may be deployed.	Reduce unnecessary diversity and complexity.	QGCIO
18 When implementing commodity applications, agencies must change business processes to meet the default processes inherent in the packaged software. NEVER modify commercially provided commodity applications to meet unique business requirements.	Align commodity business process to low cost off-the-shelf systems. ¹	Agencies

¹ Highly modified commodity applications do not provide any (competitive) advantage for government. All they do is drive up diversity and costs.

Payroll Systems

Recommendation	Objective	Lead
19 Conduct basic technical upgrades for high risk payroll systems in accordance with recommendations on critical business systems with the exception of the DCS Lattice-based payroll system. Consider using external organisations to perform some of the technical upgrades to reduce risk.	Eliminate the risk of systems that will not be supported post 2015.	QSS
20 As an immediate priority, examine external provision of payroll systems and services for the replacement of current government hosted payroll systems. Test the market for provision of payroll as an externally managed service - through the conduct of a pilot for a lower complexity business group within DCS. For example, employees covered under the core EBA.	Reduce the immediate risk facing the DCS payroll system AND understand alternative sourcing options.	DCS with QSS
21 When implementing or sourcing payroll solutions agencies must seek to remove complexity from awards and where possible remove regulatory and legislative barriers to the use of standard UNMODIFIED payroll products.	Reduce the costs and risks associated with complex payroll systems.	Agencies
22 Conduct analysis and preparation for implementation of a payroll managed service for the remainder of DCS. Consider opportunities to simplify awards and eliminate complexity as part of the preparation activities.	Simplify requirements as much as possible.	DCS
23 Develop a business case for the transition of all government payroll systems to externally managed services subject to evaluation of pilots.	Be prepared to take advantage of viable sourcing alternatives.	Service Executive for Commodity Applications

Finance Systems

Recommendation	Objective	Lead
24 Conduct basic technical upgrades for high risk finance systems in accordance with recommendations on critical business systems. Consider using external organisations to perform some of the technical upgrades to reduce risk.	Eliminate the risk of systems that will not be supported post 2015.	QSS
25 Test the market for provision of finance as an externally provisioned managed service through the conduct of a pilot for a selected government agency or part thereof.	Understand alternative sourcing options.	Agency with QSS
26 Conduct additional analysis on the Health finance system replacement initiative to determine the impact of and opportunities from government adopting an externally sourced managed services approach to finance systems.	Understand alternative sourcing options.	QH with QGCIO
27 Develop a business case for the transition of all government finance systems to externally managed services subject to evaluation of pilots.	Be prepared to take advantage of viable sourcing alternatives.	Service Executive for Commodity Applications

QSS

	Recommendation	Objectives	Lead
28	Conduct internal preparations for transition of all QSS provided services to external service provision.	Baseline the QSS business and classify service offerings.	QSS
29	Conduct market engagement to refine models and options for externally sourced services for payroll and finance systems and associated transaction processing services. This will include consideration of the results of pilot activities in the external service provision for payroll and finance.	Understand alternative sourcing options for each service offering.	QGCPO with QGCIO
30	Prepare request documents for release to the market for the provision of payroll and finance systems and the associated transaction processing services as an externally provided managed service.	Provide a coherent offering to industry.	QGCPO
31	Execute request to market and manage the transition to the successful providers.	Select commercial providers allowing time for effective due diligence processes.	Service Executive for Commodity Applications with QGCPO, QGCIO, QSS and agencies.

Commodity Infrastructure

Recommendation	Objective	Lead
32 Appoint a CEO level Service Executive for Commodity Infrastructure with responsibility and authority to drive the forward agenda across government. The Service Executive for Commodity Infrastructure will be responsible for the delivery of outcomes in the transition of government to derive maximum value from its approach and investment in commodity infrastructure.	Ensure dedicated CEO level accountability to get the job done. (Note: This is a full time role and not a background job for an existing ICT executive.)	DPC
33 Prepare request documents for release to the market for the provision of cloud-based email services in line with the cloud email strategy.	Select core provider(s). ²	QGCPO with QGCIO
34 Execute request to market (for provision of cloud based email services) and validate responses with pilot implementations.	Reduce risk through local pilots.	QGCPO with QGCIO and pilot agencies
35 Subject to the success of the market engagement and pilots, manage the transition of all agencies to cloud-based email services.	Roll out to all agencies when production ready.	Service Executive for Commodity Infrastructure
36 Undertake further analysis of the opportunities to provision desktop services to government through an externally managed desktop arrangement, including market engagement to understand the nature of current market capability. This analysis must include consideration of enablement of Bring Your Own Device (BYOD) opportunities.	Evaluate options for reducing desktop costs AND improving the capability of the wider government workforce.	Service Executive for Commodity Infrastructure with QGCIO
37 Subject to the analysis, develop a business case for the establishment of an externally managed desktop arrangement. Seek Go-No-Go decision.		Service Executive for Commodity Infrastructure with QGCIO

² Based on the Cloud e-Mail Strategy (2012)

Recommendation	Objective	Lead
38 Undertake market engagement activities to establish a trusted cloud provider for the Queensland Government.	Establish trusted arrangements.	Service Executive for Commodity Infrastructure with QGCPO and QGCIO
39 Undertake market engagement activities to establish a panel of providers of cloud infrastructure services for agency consumption.	Select a panel of providers.	Service Executive for Commodity Infrastructure with QGCPO and QGCIO
40 Undertake market engagement to determine the options for transition to a single government data network for all agencies. Include consideration of an externally provided fixed price unlimited consumption model.	Simplify data network architecture and vendor management.	QGCIO
41 Develop a business case for transition to a single government data network for consideration.		Service Executive for Commodity Infrastructure with QGCIO
42 Subject to the successful engagement of providers for trusted cloud and associated infrastructure services, establish a program to actively transition suitable agency workloads onto cloud-based infrastructure.	Ensure that transition to the cloud happens in a timely manner.	Service Executive for Commodity Infrastructure

Recommendation	Objective	Lead
43 Undertake market engagement to determine options for providing services to deliver operational management and support for legacy ICT systems in government data centres.	Provide a mechanism for legacy systems to be gracefully exited through a hospice environment.	Service Executive for Commodity Infrastructure with QGCIO
44 Develop a business case for the transition of legacy ICT systems to externally managed and supported arrangements, and seek consideration.		Service Executive for Commodity Infrastructure with QGCIO

CITEC

Recommendation	Objective	Lead
45 Disconnect the entire Confirm business and operations from CITEC. Commence an activity to determine the long term future for Confirm.	Find a long term home for residual CITEC functions.	DSITIA
46 Undertake analysis to determine options for delivery of COAG regulatory reform services (Access Gateway) without Confirm transactions supporting the cost of the infrastructure.		QGCIO with CITEC
47 CITEC to exit all remaining commercial arrangements.	CITEC exits the ICT infrastructure delivery supply chain.	DSITIA
48 Prepare remainder of CITEC for inclusion in market bid for transition to a Queensland Government trusted cloud provider.		QGCPO with DSITIA

SSQ

Recommendation		Objective	Lead
49	<p>SSQ no longer maintain their own ICT capability, instead transitioning ICT service provision to one of sourcing and managing ICT services provided outside SSQ.</p> <p>SSQ focus on provisioning of service delivery to the public.</p>	Agencies should focus on front line business systems and not running commodity ICT infrastructure.	SSQ
50	Service delivery policy and direction be relocated to a central government agency with responsibility for setting and driving service delivery outcomes for government.	Achieve a separation of responsibility for policy and delivery functions.	DPC with SSQ and QGCIO
51	Analysis be conducted to determine the viability of moving away from a fee for service model for SSQ to an appropriation-based model. The model should include some specific performance criteria to drive cost effective service delivery through efficient service delivery and demand management.	Avoid ICT fee for service models, as they drive up costs and can motivate unintended behaviours.	SSQ with Treasury

Governance and Leadership

Recommendation	Objective	Lead
52 Replace fee-for-service funding models for the central provision of back office and infrastructure services with appropriation funding. To ensure value for money, conduct and publish externally validated benchmarks for cost and value.	Avoid ICT fee for service models as they drive up costs and can motivate unintended behaviours.	Treasury with service provision agencies
53 Agencies be given greater financial flexibility to transfer existing capital funds to operational - in situations where it aligns with the cost effective provision of ICT services.	The major ICT costs are services and not assets. Financial support must align to this change in funding need.	Treasury with agencies
54 Agencies involve their Chief Information Officer in their executive management team to contribute and guide decision-making around the strategic application of ICT for business outcomes.	Recognise the strategic importance of ICT to the business of government.	Agencies
55 Agencies undertake workforce planning for their ICT workforce to transition their capabilities to align with the requirements to manage and sustain their ICT where commodity ICT is sourced through managed service arrangements.	Ensure the skills of the internal ICT workforce align to the government's ICT business model.	Agencies
56 Implement security governance findings from the Deloitte report including centralising the security function.	Ensure a One Government approach to security.	QGCIO and Agencies
57 Revise the funding model for projects to focus on gated funding, as opposed to lump sum funding at project commencement.	Better ongoing monitoring of project performance.	Treasury with QGCIO

Maintaining Momentum

Recommendation	Objective	Lead
58 Establish a program of ongoing reporting against key ICT management areas. Ensure QGCIO and agencies are well funded and resourced to continue this work.	Maintain high levels of transparency in the performance of the ICT function across government.	QGCIO, Treasury and Agencies
59 Make the necessary changes to legislation to allow QGCIO to perform ICT audits of the remaining areas of government including government owned corporations.	Look for savings, risks and benefits in areas that were out of scope for the ICT Audit.	DPC
60 Ensure implementation of approved Audit recommendations are appropriately funded and prioritised.	Implement all recommendations of the Audit.	Treasury and CEOs



Introduction



1 Introduction

1.1 Purpose

This report is the final deliverable of the Queensland Government ICT Audit (the Audit), and includes a detailed assessment of the strengths and weaknesses of the Queensland Government's ICT delivery capability, at both whole-of-government and agency levels including recommendations for addressing waste, risk, outcomes alignment, resource impacts and business models.

1.2 Background

On 8 May 2012, Cabinet decided that the Queensland Government Chief Information Office (QGCIO) lead an audit of ICT management practices and prepare a report for Cabinet – with the report considering current operations, systems and initiatives across government, highlighting any high risk projects including cost effective risk management strategies.

At the same time, Cabinet noted that the QGCIO will report to and provide the Minister for Science, Information Technology, Innovation and the Arts all deliverables for endorsement.

1.3 Scope

1.3.1 Organisations

The Audit focused on gathering fully detailed data against all departments of government. For each of these departments, there may have been specific exclusions against some of the ICT management areas due to visibility and availability of data. In these cases, a reduced set of high level information was requested.

Due to the significant and prolonged set of structural changes which took place (during the Audit) across the sector in response to machinery of government (MoG) changes, it was generally not possible for agencies to provide meaningful information in a post-MOG context.

Pre-MoG information has been used where necessary, with additional post-MoG context provided where agencies have been able to supply it, such as staffing profiles and structures.

It is important to note that the use of pre-MoG information does not overly inhibit the accuracy of the Audit's findings for a number of reasons:

- For the majority of departments, the internal ICT function remained in situ, albeit needing to accommodate varying levels of adjustment to the department's overall ICT profile.
- With regards to the former departments of DERM and DEEDI, the majority of the resulting post-MoG departments still receive ICT services from (a merger of) the previous two ICT functions.
- The general demographics of the government's existing ICT fleet remains the same in terms of size, shape, condition, risk profile and opportunities.

1.3.2 In-scope

All budget funded departments and their respective central ICT office were in scope for the Audit, including related out-reach functions and staff that are dispatched into areas and regions of the department, and which remain under the control of the central ICT office.

For areas where there was an overlap with other government audits and/or reviews, only a high level set of information was required.

1.3.3 Out-of-scope

In approving the Audit, Cabinet noted that the scope of the Audit was not to include the initiation of a full audit of the health payroll system as this was being undertaken through Queensland Health under the auspices of the Minister for Health.

Subsequent to Cabinet's decision to implement the Audit, the Minister for Science, Information Technology, Innovation and the Arts approved the following scope exclusions:

- Organisations wholly out of scope due to their sheer diversity and number, the Audit timeframe, relative immaturity with regard to existing data collection mechanisms, and lack of QGCIO jurisdiction:
 - government owned corporations
 - statutory authorities / government commissions / government boards
 - Queensland Government bodies
- All areas of departments where the respective central ICT office does not have control.

Implementation of recommendations throughout the Audit (including realising savings) within the current Audit time frame is out of scope for the QGCIO. It is envisaged that this responsibility will be assigned on a case-by-case basis to subsequent project(s) and/or relevant government entities where relevant functional control and expertise exists.

1.3.4 ICT management areas

The Audit covered a wide range of interconnected parts, all of which cumulatively provide the ICT ecosystem that, when optimised and in balance, is cost effective, agile and innovative - providing efficient government services to front line customers and back office government functions.

In summary, the analytical framework used in analysing these interconnected parts within and across agencies, covers five management areas, namely:

- ICT strategy and governance – agency and whole-of-government ICT strategies and governance processes to ascertain their effectiveness in ensuring ICT investments and strategies are strategically aligned to the business of the government
- ICT initiatives – ICT enabled business change activities, projects or programs identified by government to extend, enhance, replace or transform current ICT-enabled capabilities, optimise business return and contribute to government priorities
- ICT procurement – internal and external sourcing arrangements for ICT goods and services, the effectiveness of existing models, and general procurement capability
- ICT assets and services – existing ICT applications (systems), technologies and services to assess and compare service performance, understand risk profiles, and identify opportunities for improvement
- ICT service delivery models - organisational structure and staffing profiles, service delivery models, and performance metrics.

In effect, these five areas comprise a lifecycle view of ICT and address management capabilities essential to operating a functional ICT organisation. Strategy is formulated before initiatives, which in turn drive procurement, and result in assets and services. Subsequent iterations of the ICT management lifecycle form the Service Delivery Model of an ICT organisation.



Figure 1 - ICT management areas

1.4 Limitations

In approving the Audit, Cabinet authorised that agencies were required to provide the QGCIO with detailed information as requested and within specified timeframes, on ICT operations, initiatives, systems, emerging issues and financial resourcing and procurement arrangements. Information was to be provided as part of the Audit and in an ongoing capacity to enable independent assurance of ICT investments across government.

Whilst the responsiveness of departments in providing such information was generally good, a substantial amount of effort was required within the Audit team and with departments to address completeness and accuracy aspects across the multiple sets of information.

The Audit has strongly focused on an evidence based approach to its findings and as such, is reliant on departments' full and timely disclosure in the spirit of the Audit. Where practical within the time constraints of the Audit, the QGCIO has engaged with departments in specific discussions to provide the opportunity to better understand departmental context and to seek further clarification.

1.5 Size and scale of the Audit

In formulating the findings and recommendations of the Audit, an enormous amount of information was processed, analysed and synthesised as shown in Table 1.

Table 1 - Summary of the amount of information processed by the Audit

Aspect	Information processed
Strategy, governance and service delivery	<p>Over 19,000 agency documents were individually reviewed covering areas as diverse as strategies and plans, business cases, governance frameworks, Information Steering Committee minutes, costing models, and risk frameworks.</p> <p>Across these documents (and numerous CIO interviews), agencies were assessed for performance against 264 attributes, spanning five key disciplines: strategy and direction; governance; performance management; financial management; and service delivery.</p>
Business Cases	Documentation relating to 450 initiatives was initially assessed to determine 126 formal or draft business cases. A review of these 126 business cases identified 63 for in-depth analysis. These 63 formed a representative sample for all agencies.
Initiatives	1,100 ICT-enabled initiatives were reviewed, with 50 significant initiatives each receiving a detailed desktop review, and fourteen also receiving an even more detailed drill-down including extensive agency interviews.
Existing applications and infrastructure	In assessing the technical and financial condition of the government's existing ICT application fleet and associated technologies, the Audit assessed 1,730 applications and 4,848 infrastructure technologies.
ICT service performance	To assess agency performance and improvement opportunities in key operational ICT areas, the Audit collected and analysed in depth, over 46,000 data elements spanning eight key ICT service areas: voice and mobile telecommunications; print; data network; data centre, storage; hosting; database management software (DBMS); and desktop.

Aspect	Information processed
Procurement	<p>140,881 unique chargeable items were reviewed, across 1,303 Telstra mobile and voice telecommunications accounts, with billing data that spanned a six month time period.</p> <p>84,124 unique agency purchase orders and direct invoices were assessed.</p> <p>296 agency contracts (awarded during the 2011-2012 financial year), were examined.</p>
ICT Workforce	7,160 staff positions distributed across 60 roles were analysed.

1.6 Agency consultation

Agency engagement throughout the Audit has been characterised by extensive consultation over a broad range of mechanisms.

The Audit has also gone to significant lengths to accommodate multiple opportunities for agencies to provide, discuss, contextualise and refine their submitted information.

Table 2 shows a conservative estimate of the scale of agency consultation.

Table 2 - Agency consultation

Engagement Type	Conservative Estimate
Face-to-face meetings with agencies	151 hours
Emails sent to agencies during course of the Audit	4,482 emails
Emails received from agencies in the ICT Audit mailbox	3,762 emails
Phone calls with agencies (30 calls per day average, for 120 working days)	3,600 phone calls
Agency CIO & Audit Executive meetings (16 per month for 3 months)	24 hours
Initiative detailed drill-down meetings	117 hours
CIO interviews to validate findings in ICT service delivery, including preparation (16 interviews)	104 hours
2 information forums	4 hours
1 ICT work plan workshop for agencies	3 hours
Consultation sessions with agencies on findings for the final report (excluding preparation)	36 hours

1.7 Navigating this report

The Audit report is structured to allow readers to access those aspects of particular interest to them without having to work through the entire document. Table 3 shows the structure of the report as an aid to navigation.

Table 3 - Navigating the report

Report element	Purpose
Executive summary	High level overview of the report findings and recommendations.
Recommendations	All recommendations appear in this section.
Body of the report	Discussion of analysis findings and related research.
Appendices	Detailed information from analysis to support the discussion in the body.
Annexes	Detailed discussion of in depth analysis in each of the key analysis areas. Each annex is a self-contained document with its own summary and table of contents.

Appendix A provides a detailed list of definitions and acronyms used throughout the report.

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Savings & waste



2 Savings and waste

Findings

- Significant annual savings of between \$98 million and \$185 million can be realised in the areas of applications rationalisation, business service delivery, ICT efficiency, ICT vendor management, print services and telecommunications.
- *Quick win* savings opportunities are estimated at between \$18 million and \$25 million. There is a high confidence of realising savings of at least \$20 million.
- *Medium term* savings opportunities are estimated at between \$17 million and \$21 million.
- A number of other savings opportunities require further investigation estimated to deliver between \$63 million and \$138 million.
- Savings need to be tracked and measured to ensure the savings continue to be viable and are realised.

2.1 Introduction

The Audit, through a process of improving visibility of Queensland Government ICT, has identified significant savings available to the Queensland Government of between \$98 million to \$185 million per annum. Further analysis indicates a high degree of confidence that at least \$106 million per annum of savings can be realised. Over a three year period these savings equate to between \$294 million and \$555 million with a high confidence in delivery of \$318 million.

The opportunities were progressively investigated throughout the Audit to confirm their viability, the quantum of savings, and to identify appropriate accountability for achievement. As well as identifying savings, the Audit team progressively and proactively actioned and realised savings in a number of areas.

2.2 Savings summary

Some of the identified savings could be achieved with minimal effort as the underlying wastage was due to inadequate cost management. These represent *quick wins*. For example, a relatively simple action such as querying a telecommunications bill resulted in the identification of service provider overcharging of more than \$140,000 per annum. Engagement with the vendor resulted in a refund to the Queensland Government of more than \$400,000.

A summary of savings opportunities identified as *quick wins* is shown in Table 4. Quick wins are estimated to deliver between \$18 million and \$25 million. There is a high confidence of realising at least \$20 million.

Table 4 - Quick wins (probable realisation within 6 months)

Savings category	Savings sub-category	Annual savings (lower limit)	Annual savings (upper limit)
ICT Efficiency	QGCPO administration charges	\$1,764,000	\$1,800,000
ICT Efficiency	Optimise ISP bandwidth costs	\$1,200,000	\$1,400,000
Print services	Colour print reduction	\$600,000	\$1,800,000
Print services	Print invoice management	\$100,000	\$500,000
Print services	Print volume reduction ³	\$100,000	\$1,100,000
Telecommunications	Cancel idle fixed line telecommunications services	\$4,897,449	\$6,529,932
Telecommunications	Optimise mobile data plans	\$3,778,118	\$4,722,648
Telecommunications	Cancel idle mobile telecommunications services	\$2,128,005	\$2,837,340
Telecommunications	Consolidate telecommunications accounts	\$1,548,565	\$2,382,408
Telecommunications	Reduce fixed voice call costs	\$587,700	\$653,000
Telecommunications	Reduce mobile voice costs	\$457,833	\$508,704
Telecommunications	Telco service provider billing anomalies	\$146,035	\$149,015
Vendor management	Microsoft true-up cost avoidance	\$980,000	\$1,000,000
Vendor management	Microsoft purchase order consolidation	\$168,000	\$210,000
Vendor management	Adobe invoice consolidation	\$88,000	\$110,000

³ Highly dependent on agency commitment to manage printing processes to reduce print volume.

Medium term savings are those that are expected to be realised between 6 and 24 months. A summary of these opportunities estimated to deliver between \$17 million and \$21 million is shown in Table 5.

Table 5 – Medium term savings (expected realisation between 6-24 months)

Savings category	Savings sub-category	Annual savings (lower limit)	Annual savings (upper limit)
Applications rationalisation	Remove dust gathering systems	\$8,000,000	\$10,000,000
Business service delivery	Travel Management System (TMS)	\$8,800,000	\$9,800,000
ICT Efficiency	ICT service costing model consolidation	\$200,000	\$1,000,000
ICT Efficiency	Reduce security software licensing	\$20,000	\$100,000
Telecommunications	Minimise fixed line fax costs	\$10,000	\$100,000

These quick win and medium term savings must be tracked and measured to ensure the savings continue to be viable and are realised.

Some of the identified savings require additional investigation to clarify their business viability. Key dependencies may need to be dealt with and risk mitigation strategies may need to be put in place before these savings can be realised. In addition, the extent of change required to realise savings may be more complex and wide-spread. For example, the transition costs required to migrate to cloud service providers need to be considered with respect to any savings that may be generated from as-a-service approaches. Based on analysis to date, savings from cloud infrastructure are estimated to be between \$5 million and \$12 million.

Details of savings opportunities that require further investigation and analysis are shown in Table 6.

Table 6 - Additional savings (further investigation required)

Savings category	Savings sub-category	Annual savings (lower limit)	Annual savings (upper limit)
Applications rationalisation	Decommission CITEC SAP into DSITIA SAP	\$300,000	\$1,000,000
Business service delivery	Services migration to online (internet) channels	\$4,000,000	\$20,000,000
Business service delivery	Vehicle Registration Stickers	\$100,000	\$3,000,000
Business service delivery	Agency library consolidation	\$100,000	\$1,000,000
Business service delivery	Optimise websites and website redevelopments	\$20,000	\$500,000
ICT Efficiency	Desktop consolidation and outsourcing	\$34,572,000	\$40,200,000
ICT Efficiency	Data storage consolidation and outsourcing	\$10,000,000	\$20,000,000
ICT Efficiency	Cloud Email	\$3,770,919	\$17,082,582
ICT Efficiency	Cloud provisioning of hosting infrastructure	\$5,000,000	\$12,000,000
ICT Efficiency	Minimise transaction costs relating to delivering ICT services	\$3,000,000	\$10,000,000
ICT Efficiency	Optimise ICT asset management	\$20,000	\$500,000
Telecommunications	Optimise WAN costs	To be quantified	To be quantified
Vendor management	Right size SAP licences	\$700,000	\$5,500,000
Vendor management	Right size software application licenses	\$1,400,000	\$5,000,000
Vendor management	Reduce vendor costs via whole-of-government approach	\$50,000	\$3,000,000

2.3 Methodology

Given the time and resource constraints of the Audit and the magnitude of savings opportunities, it was not possible to undertake a full options analysis using a total cost of ownership (TCO) approach as typically prepared for business cases. Agile approaches including the relative cost of ownership (RCO) were used in most cases.

Some savings could be measured directly from existing data analysis. Most opportunities required the collection of new agency or industry information to model the current state of affairs or trends in both short and long term business expectations.

During the course of the Audit, savings opportunities were tracked against a realisation framework, shown in Figure 2.

The level of confidence for each opportunity naturally increases as it is investigated in greater depth and moves closer towards the final stage of 'Realisation'.

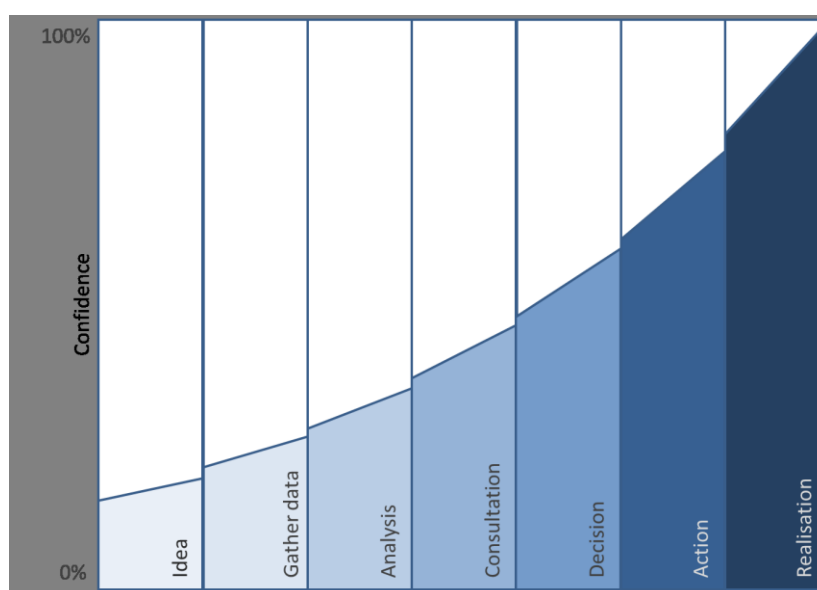


Figure 2 - Savings / waste reduction opportunity realisation framework

Each stage within the framework provides a platform for specific analysis and builds on the expectation that progressing through to the next stage will ensure savings opportunities can be harvested. It is also recognised that, during the analysis and consultation stages, savings opportunities may be deemed no longer viable and will be subsequently removed from further investigation.

The stages of the realisation framework are defined below:

Idea:	Identify a potential savings/waste reduction opportunity and high level options.
Gather data:	Collect information to measure a baseline 'starting point' and future options, including raw quantitative and qualitative data.
Analysis:	Determine the magnitude of estimated savings for various options, recurrence, and the process (what is) required to harvest the savings.
Consultation:	Validate data analysis with key stakeholders.
Decision:	Confirm the savings/waste reduction opportunity and establish ownership and accountability for its achievement.
Action:	Drive the savings potential and undertake actions required to achieve it.
Realisation:	Savings/waste reduction opportunity is achieved.

2.3.1 Savings opportunity areas

The Audit further utilised the Gartner Four Levels of Cost Optimisation framework⁴ to ensure the coverage of savings opportunities was balanced across IT procurement, cost savings within IT, joint business and IT cost savings, and business enablement.

Opportunities on the higher levels are more difficult to achieve due to greater change management impact and lower reliability of information.



Figure 3 - Gartner Four Levels of Cost Optimisation Framework⁴

⁴ Gartner, *The Four Levels of Cost Optimization*, Barbara Gomolski, Kurt Potter, Mark Raskino, 20 January 2009.

The savings opportunities were subsequently classified to a number of areas that were both representative of the Gartner framework and regarded as well understood key ICT service areas and management practices including:

Applications rationalisation

Includes activities that will realise savings by reducing the level of duplication and complexity in business systems, as well as retire and decommission legacy and other systems with low levels of usage.

[Joint business and IT Cost Savings]

Business service delivery

Includes activities that will realise savings by streamlining front line service delivery and access to Queensland Government services and information.

[Enable innovation and business restructuring]

ICT efficiency

Includes the realisation of savings by changing internal ICT management practices or adopting alternative service provision approaches that will lower the per unit cost of key technologies.

[Cost savings within IT]

ICT vendor management

Includes activities to improve the management of external ICT vendors and contract arrangements including increased compliance with current contract and vendor panel arrangements.

[IT procurement]

Print services

Includes the realisation of savings by changing mindsets and adopting whole-of-government approaches relating to the use of printers and printer management services.

[Joint business and IT Cost Savings]

Telecommunications

Includes the realisation of savings by streamlining and standardising telecommunications arrangements with vendors and negotiating value for money services across the sector.

[Joint business and IT Cost Savings]

2.4 Opportunity overview

The savings opportunities identified to date are shown in Figure 4 against the backdrop of the opportunities realisation framework. Opportunities as represented by the circles, are located in relation to their level of confidence and their stage of analysis. The size of each circle represents the magnitude of savings in dollar terms with the outer light green circle indicating the high estimate and the inner dark green circle indicating the low estimate. This provides a range of potential savings for each opportunity. *Appendix B* provides detail of each identified savings opportunity against this framework.

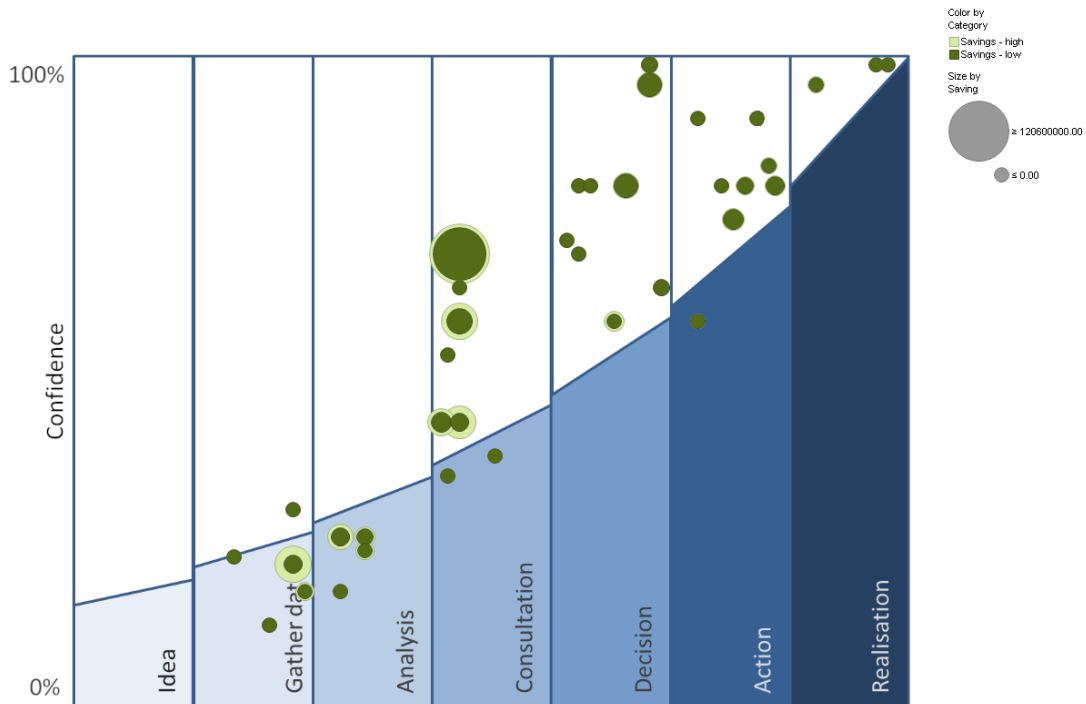


Figure 4 - Savings opportunities

The successful implementation of activities and initiatives in these areas will achieve savings by streamlining the level of investment in ICT infrastructure and applications as well as refining ICT management practices. *Appendix B* outlines the specific activities required to achieve the savings in each area and which area of government should be responsible for the realisation of savings.

The following sections provide a detailed description of the dependencies, issues and risks that may impact the volume of savings achieved along with guidance as to what is needed to realise the opportunity.

2.5 Applications rationalisation

2.5.1 Identification of savings opportunities

Applications rationalisation opportunities were identified through structured analysis of the reported Queensland Government application portfolio. For analysis purposes, all reported applications were grouped according to the business functions they support. In line with the Queensland Government Enterprise Architecture (QGEA), these groups are known as domains.⁵ Domains with high numbers of applications indicate a higher probability of application duplication. Streamlining the number of applications in these domains by moving business dependencies to more cost effective and technically sound applications may deliver savings.

The frequency of use, number of users, technical condition, estimated end of life and annual cost of operating applications were also analysed as part of the Audit. The analysis identified a number of legacy and dust gathering systems across the sector. Because of their age and low business importance, these systems are potential candidates for decommissioning. This will further rationalise the number of applications and reduce any associated costs across the application portfolio. Applications can be reduced both within an individual agency and across government.

2.5.2 Dependencies

Realisation of further savings in applications rationalisation is dependent on:

- the ability to successfully archive data and records or migrate data and records to other applications
- the ability to successfully subsume the functions of duplicated systems into other systems in the current portfolio.

2.5.3 Issues and risks

Risks and issues that may impact the realisation of savings in the area of applications rationalisation include:

- agencies that are unable to effectively decommission systems due to records management legislation implications
- the low level of business support for, or resistance to, applications rationalisation
- situations where the resources required to rationalise applications outweigh the efficiencies and savings delivered.

⁵ The categories used as part of the Queensland Government Enterprise Architecture (QGEA) to provide a consistent and convenient method of logically grouping business processes, information assets, applications and technologies and ICT initiatives into meaningful and manageable areas for analysis.

2.5.4 Looking forward – guidance

In order to remove dust gathering systems, reduce duplication and achieve savings through applications rationalisation, the following activities should be undertaken:

- Continue collaboration with Queensland State Archives to develop and implement an effective archival strategy for these systems.
- Ensure application archival strategies are implemented as part of each agency's application decommissioning activity.
- Further investigate the decommissioning of the CITEC SAP system, subsuming the CITEC instance into the DSITIA SAP instance.

2.6 Business service delivery

2.6.1 Identification of savings opportunities

These savings opportunities were identified through a variety of means including agency consultation in the early stages of the Audit. Details of the analysis regarding savings resulting from the decommissioning of the Travel Management System (TMS) are provided in *Appendix C*.

While the rationale for savings in these areas is sound and logical, the Audit did encounter substantial difficulties in collecting reliable evidence to measure the current state of these business service areas.

For example, full and complete information about the TMS was difficult to obtain from the Queensland Government Chief Procurement Office (QGCPO), even though QGCPO asked for specific information and reports which were known to exist and had been previously sighted. This information was eventually provided to the Audit after multiple delays and repeated requests.

Measuring the current state of website redevelopments and the benefits of online service delivery channels also proved difficult as current information about government websites and online channels across government is out of date and incomplete.

Importantly, the Audit understands the above savings estimates are conservative and savings are likely to be higher. The analysis of savings opportunities in this area was impeded by a lack of data quality. To understand the true savings potential, the Audit recommends further analysis be undertaken in these areas.

2.6.2 Dependencies

Realisation of further savings is dependent on the development of viable business cases that support the rationalisation of business services to online channels and external service providers.

2.6.3 Issues and risks

There are a number of risks and issues that may impact the realisation of savings through the rationalisation of business service delivery:

- The potential lack of business or ICT support for the adoption of natural systems and alternative methods for provisioning ICT business service support.
- The resources required to rationalise business service delivery may outweigh the business efficiencies and savings delivered.
- The centralisation of services to entities such as Smart Service Queensland may not be cost effective at the agency level.
- The provision of services by external service providers may not be cost effective.

2.6.4 Looking forward - guidance

These savings will be delivered through considered strategies involving rationalisation of business services and service channels, as well as the adoption of alternative ICT service options such as natural systems⁶ (e.g. Webjet.com.au for online flight booking). To realise these savings, the following activities should be undertaken:

- Continue with the current TMS licensing arrangement until end of contract life to ensure penalties for early exit are minimised.
- Negotiate with other service providers to obtain a value-for-money discounted cost, including:
 - requesting priority booking during state declared natural disasters
 - requesting a quarterly spend report, broken up by agencies, to retain a consolidated view of government travel expenditure.
- Benchmark other service providers to ensure on par pricing with tickets purchased direct from airlines.
- Ensure agencies have migrated their processes away from TMS by the end of contract life.
- Undertake a full comprehensive audit of all Queensland Government websites and associated costs to ascertain where efficiencies and cost savings can be made.
- Undertake an audit of current library facilities, costs and capacity to determine if additional efficiencies can be obtained.
- Continue to explore the potential opportunity for savings from the discontinuation of vehicle registration stickers.

⁶ ICT solutions that negate the need for an organisation to source their own unique service, whether through buy and run, build and run, or even outsourced fee for service.

2.7 ICT efficiency

2.7.1 Identification of savings opportunities

All Queensland Government agencies were requested to provide information regarding costs to provide specific ICT services. Agencies were also requested to provide details of service characteristics, including the units of demand which are primary cost drivers for each service. The QGCIO subsequently requested price submissions from a representative group of vendors in order to compare agency and industry prices.

This information was analysed to identify the per unit cost and price for agencies and industry to provide similar ICT services. Analysing the costs of desktop, data storage and hosting infrastructure bundles, in particular, highlighted that Queensland has a vibrant and competitive ICT industry.

The following areas of ICT efficiency were explored: optimise ISP bandwidth costs, QGCPO administration charges, reduce security software licensing, desktop consolidation and outsourcing, data storage consolidation and outsourcing, ICT service costing models consolidating, cloud email, cloud provisioning of hosting infrastructure, minimising transaction costs and optimising ICT asset management.

2.7.2 Dependencies

Realisation of these savings is dependent on the development of viable business cases supporting the consolidation and outsourcing of the government desktop computer fleet; consolidation and outsourcing of data storage, and the industry provisioning of both cloud-based email and ICT hosting infrastructure services. As with any cloud based solution, the underlying capability of the network is fundamental to operational effectiveness.

2.7.3 Risks and issues

There are a number of risks and issues that may impact the realisation of savings in the area of ICT efficiency:

- Identified strategies may conflict with the current business and service delivery models of both CITEC and QGCPO.
- The resources required to migrate to cloud based solutions may outweigh the business efficiencies and savings delivered.
- The consolidation and centralisation of services may not be cost effective at the agency level.
- The provision of services by external service providers may not be cost effective.
- The capability of the existing Queensland Government network to support cloud-based offerings may be inadequate.

2.7.4 Looking forward – guidance

Savings can be realised through improved management strategies to increase performance, cost and demand management of business as usual (BAU) ICT delivery. In order to realise these savings, the following activities should be undertaken:

- Continue to analyse savings opportunities related to minimising transaction costs, to enable more definitive conclusions post the Audit, including the monitoring of agency uptake of panel arrangements and report annual savings as part of the ICT Baseline.
- CITEC to revise the pricing model for the Queensland Government Internet Service Provider (QGISP) service to ensure agencies are paying for minimal overheads.
- Remove the 2% administration and management fee on whole-of-government standing offer arrangements.
- Queensland Government agencies to adopt a standard costing model developed by the QGCIO as part the BAU Review.
- Establish a panel of security software industry providers for the Queensland Government.
- Implement the recommendations of the cloud email strategy.
- Continue to collect data to determine the extent of underutilisation of assets.
- Progress the analysis and implementation of cloud provisioning for ICT hosting services.
- Engage industry providers to ascertain more cost effective solutions for provision of government data storage.
- Consolidate agency data storage services and outsource where cost effective to do so.
- Engage industry providers to ascertain more cost effective solutions for provision of the government desktop fleet.
- Consolidate agency desktop fleets and outsource where cost effective to do so.

2.8 ICT vendor management

2.8.1 Identification of savings opportunities

A number of vendors were requested to provide information regarding sales of ICT products and service to agencies over the past few years. Agencies were also requested to provide details of significant contract arrangements with significant vendors. QGCPO also participated in the Audit by providing information regarding agency spend and the level of agency adoption of whole-of-government procurement agreements in the form of Standing Offer Arrangements.

The following savings opportunities were explored:

- Adobe invoice consolidation
- Microsoft true-up cost avoidance
- Microsoft purchase order consolidation
- right sizing of SAP licenses
- ICT license management (minimising unplanned expenditure, right sizing software application licenses and reducing vendor costs via a whole-of-government approach).

This information was analysed to identify the volume and value of transactions with significant ICT vendors. In particular, analysing the frequency of purchases of software licences, highlighted unnecessary management overheads resulting from the purchase and payment of software licenses more frequently than required. An analysis of Adobe and Microsoft purchasing behaviour is provided in *Appendix D*.

The analysis of the software audit reports provided by agencies highlighted further opportunities to achieve savings through more effective management of software licenses to reduce the level of true-up⁷ discrepancy and subsequent liability to additional license costs.

2.8.2 Dependencies

Realisation of further savings in ICT vendor management are dependent on:

- the establishment of up to date agency software registers, including standard processes to periodically update software configuration information
- the establishment of centralised visibility of software deployed by agencies and agency license entitlements based on up to date software configuration information
- central participation in agency negotiations to ensure value for money software license arrangements, as well consistent terms and conditions across agencies

⁷ A process initiated by Microsoft to see if you have deployed more software licenses than what your company has licensed under an agreement or if you have licenses that are currently unallocated.

- industry accepting the Queensland Government as a single entity
- industry licensing arrangements only billing for allocated licenses.

2.8.3 Risks and issues

There are a number of risks and issues that may impact the realisation of savings in the area of ICT vendor management:

- Agencies may not be willing to delegate the negotiation of software license arrangements to a central authority.
- The time taken to process requests through a central authority and governance could be prohibitive.
- Instances may arise where an agency can negotiate a better specific software license arrangement than a central authority.
- Agencies fail to maintain an accurate inventory of software licenses deployed and total software license holdings.
- Agencies fail to comply with software license obligations with vendors.
- The complexity involved in the management of whole-of-government licensing and agency allocations.

2.8.4 Looking forward – guidance

Savings can be realised through improved vendor and licence management. In order to realise these savings, the following activities should be undertaken:

- Establish a current baseline of all software licenses deployed.
- Establish a mechanism to enable whole-of-government visibility and management of all software deployed by agencies, including software licence entitlements.
- Identify unutilised licenses and agree with vendors to avoid maintenance charges for surplus licenses.
- Reduce the frequency of raising Adobe invoices to a single quarterly transaction per agency for licenses purchased and deployed.
- Reduce the frequency of raising Microsoft purchase orders and associated invoices to a single monthly transaction per agency for licenses purchased and deployed.
- A central agency procurement group to participate in the negotiation of agency software licensing agreements with vendors.

- Potential savings may be realised by engaging with SAP to reduce expenditure on maintenance of SAP ERP licences to more closely reflect the value of licences in use by the Queensland Government.

2.9 Print services

2.9.1 Identification of savings opportunities

The savings opportunities in print services were identified by comparing print volumes and associated print unit costs provided by agencies. The savings identified were calculated by modelling the total print volumes and colour printing ratios of agencies.

The following assumptions were applied to the calculation of savings in the area of print services:

- Any agency currently below the maximum percentage limit for colour printing will maintain its existing percentage.
- No changes to click charge costs for both colour and black/white will occur. The simulation maintains current agency negotiated price points.

The following areas of print reduction were explored: colour print reduction, print volume reduction and print invoice management. The potential savings resulting from a reduction in the volume of printing is estimated at between \$100,000 to \$1.1 million per annum. This estimate is based on the analysis of annual print volumes and modelled to include a reduction in print volumes of approximately 10%. The potential savings resulting from a reduction in colour printing is estimated between \$600,000 to \$1.8 million per annum. This estimate is based on the analysis of annual print volumes and modelled to include a reduction in colour printing by approximately 10%.

It is expected these savings will continue to be realised on a recurrent basis. Methods for achieving a reduction in the volume of printing include but are not limited to:

- assigning responsibility for the management and coordination of print services to a senior level officer
- centralising the print service budget, consolidating print related purchases across the agency as well as tracking print service costs
- optimising settings on all print devices. At a minimum, agencies must default all print devices to monochrome, double-sided, draft print quality with toner saving settings enabled
- actively monitoring printing volumes and ensure colour printing is minimised
- developing agency guidelines to raise user awareness regarding print volumes and how individuals can contribute to a reduction in the level of printing in their day-to-day work.

Importantly, there are greater intangible benefits to this print strategy. The focus on cost management of the print service, which applies broadly to all government staff, will stimulate far-reaching cultural change and further innovation on how to improve efficiency and reduce wastage in other areas of government.

2.9.2 Dependencies

Realisation of further savings in print services is dependent on:

- the implementation of whole-of-government policy and guidelines regarding colour printing and reducing print volumes
- implementation of whole-of-government configuration settings on printers
- decommissioning of end of life devices
- vendors supporting Queensland Government consolidation of print invoicing.

2.9.3 Risks and issues

There are a number of risks and issues that may impact the realisation of savings in the area of print services:

- Agencies may not be able to successfully facilitate a change in user behaviour with respect to reducing the level of printing.
- Agencies may fail to adopt and comply with the whole-of-government policy regarding colour printing.

2.9.4 Looking forward – guidance

The realisation of savings in print services requires the cooperation of all agencies to adopt new policy concerning the use of printer services and printer infrastructure. It involves a change in mindset for all staff to reduce the level of print consumables required through the use of double sided outputs as well as reducing the level of colour printing in day-to-day use. Agencies and staff will need to be proactive in identifying practical strategies to reduce the unnecessary printing of documents. In addition, savings can be found by taking advantage of industry 'health checks' which model the outcome of optimising the print fleet and subsequently moving to an outsourced managed service.

The following activities are proposed in order to realise savings in the area of print services:

- Finalise the QGEA policy to reduce the percentage of printouts using colour.
- Finalise and distribute the QGEA guideline to accompany the QGEA policy.
- Monitor alignment to the policy through the annual QGEA self-assessment process.
- Consolidate vendor invoice processing.

2.10 Telecommunications

2.10.1 Identification of savings opportunities

A third party, Fastlane Software, was engaged by the Audit to investigate, in detail, government telecommunications accounts, active telecommunications services including billing frequency and billing costs. Fastlane Software was engaged to review Telstra's billing data for Queensland Government agencies, to determine what savings might be available if inactive mobile and voice services were cancelled, mobile voice plans were optimised, mobile data plans were optimised, fixed voice plans were optimised, and billing accounts were rationalised.

Fastlane Software provided a report that detailed anomalies in Queensland Government telecommunication charges against negotiated charge rates, and areas where the Queensland Government could optimise or eliminate expenditure. Details of this analysis are provided in *Appendix E*.

As a result of the telecommunications analysis a number of savings opportunities were identified, including:

- reduced billing charges resulting from anomalies in telecommunications vendor billing processes
- rationalisation of telecommunications services and accounts to minimise invoicing costs and reduce the service charges for unused telephone numbers and mobile accounts
- maintaining current and accurate inventories of telecommunications services.

2.10.2 Dependencies

Realisation of further savings in telecommunications is dependent on the continued monitoring of vendor call costs and services charges in an environment that encourages:

- centralised oversight of telecommunications, including participation in contract management negotiations with agencies to ensure that agencies receive consistent value for money
- central visibility of all carrier billing information
- redeployment of telecommunications services and equipment from one agency to another, where early termination of the service is not cost effective or permitted under contract arrangements.

2.10.3 Risks and issues

There are a number of risks and issues that may impact the realisation of savings in the area of telecommunication services:

- Agencies may not be willing to delegate the negotiation of telecommunications contracts to a central authority.
- Agency perceptions that they are able to negotiate better rates than a central authority.
- Agencies may fail to maintain an accurate inventory of telecommunications services.
- There is a reliance on Queensland Shared Services as the shared service provider which currently undertakes account management for telecommunications on behalf of numerous agencies.

2.10.4 Looking forward – guidance

Telecommunications savings will be realised through improved management strategies including but not limited to:

- continual monitoring of fixed and mobile services to reduce the level of fixed service charges for idle services
- improved control over the approval of payments to telecommunications vendors to ensure that billing charges reflect the negotiated current call charge rates for agencies
- rationalisation of call charge options to ensure that all agencies negotiate optimal call charge rates in their telecommunications contracts
- optimisation of mobile voice and mobile data plans based on actual usage
- maintaining current and accurate inventories of telecommunications services.

The following activities are proposed in order to realise savings in the area of telecommunications:

- Ensure an accurate fixed line telecommunications services inventory is maintained.
- Ensure a regular scheduled review of fixed services is undertaken to determine if any of the idle services need to be retained.
- Agencies monitor and report progress on fixed voice call costs.
- Agencies monitor and report progress on mobile voice costs.
- Implement cost optimisation strategies for mobile data plans including:
 - cancellation of idle data plans
 - minimising over plan data charges
 - optimising data plans for active mobiles
 - replacing mobile IPWAN plans with Enterprise Mobile Broadband plans.

- Ensure an accurate mobile telecommunications services inventory is maintained.
- Ensure a regular scheduled review of mobile services is undertaken to determine if any of the idle services need to be retained.
- Consolidate telecommunications accounts to minimise invoice processing costs and enable savings from service provider discounts relating to intra-account billing.
- Ensure agency telecommunications service provider invoicing is validated.
- Agencies review their use of dedicated fax machines and retire or substitute these with multi-function devices at end of life. Incorporate guidance strategies into agency ICT asset management plans and strategies.
- Conduct activities post the Audit to continue to analyse savings opportunities related to optimising wide area network (WAN) costs.

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Total ICT replacement cost



3 Total ICT replacement cost

Findings

- The total ICT replacement cost has been calculated to be at least \$7.4 billion.
- Using the current funding approach, the Queensland Government is unable to service the existing level of ICT replacement cost required to replace and maintain existing systems.
- A new approach is required including targeted investment in upgrades and replacements as well as a shift to alternative methods of providing business and ICT services.

3.1 Introduction

Total replacement cost is an estimate of the budget that is likely to be needed to maintain the integrity of the ICT portfolio at an acceptable level for the needs of the business. Total replacement cost accrues normally as part of an ageing system or technology platform. Unless an organisation makes adequate annual financial allowances to service the total replacement cost, system maintenance and replacement can suffer impacting on critical frontline services that rely upon ICT.

Where total replacement cost is not sufficiently addressed over a prolonged period, the scale and complexity of aged end-of-life systems and technologies requiring replacement can create systemic business risk, particularly for large organisations.

The Audit has identified total replacement cost, and lack of adequate measures to address it, as a major systemic issue within the Queensland Government's ICT portfolio.

3.2 Quantifying the cost

The total ICT replacement cost has been calculated to be at least \$7.4 billion.

3.2.1 Components of the total ICT replacement cost

Year-on-year cumulative funding restrictions have resulted in core systems and infrastructure being used beyond expected lifespans. They are in poor technical condition, lack vendor support and there is an inability to absorb and accommodate changed business requirements. Ultimately this has led to an increased total replacement cost and higher risk to the government.

The total replacement cost is made up of various components of the ICT stack, as shown in Figure 5. As we move up the stack, there are reported technology replacement costs, projected application replacement costs and estimated business process and service delivery costs required to implement any replacement.

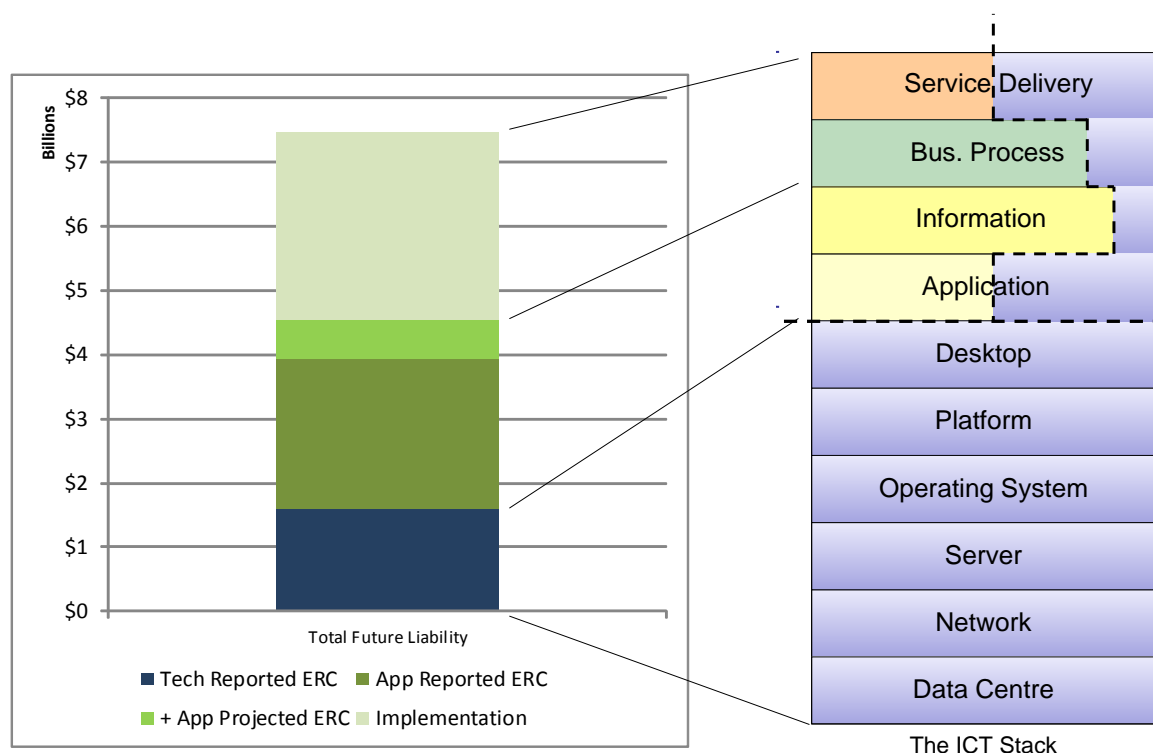


Figure 5 - Total replacement cost

The estimated replacement cost (ERC) is the cost of purchasing and/or building a new system or technology if only the system were to be replaced with a similar asset (i.e. excluding implementation). Some critical data was not provided by agencies which required the QGCIO to extrapolate the ERC for some applications.

The total extrapolated ERC for applications has been calculated to be \$2.9 billion. This consists of the \$2.3 billion reported by agencies plus an additional \$0.6 billion to account for incomplete ERC data as reported. Refer to *Annex – Total ICT replacement cost* for more detail.

In addition, the total cost of implementing a program for replacement is not part of the reported ERC and has been found (using other examples of systems replacement within the Queensland Government) to be approximately the same as the ERC again. This corresponds with the service delivery and business process components of the ICT stack, as shown in Figure 5.

This means that the implementation portion of the cost is estimated at \$2.9 billion.

For the technologies, the data provided by some agencies was poor. However, due to the complexities of these layers of the stack it was not possible to project the full replacement costs and only the reported data was able to be used. The technology ERC was reported by agencies to be \$1.6 billion and should be considered as the bare minimum technology replacement cost.

The ICT replacement cost is therefore a sum of these three component parts.

Implementation:	\$2.9B
Application projected ERC:	\$2.9B
Reported technology ERC:	<u>\$1.6B</u>
Total replacement cost:	\$7.4B

3.3 Causes

The relative independence of agencies has fostered the build-up over time of a high degree of unnecessary diversity, complexity and waste in ICT systems and underpinning infrastructure.

Added to this multiplicity of systems are years and layers of over-customisation of systems – effectively tying the business very tightly to specific vendor products and software versions.

It should be noted that often this over-customisation is a result of poor business processes and archaic industrial rules or legislation which transfer the problem to the ICT platform, instead of tackling the true problem itself – re-engineering/simplifying the business rules, applying more standardised processes and revisiting legislation which have been layered upon layer over the years.

This tight coupling reduces the government's options for making step-change transformations, and makes it very expensive, time consuming and difficult to move away from a vendor product or even to upgrade (with all the complex customisations) to a newer version.

A prominent example of the difficulty the government currently faces is in upgrading finance or payroll systems.

As a result of this complexity, combined with ageing platforms, agencies are struggling to maintain currency with vendor versions, manage operational costs, actively manage security risks and source the wide range of skills required to support these systems. This complexity is further compounded by machinery of government changes affecting ownership of assets and associated funding. Differences in business priorities between current and receiving agencies often lead to diminished use and functionality of some systems or additional customisation to align with new priorities.

Agencies have become locked into costly extended vendor support arrangements over and above the funding of upgrade and replacement initiatives. Approximately 14% of technologies are subject to extended support arrangements.

Projects to deal with the individual issues become hard to fund and establish, let alone deliver successfully due to compressed timeframes, resource shortages, and complex, dynamic business requirements.

Queensland Government ICT capital spend on ICT projects is approximately 12% of the ICT budget, compared to other state and local government metrics of around 20%.⁸ This demonstrates a comparative underspend on systems replacement, limiting growth and transformation in ICT enabled services.

There is a lack of forward planning and funding for the replacement of major systems and technologies. In some instances agencies have not considered appropriate lead times, or budgeted sufficiently for asset replacement initiatives.

3.4 Replacement cost for applications

The Queensland Government has a significant portfolio of software supporting the business of government. Based on agency provided information on 1730 applications across all departments the associated replacement cost totals approximately \$5.9 billion with a like-for-like replacement strategy.

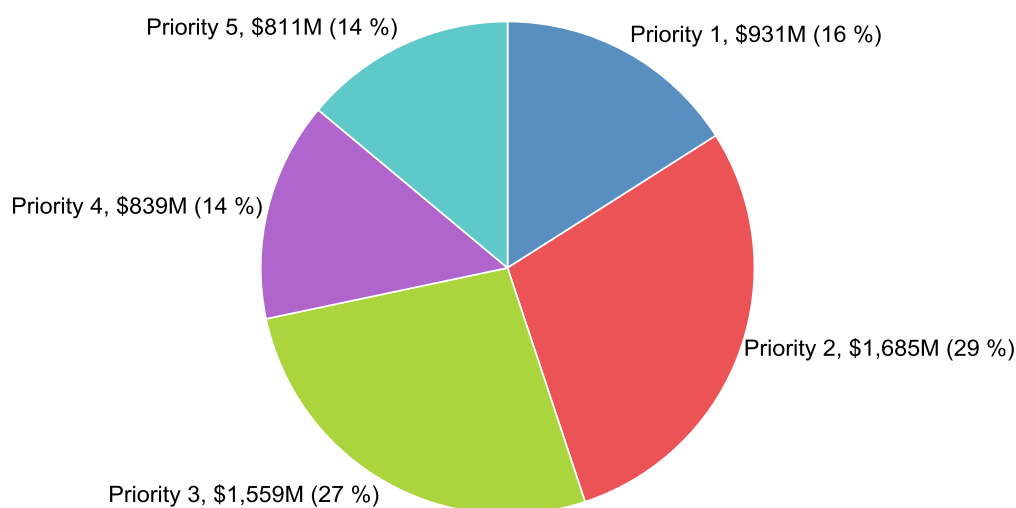


Figure 6 - Replacement cost for applications by priority

ICT expenditure year on year has been maintained at around \$1.6 billion per year in recent years. This expenditure has been applied to all aspects of ICT including day-to-day operations, and projects for changes and additions to the ICT portfolio. Current funding levels are inadequate to cater for the required replacement program using a like-for-like replacement strategy. Figure 7 shows the projected expenditure required if all reported applications were to be replaced no later than 5 years past their current reported end of life date.

⁸ ICT Key Metrics Data 2012: Key Industry Measures: Government: State and Local Analysis: Multiyear, Gartner, December 2011.

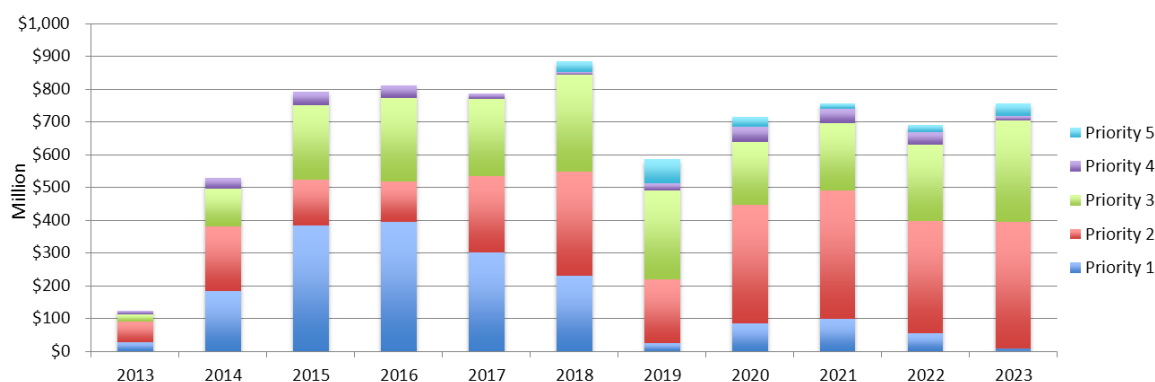


Figure 7 - Modelled applications expenditure profile

The model assumes that each project will conform to a profile based on its size that includes a level of lead time to prepare for the replacement as well as an implementation period. It also assumes that all of the applications will be replaced and that they will be replaced with an equivalent application. The model schedules all priority one applications before scheduling all priority two and so on. It also includes an annual inflation figure of 2.5% on the costs. The primary constraints the model was driven to achieve were to minimise the amount of time that applications remain in production beyond their reported end of life date, and to keep total annual expenditure below a cap.

While the assumptions in the model are not a perfect reflection of reality, it does provide a reasonable approximation of the forward expenditure required to support the current approach. It is estimated that \$200 million of the \$1.6 billion currently spent annually on ICT could be applied to the replacement of existing systems. This implies that continuing the current approach will require an additional \$600 million - \$700 million in years 2 to 6.

It is clear that alternate strategies are needed to address the provision of ICT support for the business processes that are currently underpinned by the applications reaching end of life.

3.5 Addressing replacement cost

Injecting funds to immediately stabilise core government systems is imperative to maintain current service delivery. However, continuing to inject large amounts of investment in the context of the current ICT environment would only add to an inherent ongoing and long term problem with the maintenance of systems, and it would not be long before the same replacement cost problem would occur.

Addressing the current backlog of application upgrades and replacements requires government-wide formal prioritisation. Implementation for high risk applications must be commenced while alternate business models and delivery strategies are determined for the remainder.



Reduce complexity



4 Reduce complexity

Findings

- Reduce the size of the problem
- Value the right things – Don't have complex solutions and processes for things that are low value
- Understand the broader impacts of seemingly small and straight forward decisions
- The whole is greater than the sum of the parts
- Leverage new industry capabilities to deliver ICT services in different ways
- Change the funding model to encourage innovation and remove limitations on performance.

1.1 Introduction

It is clear from the Audit that the government's ICT portfolio is approaching an unsustainable state. A large proportion of the government's ICT is in need of replacement or upgrade. The asset base is a fragmented, disconnected collection of a wide variety of software and technology. The level of specialisation is very high to the point where generic products are almost never used without modification. The ICT workforce is heavily concentrated on keeping everything running. The strong preference is for in-house delivery and for build rather than buy off-the-shelf. ICT management has become about managing the risk associated with the asset base rather than driving increased business value.

The solution to reach a sustainable state is to reduce the complexity of the ICT asset base and how it is managed.

Unlimited power

Consider for a moment the way we consume electricity. Power is provided to our homes and businesses in a reliable manner by a third party. The third party is responsible for worrying about all of the issues associated with power generation and delivery. Everyone else simply consumes it without a second thought on how it got there. No-one except for people in power generation has to ensure that the coal hopper at the power station is full and ready to use.

In ICT, government has taken responsibility for more of the supply chain than necessary or even optimal. In essence, government is worrying about ICT's coal hopper equivalent.

1.2 Principles for reducing complexity

4.1.1 Reduce the size of the problem

Reducing complexity in a large complex organisation is a difficult problem because it's simply too big to deal with. The best approach to this issue is to have a smaller problem.

There are a number of ways the government can reduce the problem in ICT complexity:

- Get out of the business of building and running commodity systems.
- Turn off unwanted systems.
- Leverage Natural Systems.
- Only manage commodity arrangements once.
- Eliminate internal charging models.

Commodity systems

Commodity systems are those systems that are readily available from the market as packaged solutions. For example, there are standard software solutions for things like customer relationship management, financial management, etc. The government spends 53% of its application spend on applications in commodity domains, and 41% of its (ICT) people resource running commodity infrastructure. These numbers don't include the number of senior executives whose capacity is consumed overseeing activities that are simply not core government business.

New models are available for procuring commodity applications (for example, software-as-a-service) and commodity infrastructure (cloud-based infrastructure-as-a-service). There is a significant opportunity for government to reduce cost and remove the distraction of having to manage commodity environments. However, if real value is to be delivered adoption must be accompanied by a fierce determination to adopt without customisation whenever possible.

Unwanted systems

Approximately 9% of the government's application portfolio can be turned off without any impact on the business of government. All that is required is a process to decommission them and a location to store or dispose of information in line with legal disposal schedules. The Queensland State Archives has been championing for a digital repository for almost 10 years without any support from government. This facility would allow for 160 applications to be decommissioned. In addition to reducing complexity, decommissioning these applications would save \$8 million per annum.

Leverage Natural Systems

The Audit found cases where systems were built or acquired to fill a business need that could have easily been served through the use of Natural Systems. Natural Systems are ICT systems that exist commercially providing better practice and fit for purpose solutions that negate the need to have an in-house system at all. For example, every airline has an extremely capable, publicly accessible Natural System for booking flights.

Accommodation can be booked through Wotif.com with minimal cost overheads.

Compare that to the high cost to acquire and operate the Travel Management System currently in use and the government stands to save \$8 million to \$10 million per annum.

Natural Systems should be used as a first preference, where they exist, thereby avoiding the costs and management overheads associated with government sourced solutions.

Only manage commodity arrangements once

Today there are 19 Agencies and with the exception of six which are serviced by Information and Technology Partners, each one manages the supply of commodity services (examples include: telecommunications, e-mail, calendaring, document management, and so on). These services should all be delivered in the same way by a limited set of vendors with central administration of the arrangement. Importantly this does not mean that a new system is required when Natural Systems offered by vendors can be leveraged. Even when Natural Systems are not available, they can be requested as part of negotiating the vendor arrangements.

Eliminate internal charging models

The Audit does not support charge back models or models that involve internal fees. These simply create more complexity and overheads. Their purpose is often to limit demand – an outcome that is rarely achieved. If services are to be provided centrally they should be free for agency use. Any demand management initiatives should be carefully considered and monitored over time to ensure they are driving the desired behaviours.

Eliminate unwanted processes

Travel management is an example where an initially sound business objective (reduce / manage government spending) actually increased costs and failed to achieve best price arrangements. When government invests in processes designed to reduce costs there is always a commensurate increase in costs – cost to implement and manage the new processes.

Red tape reduction is about reducing processes and process complexity – reducing steps. Whenever new processes are proposed (generally to increase governance controls) it is critical that these processes are clinically reviewed to ensure the net effect is a benefit to government.

Conclusion

If the government no longer owns or manages commodity systems, turns off unwanted systems, consolidates the management of commodity arrangements, eliminates internal charging models, removes unnecessary processes and improves remaining process, the size and complexity of ICT in government will be heavily reduced.

4.1.2 Value the right things

The business of government needs a good base. ICT is the fundamental infrastructure of a modern government. Core to that infrastructure is the ability to communicate and work together through one network underpinned by robust identity management, good security, good communications, and quality collaboration tools (e-mail, messaging, video conferencing and so on). If these are effective and cost free for agencies then innovation will no longer be constrained by internal funding models or switching costs from inappropriate channels.

4.1.3 Understand impacts of seemingly harmless decisions

Over the past 12 years agencies have acquired or built ICT infrastructure and systems with varying degrees of constraint. Often new systems were acquired primarily for their ability to meet the unique business requirements of a part of the agency. Each acquisition has contributed to the complexity and duplication within the total ICT asset base. New systems often depended on technical components that were not part of the agency's current ICT architecture, so these were also added. Machinery of government changes often meant those new systems and technologies were subsequently transferred to a new host agency with a different diverse portfolio of ICT.

Every small decision has the potential to complicate the operation, licensing and management of the government's ICT portfolio. The more complex the portfolio, the more difficult it is to manage and change - increasing the cost incurred in doing so.

4.1.4 Don't be captured by vendors

Vendors look to establish long term relationships with clients. Some do this through contractual arrangements (for example, committed spend arrangements, multi-year enterprise licensing arrangements), some do this through good service / customer relationships, and others look to lock the government in as long term customers through integration and complexity.

Vendors that are driven and measured by quarterly sales targets have a focus on making their numbers each quarter. The most effective way to achieve this is to create a critical dependency that prevents the customer from moving away. One prominent example in the Queensland Government is the use of the Microsoft desktop.

Much of the government's application access is dependent on a Microsoft Windows access device. As a result, when the desktop products become unsupported the government has no choice except to continually perform expensive and resource intensive upgrades, for as long as the dependency remains.

This report recommends ways to identify and resist vendor lock-in. Vendor lock-in is never good for government. Vendors who practice this believe that it's good for their business. The Queensland Government intends to change this position.

4.1.5 The whole is greater than the sum of the parts

Sometimes local sub-optimisation can lead to whole of organisation optimisation. Parts of government must be prepared to be adequate or even slightly sub-optimal so the whole organisation can excel.

However, this must not be translated to mean one size always fits all. The Audit found that some of the failings of the ICT-related shared service providers have been a result of trying to 'shoehorn' all parts of government into one type of solution. In doing so, they were then forced to make the solution overly complex to cater for the differing business needs of the different agencies resulting in unnecessary expense.

4.1.6 Don't sweat the little things

The Audit found that agencies sometimes focus on the wrong things in an attempt to comply with government policy and as a result miss the larger opportunities. For example, agencies spend time and effort chasing the costs associated with employees personal phone calls when there are significant savings to be made from ensuring those same phones are on the correct plans.

The Audit also found that improvements in vendor and contract management has the largest potential to deliver reduced costs. It is vital that agencies have a mechanism to understand whether they are getting the best value from contractual arrangements on an ongoing basis.

1.3 What does this mean in practice

In practice this means that agencies of the Queensland Government must make a shift in how they think about and make decisions about using ICT to underpin the business of government.

More and more commodity ICT will be provided through external vendor arrangements allowing agencies to concentrate on more of their core business. Government owned ICT infrastructure will reduce over time resulting in a shift from capital expenditure in ICT towards operating expenditure to deliver the same capability. Simplification of the ICT portfolio will ensure that change is easier and less costly.

More active management of the value derived from arrangements and associated active management of vendors will be required.

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Applications



5 Applications

Findings

- The current application portfolio across government is complex, nearing or past end of useful life, and beyond the limits of budget to replace.
- New approaches are required to deal with replacement of legacy applications at end of life – current approaches are too complex, too slow and too expensive.
- Significant duplication exists across the application portfolio with many agencies implementing different customised systems to meet the same business need.
- Almost 10% of the application portfolio across government could be decommissioned once an appropriate archive strategy has been identified.
- Some of the application portfolio across government can be delivered through commodity applications without customisations but require changed business processes in agencies.
- Independent agency software acquisition without consideration of opportunities or constraints across or within departments is a leading cause of the current disarray.
- Shared service solutions in human resources and finance have been of limited success and face significant challenges going forward.

5.1 Introduction

The application portfolio of government is its lifeblood in terms of support for key business processes and provision of information to operate and manage the business. A strong application portfolio is essential for high performing and vibrant business.

The Audit is the first time the entire application portfolio of government has been visible with all of its value, risk, coverage, complexity and flaws. The analysis of the application portfolio has revealed areas of particular challenge from an ICT perspective, especially within the current government context.

The replacement cost for the application portfolio is a significant issue that has a major impact on how the government approaches the replacement of applications reaching end of life (see section 2– Total ICT replacement cost for detail). The annual expenditure required is \$600 million to \$700 million above the current provision in years 2 through 5.

5.2 Current state of application portfolio

The 1730 applications reported to the Audit represent a small fraction of the total application software in place in agencies. It is estimated that the true number of software applications deployed is in the order of 20,000 to 30,000 applications.⁹ While the number reported is a small fraction of the total number of applications, the reported applications represent the substantial application software underpinning the business of government. Within the 1730 reported applications, significant applications¹⁰ account for 22% of the number and 65% of the cost.

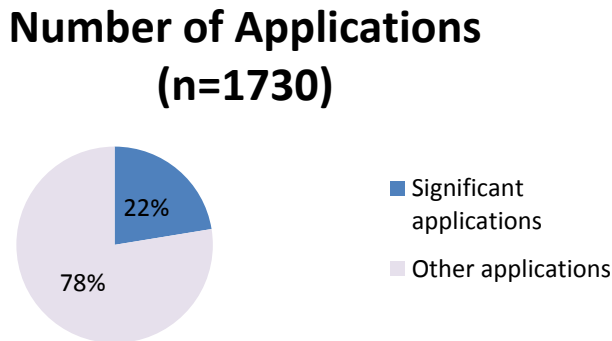


Figure 8 - Proportion of significant applications by number

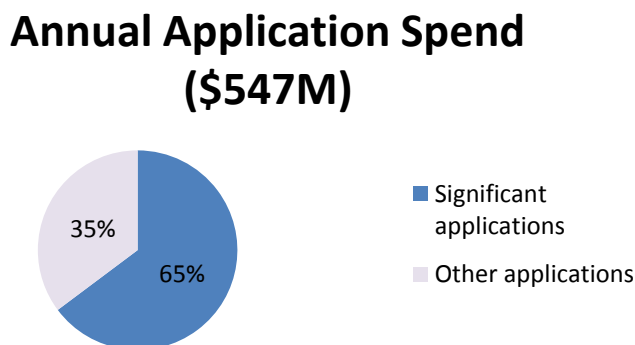


Figure 9 - Proportion of significant applications by spend

The average planned life of applications across the government is 10.3 years with the average life for significant applications being longer at 13 years and the remaining applications life being shorter at 9 years. The reason for this variance is that the significant applications are overall, larger and more complex than other applications, and are therefore more expensive and more difficult to replace. Significant applications also tend to be those supporting stable business activities such as legislated processes.

⁹ 20,000 to 30,000 is an estimation based on discussions with agencies. These applications, while large in number, are all small in profile often serving only a very small number of users. Some examples, include Lotus Notes applications, Microsoft Access databases, and so on.

¹⁰ Applications that have been identified by CIOs and QGCIO as of interest, in the media, in prior audits, as critical systems or have an annual operating expenditure greater than \$1M per year.

To determine the risk associated with the application software, the technical condition of each of the applications was assessed by the owning agency using a standard methodology. Technical condition is an assessment of an application's health in terms of its performance, maintainability, and alignment with the corporate architecture and best practices. Across the 1730 reported applications 25% (424) were assessed as being in poor technical condition, but only 9% (36) of the 388 significant applications were assessed as being in poor technical condition.

These proportions of applications in poor technical condition are not alarming since technical condition often declines with the age of an application. However, when considered along with the end of useful life for the applications the true state of the portfolio becomes clearer. The program of work undertaken to address the Y2K bug in the late 1990s had the unplanned side effect of synchronising the end of life dates for many of government's key systems. By December 2015, 77% of the reported applications will be at or past their end of useful life, 84% by December 2016, 91% by December 2017, 95% by December 2018, 96% by December 2019, 99% by December 2020, 100% by December 2021, and 100% by December 2021.

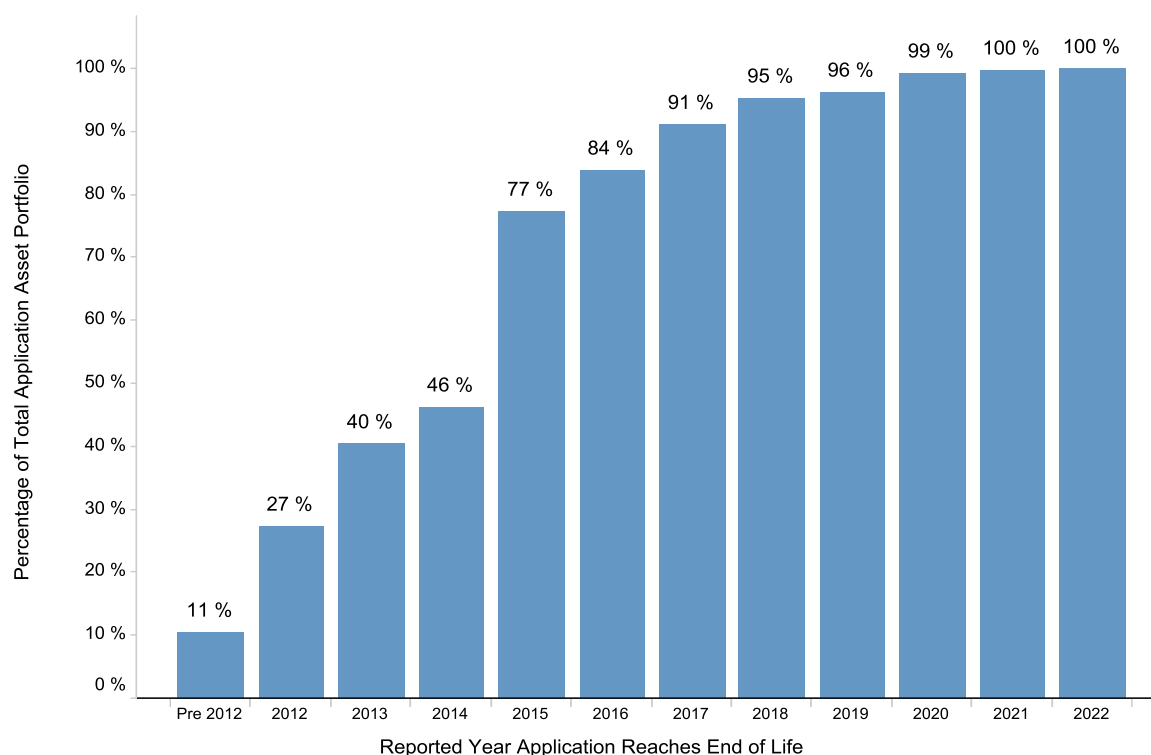


Figure 10 - Percentage of total applications reaching end of life by year

A detailed analysis of this situation can be found in *Annex – Significant and high risk systems*.

The software applications of government underpin all of its service delivery and operations. Thus it is vital to deliver a level of capability that allows the government to continue to operate after an application is no longer capable of servicing that need.

In the past, the most common approach has been to upgrade or replace ageing applications. However, this approach is time consuming, expensive and difficult when the application is not standard off-the-shelf software. Across the 1730 reported applications, 57% are custom built, 36% are based on off-the-shelf products and the remaining 7% are procured as a service. Even within the off-the-shelf products, agency Chief Information Officers commonly report high levels of customisation.

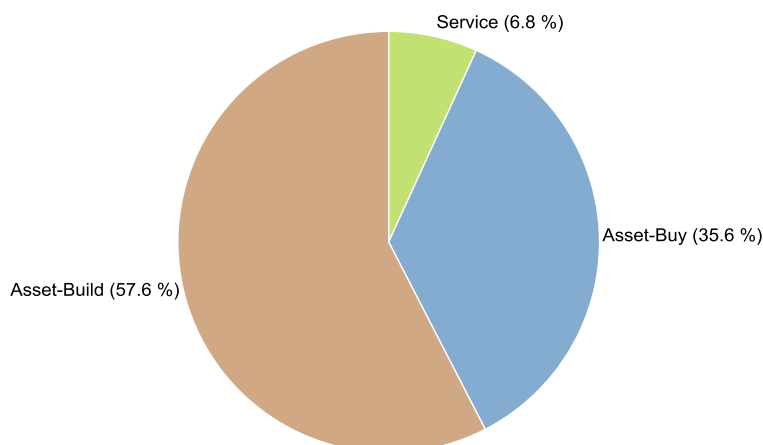


Figure 11 - Application acquisition strategies

The combination of poor technical condition, complex, custom applications all reaching end of life in a short time horizon dictates that a different strategy will be needed to provide the required level of capability. Continuing to source that capability through heavily customised or purpose-built applications software is no longer sustainable.

A common approach in agencies to date has been to build or customise and deploy application software to precisely reflect the current business process with all its inherent complexity and misalignment with the available products. Failing to review the business processes and challenge the need for the complexity or local nuances has resulted in overly complex, expensive and difficult to maintain application software. It also results in lengthy replacement projects when the applications reach end of life.

The Audit did not capture the level of customisation in individual packaged applications. However, agencies have stated that the majority of their commercial off-the-shelf product based solutions have been customised to some degree. The customisation is a by-product of the approach taken to acquire solutions to business needs. The typical approach has been to perform a requirements gathering exercise to gather the detailed requirements and then attempt to procure software that best meets the requirements. The software almost never meets all of the requirements and results in a lengthy, expensive and complex process to customise.

The other dominant approach taken is where agencies review the software market and determine that there are no candidate products on offer and, having reached that conclusion, commence a software build project, typically in-house.

Both of these approaches can result in suboptimal solutions for the following reasons:

- Specifying highly detailed and specific requirements may eliminate viable potential products from consideration and often biases selection towards rigid solutions rather than flexible solutions.
- Heavy customisation results in upgrades or replacements that are complex, time consuming and expensive.
- Failure to consider changes to the business process to meet the software market misses opportunities to simplify and improve the performance of the business.
- In house builds create a long term dependency on maintaining those skill sets and knowledge. While it may provide a very good fit to the current business, it also creates long term risk and expense.
- End of life migration away from heavily customised products and custom built software is difficult and expensive.
- Heavily customised products causing reliance and lock-in to specific vendors and technology.
- After the software is no longer used, it leaves behind a significant overhead with the requirement to store and access the records it held.

It is clear that before application software is replaced or acquired the business must be reviewed to ensure the business model is appropriate. The business processes can then be revised to align with the application software to the highest possible degree.

5.2.1 Application platform complexity

Application software has evolved through the years in ways that have increased the complexity of the operating environments on which they are built and run. Modern environments have a much larger number of platform components upon which the modern applications are dependent, as shown in Figure 12.

Evolution of application architecture

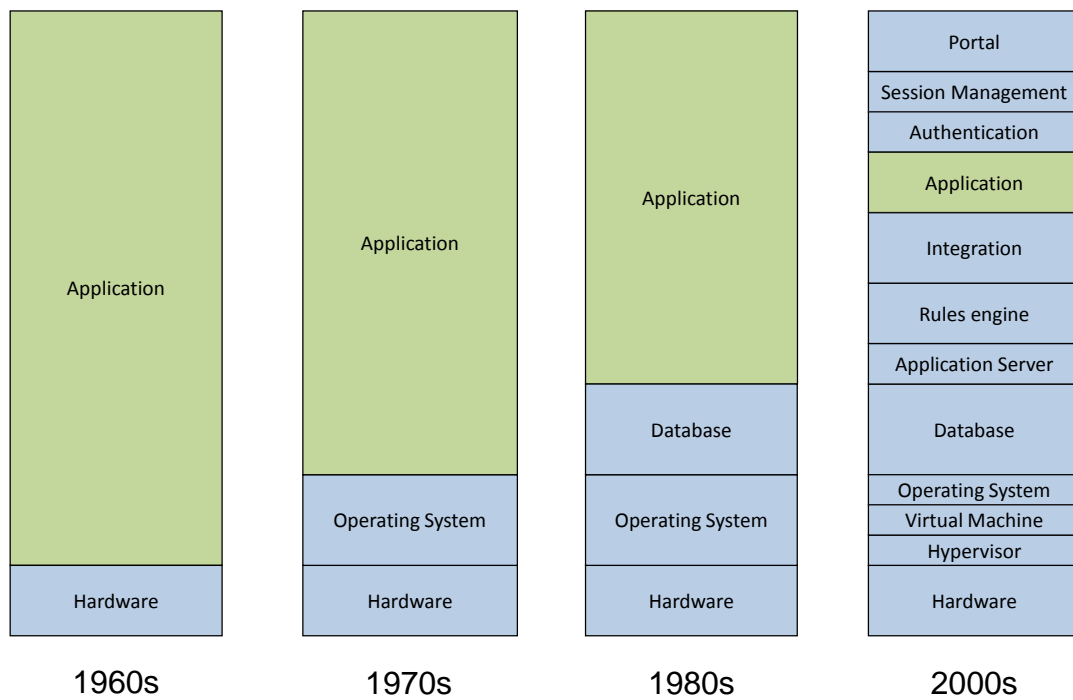


Figure 12 - Evolution of application architecture

However, this does not mean that applications are now smaller. Figure 12 shows the increasing complexity for equivalent applications over time. In general, applications are now much larger and richer than in past decades.

The Audit found that agencies have adopted these complex application architectures, as shown in Figure 13 and Figure 14. The mixture of shapes used in each of these figures is purely to aid in differentiating the (plotted) items which relate to each figure's respective legend.

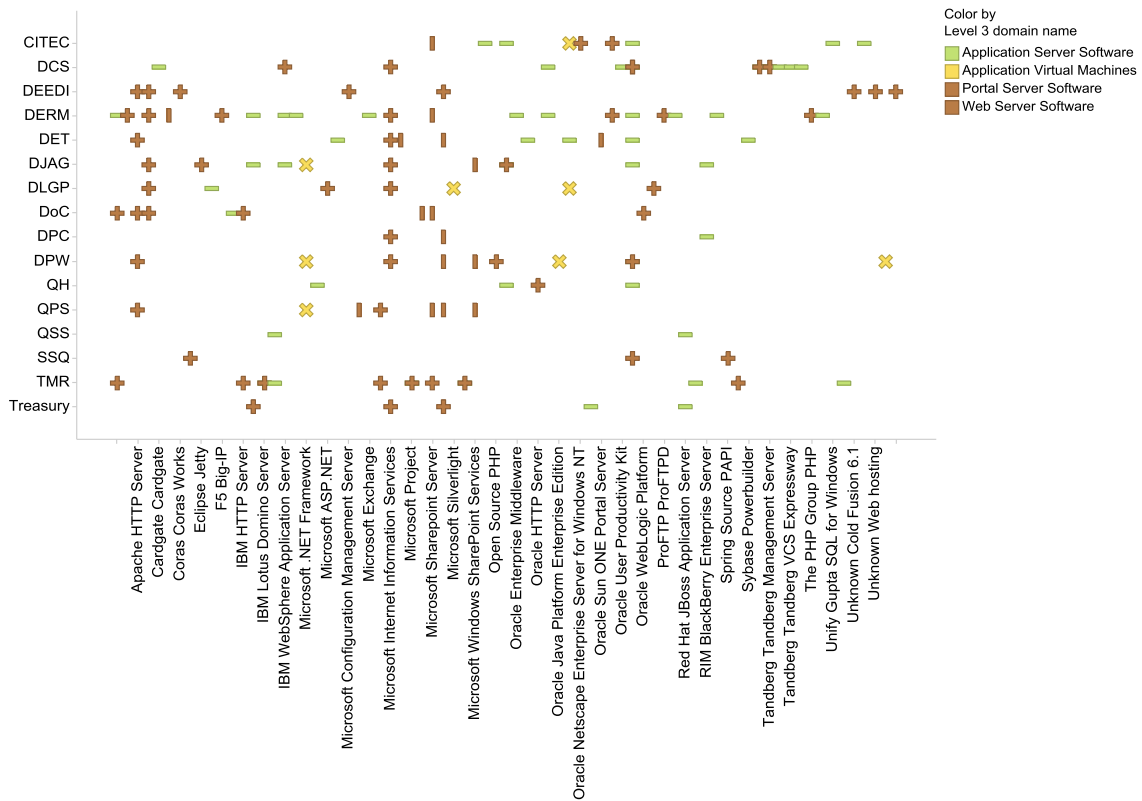


Figure 13 - Application platform software complexity by agency



Figure 14 - Application software engine complexity by agency

Many of the deployed applications are now dependent on inherently complex environments. The impact of this is increased cost and complexity in the replacement or upgrade of current applications.

This also points to a level of duplication in the types of platform technologies resulting from the procurement of best fit applications, and the need to deploy the associated infrastructure to implement them. The complex technology environments for the portfolio of applications should be rationalised and simplified as the applications are replaced or upgraded.

5.2.2 Application duplication

The potential scale of application system duplication is highlighted by considering reported application assets against discrete application domains. Duplication occurs when multiple systems support the same, or similar, business services or processes. The Audit reviewed the functional breadth of applications at a high level which only provides indicative information as to the potential duplication with other applications in the same domain. A detailed assessment of each application is required to validate each potential duplication.

Table 7 shows the top 12 application domains where there appears to be high levels of duplication.

Table 7 - Application system duplication

Application Domain ¹¹	CITEC	DCS	DEEDI	DERM	DET	DJAG	DLGP	DoC	DPC	DPW	QH	QPS	QSS	SSQ	TMR	Treasury	TOTAL ¹²
Information Provision	4	16	29	59	16	48	1	40	6	10	44	4	1	1	12	5	296
Human Capital Management	8	9	9	6	7	7	2	10	5	12	10	17	24	1	4	2	133
Financial Management	10	2	3	6	9	13		15	2	10	8	5	29	1	4	5	122
Case Management		6	4	4	4	26		19			38	1	1		3	2	108
Customer Service and Support	3	5	3	4	11	23	1	13		4	10	2	3	8	3	4	97
Document and Records Management		7	6	10	3	12	4	13	4	10	9	3			7	3	91
Information Submission	1	4	3	9	6	13	4	13	4		22	1					80
Enterprise Business Intelligence	1	5	4	5	7	3	1	8	1	4	5	1	4	13	6		68
Research			15	1				3		4	32				3		58
Authorities, Licences, Permits and Awards	2		13	8	1	11	2	3		1	1	1		2	9		54
Scheduling and Bookings	1	2		2	6	2		6		4	8	2	2		3		38
Maintenance Management	4		2			1				2	2	1	4		6		22

Domains associated with agency service delivery, such as Information Provision, would appropriately tend to have multiple applications to cater for the specialised nature of the service delivery. However, application domains related to standard back office processing such as financial management and human resource management would be expected to provide standard functionality across agencies. There should be minimal duplication in these domains.

¹¹ Includes all systems that have 50% or more functionality relating to the domain OR have been identified as significant applications for this audit.

¹² A single application could be mapped to two domain if it contains significant functionality from both domains

The Audit has identified substantial application duplication in the following domains where standard functionality could be expected:

- Human Capital Management
- Financial Management
- Case Management
- Document and Records Management
- Scheduling and Bookings.

This duplication represents wasted effort and expenditure as a result of the specialisation. This complexity of the application environment impacts on the agencies ability to respond to changes in requirements, legislation or government direction. Further, duplication of front office activities causes inconsistent service delivery to the Queensland public and businesses.

5.3 Commodity applications

Every part of the business of government is underpinned by application software. The growth in application software within government has been organic with software being developed or acquired in response to a business need. The application software available from suppliers has also been growing organically with a significant body of commercial off-the-shelf software products available today. An examination of the software market mapped onto the domains of the QGEA and the business of government provides insight into the potential to identify which domains have commodity solutions.

Figure 15 shows the domains in which commodity solutions are prominent.

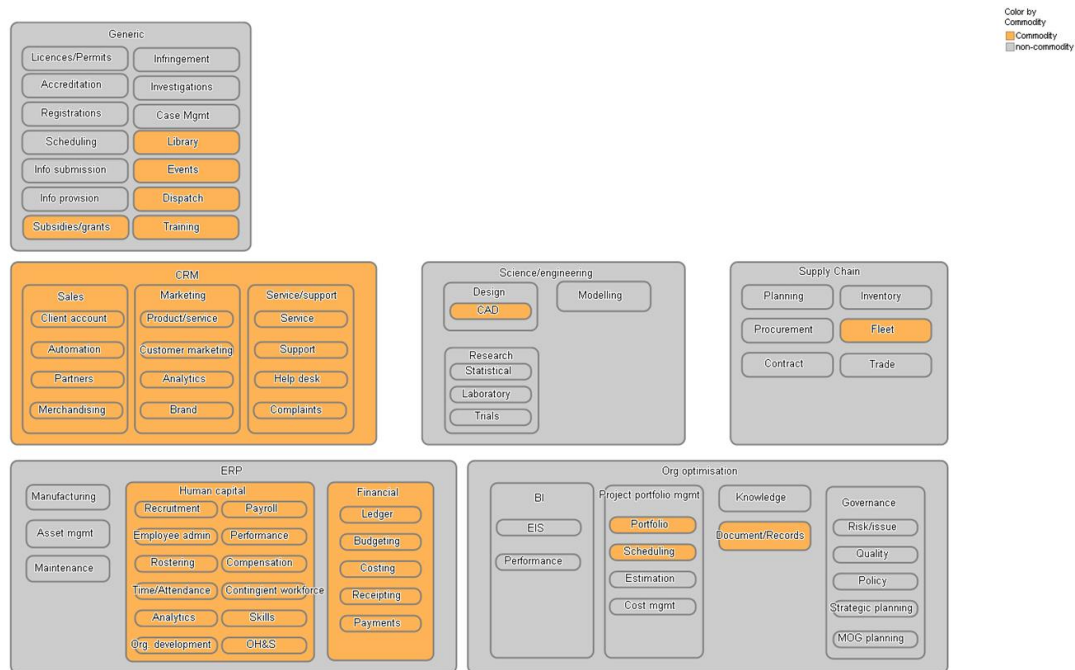


Figure 15 - Commodity domains

In domains where commodity applications exist the following principles should be applied:

- Standard software solutions must be used.
- Configuration of the software is permitted.
- Business processes must be changed to meet the functionality of the software to the maximum extent possible.
- Customisation of the software must be limited to only absolutely essential modifications.
- Software must not be extended; instead it must be loosely integrated with other systems and components.
- Software must be purchased as a service where possible.
- Software must be deployed in a minimal number of instances across government.

This approach will see the government move resources away from commodity applications over time, minimise complexity in those domains, standardise processes, knowledge and skills, minimise expenditure and allow business areas to concentrate on line of business specific activities.

5.4 Payroll systems

Payroll systems are specialist systems within the Human Resource Management domain designed to calculate and trigger the disbursement of the salaries and wages for employees. These systems require significant input data each fortnight. Integration between systems that gather the required input data and the payroll system and between the payroll system and the financial system is essential.

The total number of reported payroll systems is 14. Since the machinery of government changes following the election, the staff of a single new agency may be fragmented across as many as eight different payroll systems.

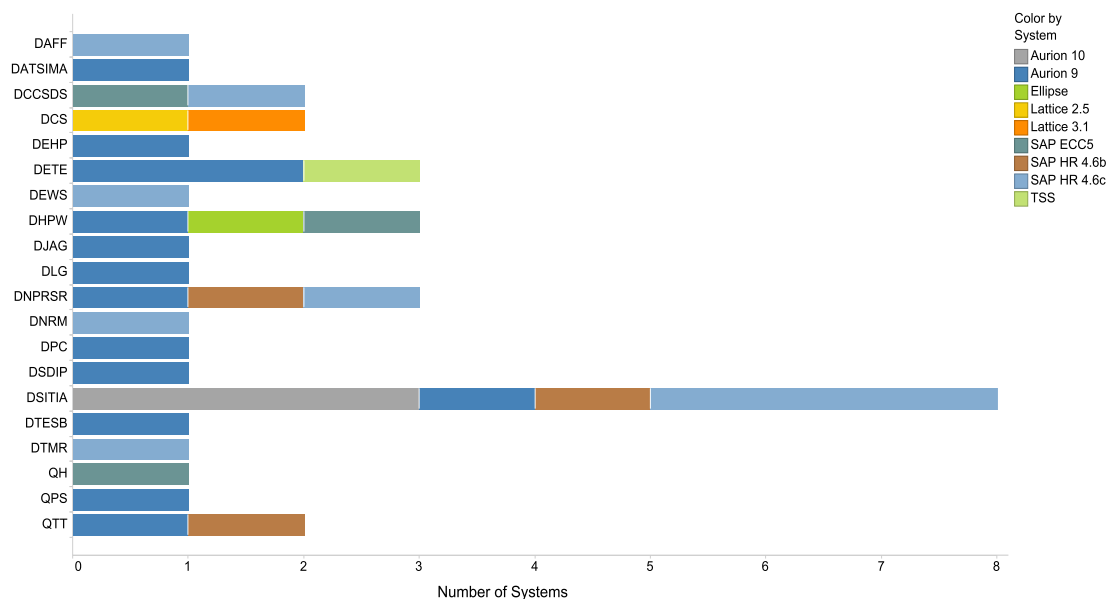


Figure 16 - Count of payroll systems by agency

The example that has some of its staff in each of 8 different payroll systems is DSITIA. This is a dramatic illustration of the impact of machinery of government changes on applications. In this case, each system delivering payroll for some staff members in DSITIA was commissioned for a different department and staff have not yet transitioned to a system commissioned specifically for DSITIA.

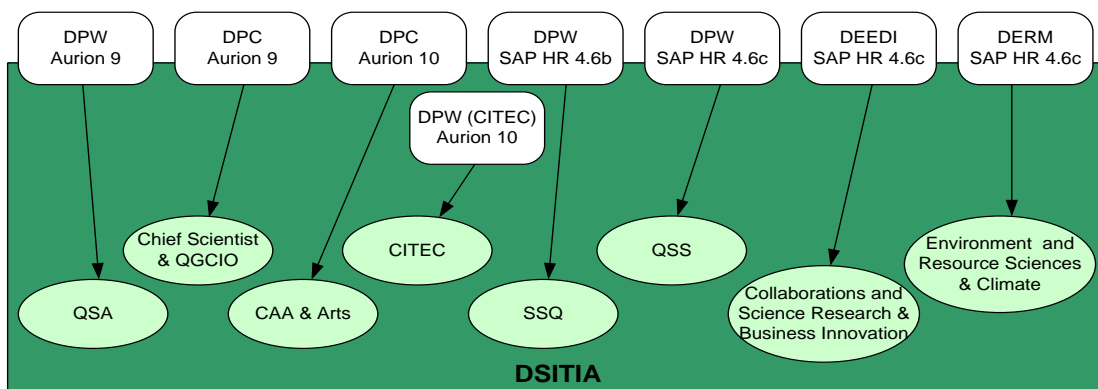


Figure 17 - Payroll systems mapped to business area for DSITIA

Payroll systems are implemented across government through a range of different software applications – SAP, Lattice and Aurion for core payroll systems of departments; and, Ellipse for payroll in QBuild within the Department of Housing and Public Works.

Many of these products are nearing end of support and, in the case of Lattice, past end of support. This poses issues with respect to the maintenance of the taxation rules, which are typically kept up to date through patches to the product / system provided by the vendor as part of the support agreement. Once out of support these updates will have to be applied by the provider of the service if that is even possible. Lattice has been internally supported for a number of years.

Table 8 - End of support dates for payroll products

Payroll Product	Current end of vendor support ¹³	Number of agencies using product ¹⁴
SAP HR 4.6b	Jul-15	3
SAP HR 4.6c	Jul-15	7
SAP ECC5	Jul-15	3
Lattice 2.5	Jun-08	1
Lattice 3.1	Jun-08	1
Aurion 9	Jul-13	13
Aurion 10	TBA	1
Ellipse	Oct-14	1
The Software Solution (TSS) version 5.2.1	Oct-13	1

The implementation of payroll systems is inherently complicated as a result of the complexities of the awards under which an employee's pay is calculated and the associated taxation and legal requirements. This is further complicated by the implementation of other payroll related components such as rostering, time capture, and recruitment management, etc. Limiting the scope of implementation of payroll systems to essential components will increase the chance of success of those implementations. However, additional components may be leveraged to simplify processes to gather the required input data for a pay run, which in turn may reduce the manual effort required to execute a pay run.

As with other packaged software solutions, the implementation of a packaged payroll system should be such that it is contained to configuration of the software with customisation of the packaged solution only where absolutely essential to comply with legislation, regulation or awards.

¹³ Vendor support includes mainstream support and extended vendor support arrangements such as those procured from SAP by QSS.

¹⁴ Count includes agencies where only part of the agency is serviced with the product

Business processes within agencies and in the provider must be changed to meet the software package rather than changing the software. Award simplification and legislation changes should be favoured over customisation of packaged software.

Payroll solutions are currently commercially offered in multiple models. The traditional model is the licensing of a commercially developed product configured and deployed inside the target organisation. This is the model that has been deployed in the Queensland Government. Newer models offer the delivery of the software-as-a-service, hosted in a vendor organisation and accessed from within the target organisation. In addition, the host organisation may also manage the entire business process end-to-end delivering all payroll processing as well as the software solution.

While the more contemporary models have not been deployed in the Queensland Government to date, they are now mature and offer a viable alternative to the traditional approach. Given that payroll is considered a commodity application and business process, it is preferable to not provision this kind of application software from within departments or internal-to-government service providers, subject to being able to secure appropriate service quality and charging.

Success with internal implementation of payroll systems has been mixed. Recent high profile failures in the Health payroll highlight the risks associated with failed implementation. The current process to implement a replacement for the Lattice-based payroll system deployed in the Department of Community Safety is rated as a very high risk project. There are issues with ownership, governance and approach that are highlighted elsewhere in this report. The Department of Community Safety's payroll systems is a prime candidate for considering a different approach to implementation.

5.5 Human resource systems

A Human Resource (HR) system encompasses HR policies and ICT technologies to enable administrative control of various components including some or all of:

- payroll
- time and attendance
- appraisal performance
- benefits administration
- HR management information system
- recruiting/Learning management
- performance record
- employee self-service

- scheduling/rostering
- absence management.

It is clear that HR functionality covers the entire spectrum of activity involved in maintaining a well-managed capable workforce.

In addition to the core payroll systems of government, the Audit identified 160 other systems with a significant HR component. These systems are typically used to provide subordinate HR capability for a portion of the business of an agency.

While application software support for the HR function is clearly required, it is also clear that the diversity of products underpinning the applications across the government is overly complex.

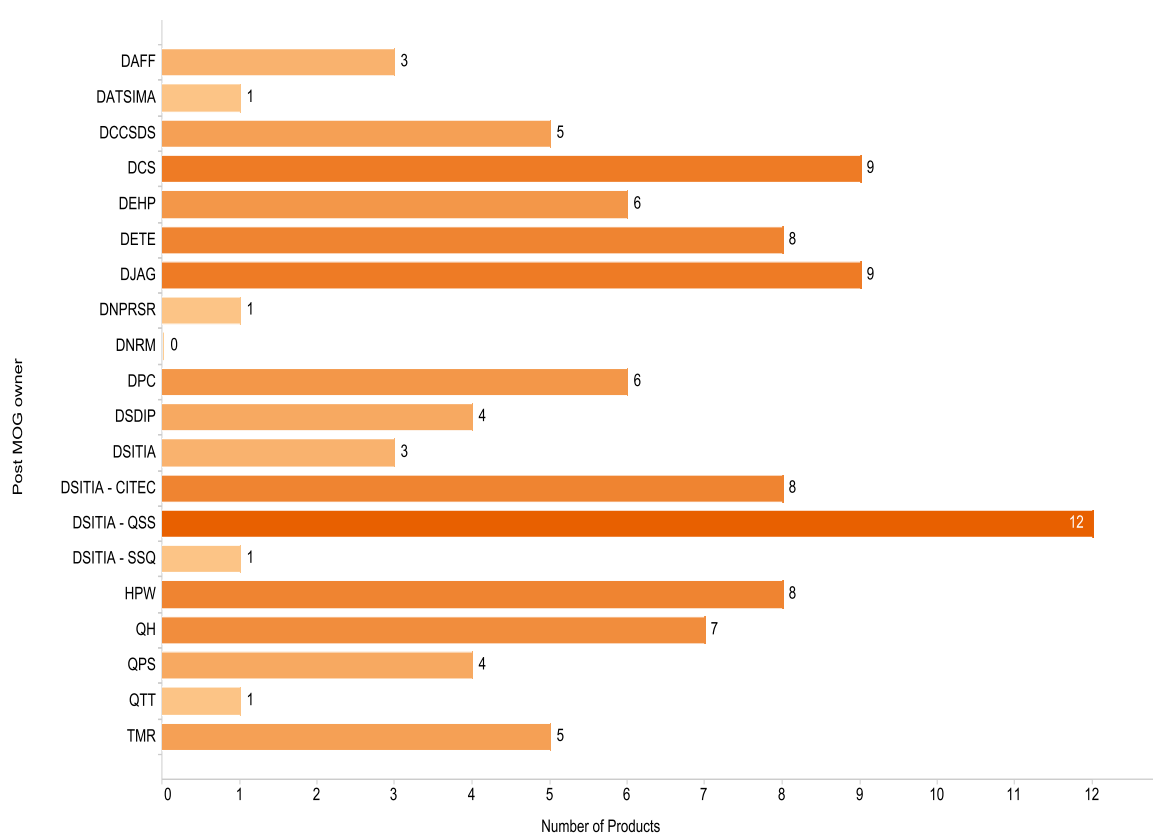


Figure 18 - Diversity of HR products reported across government

There are strong linkages between the different aspects of HR systems and the software supporting the payroll function; however, the connection and distinction between them has often been blurred. This is a by-product of the approach taken by software vendors to increase their market share and the desire by HR business units to have a single all-encompassing solution. Over the last 10 to 15 years this has resulted in the adoption of Enterprise Resource Planning solutions like SAP for HR and payroll with their associated complexity and expense of implementation.

However, not all human resource management functionality is supported through the core HR and payroll system of departments. These systems are supplemented by a large variety of human resource management functions embedded in other systems.

Information flows between the payroll system and other functions supporting human resource management are essential for successful payroll processing. For example, time worked information is a vital input to the payroll calculation. Tight coupling between the systems that provide information to the payroll calculation and the payroll calculation itself creates undue complexity in implementation and management.

As noted earlier in this report, HR systems have become commodity systems. The appropriate approach is for solutions to be acquired and configured without customisation – preferably as a service with business processes changed to meet the capabilities offered by the system. This has not been the approach to date. With HR systems in all agencies reaching end of life by July 2015, it is appropriate that as they are replaced it is done as a commodity system.

5.6 Finance systems

The finance systems across government have achieved a level of standardisation through the implementation of standard products via the corporate solutions program. This has resulted in broad adoption of SAP – core finance system for all departments – and Finance One – core finance system for Corporate Administration Agency and Arts Queensland.

The implementation of SAP for finance is currently spread across six versions of SAP – 3.1h, 3.1i, 4.0b, 4.6b, 4.6c and ECC5. This comes with issues of upgrade timelines with extended support for the older versions of SAP ending in July 2015. A program to migrate these implementations to an alternate platform, either a later version of SAP or some other delivery platform, must be implemented as a matter of some urgency if unsupported platforms are to be avoided.

Table 9 - End of support dates for finance products

Finance Product	Current end of vendor support	Number of agencies using product ¹⁵
SAP 3.1h	Jul-15	1
SAP 3.1i	Jul-15	2
SAP 4.0b	Jul-15	1
SAP 4.6b	Jul-15	3
SAP 4.6c	Jul-15	10
SAP ECC5	Jul-15	12

¹⁵ Count includes agencies where only part of the agency is serviced with the product

Finance Product	Current end of vendor support	Number of agencies using product ¹⁵
Finance One	N/A	1
Ellipse	Oct-14	1

The urgent upgrade or replacement of the core finance systems of government is the product of a number of different circumstances. The issue of most concern is that the software upon which the majority of the core finance systems of government is built, SAP, is currently on extended support and will soon be unsupported by the vendor. The timelines for replacement are constrained by the availability of vendor support. A program of upgrades or replacements should have been initiated over the past three to five years. However, whether for reasons of funding, capacity or agency readiness, QSS have not been able to execute on the program.

The replacement of SAP finance systems in the government is further complicated by customisations that have been made to the standard product. These are typically done to meet the business practices currently in place in an agency.

A customised system is then far more difficult, time consuming and expensive to upgrade, further reducing the time window available to start the projects.

Several vendors have advocated to the Queensland Government for implementations of SAP ERP systems without customisation. The solution offered to meet special business requirements is to place the refinements of business process in a business process engine, allowing the SAP environment to remain in its standard form. Should this approach be successfully taken all future upgrades then become much simpler and faster.

An emerging alternate strategy is to source the financial systems and the associated business processing services from an external organisation as a service. This would eliminate the issues associated with remaining on a vendor supported version of the software – it becomes a matter for the provider. Serious consideration of the level of risk associated with outsourcing ERP as a service would be required before this strategy was adopted.

The externally provided as-a-service strategy, while appearing very promising, has not been trialled to date in the Queensland Government and so carries with it an element of risk. To mitigate that risk it will be necessary to perform technical upgrades for at least a portion of the SAP finance environments.

The attractiveness of the externally provided as-a-service approach needs to be tempered with the government experience to date. The intention of the shared services initiative in the Queensland Government was to provide finance and HR as a service to agencies.

However, the service offered has been limited to core functionality requiring agencies to augment with their own systems and creating dependencies that constrain upgrades.

In addition to the core finance systems of government, the Audit identified 122 other systems with a significant financial component. These systems are typically used to provide subordinate financial transactional capability for a portion of the business of an agency. These systems overall are in moderate to good technical condition with a requirement for replacement over the next two to three years.

5.7 Legacy systems

The National Association of State Chief Information Officers (NASCIO) in the United States of America defines a legacy system as:

A Legacy System is not solely defined by the age of IT systems (e.g. 20 years) as there are many systems that were designed for continued upgrades, but the term also focuses on elements such as supportability, risk and agility, including the availability of software and hardware support, and the ability to acquire either internal or outsourced staffing, equipment or technical support for the system in question. The term may also describe the system's inability to adequately support line-of-business requirements or meet expectations for use of modern technologies, such as workflow, instant messaging (IM) and user interface.¹⁶

Within the Audit, a legacy application is classified as having one of the following attributes:

- 1) An age greater than the average age of all government systems.
- 2) Past its end of useful life date.
- 3) In poor technical condition.

By this definition approximately 52% of the reported applications are classified as legacy systems.

This should not be interpreted to mean 52% of the application portfolio needs to be decommissioned. All of the applications reported to the Audit represent systems of substance to the business of government. The legacy classification implies that those applications have additional risk associated with them and they will need some action to be taken in the near term to ensure the business of government can be continued.

¹⁶ *Digital States At Risk! Modernizing Legacy Systems*, National Association of State Chief Information Officers (NASCIO), December 2008.

5.7.1 Factors leading to legacy systems

An examination of the factors that have resulted in the high level of legacy applications reveals the following systemic issues:

- Insufficient funds available for provisioning ICT resulting in:
 - stretching the application portfolio beyond its normal useful life
 - deferred maintenance and upgrade of existing applications becoming the norm.
- A lack of structured analysis of the application portfolio as input to strategic plans.
- Poor performance management of the application portfolio.
- Mass customisation of packaged software making updates and upgrades expensive and difficult.
- Strong preference for custom built applications.
- Business areas are separately funded to develop their own business solutions without any consideration of the current application portfolio.
- Subsequent limited business area willingness to fund ongoing upgrades combined with limited appreciation for the risks associated with legacy applications.
- Machinery of government changes moving ownership to departments with incompatible technical architectures and implementation priorities.
- Complex diverse heterogeneous environments that complicate maintenance and upgrades.

The legacy problem is not confined to applications, legacy applications predominantly depend on legacy infrastructure. The need to maintain legacy infrastructure has also been seen to drive poor application decisions, with that same infrastructure becoming the default preference for new applications. Further, the dependencies between the applications and the infrastructure and between the various elements of legacy infrastructure can be shown to be a significant constraint to moving to newer generations of application platforms.

5.8 Dust gathering systems

The Audit has revealed a class of legacy systems which continue to incur an ongoing operational expense but for which the business value is extremely low or zero. The Audit refers to these systems as dust gatherers. In many cases these systems are being maintained to meet an occasional business need of retrieving old records from the system. Of the 1730 applications of substance reported to the Audit, 9.3% were found to be dust gatherers.

The majority of these applications can be decommissioned; however, the major impediment to decommissioning is retaining access to the records contained in the system for occasional business reference. The Queensland Government does not have a general purpose facility for the preservation of digital public records. Without such a facility each agency has to provide its own mechanism to retain records in an accessible form. For example, Queensland Shared Services have a facility for maintaining historical records from government finance and HR/payroll systems that they manage on behalf of agencies.

The dust gatherers that agencies consider to be suitable for decommissioning, many subject to the availability of a mechanism for digitally archiving their records¹⁷, account for an annual operational cost of \$8M. However, it is projected that there are between 20,000 and 30,000⁹ small applications in government not reported as part of the Audit. If a significant portion of those could be decommissioned, the combined reduced operational costs could be substantial.

The Queensland Government needs to develop a general purpose digital archive. For large systems the cost to operate is impacted by the volume of data held in those systems. The availability of a general purpose digital archive will present a much larger opportunity for operational cost reduction by allowing older records currently held in operational production systems to be moved out to low cost archival storage. The reduction in data holdings in operational production systems will reduce the operational costs of those systems by reducing storage and processing costs on an ongoing basis.

Further, the rapid growth in storage of digital images, for example medical imagery, geographic data and images, digital video and massive data sets will require the availability of petabytes of low cost storage for infrequent access. The value of this opportunity has not been modelled or estimated.

5.9 High risk applications

High risk applications are those applications for which failure is highly likely, and/or the consequences of failure are high for the agency. These would be considered the highest risk to the Queensland Government, and where strategies to minimise ICT risk should begin.

A number of metrics were applied to identify systems that fall within this category. There are many reasons a system could be considered as high risk ranging from supporting framework and environment issues, to those related to its health or fit for purpose.

¹⁷ In dealing with both Legacy Systems and 'Dust gathering' systems, it should be noted that the systems in question will contain public records that either no longer need to be retained, may need to be retained short term, or may need to be retained long-term (including permanently). Data owners need to work with Queensland State Archives to determine the business, legal and historical value of the public records and their necessary retention periods, so that the data that does not need to be retained can be legally disposed of under the Public Records Act, 2002. Disposal of data that the Government no longer needs to retain is a potential cost saving.

High risk systems are systems where:

- the application software is no longer supported by the vendor (for packaged application software)
- the agency does not have ready access to sufficient skilled personnel to maintain the application software (for purpose built application software)
- the application has become unstable or has reached its limits, and is difficult to provide continuity of operational performance
- the application is dependent on one or more unsupported technical components
- the window for replacement of the application is shorter than the time needed to get a replacement in place
- there is an upcoming critical change to the business, which the application will not be able to meet
- the application has been identified as high risk by the CIO (HBCIS is an example)
- system failure carries a large impact.

Explicit metrics on all these attributes were not available to the Audit so the following criteria were used:

- The system was identified in the Audit (3 Month Report) via CIO feedback.
- The system has been assigned an extreme business exposure (high business impact, low technical condition) by the agency.
- The system is past or near end of life in poor technical health with no evidence of a planning activity to address the issue.
- For disaster critical applications, the system carries a personal safety implication if it were to fail.

These criteria were used to develop a consolidated list of high risk systems (validated with agencies) which can be found in *Appendix G*.

Table 10 shows the top 15 high risk applications, as considered by the Audit.

Table 10 - High risk applications

Post MOG agency	System Name	Business impact	Technical condition	End of life date	Estimated replacement cost ¹⁸
QH	Hospital Based Corporate Information System (HBCIS)	High	Good	Sep 2015	\$250M
DCS	Human Capital Management System (HCMS)	High	Poor	Jun 2008	\$150M
QH	AUSLAB	High	Medium	Jun 2020	\$131M
QSS	Corporate Finance, HR systems (excluding Health and Education)	Multiple systems, multiple instances			\$77M+
HPW	SAP RE (Real Estate) - Housing Tenancy Management SAP PM (Plant Maintenance) SAP PS (Project Systems)	High	Poor	Jan 2016	\$75M
DNRM	Automated Titling System (ATS)	High	Good	Dec 2025	\$40M
QH	Queensland Health payroll solution	High	Good	Dec 2010	\$40M (potentially under reported)
QH	AUSCARE	High	Medium	Jun 2016	\$5M
QTT	TriData	High	Good	Dec 2009	\$5M
QPS	Incident Management System (IMS)	High	Poor	Jun 2013	\$5M
QPS	Weapons Licencing Management System (WLMS) ¹⁹	Not reported	Not reported	Jan 2018	\$4.2M
QH	Finance business solution (FAMMIS)	High	Good	Jun 2012	\$4.1M (potentially under reported)
DCCSDS	Carepay	High	Poor	Jan 2010	\$1M
DNPRSR	IAParks Version 2	High	Poor	Jun 2012	\$0.8M
DCS	Disaster Management Portal	High	Poor	Apr 2011	\$0.04M

The high risk applications shown in Table 10 have been assessed as those applications for which immediate action must be taken to avoid a critical loss of capability for the Queensland Government. The only exception is the Health payroll system, which was identified because of its high profile in the media and the fact that there are still issues to be resolved.

¹⁸ System replacement costs only, does not include implementation costs in agency

¹⁹ QPS have since provided clarification that has not been analysed.

It should be noted that the first five systems in the list have an estimated replacement cost of \$683 million representing a significant challenge for government to fund. Although AUSLAB has a 2020 end of life and HBCIS has a 2015 end of life, QH have advised that both will need a seven year lead time for replacement.

There are a large number of other applications supporting the functioning of the Queensland Government that also require action to be taken in the next three years. It is essential that the government undertake planning to address all applications approaching end of life.

5.10 Business-specific applications

A distinction can be drawn between those applications that are commodity and those that are specific to the line of business that they support. Examples of commodity applications have been given in previous sections including HR systems, finance systems, document and records management systems, and so on. A business-specific application is an application that supports a specialist area of the business – and has little in common with other areas of business from a supporting software perspective. For example, systems to support operating theatres in Queensland Health.

Over time application types can shift toward commodity as standard software solutions become available. For example, in recent years there has been a significant increase in the availability of grants management solutions to such an extent that this would now be considered a commodity application.

While business-specific applications are specialist applications, they should not require a different approach to selection and sourcing than that used for commodity applications. Software that supports specialist areas of the business should be sought as off-the-shelf products in the first instance. If suitable products can be found consideration must be given to changing the business processes, regulation and legislation to align with the products. Only when that is impractical or inappropriate should customisation or software builds be used.

The selection of business-specific applications is a decision for the business areas within government agencies. However, Audit analysis reveals that these decisions have often been made in complete isolation. The attributes commonly observed are:

- business-specific applications that are heavily customised or custom built from scratch
- a completely heterogeneous set of ICT platforms that is not aligned and difficult to manage
- high levels of variance across business processes in government that are essentially the same

- difficulties obtaining and retaining staff skilled in the maintenance of the application or platform
- contractual arrangements that give the power to the vendor resulting in higher costs.

While the business areas of government must have the flexibility to acquire software that suits their business needs and underpins their operation, it is essential that this acquisition takes place within a framework that limits the negative consequences of some choices. The framework should have the following constraints:

- Decisions made must be made as portfolio decisions within the context of the other systems of the agency and the government.
- Technical architecture constraints must be applied prior to selection ensuring things like deployment infrastructure, security, integration with standard components, interoperability and technical standards are consistent with the requirements of the agency and the government.
- Software should be able to be deployed on the standard infrastructure of the agency.
- Software supplied as a service should be preferred to software acquired as a product.
- Software should be able to meet business requirements through configuration.
- Customisation must be minimised with a preference for changing the business processes to meet the software rather than changing the software.
- Packaged software should be preferred over custom built software.

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Infrastructure



6 Infrastructure

Findings

- The Queensland Government is not getting value for money from its ICT infrastructure arrangements.
- The central infrastructure provider (CITEC) is seen as too expensive.
- New business models for provision of ICT infrastructure are emerging. These business models promise simplification, flexibility, low risk, cost reduction, mobility and agility. While these new opportunities are attractive, the take-up within the Queensland Government has been very low.
- There is a history of follow-on strategic investments designed solely to recover sunk costs from previous under performing investments.
- Vendor lock-in across several platforms is driving up infrastructure costs, forcing the government into unwanted upgrades and limiting alternate procurement options.
- Several technology architectures that were mainstream in the 1990s are limiting strategic options for ICT delivery.
- Existing client-server architectures create silos within and across agencies, limit mobility of staff, create islands of information, and increase the cost and impact of machinery of government changes.
- Agency-based network architectures designed to link local desktops to local servers will constrain the value of future cloud based architectures. Inefficiencies across the government's applications portfolio (including unnecessary duplication, extensive customisation, out-dated architectures and significant numbers of applications that should be decommissioned) are driving a range of unnecessary infrastructure overheads. These include: increases in capacity (cycles, storage, network); additional licensing costs; and, additional operational overheads.
- Infrastructure investments have not been well prioritised.
- Government's telecommunications networks have evolved within agencies. This has created a complex and inefficient web of networks. In many cases there is duplication of infrastructure in the same geographies (without the benefits of complementary redundancy) and complex contractual arrangements that carry large administrative overheads.

6.1 Introduction

Dating back to the 1960s, governments across Australia were early adopters of ICT. Over the years the Queensland Government, like other early adopters, optimised its ICT business models driving economies of scale and efficiencies. At some point in the lifecycle of any technology or business model there comes a point where alternative approaches emerge that deliver a step change improvement in benefits. This doesn't mean the technology isn't working properly or that the staff are not performing well - it simply means that at a certain level of adoption and scale, the approach used by early adopters (of ICT) no longer passes the 'best value' test when compared to modern emerging paradigms.

In an effort to drive improvements in efficiencies, some governments have programs in place to simply reduce the costs of running their in-house ICT investments. While many of these appear logical there is a risk that all they will achieve is a reduction in effectiveness commensurate with the reduction in cost. The ICT industry is responding far more creatively to the challenge of balancing the competing forces of cost, value and complexity – forces faced by every large complex organisation, including government.

The Queensland Government has examples of well-run and well managed ICT operations – a credit to the committed and professional staff responsible. However, regardless of these individual success stories, it is impossible for government as a whole to achieve best value for money from its ICT infrastructure arrangements.

Five key drivers undermine value for money in the area of commodity infrastructure and systems. These are:

1. Government's internal infrastructure provider, CITEC, is seen as too expensive.
2. There is unnecessary and excessive diversity across infrastructure platforms.
3. Government cannot achieve meaningful economies of scale.
4. Out-dated sourcing models are prohibiting access to modern, low cost, high value alternatives.
5. The number, size and complexity of business applications continues to grow without constraint.²⁰

²⁰ See Applications Section for discussion on this issue.

6.1.1 Government's internal infrastructure provider is too expensive

The Queensland Government's central infrastructure provider, CITEC, carries high levels of overhead. These overheads are passed on to agencies in infrastructure charges. It is difficult to identify value that is delivered in exchange for these higher costs as there is little evidence of risk reduction, economies of scale, cost savings, etc.

Figure 19 shows the raw findings from an industry and agency comparison, for a three year infrastructure investment bundle.²¹ Agencies are highlighted in blue and vendors are highlighted in orange, with the median cost indicated by the dotted line. To observe the commercial in confidence requirements of vendors, their names have been withheld.

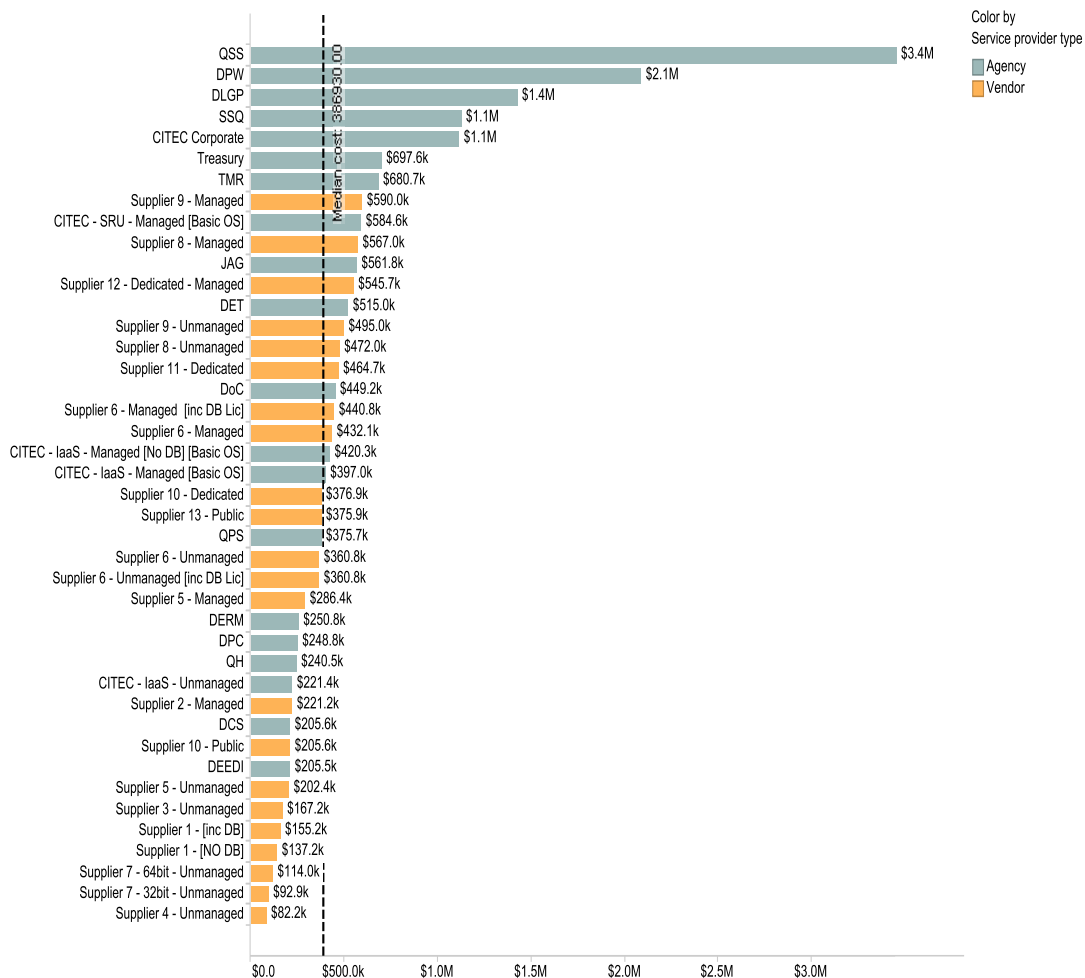


Figure 19 - Industry and agency comparison for a three year infrastructure investment bundle

²¹ For additional detail, refer to *Annex – Demand, cost and performance management of ICT*

The high end of the cost spectrum is predominantly occupied by Queensland Government agencies; with the low end of the spectrum dominated by industry for both managed and unmanaged service offerings. In addition, the most expensive government agencies (QSS, DPW, and DLGP) predominantly receive ICT infrastructure services from CITEC.

The Audit identified that, where agencies were mandated to source ICT services from CITEC, the internal government provider, agencies were paying different prices for equivalent services. Agencies expressed concern that they were at times paying higher prices than the official CITEC price book.

A full analysis and comparison of agency and industry costs is provided in *Annex – Demand, cost and performance management of ICT*.

CITEC only provides a subset of the infrastructure services required by government. Because CITEC does not offer an attractive end-to-end service, every agency also has an IT business unit which provides commodity infrastructure services (in addition to CITEC). Both agency IT business units and CITEC have overheads that contribute to increased infrastructure costs. In addition, the devolution of commodity infrastructure decision-making to agencies leads to high levels of diversity in infrastructure as well as delivery and funding models.

6.1.2 Unnecessary and excessive diversity

Unnecessary diversity across infrastructure platforms impedes efforts towards economies of scale, drives the need for a wide range of technical experts to remain in-house and limits agility and integration.

Figure 20, Figure 21 and Figure 22 show the level of diversity currently being managed by Queensland Government ICT staff across the following domains: operating systems and utilities, database management systems and software development platforms. The mixture of shapes used in each of these figures is purely to aid in differentiating the (plotted) items which relate to each figure's respective legend.



Figure 20 - Operating systems and utilities by agency

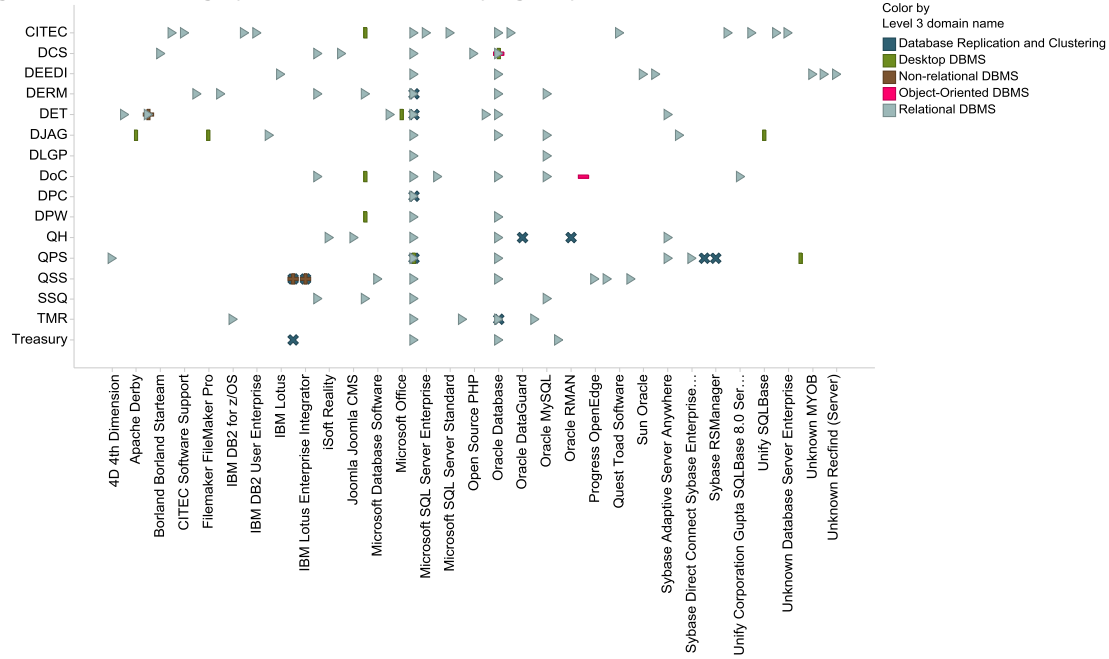


Figure 21 - Database management systems by agency



Figure 22 - Application development environments by agency

There are several drivers of diversity:

- Agencies have authority to select commodity assets.
- Machinery-of-government changes introduce new platforms from other agencies.
- There is a lack of ‘appropriate’ infrastructure standards.
- There is no enforcement regime for infrastructure standards.
- The personal preference of existing ICT professionals.
- Infrastructure product selections are often an outcome of systems selection, where the entire focus is at the application level with little consideration of the impact on platform diversity.

While agencies have responsibility for commodity infrastructure decisions, sourcing and provision there will be little chance of reducing diversity in the commodity infrastructure domain.

Impact of diversity on resourcing

The impact of diversity on the government’s technology asset base can be understood by examining it across different technology domains. It is clear that managing government technologies is a challenging task – when unnecessary diversity is added to the mix the overheads grow exponentially.²²

²² Annex - Application and technology duplication describes in detail the diversity of the government’s technology assets.

The right hand bar chart in Figure 23 shows the technology layers in terms of annual estimated total cost of operation (AETCO), whilst the left hand bar chart shows the associated number of ICT support staff.

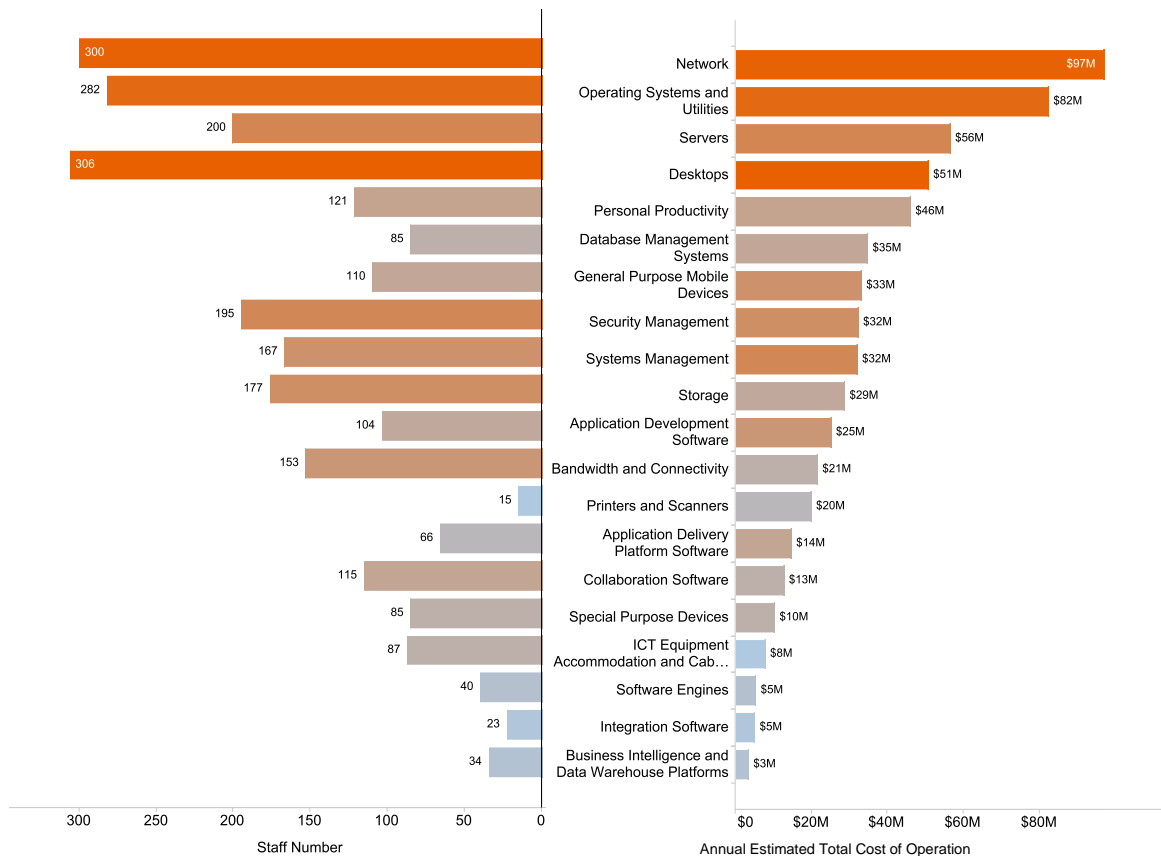


Figure 23 - Technology annual cost and support staff by technology domains

The high number of ICT operations and support staff within these domains represent a distraction from the primary purpose of the Queensland Government – front line service delivery. Notably, the domains representing commodity platforms including desktops, network and operating systems dominate the AETCO and numbers of support staff.

6.1.3 Achieving meaningful economies of scale

When compared to private sector providers, the Queensland Government faces several challenges to achieving economies of scale in commodity infrastructure domains:

- The physical scale of government's ICT operations does not deliver significant economy of scale advantages compared to large scale private sector ICT infrastructure providers.
- Agency silos limit economies of scale opportunities - attempts to build scale through consolidated procurement arrangements have not overcome these issues.

- Decentralised control of ICT infrastructure and commodity systems has created an environment where extensive customisation continues to drive up costs and inhibit economies of scale.
- Existing delivery of ICT infrastructure and commodity systems is based on business models that are rooted in the 1990s - many of the fundamental building blocks of government's in-house delivery models are being challenged by new paradigms that offer step change improvements in efficiency.
- There are over 3,000 staff in Queensland Government connected in some way to ICT operations (alternative approaches to infrastructure delivery do not require large numbers of technical staff - many of these skilled professionals could be redirected to more critical activities if government adopted modern sourcing models for ICT delivery).

Detailed data centre costing, by agency can be found in *Annex - Demand, cost and performance management of ICT*. It shows a large variation in per unit cost which can be a reflection of scale, management control or quality of service. There is evidence of incremental cost improvement which is a credit to the agencies responsible for improvements. However these improvements could have been far more significant had other sourcing approaches been applied.

6.1.4 Out-dated sourcing models

Traditionally, Australian governments have focused on owning and managing ICT infrastructure and commodity systems such as email, desktops, networks and data centres. Twenty years ago, internal ownership and management of these systems was the only sourcing strategy available.

It can be argued this approach has strengths including control of security and certainty of supply; however, ownership of large scale ICT infrastructure and the corresponding responsibility for operations also has shortcomings, including high cost; limited scalability; and a requirement to keep a broad range of skilled ICT professionals retained in-house in case they are needed.

Architectures used with insourced approaches create issues beyond value for money. Internal sourcing models build islands of unique technologies (applications, information and infrastructure) and these limit the mobility of the workforce. For example: At present people cannot take their laptop computers from one department to another, plug them into the network and start working. Each department has its own standards for security, identity, network access etc. When staff go home they no longer have these limitations. They can use their personal ICT equipment to access multiple organisations (eBay, Facebook, Qantas.com, etc) without limitations.

Business agility is also reduced through internal sourcing approaches. The government currently builds and implements technologies to support business initiatives. Invariably these technology builds rapidly become the critical path for the business initiatives they are supporting – a dependency that under modern sourcing models may not need to exist.

Another constraint is scale. An internal sourcing model where infrastructure is owned by the government means that government has to buy sufficient infrastructure to cover peak loads. At non-peak times this infrastructure is wasted.

New delivery models are emerging that can meet security and scale criteria. These models come at a significantly lower price point. Key to these sourcing models is ‘as-a-Service’. Table 11 shows how the ‘as-a-Service’ model will impact the ICT industry.

Table 11 - As-a-Service versus traditional delivery models for ICT Infrastructure

Technology	Past (Traditional)	Future (as-a-Service)
Core infrastructure	<ul style="list-style-type: none"> • Expensive • Fragile • Labour intensive • Disruptive upgrades 	<ul style="list-style-type: none"> • Robust • Agile • Cheap • Only pay for what you use • Invisible
Network	<ul style="list-style-type: none"> • Complex • Non-secure perimeter • Siloed • Usage charges • Disruptive upgrades 	<ul style="list-style-type: none"> • Secure the data • Reliable • Mobile • Ubiquitous • No usage charges
Commodity applications	<ul style="list-style-type: none"> • Expensive • Monolithic • Rigid • Disruptive upgrades 	<ul style="list-style-type: none"> • Cheap • Mobile • Standardised

The impacts of the ‘as-a-Service’ model are significant. It will be difficult to make any technology-based argument to sustain a policy of significant in-house ICT practices in the face of the opportunities provided by this new paradigm.

A few years ago the main concerns with the ‘as-a-Service’ model were security, data sovereignty and risks associated with the paradigm change. In 2012, these risks can all be addressed.

There are minimal risks in migrating to as ‘as-a-Service’ model for most ICT infrastructure and commodity systems. Queensland Government agencies however, in the main, continue to own and operate a number of ICT commodity services.

The challenge for the Queensland Government, like many organisations, has been in monitoring the evolving maturity of ICT commodity services and knowing when to transition. To date, there has not been a widespread rethink of ICT provisioning.²³

The following sections discuss key components of the Queensland Government's ICT infrastructure and commodity systems. Each component is assessed for efficiency in its current state and then analysed against the 'as-a-Service' business model.

6.2 Data centres

6.2.1 Recent history

The Queensland Government has two whole-of-government data centres and a number of smaller agency level data centres. In 2006, the Service Delivery and Performance Commission recommended the consolidation of the Queensland Government's data centres, networks, infrastructure and essential ancillary services such as email and authentication. The Commission claimed savings of up to \$74 million per annum would flow from data centre and infrastructure consolidation. The Service Delivery and Performance Commission could not produce any working papers to support the savings claim, with subsequent efforts to build a benefits model based on the Commission's recommendations failing to demonstrate any savings.

Notwithstanding the lack of metrics and the absence of a benefits model that proved savings, Government commissioned the Polaris data centre and began the task of migrating agencies to a new whole-of-government data centre model. The initiative to consolidate data centres, as a component of what is now called ICT Consolidation (ICTC), began in 2007.

By any measure, the ICTC initiative has been unsuccessful. It has struggled to get agencies to comply with the requirement (set by Cabinet) to consolidate data centres²⁴ and ICT infrastructure. Six years after the Service Delivery and Performance Commission's recommendations were released the mandate for infrastructure consolidation remains ineffective and 45% of the Polaris data centre remains underutilised. The cost of unused floor space at Polaris is \$3.26 million per annum.

²³ Not all applications can be transitioned to a virtualised / cloud environment. A strategy for managing legacy applications will be required. See subsequent section on hospice approach.

²⁴ This non-compliant behaviour from some agencies still exists today and will be a concern in the implementation of findings from the Audit.

Compounding this, the other whole-of-government data centre at 317 Edward Street is almost fully committed with a contract for leasing additional data centre space in Wharf Street established in February 2012. A consultancy report *Strategic Data Centre Review - Options for 2nd Primary Data Centre for Queensland Government* was delivered in February 2012 by CS Technology Pty Ltd. In respect of the 317 Edward Street data centre, the report determined a need for:

..approximately \$7.5 million of investment within the next ten years for capital equipment only. This estimate does not take into account the installation and associated construction costs, and does not account for ongoing upgrades that will be required towards the back end of this ten years. Up to 70% of the required investment will focus on 'high risk' with 'serious impact' fixes and upgrades.

Today, agency true-up requirements, challenges of demand and utilisation management, the need to inject large sums of capital and the risks associated with ageing facilities are no longer the only issue facing the owners of the Queensland Government's data centres. There are a number of emerging challenges as well.

6.2.2 Emerging challenges

New paradigms such as cloud computing (anything-as-a-Service) are promising to radically change how industry, the community and government will acquire and use information technologies. The benefits of these new paradigms include:

- scalability on demand
- low cost high availability
- very low cost computing and storage – only pay for what you use
- no need for large numbers of in-house technical experts
- no capital investments required
- no major internal ICT projects focusing on acquisition, implementation or upgrade of hardware and software platforms.

The move to the cloud is happening now

The Queensland Government is looking to move to cloud based email. Cloud based email services are sold on a price per person or price per mail box per month basis. The services provide scalability on demand, have high availability for low cost, provide high data storage at low cost, need virtually no capital investment and need no ongoing upgrade program. Cloud based email is a Software-as-a-Service (SaaS) architecture that does not require government to own and run a data centre to provision a very high quality service.

The move to Software-as-a-Service (SaaS) is not solely limited to email. Queensland Health is moving to SaaS approaches for major clinical systems, the Department of Communities is using cloud services for grants management and several other agencies have put in place cloud initiatives. This report recommends SaaS services for other areas of government such as payroll and finance. In 2012, there are now very good arguments for governments not to own and run data centres. In fact, there are very good reasons not to own and manage storage or compute power.

6.2.3 Whole-of-government infrastructure initiatives

The previous sections discussed the challenges of government ownership of ICT facilities - data centres and associated services such as storage and computer cycles. This section discusses the government's track record in the delivery of centrally provided end-to-end ICT infrastructure services.

Examples exist where internal-to-government providers (for a host of reasons) have not demonstrated industrial strength processes for winning and operationalising new services or the mandate for agency take-up has been ineffective. As a result some high cost infrastructure investments have remained underutilised. One example is the Foundation Infrastructure Project, established at CITEC, to deliver Infrastructure-as-a-Service (IaaS) at a capital cost of \$23 million.

There have been other examples where delays in implementation have resulted in infrastructure being underutilised or abandoned even before going into production. The Identity, Directory and Email Services (IDES) program established whole-of-government identity and email infrastructure at a cost of \$45 million, but due to delay and an unsustainable cost position, was terminated in the pilot phase of the roll-out.

Finally the ICTC initiative itself is yet another example of an internal initiative that failed to deliver meaningful outcomes – even with a strong Cabinet mandate.

Further detail, contained in *Annex - Initiatives* shows that 44% of internally run projects had changes in schedule of greater than three months. *Annex – Initiatives* also examines the impact of delays to initiatives' schedules. The key finding was the 'value proposition for the initiative weakens over time'. This was especially the case with infrastructure investments.

If there is a delay in implementation then competition from emerging technologies will undermine the initiative's original value proposition. Nowhere is this more evident than the IDES initiative.

In 2006 the IDES initiative promised a whole-of-government identity and e-mail system based on an in-house delivery model using Microsoft exchange. The project was given the go ahead based on a positive financial business case. By 2012 alternative commercial approaches to e-mail became mainstream. These were up to five times cheaper than the best case model proposed by IDES. What was a good outcome in 2006 became a poor outcome in 2012.

Had IDES been implemented by 2008 it would have provided benefit to the government for up to five years. Delays in implementation meant there were no benefits at all.

The Queensland Government has not had a good track record in the delivery of infrastructure initiatives – especially at the whole-of-government level. Given the criticality of ‘on time’ completion for infrastructure projects there is an urgent need to rethink the approach to internal provision in this domain.

6.2.4 The options for Queensland Government data centres

With utilisation at the Polaris data centre already lower than expected (by \$3.26 million per annum); a poor outcome based track record; and demand for the service falling due to competition from other approaches such as SaaS, the Queensland Government has two clear options for its data centre investments. These are:

1. **insource with an agency mandate:** Look to ‘force’ agencies to use existing data centre investments (made by previous governments) in an effort to recover some of the sunk costs and contractual commitments – especially those in the Polaris data centre.
2. **adopt ‘as-a-Service’ approach:** Exit the data centre business and set a direction that prohibits agencies from running their own internal data centre operations. Set a standard in the Queensland Government Enterprise Architecture (QGEA) where agencies must source infrastructure services, as required, through an Infrastructure-as-a-Service (IaaS) approach. Enforce a migration of legacy systems (systems that cannot meet cloud architecture requirements) to the hospice model (described below).²⁵

Option 1 will lock in higher costs for services – services that should be low cost commodities (e.g. computer cycles and storage) will require large numbers of technical staff to design, maintain and run the data centres; and create an internal financial barrier for agencies wanting to adopt solutions based on other storage models such as SaaS.

Attempts to gain value from sunk costs in in-house ICT infrastructure investments (including excess floor space at the Polaris data centre or assets in CITEC) have the potential to lock agencies into high ongoing costs based on dated delivery models.

²⁵ Exiting the data centre ownership will require a strategy to manage the government’s existing commitments to data centre space at Polaris.

Option 2 allows (in fact encourages) government to select the best solutions and best architectures without being constrained by needing to consume internal assets. Option 2 allows systems to be used without the overhead of owning infrastructure, managing licences and being responsible for software upgrades. (Note: A SaaS approach will mean that the government will not have to even consider infrastructure issues. Many systems will be delivered this way in future.)

6.2.5 The need for a hospice

Cloud architectures require systems to operate in a virtual environment. A significant percentage of the government's applications portfolio cannot operate this way and as a result cannot be moved to the cloud or take advantage of an 'as-a-Service' model. These systems will require a different approach as they will need an environment to provide hospice services so they can operate in production until they are decommissioned.

There are two key considerations with regard to the hospice concept:

- The provision of a hospice capability is an independent piece of work and should not constrain a rapid exit from owning and running data centres.
- No system should go to a hospice unless it has a decommissioning strategy in place.

6.2.6 Sourcing

Annex - Demand, cost and performance management of ICT contains a comparison of internal and external sourcing options on a typical infrastructure bundle. These cost comparisons are based on existing sourcing strategies (they are not based on an as-a-Service model). Even though these are raw numbers they clearly show that an insourced model (and especially an insourced model with CITEC in the value chain) was far less competitive than an outsourced model.

The Queensland Government's preference should be to consume services (as-a-Service) as opposed to sourcing strategies that involve nominating specific assets. In the short term this may not be possible – industry may not be ready to offer the services required and/or government may not be in a position to make use of services requiring applications to be virtualised. In this case an appropriate medium term sourcing strategy will be required.

6.3 The government's cloud strategy

The current business model for Queensland Government ICT is flawed and in need of reform. A new way of thinking about ICT is required. One that considers ICT as a service; one that supports ease of service provisioning and right sizing; and one that does not hinder the government's flexibility.

This shift in computing paradigm for the Queensland Government requires a detailed understanding of the current market and an appreciation of the advantages and pitfalls of a migration to the cloud.

To ensure there is a well-planned strategy to a cloud environment the QGCIO, through the Queensland Government Chief Technology Officer (QGCTO), has developed a Cloud Strategy, titled the *Queensland Government Cloud Computing Strategy 2013 – 2016*.

Key principles of the future state ICT model include:

- ICT as a service
- Self-service ICT
- No lock-in.

6.3.1 ICT as a service

ICT as a service is based on the concept of 'utility services, or utility computing' – which involves the packaging and sourcing of ICT resources as a metered service. Utility services are continually rented, based on level of usage, with low or no initial cost to acquire the ICT resources.

6.3.2 Self-service ICT

Self-service ICT is centred on the notion of enabling agencies to better manage their ICT service requirements in real-time (or near to), by having the self service capability to adjust their 'ICT as a service' requirements, as required, without needing human intervention by the service supplier or protracted contract variations. This allows agencies to better manage business peaks and troughs, to easily match ICT capacity to changing requirements, and to only pay for what is used.

6.3.3 No lock-in

No lock-in refers to the principle of avoiding ICT services and/or solutions that would place a prohibitive exit strategy and/or cost on government. No service or solution should be entered into without first developing and evaluating an exit strategy.

This principle is aimed at reversing the current predicament where government finds itself all too often enmeshed in a vendor's solution or product set to the extent that its reversal or alternative is cost prohibitive – effectively perpetuating a long term drain on business and cost effectiveness.

No lock-in seeks to protect the government's flexibility and agility to source services and solutions from a competitive marketplace, and leverage contemporary innovations where available.

These principles align closely with the attributes of cloud computing and will drive increased adoption of cloud services across the Queensland Government.

6.3.4 What is needed

Key to the proposed Queensland Government cloud computing strategy are the establishment of:

- a cloud broker and integration services
- trusted cloud services (for sensitive government information)
- a federated identity management process
- a cloud services panel.

6.3.5 Identity management

What is identity management

The www.opengroup.org provides a description of the concept of identity in an ICT context.²⁶ Management of identity is an absolutely fundamental capability for modern business systems because it allows trusted people to be logically linked to their required assets (information, systems, hardware, people, etc.). In a virtualised environment, such as the cloud, this capability is critical.

Issues with identity in the Queensland Government

Identity management in the Queensland Government has been siloed on a per agency basis utilising disparate processes. Individual agency level identities are not transportable outside of a particular agency networking environment, nor are they guaranteed to be unique across government or trusted by other agencies. This leads to Queensland Government clients having to undergo multiple evidence of identity (EOI) processes across agencies to identify themselves and establish the trusted authentication baseline to transact online and at a counter. There is no common application of the EOI processes across agencies and the multiplicity of approaches, in effect, discourages the transfer of service delivery from more expensive face-to-face transactions to the online channel. In addition, this leads to agencies adopting a reduction in the compliance requirements for identity and authentication processes to enable online service offerings.

In addition to technical challenges with sharing services and reusing identity credentials, a recurring issue within the Queensland Government has been a lack of trust between agencies in identification processes and account management systems. This lack of trust

²⁶ Identity is the fundamental concept of uniquely identifying an object (person, computer, etc.) within a context. That context might be local (within a department), corporate (within an enterprise), national (within the bounds of a country), global (all such object instances on the planet), and possibly universal (extensible to environments not yet known).

has resulted in duplicated identification processes and issuing of additional separate credentials across agencies and systems.

What is required

Agencies such as the Queensland Police Service, Queensland Health and the Department of Education and Training (DET) all have unique identity management requirements – in some cases specifications are set at the national level. It is important that any identity initiative be cognisant of these requirements.

The establishment of a new whole-of-government identity/identifier for a public servant which is unique, trusted and transportable across government, including external partners is required to enable an identity centric approach. Given the various agency constraints and the urgency for a government-wide solution, a federated identity management arrangement (one that can cope with the varied needs of individual agencies) should be implemented.

6.3.6 Whole-of-government email

In 2012, email services are offered by a range of vendors under a SaaS model. Prices being offered by these vendors simply cannot be matched by internal government providers. In fact, internal delivery of email can be up to four times more expensive than commercial prices. SaaS delivered email has a range of other benefits apart from price. SaaS email offers more storage (up to ten times more), more mobility, availability on more device types, no requirement to manage upgrades, no need to engage internal architects to design the system and limited need for regular capital investment. SaaS delivers another benefit – true transparency of the cost of email. No agency in the Queensland Government today can accurately demonstrate the true cost of their email services.

To facilitate a move to cloud based email the QGCIO has developed a cloud email business case. This cloud email strategy recommends government move to email in the cloud in a three step process. The proposed approach allows for multiple email vendors and an initial agency by agency implementation strategy.

6.4 Hardware and software technology platforms

6.4.1 Platform investment model

Figure 24 shows the platform investment model. This model shows the change strategies and design goals for business applications, software technologies and hardware technologies. Both software technologies and hardware technologies are considered 'platforms' under this model. Examples of software technologies are Lotus Notes, Outlook, Oracle, Windows XP, etc. Examples of hardware technologies are servers, PC hardware, monitors, etc.

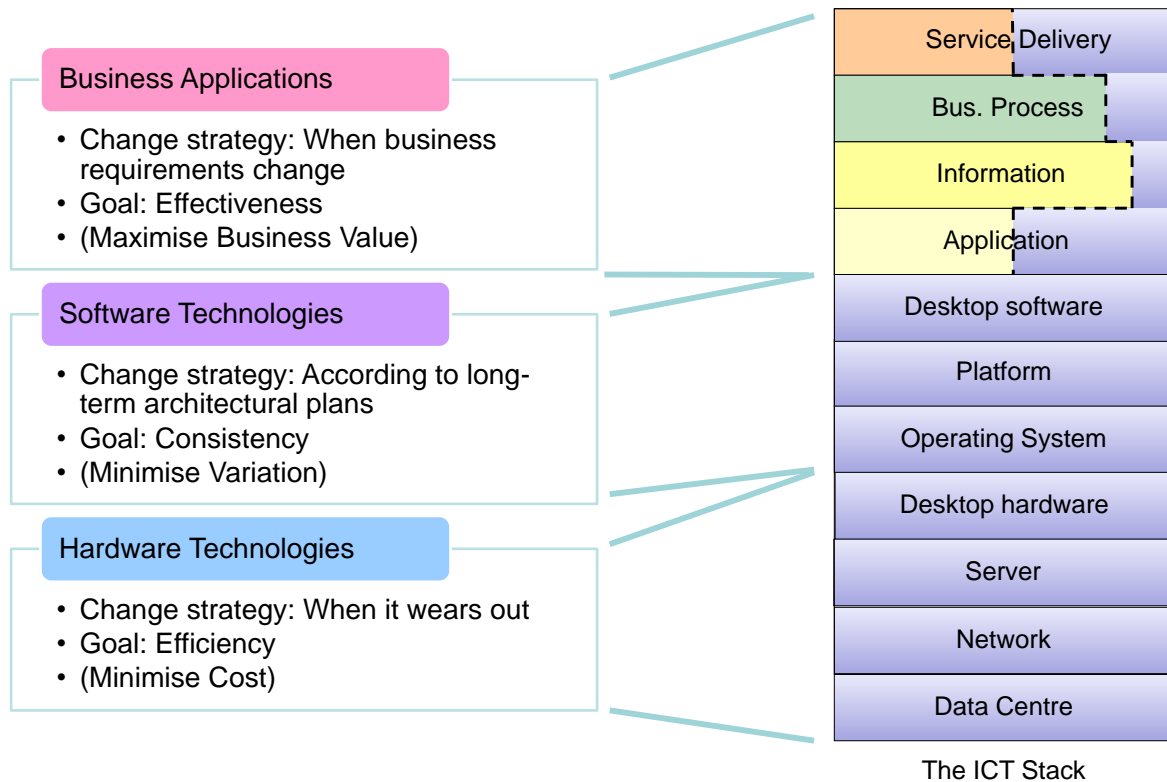


Figure 24 - Platform investment model

6.4.2 Software and hardware technology platform investment strategies

Failure to understand the connections between business applications and supporting platforms often results in poor investment decisions that inevitably drive up infrastructure costs through either inappropriate investments or through unnecessary diversity. Some common mistakes made with ICT investments include:

- the belief that investment in a local business application won't impact anyone else – it's my budget so I am just going to do it
- the hope that an investment in a business application can be recovered over a long period of time
- the lack of recognition that investments at different layers of the stack are linked
- not understanding that investment in a business application will drive the need for a software technology platform (which may require licences with annual charges) and a hardware technology platform that will need regular replacement.²⁷

The following sections describe the investment strategies for the three layers: business applications, software technologies and hardware technologies. It is important to understand the interrelation between these layers to appreciate the impact of diversity of software technology platforms.

²⁷ May not be an issue with SaaS procurement model.

Business applications

Business applications do not wear out. However, they are subject to change and even replacement when business requirements change. Business requirements can change at any time as a result of changes in environmental factors (competitive pressures, changes in supply chain dynamics, tax rule changes, legislation etc.) or from changes to internal business processes. The decision to change a business application is normally an automatic one once there is a change in business requirements. It is difficult to guarantee a predictable return on investment (ROI) for a business application because it is difficult to determine how long an investment in the application will remain useful.

Hardware technology platforms

Hardware technology platforms are normally replaced on a predictable duty cycle, when they are damaged or when there are capacity issues. Unlike business applications, the replacement cycle for hardware technologies is generally predictable and normally built into a repeatable asset refresh cycle.²⁸ Because hardware will be refreshed faster and more predictably than business applications it is critical changes in hardware do not unnecessarily drive changes in business applications. In the past this was an issue with ICT systems. Today it would be seen as an example of poor architecture.

Software technology platforms

Software technology platforms are the longest term ICT investment. Once implemented they are likely to remain in place for ten or more years. This occurs because over time multiple business applications may be built on the same platform. Consequently, the selection of a software technology platform is an important strategic decision.

A poor investment in a software technology platform can constrain future investment options for the entire organisation – not just the business or ICT area that initiated the selection of the platform. Too much diversity in software technology platforms can drive far higher than necessary infrastructure costs.

Impact of lock-in

It is very important to avoid lock-in between platforms (software and hardware) and business applications. For example: a large proportion of upgrade costs for the Queensland Government's desktop fleet are caused by dependency (lock-in) between applications that run on the desktop (business applications) and the desktop operating systems (software technology platform). In general, client-server (fat client) architectures tend to tie the design of desktop systems to the back end server architecture. Vendor licensing models also contribute to this tight coupling.

²⁸ The state of hardware infrastructure in Queensland Government is not as dire as the state of the business applications. The built in hardware replacement cycle has driven this because hardware has generally been refreshed while business systems have been 'sweated' well beyond normal end of life.

Apart from driving upgrade costs, this coupling also limits procurement options and constrains business models for provision of infrastructure. A key architectural principle in future will be to limit, as much as possible, tight coupling between platform technologies and business applications.

6.4.3 Technology duplication

Annex - Application and technology duplication identifies the scope and impact of duplication across a range of technology domains. It shows that diversity of technology assets drives high support costs and demands a large workforce dedicated to support. In particular technology duplication and diversity increase the challenge of keeping technologies up-to-date.

6.4.4 Platform currency in the Queensland Government

The Queensland Government has a poor track record in managing software upgrades. All of the following examples have very poor version management: Windows XP desktops, SAP, Microsoft SQL, Adobe. All things being equal, options that free the Queensland Government from the responsibility of software upgrades should be favoured.

The currency of government technologies by agency is shown in Figure 25.

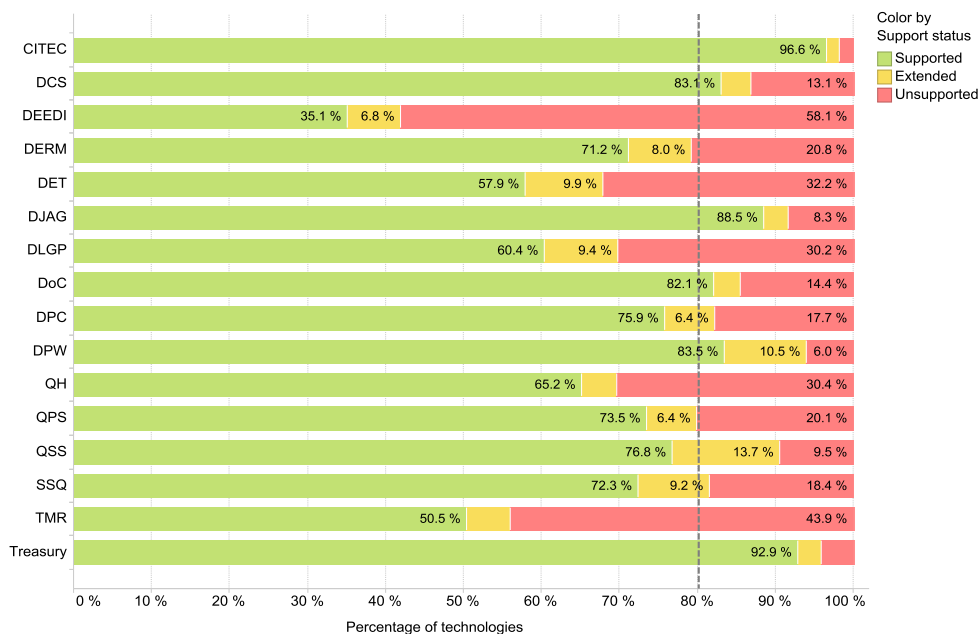


Figure 25 - Technology support status, by agency

ICT products that are unsupported by vendors are generally considered to be a risk to the business. Failure of the technology may not be recoverable, security vulnerabilities may not be able to be patched and vendor support may not be available.²⁹

Approximately 19% of the reported technologies are either on extended support or unsupported.

Key observations: ICT replacement cost – technologies at risk

The top ten unsupported technologies, commonly used across the sector are shown in Figure 26.

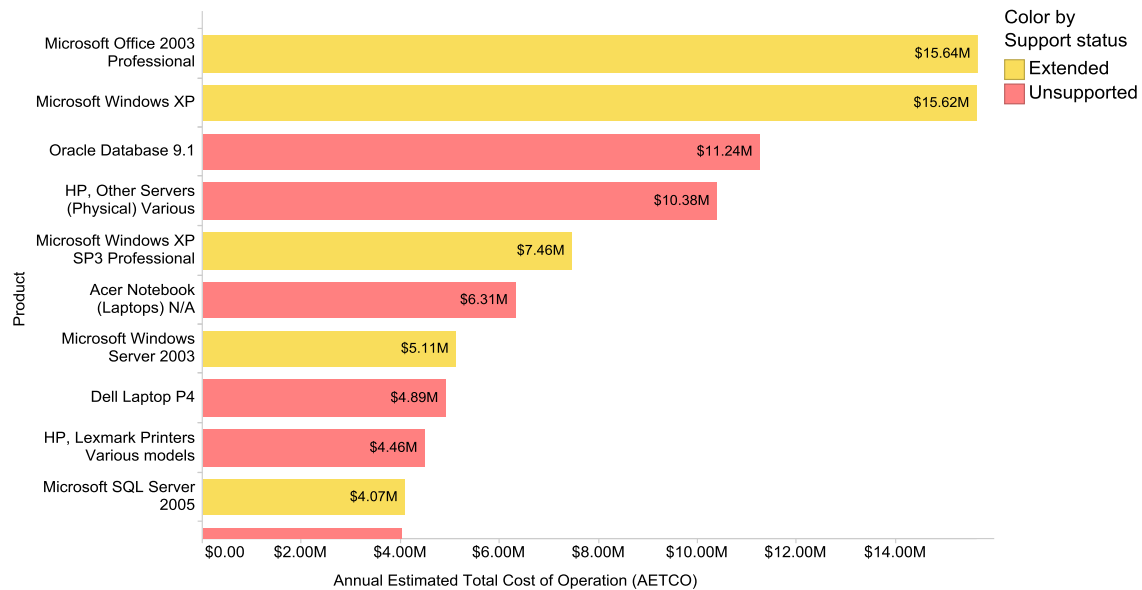


Figure 26 - Support status and AETCO of key technologies

These technologies are of concern due to their low vendor support status, and include:

- database software - Microsoft SQL Server 2005 and older, Oracle database 9.1/9.2
- desktop fleet related - Microsoft Windows XP (operating system), Microsoft Office 2003 (office productivity suite)
- collaboration/email/calendar - Microsoft Exchange 2003
- internet connectivity/remote access - Microsoft Internet Explorer 6 and 7
- identity management (access and authorisation) - Microsoft Active Directory 2003
- application and infrastructure platforms - Microsoft Windows Server 2003.

²⁹ In some cases, Queensland Government has negotiated extended support with individual vendors. This support comes at higher price to support provided to current products.

6.5 The desktop platform – a major upgrade challenge

At the time of data collection for the Audit, the Queensland Government's desktop fleet totalled 411,759 devices. Of these 289,926 were in the Department of Education and Training (DET); the bulk of which were government supplied devices used by students. The number of desktops in use by government employees, including DET staff, is approximately 160,000.

A large portion of agencies use Windows XP. Mainstream support for Windows XP ended in April 2009, and extended support will end in April 2014. Table 12 shows the current progress of agencies with respect to the migration from Windows XP to Windows 7.

Table 12 - Status of Windows XP to Windows 7 migration

Agency	Desktop Microsoft Configuration			% Complete
	Windows XP	Windows 7	Total desktops	
CITEC	469	341	810	42%
DCS	10,358	105	10,463	1%
DEEDI	6,000	0	6,000	0%
DERM	5,300	1,700	7,000	24%
DET	74,928	214,998	289,926	74%
DJAG	4,500	0	4,500	0%
DLGP	989	0	989	0%
DoC	12,527	1173	13,700	9%
DPC	10	720	730	99%
DPW	6,375	85	6,460	1%
QH	49,877	123	50,000	0%
QPS	10,860	30	10,890	0%
SSQ	510	0	510	0%
TMR	8,500	0	8,500	0%
Treasury	0	1,198	1,198	100%
Total	191,286	220,473	411,759	54%

If the reliance on Microsoft operating systems is maintained, agencies will be required to migrate from Windows XP to Windows 7 before April 2014. There are a number of issues with this situation:

- The cost of the upgrade is substantial, estimated at over \$100 million.
- The requirement to upgrade is recurrent – each time an operating system release goes out of support.
- The desktop fleet currently running Windows XP is adequate for the Queensland Government's requirements. Upgrading the operating system from Windows XP to Windows 7 is not the highest priority for the Queensland Government – the deadline is set by Microsoft.

- Microsoft Windows 7 is perceived as the only choice available to the Queensland Government. The requirement to upgrade, and the price, has been set by Microsoft. There has been no assessment of Windows 7 against other products because there is an assumption that Windows PCs are the only way to deliver desktop services. This is reinforced by a level of vendor lock-in through the tight connection between Microsoft desktop operating system and back-end Microsoft server software.

Estimates for the cost of this migration vary between \$100 million and \$160 million. This cost is substantial – almost \$1,000 per desktop, at the higher end of the estimate.

Windows 8 was released during the Audit. Agencies are now looking to spend over \$100 million upgrading to the second newest Microsoft Desktop operating system (Windows 7). Within three years, when the replacement of Windows 8 is released, government will be under pressure to complete another whole-of-government upgrade initiative. It is incumbent on government to explore alternative arrangements for its desktop fleet.

There are several options for dealing with the desktop fleet that do not require the government to run an expensive Windows XP to Windows 7 upgrade. These include:

- considering whether desktop computers (PC or other devices) should be provisioned as the default desktop device
- considering whether the Microsoft based desktop PC platform is the only device type that can provide access to government's information resources
- considering whether ownership of the desktop fleet is the most appropriate model for provisioning of information access devices
- considering allowing public servants to use their personal devices (bring-your-own-device) to access government's information resources.

6.6 Security

6.6.1 Security overview

This section does not discuss any technical issues or specific failings with ICT security. Information of that nature is contained in *Annex - Security*. Instead, this section focuses on:

- the dated approach to security architecture
- the responsibility for security across the Queensland Government
- resourcing for key security roles
- the compliance framework.

6.6.2 Dated approach to security

Traditional (perimeter-based) security models as relied upon by many Queensland Government agencies have become increasingly limited in their security effectiveness. Failure to follow sound security practices inside some agency networks are exposing systems and networks to compromise, particularly given the changing environment to one of ubiquitous mobile devices, inter-organisational communication, internet access, outsourced services and use of collaborative media.

This has lead to a lack of trust between agencies and reduced interagency cooperation. However, agencies tend to have a self belief that their security practices are sound, and as a result executive management are unaware of the high levels of risk they are effectively accepting, leaving the Queensland Government exposed.

There is no silver bullet for security as absolute security cannot be achieved while still achieving useful outcomes, requiring informed business decisions.

Within this context, organisations need to maintain a balance between the need to protect and secure information with the need to have open access and information exchange between government, its customers and the community. The role of information security is not to lockdown (and prevent) business with gold plated security; it is to implement a risk-based approach to business enablement and information sharing.

When agencies apply security fundamentals in a poor or inconsistent manner they inadvertently accept high levels of business risk and significant expense. The potential for economies of scale and alternative delivery models are spurned due to perceptions of security risk and agency centric thinking.

At the whole-of-government level and within many agencies, security and risk visibility has been limited. Efforts to identify critical systems to improve the government's business continuity and disaster recovery posture have revealed far more critical systems than expected - refer to *Annex - Security*. It has also revealed that many systems are in poor technical condition. Similar visibility stories exist for web site security, security incidents, and security provisions within service contracts.

The Australian Government and industry are transitioning from a protect focus (we can stop bad things happening) to more of a focus on business and technical resiliency (limit the opportunity for bad things to happen, and be ready to detect and deal with it when it does). In this context, resiliency is the ability to continue to meet key business goals while resisting, and adapting to negative disruptive events and actions.

For instance, resilient ICT models include a combination of: isolation/separation of untrusted systems, reduction of technical vulnerabilities, protection of systems, detection of compromise to systems, containment (of infection or negative consequences) and strong recovery capabilities.

Organisations stuck in a predominantly perimeter mind set are not well placed to take advantage of new business models for the provision of ICT and are likely to be suffering from a security perception reality gap. That is, management believes the organisation is more secure than it really is.

6.6.3 Responsibility for security

Information security leadership and coordination at a whole-of-government level has been limited, resulting in fragmented and inconsistent security across government.

Agencies are individually responsible for adopting government security standards and guidance, and supplementing these to meet any additional security requirements and business objectives for the agency. For example, an agency may need to meet additional legislative requirements or information management requirements of the federal Government.

Information security leadership and coordination at a whole-of-government level has been limited, resulting in fragmented and inconsistent security across government.

For the period October 2009 to June 2012, some security oversight was provided via the Information Security Sub-committee. However, its security role was diminished due to its limited terms of reference and tendency to focus primarily at an operational response level. It did not pursue the broader responsibility of appropriate protection of information and security innovation across government.

Visibility of security across government agencies has been provided through agency Information Standard 18 – Information Security (IS18) self-assessments, Queensland Audit Office reports and mandatory incident reporting. Participation in mandatory incident reporting has been limited.

No formal mechanism or responsible body is in place for understanding whole-of-government risk or for ensuring risks accepted by individual agencies are acceptable to the broader government.

The results of Queensland Audit Office audits of IT network security confirm the true-up requirements identified through the agency self-assessment process. The results confirm the need for further action by agencies and better central mechanisms.

6.6.4 Security resourcing

Security resourcing is predominantly on a per agency basis.

In addition to agency security resources, a small virtual incident response team (VRT) capability exists to allow for security resources to be drawn upon from CITEC and agencies for a major incident response. This capability is led by the Queensland Government Chief Technology Officer; to date the VRT has only drawn upon CITEC resources to assist with incidents.

Placement, skills and seniority of information security staff vary between agencies resulting in different levels of security engagement, visibility and culture.

Approximately 39 security specialists were reported by agencies to the Audit. Figure 27 shows the reported information security expertise within agencies.

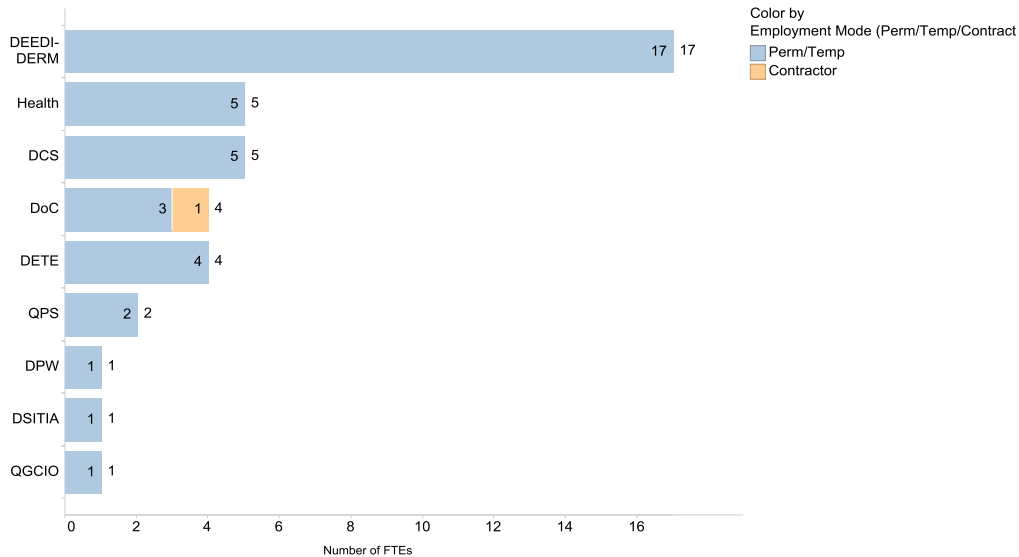


Figure 27 - Information security specialists

The agencies where no clear information security capability could be identified include:

- Department of the Premier and Cabinet
- Queensland Treasury
- Department of Transport and Main Roads
- CITEC
- Queensland Shared Services
- Smart Service Queensland
- Department of Local Government and Planning.

These agencies may have resources whose role in part, relates to information security.

The low level of information security capacity and capability was also highlighted in the *Whole of Queensland Government Information Security Governance Review*, conducted by Deloitte. The review highlighted that:

All agencies have a job role that is to be considered as the primary responsibility for information security. The grade of the role varies with the size of the agency, but in a larger agency this can be a relatively senior role, with in excess of ten staff reporting to it, whereas in a smaller agency, this can be as low as 0.1 of a full time equivalent (FTE) and consequently this can impact the focus and experience of information security leadership in the agency.³¹

The Deloitte review recommended the establishment of a Chief Information Security Office (CISO) to provide executive oversight of Queensland's information security management program as a necessary first step toward the adequate protection of government information.

A minimal change that should be considered for the Queensland Government is the establishment of a central information security and risk team that supports all agencies. This team could be structured as a permanent dedicated core team with a supplementary virtual team spread across the sector.

The dedicated core team could effectively form the Chief Information Security Office, as recommended by the Deloitte review. The supplementary virtual team structure would further enhance capability across government, facilitate skills development, reduce the impact of staff movements and provide access to expertise across government. This access could be effectively utilised in emergencies, incident responses, projects and business as usual activities. It could also perform a key role as a catalyst for culture change and security visibility across government.

In addition to the above recommended core capability, making it common practice to share staff between agencies, and leveraging their recent experiences through secondments and short term exchanges, could be used to improve utilisation of limited expert resources.

6.6.5 Compliance framework

The compliance centric nature of policy and the fear of risk-based decision-making frequently leads to inadequate security for key systems, rather than resources being allocated to areas of genuine business vulnerability and security risk. Security can become a blocker of innovation rather than a facilitator of essential business control.

These issues are compounded by the limited availability of skilled security resources to provide the necessary risk-based advice required by senior executives – and to create an environment of relatively low risk, with high transparency of security exposures.

³¹Whole of Queensland Government Information Security Governance Review Report, Deloitte, April 2012.

For a number of years, the Queensland Government has had a reasonably complete and mature security management and compliance framework through IS18, supporting standards and guidelines.

As evidenced by agency self-assessments and Queensland Audit Office reviews, the Queensland Government is not meeting its stated ICT security objectives and will not meet them under current arrangements.

International and industry standards for information security management and risk management have matured greatly since Queensland's IS18 was created. Support for, and expertise in, aligning to these standards is widely available. It is also important to note that the security validation of services offered in a standardised commodity manner (e.g. cloud based services) are generally only available relative to international and industry standards.

Government should consider transitioning from IS18 to a standards based security framework to increase the opportunity for mature risk-based decision-making and to increase transparency.

However, care must be taken to avoid the assumption that movement equals progress. In other words, limited compliance to an ISO 27001³² statement of applicability or formally accepting inappropriate risks is no more secure than limited compliance with IS18. Significant sector up lift, standardisation and transparency in risk management is required ahead of any major change in compliance arrangements.

6.7 Telecommunications

6.7.1 Background

The Queensland Government has a plethora of data and phone networks, all evolving out of local agency requirements. These networks are supported by thousands of contracts with telecommunications vendors. With the exception of internet services and some multi-agency initiatives (e.g. Public Safety Network), decisions on telecommunications arrangements are made at the agency level.

From a procurement perspective, the level of attention paid to the quality of these arrangements across government has generally been substandard. As a result, government has a range of telecommunications arrangements³³ in place that have been either strategically inappropriate or simply too expensive relative to current market rates.

The savings section of this report describes areas where changes to procurement approaches can be made to improve value for money from government's

³² ISO 27001 is an information security management system standard published in October 2005 by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).

³³ There are thousands of telecommunications contracts with the two biggest telecommunications vendors.

telecommunications arrangements. This section will outline the fundamental changes needed to telecommunications infrastructure.

6.7.2 Relationship between government and telecommunications vendors

Complex arrangements

Contractual relationships are difficult and expensive to administer. This report has identified significant amounts of waste, through poorly managed telecommunications arrangements. It is also very expensive for government to pay the government's phone bills – more than \$100,000 per month just in transaction costs. The reason for this excessive cost (that is borne on both the vendor and government's side) is the multitude of telecommunications accounts and overly complex billing arrangements.

No-one responsible for step change improvements

At present, agencies procure a mix of telecommunications offerings through a variety of sourcing strategies. In most cases it is unclear who has responsibility for optimisation of the service during the contract period. If there are improvement targets, these are often limited to small price reductions. In many cases the vendor does not have sufficient control of the end-to-end deliverable (nor is there sufficient motivation) for them to take responsibility for optimising the service or substantially reducing the price.

The agency is in a similar position. There is little motivation to seek major improvements because they cannot influence price. In most cases operational changes come at a price increase. Under the current arrangements agencies are wasting up to \$25 million per year on poorly optimised arrangements.

Pricing mechanisms drive the wrong behaviour

Telecommunications vendors invest in massive amounts of infrastructure, generally with enormous capacity, with their objective being to get a competitive return on these investments. The majority of the pricing regimes for telecommunications are based on consumption. This creates a number of issues.

- Consumption pricing can be very complex to implement – as a result billing systems used by telecommunications vendors can be complex and difficult to change. This limits innovation and that impacts both sides; the vendor and government.
- Consumption pricing is very difficult to administer - so much so that an industry sector focused on managing telecommunications bills has grown. If a process needs a new industry sector just to make it work then there is probably something wrong with the process.

- Consumption pricing can drive unwanted behaviour within agencies. For example, agencies may limit the use of certain telecommunications facilities in order to reduce costs when in fact the use of these facilities was potentially a better business model for service delivery to the community. Neither the vendor nor government benefits from the existing engagement models. Government is encouraged to maintain a constant, or even reduced, consumption rate and the vendor is not motivated to improve the overall business model in order to reduce costs and/or increase margins, reduce prices or reduce both. A model that encourages continual innovation (in performance, price, or both) from the vendor would benefit both parties.

The following principles should apply to the development of a new engagement model with telecommunications vendors.

- The vendor should be offered an end-to-end deliverable where they are responsible for an outcome; not responsible for meeting technical specifications.
- As far as possible, the model should allow for unlimited consumption within the quoted price with billing based on high level outcomes (not click charges for calls or data volumes).
- Switching costs are to be eliminated as far as possible. At the end of an arrangement government should be able to go to open market to offer the service and the existing assets. (Note: In many managed service arrangements the incumbent vendor has a significant advantage over new entrants).
- Market testing to occur every three years.
- Telecommunications to be procured through an 'as-a-Service' model.

For this model to work there has to be a simplification of the government's telecommunications arrangements. Key areas to address are the reduction of diversity of telecommunication infrastructure and a centralisation of ownership and decision making in telecommunication investments. This would result in:

- a single (logical) government data network
- a single point for billing arrangements
- a 'One Government' approach to the design and implementation of telecommunications arrangements.

There are a number of other principles that should apply immediately. These principles are in line with the view that government and telecommunications vendors are strategic partners, and as such should look after each other's interests.

- Telecommunications vendors are to ensure that government agencies are being billed for services at contracted prices or market rate; whichever is lower. The Audit has found instances where government was paying commercial rates higher than

individuals in the community could achieve. This occurred because agencies had not actively managed their telecommunications arrangements, supported by a lack of interest from telecommunications vendors in ensuring government had the best value for money arrangements in place. In summary, government contract management has to improve and its strategic telecommunications vendors have to care.

- Government is to work with telecommunications vendors at a strategic level to align their investment in infrastructure with key government initiatives (i.e. infrastructure that has community as well as government benefit). Experience over the last two decades has proven that dated adversarial procurement processes deliver little strategic value in this area. In addition, the perception that telecommunications is a Federal Government issue has perpetuated Queensland's less than optimal results from federally funded telecommunications initiatives.

6.7.3 Government data network(s)

The government data network is a collective of agency level networks – at least one per agency with a total number exceeding 50. There is no single architected network for the Queensland Government. This creates a number of issues:

- The Queensland Government is paying for a large number of networks covering the same geographic area with no ability to aggregate capacity or speed. This agency centric investment in telecommunications prevents government from leveraging economies of scale.
- This duplication also results in an underutilisation of physical infrastructure and higher operating costs to government.
- There is little or no managed redundancy provided by duplicated networks in the same geographic area.
- Different networks managed under different regimes make a whole-of-government security approach almost impossible, inhibiting access to, and sharing of, information across agency boundaries.
- Siloed approaches to network provision limit step change approaches for the provision of network services, and importantly, One Government services to the community.
- Multiple vendors provide data network services with third parties (e.g. CITEC) used to manage handoffs between vendors.
- There is an inconsistent approach to, and low level of investment in, disaster recovery and service continuity across government.

Identifying actual costs in component areas of the data network infrastructure and associated services has proved almost impossible for the Audit. The reasons are:

- there is no consistency to the classification of costs against domains
- there is an inconsistent roll up of reported costs.

As a result, it is not possible to identify dollar figures in any potential savings across the data network.

6.7.4 A One Government network

The QGCIO has developed a vision for a single logical data network (A One Government Network). The vision links work on strategies covering security, identity, telecommunications and cloud. The vision states:

Any Queensland Government employee from any agency, with the appropriate security credentials, will seamlessly access the appropriate applications and information that are required to successfully fulfil their duties, from any location in the whole-of-government network, according to the predefined service levels, even if they are mobile.

In a One Government Network architecture, the traditional security perimeter disappears and network-based firewall and VPN security practices prove ineffective. Protecting an extended network of cloud-based services and an increasingly mobile enterprise requires a new approach. Identity management fills the gaps left by the disappearance of the traditional perimeter and becomes the new point of control for government / agencies; particularly when service providers own the servers and users own the devices.

A One Government Network will provide the foundation network for the future Queensland Government Cloud Strategy. It will offer an assured network over which government can safely share services, including many cloud services, to collaborate in new ways, more effectively and efficiently than ever before.

The benefits of adopting consolidated One Government Network solutions include:

- the removal of unnecessary duplication of network connectivity solutions across the Queensland Government
- cost efficiencies by utilising government's existing investment in network connectivity solutions and capabilities provisioned under the Foundation Infrastructure Program
- agency network infrastructure that complies with QGEA interconnection standards
- consistent and standard service level agreements for network connectivity services across government, including consolidation of carrier billing
- greater homogenisation of processes that align to Information Technology Infrastructure Library (ITIL) framework best practice
- reduced equipment maintenance costs through aggregation

- reduced operational support and management costs through consolidation and rationalisation of infrastructure and resources
- solutions based on global internet protocol (IP) architecture using standard based protocols and interfaces.



Organisational



7 Organisational

Findings

- Agencies remain very operationally focussed.
- Fragmented approaches to ICT investment have resulted in inefficient implementation and overly complex ICT environments.
- Performance management in agencies is poorly done with a tendency to default management of risk.
- Service cost benchmarks indicate excessive variability in costs, especially in some high volume service areas.
- Central service providers are under-performing and increasing the costs for agencies in supporting their business activities.
- There is a lack of transparency of costs in service providers across the government.
- The fee for service model is not delivering the outcomes that it set out to deliver, instead adding cost overheads and impeding the adoption of services and the delivery of business.
- The workforce profile is heavily operational with a skills profile that does not match the likely future needs given the changing ICT industry and the government's preference to externally source commodity services.

7.1 Introduction

Through the course of the Audit, the ICT-related organisational units of the Queensland Government were examined and reviewed. This revealed a number of characteristics of how ICT is managed and delivered.

In most agencies, the ICT unit is seen as operational service provision to the business of the agency, not a strategic business partner. When treated as purely an operational capability, the ICT unit is generally not empowered to contribute to the strategic outcomes of the agency even though all agencies are completely dependent on ICT to drive those strategic outcomes.

In most cases the peak governance body for ICT in the agency, the Information Steering Committee (ISC) or equivalent, is not positioned as part of the executive governance of the organisation. It is also common for the Chief Information Officer (CIO) not to have a leading role on the ISC, often being relegated to being an advisor or an occasional invitee.

Despite the fact that ICT accounts for a significant portion of the spend in agencies, underpins almost all of the business of the agency, and often provides the greatest opportunity for advancing the business, the CIO is seldom a member of the executive board.

Investment decisions are frequently made as point decisions to address a particular business problem. Taking a strategic view would have ICT decisions made as a portfolio of interconnected and prioritised decisions where the agency can obtain maximum value from the set of investments.

Performance management in agencies is not mature. It tends to be operationally focussed and often is risk-based. Again the performance management regimes tend to be fragmented with no consolidated picture of performance across all aspects of ICT, and no strategic portfolio view of risk associated with ICT in the organisation. This indicates a lack of an outcomes focus which is also reflected in the very low levels of benefits management maturity.

Financial management in ICT units tends to be reactive and cost centre based, with service costs often not well understood. ICT budgets tend to be subordinate to those of business areas, not strategically considered and largely around the operational aspects of ICT.

Service delivery is also largely operationally focussed with strong operational disciplines. In recent times there has been a further reduction in investment prioritisation and high value strategic activities that look at how ICT can be leveraged to design the future of the organisation.

Procurement in ICT remains operationally focussed. The current push to consider alternate sourcing models for ICT will require more capability in strategic procurement, vendor and contract management.

7.2 Shared Service providers

Shared service provider models have been in place in the Queensland Government for a long time. There has been an increase in adoption of shared service arrangements over the last 10 years. Prominent examples include Centre for Information Technology and Communication (CITEC), Queensland Shared Services (QSS), Smart Service Queensland (SSQ), Corporate Administration Agency (CAA) and agency cluster shared service providers like the recently formed Information and Technology Partners (ITP).

The Audit found the following issues to be common across most shared service providers:

- Shared service providers have little strategic control over the services they are expected to provide. This creates a level of inflexibility in self-determination for their business. They still retain discretion in how those services are delivered.

- Shared service providers are directed and protected by their host departments often looking after the interests of the host department ahead of the interests of other clients.
- Central government ICT service providers (CITEC, QSS and SSQ) are supported by whole-of-government mandates that require agencies to consume their services. However, the control associated with those mandates has typically been weak extending uptake timeframes and eroding benefits. Agencies' declared unique requirements have also driven up complexity, cost and implementation time frames further eroding benefits.
- Central government ICT providers have had undue influence over government ICT policy and mandates. This resulted in policy and mandates that favoured the service provider's implementation preference, often at the expense of agencies. This lack of independence has at times driven policy that is not balanced and in the best interests of government as a whole.

7.3 CITEC

CITEC is the central whole-of-government provider of ICT infrastructure and associated services. It has its origins in 1964, becoming the State Government Computer Centre in 1976, and CITEC in 1987.

The early focus was around the provision of data processing capability for the state government. In the 1980's, 1990's and early 2000's CITEC established and maintained a significant commercial business providing data centre, infrastructure and network services along with solutions integration and information brokerage on a commercial basis.

The Service Delivery and Performance Commission Report on ICT Governance in September 2006 recommended that CITEC reorient itself to become the Queensland Government's technology service provider, winding back its commercial business to focus on providing services to government. The one commercial part of CITEC's business that was to be unaffected by this direction change was the CONFIRM information brokerage business. The report also recommended that CITEC provide ancillary services such as email and authentication.

At the time CITEC operated under a fully commercial model, received no direct budget funding and had no tied government clients. However, CITEC did provide services to some agencies under these commercial arrangements. It also delivered the GovNet infrastructure on behalf of government under a mix of budget funding to its host agency, and cost recovery from all departments.

7.3.1 Issues

The success of the transition of CITEC to focus on the business of government has been mixed. Major infrastructure establishment programs have failed to deliver. The Identity, Directory and Email Services (IDES) program was terminated without delivering in 2012. The ICT Consolidation (ICTC) program, while getting consolidation platform infrastructure in place, has achieved very limited uptake. The Polaris data centre remains underutilised with leasing costs being expended for a significant area of unoccupied floor space (45% of floor space underutilised, at a cost of \$3.26M per annum).

Agencies continue to express concern over the price of services from CITEC, particularly for mandated services.

CITEC also receives criticism for the lengthy delays in provisioning services. This is apparent in the timeframes for the establishment of the IDES infrastructure and services (4 years), and the establishment of the Foundation Infrastructure Program (FIP) services as part of the ICTC program (4 years).

Some success has been achieved in consolidation of contractual arrangements, most notably in the Internet Service Provision (ISP) space. This arrangement has delivered significant savings across government.

CITEC have also exhibited strong performance in managing technical issues, especially during the 2011 floods where the systems and ICT services to government were kept operational throughout the crisis. Recovery of affected systems was handled in a professional and efficient manner.

Evaluations conducted as part of the audit indicate that CITEC maintains robust processes, most notably in the areas of IT service management, operational performance reporting to clients, and operational risk management. However, the Audit also found opportunities for improvement in options analysis, procurement planning, cost transparency, strategic performance management, and governance.

Financial position

CITEC currently exhibits poor financial performance. This has been identified by the new government with direction given to achieve a positive financial position in 2012. The cancellation of the IDES program has been undertaken to enhance CITEC's future financial position. Current indications are that achieving a positive financial position this year remains challenging.

Information provided to the Audit suggests that CITEC's poor financial performance has several contributing factors:

- CITEC has been directed to deliver services for government with conflicting criteria – meet the service levels of the most demanding area of government, and provide good value for money.

- Weak mandates have been in place resulting in low uptake. This results in high costs and low revenue.
- CITEC has been forced to carry overheads of unused capacity. For example, contractually obliged to pay for unused floor space in the Polaris data centre due to slower uptake than projected.
- There is poor transparency of costs in service provision.
- High overheads are included in the charges for services.
- Prices charged do not reflect those in the published price book. CITEC are often prepared to lower the price when challenged, and at other times are charging agencies much higher prices than the published price.

While some of the constraints under which CITEC has had to operate have made financial performance more difficult, there is little to suggest that it is aggressively taking action to address its financial position. Further, there is no evidence that CITEC is working to improve its value proposition to agencies or to government.

The Audit conducted a market analysis to examine the price performance of standard ICT infrastructure sourced internally versus the pricing available from the market. Some of the variability found is attributable to differences in the models and levels of service. As shown by Figure 28, industry generally dominate the lower prices, while government dominates the higher prices. Unmanaged services are generally lower cost while managed services tend to be higher. To observe the commercial in confidence requirements of vendors, their names have been withheld.

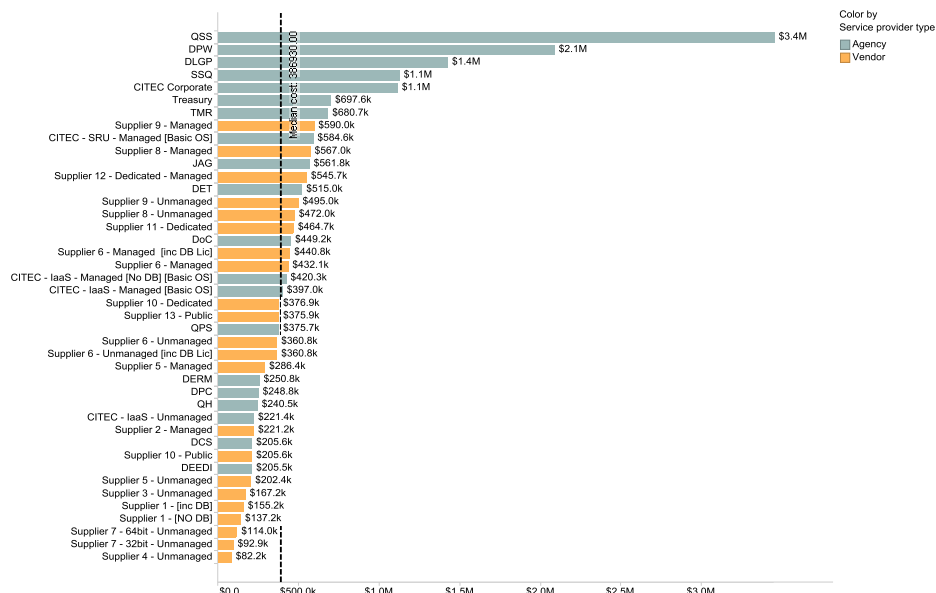


Figure 28 – Industry and agency comparison for a three year infrastructure investment bundle.

While this raw analysis does not provide definitive answers, it does show that there are opportunities for achieving cost reductions through the judicious use of industry sourced services. Further, with genuine utility computing now available in the market, it is now possible to have access to low cost services without being contractually locked into those prices long after the market has moved lower.

Transparency

A majority of agencies have reported issues with the transparency of CITEC's price book. Many state that their own delivery is much more cost effective than the services they are required to source through CITEC.

The Audit has also experienced difficulty with cost transparency. Reviews of financial performance were unable to obtain clear evidence of the price calculation, nor evidence of the costs that underpin the price. When attempting to undertake basic benchmarking with agency and market pricing, CITEC provided multiple revisions of pricing for what were standard services, with later revisions heavily discounted below the published price book.

Agencies report not being able to procure CITEC services at prices advertised in the price book, in several cases being forced to remain on much more expensive services for extended periods.

In other instances agencies have challenged CITEC pricing with other commercial offers. The response from CITEC has been to quickly offer lower prices. This suggests a level of overhead in pricing where agencies are being asked to pay a substantial premium rather than true cost recovery with minimal overheads.

7.4 Queensland Shared Service (QSS)

The Shared Service Initiative (the Initiative) in the Queensland Government commenced in 2002 with a plan to consolidate the software platforms and transactional service delivery of finance and HR systems across government. The original intention was wider than finance and HR systems but contracted its scope over time.

The Initiative concentrated primarily on the technical implementation of systems leaving the business processing aspects to cluster-based shared service providers. The technical implementation arm of the Initiative became known as Corptech in 2003.

In late 2007 the cluster shared service providers were reorganised. Health and Education each retained their own cluster shared service providers for business processing. Shared Service Agency was formed from the remaining four cluster shared service providers.

In mid-2008, the responsibility for delivery of the shared services agenda was transferred from Queensland Treasury to the Department of Public Works.

At this time it comprised Corptech for technology implementation and Shared Services Agency for the delivery of the business processing services. Health and Education cluster shared service providers remained independent.

On 1 July 2011, Corptech and Shared Services Agency were combined into the single business unit that became known as Queensland Shared Services (QSS).

In response to the failures of delivery with the Health payroll since March 2010, government accepted the recommendations of Price Waterhouse Coopers to split the shared services technology implementation agenda. Government's decision in November 2010 handed control for shared services in Queensland Health and the Department of Education and Training back to those respective agencies with the rest remaining with QSS. These transitions are currently in different states of completeness.

7.4.1 Issues

The Audit found that QSS have a rigorous process discipline but lack a strong outcomes focus. Their focus is primarily operational with strategic aspects of the business largely relegated to a compliance activity.

Over the years QSS has developed strong capabilities and retain a critical mass of skilled resources for government. They have implemented a solid cost model that allows them to clearly understand all of the elements of cost and how they contribute to the delivery of their services. They are also strong in their governance framework with governance processes well-articulated and executed.

QSS has solid mechanisms for measuring and reporting transactional performance. However, performance measures are concentrated on operational areas and weak in strategic measures of performance. Service Level Agreements with vendors also reflect incident-based performance measures.

End of support for core products

At present the government is exposed to a major risk with key technology platforms running out of time to be replaced before the end of vendor support. For example, payroll, HR and finance applications are discussed in *Applications*, earlier in this report. This issue has been known for a number of years when the government negotiated extended support dates with the vendors. Despite this, there have been significant delays in commencing the necessary upgrade projects. The risk associated with having to complete so many parallel technical upgrades is now extremely high.

Authority to make key decisions

Decision-making and governance arrangements around the implementation of corporate solutions is not ideal. The lack of clarity of ownership, authority and responsibility for go live decisions has resulted in systems entering production with unresolved issues to meet political imperatives and artificial timelines.

This results in increased operational costs due to the heavy burden of remedial actions to support dysfunctional aspects of the production systems and associated business processes.

Customisation of products

The shared services model implemented in the Queensland Government through QSS has been unable to deliver many of the expected cost reductions. This has been in part due to the policy of allowing agencies to have specific customisations to suit their particular way of doing business. Current practices worldwide are indicating that specialisations of corporate systems to align with the way an organisation currently conducts its business should be vigorously avoided. Successful organisations are adopting packaged solutions for corporate systems without customisation. Customisation significantly increases complexity and cost of both implementation and future replacement, and all but eliminates opportunities for economies of scale.

Fee for service

Like other government service providers QSS currently operates a fee-for-service model. In this model agency usage determines the billing. This imposes an overhead on QSS to gather the usage information, perform billing calculations, prepare and distribute bills, process and follow up on payments, and deal with adjustments and corrections. The overhead in turn adds to the cost of the service.

Sourcing model

The history of QSS and its previous incarnations have led it down a path of applications configured and customised in house. All of the current practices and skill sets are aligned to in-house delivery of customised packaged applications to meet the stated needs of agencies.

This limits the options for future implementations and locks the government into arrangements where upgrades are slow, difficult and expensive. Long upgrade times combined with vendor determined end of support dates for the products creates a rolling issue where upgrades are required again soon after the previous upgrades have been completed. The result is constant churn and change at the technical level without delivering any significant value to the operations of government.

Industry offerings have moved far beyond product-based software acquisition with the provision of services that incorporate the configuration and operation of the product now mainstream. In these types of offerings the vendor takes responsibility for the software currency on an ongoing basis.

Large organisations worldwide are starting to adopt full service delivery models where the partner organisation configures and operates the software and delivers the service to end users inside the organisation on a per transaction basis.

One size doesn't fit all

A key assumption of the shared services program has been that one size could be made to fit all. Thus agencies have been forced to adopt a product that in some cases has added cost and complexity to their business with limited, if any, additional value in return. While there are advantages to limiting the number of different products deployed to service particular aspects of government, careful evaluation is required as to the suitability and value for money before committing small agencies to large expenditure on complex products that are beyond their needs.

Benchmark costs for ICT services

In the Audit's benchmarking of unit costs for eight key ICT service areas, QSS was shown to have very high costs for three services.

Table 13 - QSS benchmark service areas with high costs

Service area	Compared to government median	Compared to next highest	Compared to best practice government agency
Managed desktop services (\$2,810 per device)	3 times higher (\$909)	44% higher (\$1,950)	7.5 times higher (\$375 – TAFE outsourced)
Storage (\$85K per operational TB)	22 times higher (\$3.9K)	60% higher (\$51K)	24 times higher (\$3.6K – QPS)
Microsoft hosting services (\$7,240 per server resource unit)	9.5 times higher (\$762)	34% higher (\$5,410)	12.5 times higher (\$581 – DPC outsourced)

In all of these cases the services are provided through another government service provider, either CITEC (storage and hosting) or DPW (desktop). Data from QSS indicates that these costs do not have any overhead or mark-up added from within their organisation. This indicates that pricing being applied to QSS by the internal government service providers is not competitive and that there is a failure in QSS to actively compare and manage the charges associated with these services.³⁴

In telecommunications services, QSS's own costs are considered to be at best practice levels (\$786 per FTE) indicating that QSS manage their own telecommunications costs well and maintain a tight grip on demand for telecommunications services for their employee base.

The benchmark in this area is, however, somewhat dependent on the type of business being run and the associated requirement for telecommunications services in the day-to-day work of employees.

³⁴ QSS have indicated that there has been a significant change in CITEC service charges since 1 July 2012.

QSS also manage the telecommunications accounts for a number of agencies. The Audit found that the group of agencies that use QSS to manage their telecommunications accounts are also the group of agencies that have the highest telecommunications costs. There is a significant opportunity for improvement in account management by QSS to assist agencies to manage down their telecommunications expenditure.³⁵

7.5 Smart Service Queensland (SSQ)

Smart Service Queensland (SSQ) was formed under the then Department of Innovation and Information Economy in 2002. The scope was to provide a set of services through the Internet and an integrated contact centre.

Over the 10 years since, SSQ has continued to expand the services it delivered on behalf of agencies through telephone and web channels. Commencing in 2008, face-to-face channels were added through the hosting of integrated whole-of-government counters in Brisbane, the Sunshine Coast and Cairns.

In late 2011, SSQ launched the new web face of government using CS Transform's franchise model to deliver a more customer focussed experience. Implementation is progressing across 17 franchises for the general public and a separate franchise for business and industry.

SSQ has also been progressing a program to reduce the number of phone numbers the public use to contact the Queensland Government.

This approach to advancing the service delivery of government became the foundation for the government's 'one stop shop' agenda to revolutionise the service delivery experience for the public of Queensland.

SSQ operate their own ICT infrastructure and applications underpinned by service relationships with CITEC and a number of industry partners.

7.5.1 Issues

ICT strategy and direction

The Audit found that SSQ has a well-articulated direction and focus areas although there are issues with the timeframes in the strategies not being as current as would ideally be preferred. It was not clear what evidence base was used to derive the ICT strategy, nor whether a structured rigorous process was applied to prioritisation across the portfolio.

The organisation exhibits a very strong focus on the operational delivery of services to the public with the delivery of the ICT necessary to support that more of a distraction than a differentiator.

³⁵ The responsibility for taking action to address high telecommunication costs rests with agencies. The current arrangement limits QSS to the provision of information to agencies.

Tight funding for ICT

To date SSQ has operated their internally managed ICT on tight budgets. In addition, the size of the organisation has not provided significant opportunities for economies of scale. This combination has resulted in higher costs and an ICT infrastructure that is barely sufficient to support its business operations. Over the last two years SSQ has spent a large proportion of their effort and expenditure dealing with legacy and capacity issues.

As SSQ takes on more services from agencies it will continue to be challenged to have ICT infrastructure with the capacity to support that growth while the current funding and ICT service provider model remain.

Fee for service model

SSQ operates on a combination of very limited appropriation funding and fee for service. As with other central service providers, SSQ faces challenges with agency acceptance of their service charges. Client agencies have difficulty understanding the value for money equation. There is evidence to suggest that the additional rigour applied by SSQ when agency service delivery is transitioned imposes additional cost. Prior to transitioning agencies typically have not applied the same levels of rigour to interactions and, in many cases, have not understood the true costs of delivering the service prior to transition.

As with other service providers, the fee for service regime in place in SSQ imposes overheads associated with billing that add to the cost of service provision. While one of the original intents behind applying a fee for service model was to manage demand, it is clear that from a public perspective, government service delivery is about providing sufficient high quality services to meet public needs. Demand may be better managed through a reduction in the need to interact with government rather than reductions in the government's ability to meet those needs.

Should the fee for service model be removed, funding will have to be provided to meet the service levels required and alternate means be employed to contain the public's need to interact with government.

Channel focussed culture

The Audit has found that SSQ have a very strong service culture that is linked to a solid channel centric set of disciplines around performance management, financial management and governance. The Audit also found a focus on improving and supporting staff in specific channels.

The ICT functions underpinning SSQ are also structured around the different channels of delivery with costs associated with those channels and their cost centres. The total cost of ICT is not visible across multiple business areas in SSQ.

ICT service maturity and performance

The incident resolution times are the longest in the Queensland Government, and this is reflective of the low funding and maturity of the ICT function within SSQ. Of particular concern is the lack of an overall performance management approach and the lack of an overall portfolio risk management approach. This is accompanied by low maturity in IT Service Management (ITSM) and operational change management.

Benchmark costs for ICT services

In the Audit's benchmarking of unit costs for eight key ICT service areas, SSQ was shown to have very high costs for four services.

Table 14 - SSQ benchmark service areas with high costs

Service area	Compared to government median	Compared to next highest	Compared to best practice government agency
Networks (\$1,670 per active network end point)	2.5 times higher (\$667)	10% higher (\$1,520)	5 times higher (\$328 – CITEC)
Microsoft hosting services (\$3,110 per server resource unit)	4 times higher (\$762)	27% higher (\$2,440)	5.4 times higher (\$581 – DPC outsourced)
Print services (\$0.13 per page)	2.6 times higher (\$0.05)	44% higher (\$0.09)	3.3 times higher (\$0.04 – QPS)
Storage services (\$9.5K per operational TB)	2.4 times higher (\$3.9K)	66% higher (\$5.7K)	2.6 times higher (\$3.6K – QPS)

In all of these areas there are opportunities for SSQ to reduce its cost base by either optimising the costs of current service delivery arrangements or by switching to alternate service provision arrangement.³⁶

7.6 Agency ICT units

The Audit examined the ICT capabilities in agencies in five dimensions:

- strategy and direction
- governance
- performance management
- financial management
- service delivery.

³⁶ SSQ currently have initiatives underway that are expected to significantly lower their costs with respect to network and storage as older technology is decommissioned.

The following issues examine the findings in these areas overlaid with the changing future ICT landscape and what generally needs to be done to position the government for that future. In addition, there are some specific findings for individual agencies in relation to their management and delivery of ICT services.

7.6.1 Issues

ICT management approach

Agencies tend to manage their ICT in a very operational way, managing projects and activities often on an instance by instance basis. They do not take a service centric approach to managing their portfolio. When a service centred approach is taken agencies then understand the end-to-end value chain of delivering services and in doing so optimise the ICT services required to underpin agency business as an integrated portfolio. A service centred approach also allows for improved service comparisons, performance management, cost management, risk management and governance.

Tighter austerity measures have resulted in agencies asking their ICT business units to focus only on 'lights on' activity. The result has been ICT business units that are geared more to react to incidents and problems of the day than drive improved service delivery through planning with the business.

Agency financial management for ICT has been found to be one of the most challenging areas. The treatment of ICT as a necessary operational expense has led to the predominant approach to management of ICT being that of cost containment. Furthermore, the distribution of ICT budgets is primarily through allocation of budgets to functional cost centres with expense attributing against those cost centres. This has resulted in difficulty understanding costs at a service level and cost shifting making the real costs of ICT impossible to understand.

Operational focus

Agency ICT units are heavily operationally focussed. Significant resources are expended on operational ICT, with strong IT Service Management methodologies for ICT operations, and maturing adoption of standard government project and program management methods for the change portfolio. However, ongoing management of value to deliver outcomes aligned with strategic direction is not evident.

Not only is this operational focus potentially having a negative impact on outcomes for agencies, it is also not the appropriate kind of focus an internal ICT capability will need in an as-a-service future where the operational aspects of ICT are no longer delivered by the agency.

The Audit also found that governance is largely operationally or initiative focused, with poor business buy in. ICT participation in business governance is also poor. Agency CIOs are often relegated to operational roles without the opportunity to participate in strategic decision-making for the organisation.

Agencies that do include CIOs in the executive management of the organisation are consistently leaders not only in their use of ICT to make their businesses better but also in the operational performance of their ICT.

Queensland Health and DETE highlight that when CIOs are invited to the agency executive table they have the ability to more proactively support business and customer outcomes. In smaller agencies with reduced ICT staff there is a high likelihood that ICT executives are excluded from senior executive and governance boards. CIOs still under the auspice of corporate services are largely managed as IT operational shops.

Federated or centralised

The Audit found two models for how ICT is funded and controlled in agencies. Agencies are either predominantly federated with funding and ICT decision-making devolved to business areas within the agency, or they are centralised, with the funding primarily provisioned to a central ICT unit and investment decision-making resting with the agency Information Steering Committee. Federated ICT has been found to result in challenges in maturing the agency's ICT as a whole. This also makes it difficult to achieve economies of scale as each business area procures independently. Low portfolio management maturity in the majority of agencies results in poor oversight of the suite of applications being acquired and whether they can be acquired in a more holistic way.

Federated business units within an agency in most cases do not see their ICT business units as a strategic partner. Further, the federated approach also results in lower compliance with standards and results in much more complex, expensive and difficult to manage ICT environments.

The Audit examined the distribution of ICT resources in the organisation between those under the CIO and those working inside business areas of agencies. Some departments were not able to clearly identify those ICT staff employed by business areas resulting in potential under-reporting in those departments. The level of discipline and management control over ICT expenditure, especially the agency's implementation of portfolio management practices to underpin investment decision making, will determine how fragmented ICT becomes. Fragmented ICT makes it difficult to maintain a streamlined and cost-effective ICT environment.

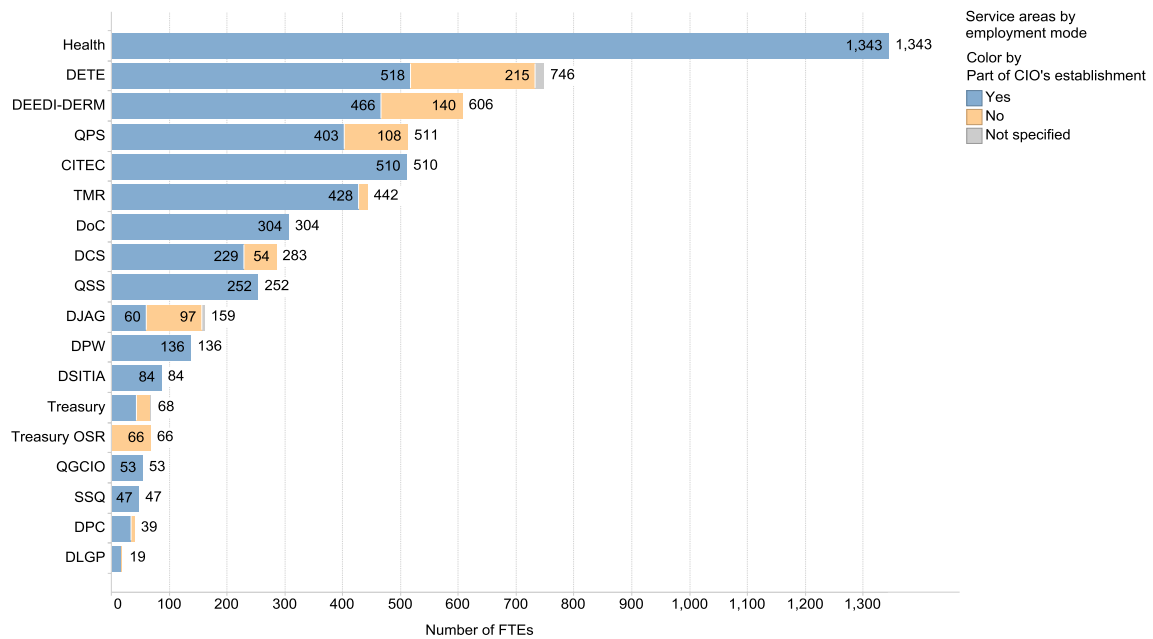


Figure 29 - ICT staff under CIO control by agency³⁷

The Audit analysis revealed a strong linkage between the level of discipline applied to the management of ICT and the success in creating an efficient and cost-effective ICT asset base and operation. While it is not essential for all ICT resources to report to the CIO, all ICT investment decisions and operational activities must follow a single consistent management discipline, have investment decisions made at the whole of agency portfolio level, and have high visibility at the whole of agency portfolio level.

The Audit found that a complete devolution of responsibility for aspects of ICT to business areas of an agency regularly results in poor investment decisions that complicate the ICT environment and leave the agency with high risk systems to manage.

7.7 Workforce capability

In the 1960s and 70s organisations choosing to leverage the power of computer systems had to build or assemble the infrastructure and develop software applications entirely from scratch. In the 1980s and 90s in-house deployment of infrastructure and development of software applications was a critical competency for an organisation to leverage the power of ICT.

Today's ICT groups are still built around the skills and competencies needed to assemble and run in-house infrastructure and to develop and maintain in-house applications.

³⁷ QSS data does not include 97 currently filled positions transferred to Queensland Health. Health data excludes Hospital and Health Services (HSS) staff.

As the industry moves to an 'As-a-Service' paradigm, the challenge for organisations will be: How do we leverage our existing ICT resources (people whose skills, experience and history of success has been forged around building and running in-house ICT) in a world where storage capacity, computing cycles, applications, networks and devices can be delivered as a service at a fraction of the cost, more responsively, in a more flexible manner and arguably with less risk?

It is human nature for people to play to their strengths and to fall back on proven techniques based on their experiences. So how do we ensure these experiences in one paradigm do not limit our ability to leverage a newer paradigm?

Fundamentally, the roles of in-house ICT staff have always been to identify and provide the best technology solutions to support the business of the organisation. This tenant still stands. The challenge today for ICT staff is to identify and provide the best solutions from all of the options available – not just those that exist in-house. The impacts of this are far reaching for ICT groups.

The old operating model for ICT groups included a range of standard roles that took care of in-house assets. For example, assets such as networks, storage, servers, etc. will no longer be in-house and will not need teams of people to look after them. The old operating model for ICT assumed that applications needed to be written and maintained in-house. A growing range of business functions can now be delivered via software-as-a-service where the organisation never owns (and never develops the application).

The future role of ICT groups is to assist in the identification and assembly of these functions – a very different skill set to programming and application from scratch. Some programming capability will always be required to integrate the selected function, but this will be a niche skill set. In essence the shift for ICT groups is as fundamental as saying that the old ICT operating model is engineering based and the new operating model is business based.

7.7.1 Issues

Operational focus

Approximately 64% of the ICT workforce is engaged in the implementation and day-to-day operational support of applications and infrastructure. It is clear that the transition to alternate methods of ICT delivery will have a significant impact on the current ICT workforce. Whilst some agencies have already made progress in shifting the focus of ICT delivery to fully managed services and software-as-a-service options, approximately one quarter of current ICT workforce are supporting the internal development and ongoing support of applications.

The focus in the Queensland Government is clearly biased toward the internal provision of business and underpinning ICT services. The Queensland Government will require both the business leadership as well as business acumen and experience to challenge the way that government services are currently provided and create an environment that embraces fresh insight and radical change.

Future ICT worker

The future ICT worker in the Queensland Government will need to challenge the way that both the business and supporting ICT services are provided. They will need to build trust and rapport with the business as well as build confidence through the successful implementation of alternatives that deliver value for money business and ICT services. Currently only 2% of the ICT workforce are in roles that can challenge the way government conducts its business. The profile of the ICT workforce is currently not equipped to sufficiently promote or influence innovation. Insufficient resourcing in the areas of architecture, business and ICT strategy and planning and business analysis will inhibit the speed at which significant change can be planned and implemented.

Information and security

Understanding the nature of the government's information holdings will be crucial to successfully changing how business services can be provisioned. Information must be current, accessible, portable and able to be shared, mined and manipulated regardless of where that information is stored. There will need to be consistent and pragmatic approaches to developing and accessing the risk profile of government information holdings. This will enable appropriate information security controls to be applied, independent of specific technology security products and ICT solutions.

The information holdings of the Queensland Government are vast. Current information architecture, information security and information management capacity and capability will need to be expanded to better understand what and how information can be accessed, shared and published for consumption by the public and other stakeholders. This is an area in which some erosion in the area of information management has already occurred. Currently less than 5% of the reported ICT workforce specialise in the security and management of information.

Use of contractors

The use of contractors to provide specialist technology skills is consequence of the reliance on internally provided and highly customised ICT services and applications. Specialist areas have been supplemented with contract staff because of difficulties with attracting and retaining people with appropriate skills at public servant salary levels. As part of workforce planning, there needs to be recognition of the specific skill sets of individuals with a level of remuneration commensurate with the performance, skill set, competency and current industry rates. Programs that restrict the number of staff at particular levels may further inhibit the government's ability to attract and retain qualified and competent resources.

There will always be a need to fill resource capacity and skill shortfalls with contractor and temporary resources. These resources should however only be used to facilitate and implement change rather than be retained on a long term basis in support roles.

Workforce planning

There is a responsibility at the whole-of-government level to set direction around ICT provision and the subsequent reshaping of its ICT workforce. Success with resizing and reshaping the ICT workforce rests with agencies and is dependent on the extent to which each agency embraces innovation and alternative methods of ICT service provision.

At present, ICT workforce resizing efforts are focused on ensuring the business continuity of in-house ICT services to ensure that there is no threat to business services. It is expected in the longer term, that the level of technical expertise required to support ICT services will be reduced. Roles in architecture, strategy, information security, information management, planning, service management and sourcing will become more prominent. The focus will be on managing integrated ICT commodity services, provided by multiple services providers to provide seamless ICT support to the customer.

The ICT workforce has already changed and will continue to change as a result of organisational drivers such as the Establishment Management Program and through strategic shifts in the delivery of ICT services. Ongoing workforce planning by agencies is required to confirm the profile of the ICT workforce in terms of size, skill, competency and utilisation of staff as well as define and implement strategies to reshape the workforce. Strategies for reshaping the ICT workforce in the Queensland Government should include:

- reskilling and retraining to grow the necessary skills and build new capability
- redistribution of surplus resources across departments to address core skills gaps in particular areas
- pooling of key areas of expertise if possible to better utilise specialist expertise
- repositioning of technical resources to service providers
- transitioning surplus resources to assist in the implementation of business and ICT change projects.

7.8 Procurement

7.8.1 Introduction

While it is acknowledged that agencies have successfully used procurement processes to achieve agency business outcomes and significant savings at times, there are a number of issues that are limiting the value from procurement activities and impacting the initiatives they underpin. There is often a mix of central procurement and procurement within the ICT division of an agency.

There are few performance measures in procurement and procurement activity. This is regardless of whether the procurement is internal to ICT or centralised in corporate procurement. However, procurement has a large impact in the realisation of projects and significant changes. Fragmented approaches to procurement are resulting in significant wastage and missed opportunities. Procurement was often cited as the cause of significant delays in delivery for ICT projects and programs.

7.8.2 Better procurement information required

The procurement function is an area of government that needs excellent supporting metrics. The Audit found that ICT procurement information was inadequate. This leads to a significant amount of waste. The Audit reviewed a number of procurement areas in detail and found significant savings opportunities. For example, savings in vendor management are up to \$14.8M and in Telecommunications the savings potential is \$31.2M.

A range of process improvements and tools that can be put in place to improve the management of the procurement discipline across government are discussed in *Annex – Procurement*.

7.8.3 Internal management fees

Currently, there are a number of whole-of-government ICT procurement arrangements that charge a management fee (typically 2% of invoice charges) to suppliers for supplying under that specific arrangement. The fee is represented as a mechanism for recovering the cost to government in managing the arrangement. However, the revenue collected from suppliers is in some cases grossly disproportionate to the cost of resources required to manage these arrangements. A number of issues present themselves when applying administration fees on government procurement arrangements:

- These fees create unnecessary red tape and drive up overheads for a range of parties in the supply chain. It can be expected that any costs incurred by industry (the fee plus the cost of red tape) will eventually be passed back to government as a cost.
- The fee represents a barrier to doing business with the Queensland Government. The New South Wales government has recently eliminated all instances of this type of management fee.
- The fees, in some cases, are disproportionately high compared to the real costs of administering the arrangements. Eventually securing the fee can become more important for the procurement group than realising the objective of streamlining procurement and ensure good outcomes for government.

7.8.4 Inefficient order processing

The Audit has identified several cases where agencies are generating many more orders than needed, resulting in wasted effort and processing costs. These costs are substantial. This occurs through unmanaged procurement activity within the agency.

It is not driven by constraints imposed by vendors. In fact, vendors such as Microsoft and Adobe, for example, provide end of month processes to assist agencies in simplifying procurement processes. *Annex - Procurement* discusses these issues further.

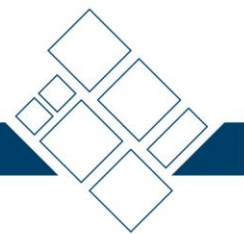
7.8.5 Vendor management maturity is low

The Audit has identified lower than adequate levels of vendor management maturity across government. The Queensland Government has a number of major ICT vendors such as IBM, SAP, Adobe, Microsoft, Oracle and VMware that require a higher degree of management than other vendors. This is due to their strategic relationship to Queensland Government ICT. The high switching costs and strategic dependencies on these large vendors' solutions means a high degree of lock-in to their products and services.

Therefore, highly skilled IT vendor managers are required to manage entrenched vendors and ensure contracts and relationships are more effectively managed to align IT and corporate goals, and to ensure software and hardware investments are maximised.

The audit found that of 16 agencies audited, only 10 have a vendor management function and, of these, only four had a Vendor Management Framework that governs their vendor management function. These functions are not easily created. Vendor management is a broad discipline that requires capabilities including legal, commercial, technology and financial competencies. At present a significant skills gap exists.

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Initiatives



8 Initiatives

Findings

- While agencies are maturing in project and program management, many projects are still showing poor project outcomes with overruns of cost and schedule.
 - 10% of reported projects show an increase in budget of greater than 75%.
 - 44% of reported projects ran over schedule by more than 3 months. The average schedule slippage was one year.
 - Long running projects are the least likely to deliver the desired outcomes and benefits. Conversely, staged projects show high performance in delivery of outcomes and benefits.
 - Initiatives that involve shared service providers (QSS and CITEC) showed delays in schedule and changes in budget.
- Agency budgets fall far short of funding the initiatives identified by agencies as being required to meet their business needs. Some agency budgets reflect chronic underfunding with many in-flight initiatives recently put on hold.
- As a result of the way agencies are funded, they have shown a preference for capital expenditure (build-based) projects over operational expenditure (service-based) projects.
- Agencies are showing varying levels of portfolio management capability consistent with the early phases of adopting these practices.
 - Lack of portfolio management has resulted in some poor selection of investment priorities.
 - Few agencies use portfolio level information to manage the performance of their ICT initiatives as a whole, limiting the opportunity to maximise the value being delivered.
- Many ICT initiatives are commenced without a business case. Initiatives that have well developed business cases that are then applied to guide the execution of the initiative deliver better outcomes.
- Benefits management maturity across the government is low. Many initiatives have not identified the expected benefits, have very low levels of measurement and do not track the benefits/outcomes.

8.1 Introduction

The government funds and executes a large number of initiatives to maintain and enhance the ICT asset base of government. These initiatives include activities and programs/projects designed to deliver changed or new functionality.

Agencies reported 1,092 ICT-enabled initiatives as summarised in Table 15.

Table 15 - Aggregated initiative investment information

Initiative status	No. of initiatives reported	Estimated expenditure
Initiatives completed since 30 June 2011	199	\$445M total estimated expenditure
Initiatives closed (stopped) since 30 June 2011	60	\$22.4M total estimated expenditure
Initiatives that are active and currently underway	304	\$1,173M total estimated expenditure \$643M forecast expenditure
Initiatives yet to start, awaiting approval	207	
Initiatives on hold, awaiting approval	167	\$1,728M forecast expenditure
Initiatives that are ongoing and operational in nature (business as usual)	155	\$189M total estimated expenditure \$93M forecast expenditure

It should be noted that expenditure is across the life of the project, which may be across multiple years.

8.2 Funding

Table 16 shows a breakdown of the funding arrangements by the various agency portfolios for 2012 onwards. It highlights where agencies vary, and where some agencies have significantly more fully funded expenditure as a proportion of their portfolio than others.

Table 16 - Initiative funding by agency showing forecast expenditure

Agency	Fully funded or internally funded		Partially funded		Unfunded or awaiting approval		Total forecast expenditure	
	\$	%	\$	%	\$	%	\$	%
DAFF	1.3M	83%			0.25M	17%	1.5M	100%
DCCSDS	1.4M	3%			39.2M	97%	40.6M	100%
DCS	126.2M	92%	6.5M	5%	4.8M	4%	137.5M	100%
DETE	5.7M	10%	0.35M	1%	53.0M	90%	59.0M	100%
DJAG	39.1M	83%	3.6M	8%	4.3M	9%	47.0M	100%
DLG	0.22M	59%			0.15M	41%	0.37M	100%
DNPRSR	1.6M	68%	0.75M	32%			2.4M	100%
DNRM	15.6M	55%	1.0M	4%	11.7M	41%	28.3M	100%
DPC	4.4M	100%					4.4M	100%
DSDIP	0.49M	27%	0.61M	34%	0.71M	39%	1.8M	100%
DSITIA - CITEC	0.91M	3%	4.6M	17%	21.8M	80%	27.3M	100%
DSITIA - QSS	11.9M	100%					11.9M	100%
DSITIA - SSQ	2.3M	49%	0.75M	16%	1.7M	35%	4.7M	100%
DTESB	4.2M	100%					4.2M	100%
EHP			2.1M	38%	3.4M	62%	5.4M	100%
HPW	10.7M	20%	5.8M	11%	36.9M	69%	53.3M	100%
QH	285.4M	15%	4.4M		1,632.1M	85%	1,921.9M	100%
QPS	32.4M	84%	2.9M	7%	3.4M	9%	38.7M	100%
QTT	9.5M	53%	0.10M	1%	8.3M	47%	17.9M	100%
TMR	27.6M	49%	3.2M	6%	25.7M	45%	56.5M	100%
TOTAL	\$581M		\$37M		\$1,847M		\$2,465M	

As a result of recent budget cuts and a backlog of unmet demand, most agencies have a large number of initiatives that are on hold. DCCSDS have the largest proportion with 85% of their initiatives currently on hold.

One notable initiative currently on hold is QPAS – replacement of the Queensland Patient Administration System (HBCIS) in Queensland Health. This initiative is of very high priority for Queensland Health, now inside the lead time required for replacement, and still awaiting funding. This initiative not only poses risks for the agency operations if the current system were to fail, it also entails a very difficult and complex implementation.

Capital expenditure funding was found to be more readily accessible for initiatives. This resulted in a tendency towards capital purchase of hardware and software including in-house software development activity rather than the acquisition of ICT solutions on a service basis. This severely limits agencies' ability to be agile in their software solutions and creates a significant long-term lock-in to the procured solutions.

8.3 Portfolio management

Portfolio management in ICT has been introduced into Queensland Government agencies over the last few years. Some agencies have shown higher levels of adoption than others, from awareness and understanding through to repeatable execution.

Only a few agencies appear to leverage their initiative information to govern their portfolio. However, there are still many initiatives that escape the attention of the ICT unit in agencies and, depending on internal governance of ICT investment, may be entirely at the discretion of the business units within the agency.

Without visibility of ICT investment decisions across an agency, and at a whole-of-government level, it is inevitable that poorly aligned investment decisions will be made. The result is poor prioritisation of ICT spend within the agency and across government.

In addition, the lack of a portfolio approach in agencies means no opportunity to maximise the value being delivered from the suite of investments an agency is making. Without a portfolio approach, collective good value for the agency and for government as a whole is all down to good luck rather than good management.

8.4 Business cases

The Audit found varying levels of business cases to substantiate the rationale for funding and commencing initiatives. In many cases, even where a business case was used to justify funding an initiative, it was subsequently not used as the basis upon which the initiative was conducted or managed.

The Audit did not advocate that every investment required a long and arduous business case to be developed. Instead the Audit was seeking right-sized formal justification for the investment. Often in the case of larger investments where a submission was required to obtain funding for an initiative, the submission was seen as the business case but then because of Cabinet-in-confidence requirements was not available to be used to drive the initiative.

Business cases were often found to be deficient in catering for the ongoing operational funding required to sustain an ICT system. This resulted in funding shortfalls in the out years once the system has been placed into production.

8.5 Benefits management

Benefits management was poorly done in most agencies. Benefits were often poorly articulated, described in terms of ICT benefits rather than business benefits, if they were articulated at all.

When benefits were described they were often then not followed through with tracking and measurement throughout the life of the project or program. Where benefits were measured the measurement often stopped when the project was complete even though the real delivery of the benefits was projected to be well past project closure. This was often due to the project team being assigned responsibility for benefits management rather than the business sponsor or owner.

The Audit was unable to determine whether benefits or outcomes articulated in business cases were ever realised following implementation.

Benefits management practices in agencies fall well short of what is required if business investment in ICT is to be able to demonstrate value for money.

8.6 Program and project management

The Audit found that most agencies had developed their project management capability, however, many areas still require improvement. The basic discipline of project management is being practiced to varying degrees in agencies. High profile project failures are an indication of weakness in project management practices and discipline. There was often a disconnect between the business and the ICT project resulting in failures of communication and failures in managing business change aspects of the projects.

A number of projects exhibited ineffective financial management processes resulting in discrepancies between planned and actual project expenditure.

Agencies appear to be assessing risk in projects reasonably well. However, agencies tend to have optimistic opinions about the likelihood of project success for high risk projects.

Cost overruns in projects are not always apparent due to regular re-baselining of projects. Table 17 shows a list of the 10% of the significant initiatives that had a cost with a greater than 75% increase in budget since the original approval.

Table 17 - Initiatives with cost overruns greater than 75%

Significant initiative	Agency
Weapons Licensing Management System	QPS
ESCAD Infrastructure Upgrade Project	DCS
QVAS Gateway Valuation reform and LVA 2010 (QLVA)	DNRM
Effective Service Delivery (ESD) Lifecycle	DTMR
Migration to VoIP	DTMR
Early Childhood Education and Care (ECEC) Grants Management Solution	DETE
International Students Management System (SMS) CRM	DETE
A Road Management Information System (ARMIS) Remediation	DTMR
DPW IDES Implementation	DHPW
Complaints Management System	DETE
Service Centre Online Phase 2	DTMR
State Property Asset Management (SPAM)	DNRM
RTI and Case Management Tool (LALB) Implementation	DETE
Ingres Software Upgrade	DETE
Local Laws Enhancements	DLG
Sybase ASA Upgrade	DETE
General Purpose Expenditure Voucher Smart Form	DETE
International Offshore Project Unit (IOPU) Management Project for the implementation of a Customer Relations Database	DETE

A large proportion (44%) of projects assessed, show changes in schedule of greater than three months. Of those projects with schedule overruns 71% were reported to have re-baselined (i.e. approved changes to the schedule). While re-baselining is an accepted practice, there is evidence of a systemic issue with an average slippage of one year per project. Agencies cited shifting priorities, procurement delays and availability of appropriately skilled staff as some of the reasons for schedule overruns.

The Audit found that ICT projects had durations that were on average 1.9 years longer than the ideal. Long duration projects have been found to be more likely to not deliver on the original business case. Successful agencies were found to contain the timeframes for projects by staging the project into stages of 12 months or less where each stage delivered value in its own right.

8.7 At risk initiatives

Table 18 shows those initiatives assessed as being at risk through in-depth analysis.

Table 18 – Initiatives at risk

Significant initiative	Agency	Observation
Lattice Infrastructure Improvement	DCS, QSS, CITEC	Extreme exposure, scope agreed late 2011 but still not started, issues with inter-agency governance and accountability, need for protected environment.
CIIP – ADS Technology Refresh Project	QSS	Delays due to reprioritisation of resources, inter-agency dependency, limited documentation. Project has been put on hold.
Laboratory Information Management System (LIMS)	TMR	Significant procurement and vendor management issues, ongoing resource issues, concerns around quality and industry acceptance of end product, executive indecisiveness.
ParkInfo 2.0	DNPRSR	Significant procurement and vendor management issues, in-house developers had inappropriate input early in project, alternate solution with revised business case under consideration.

Table 19 shows initiatives that warrant additional attention due to agency reported high business impact and potential performance issues. Some of these initiatives may also represent a high risk for government.

Table 19 - High business impact initiatives with potential performance issues

Significant initiative	Agency	Observation
SAP Assets Procurement Finance Information Resource (SAPFIR)	QH	SAPFIR is the project with the largest total estimated expenditure in this table (\$79.7M). Although the SAPFIR project was identified as one of the significant initiatives, it was excluded from drill down activity because of a parallel PwC review.
Mobile Data Terminal (MDT) Replacement	DCS	Replacement of mobile data terminals in Queensland Ambulance Service vehicles in south-east Queensland.
Spring Hill Office Complex Data Centre Relocation All Stages	DTMR	Relocate the Spring Hill Office complex (SHOC) data centre to CITEC leased floor space at the Polaris data centre in Springfield Central.
Early Childhood Education and Care (ECEC) Grants Management Solution	DETE	Part of overarching information management program driven by Office of Early Childhood Education and Care (OECEC), generic SAP-based solution provided by OSR, some delays associated with national system and broad range of stakeholders.
National Occupational Licensing System (NOLS) including PAMDA split	DJAG	COAG agreed to the development of a national trade licensing system in the context of its broader agenda for regulatory reform. The National Occupational Licensing System (NOLS) will be applied to seven occupational areas, including property agents.
Early Childhood Education and Care (ECEC) Reporting Services for Early Childhood Development	DETE	Part of overarching information management program driven by OECEC, impacted by National Quality Agenda IT system implementation delays, delivering early outcomes for local stakeholders through incremental IM changes.
DPW IDES Implementation	DHPW	DHPW indicated that this project will shortly be closed, as they are currently in discussions with CITEC to wind up this project.
Application Migration	SSQ	Migration of ICT applications from legacy hardware to the 'new' virtualised environment.

Significant initiative	Agency	Observation
Storage upgrade	QTT	Address the issue of storage equipment that is end of life, fully depreciated and out of support. The project will also provision additional storage capacity to cater for Treasury's storage requirements over the next four years.
Office of Fair Trading (OFT) Technical Refresh	DJAG	Refresh Office of Fair Trading technology including operating systems and the server hardware to enable software upgrades that support patch levels.
TAFE Course Information Search (TCIS) System	DETE	Enhance and refine the replacement product suite and roll the product out to individual TAFE institutes.
Simtars Workwise Replacement	DNRM	Replace in-house enterprise resource planning system while improving business processes and adding functionality.
BQCC SQL Server 2008 migration	DAFF	Stabilise Biosecurity Queensland Control Centre systems on robust current software platforms.
Local Laws Enhancements	DLG	Business case to be reviewed in terms of requirements and costs.
Desktop Client Roadmap	QSS	Establish ownership of desktop client issues within QSS and undertake sociability test for QSS's HR, Finance and other solutions' desktop clients with Windows 7, Internet Explorer 8, MS Office and CITEC system upgrades.
Exploration Permit - Minerals	DNRM	Part of overarching program to streamline business systems, funding managed at program level, high profile due to mining industry, using agile development.

8.8 Summary

Overall the ICT-enabled initiatives of government deliver vital services to underpin business delivery. While many initiatives are successful, cost and schedule overruns (often with associated changes in baseline) are common. A number of current initiatives remain high risk and are showing signs of under-performance.

There is a large backlog of unmet demand primarily due to lack of funds that is impacting the business delivery of government.

A portfolio management approach to investment prioritisation at agency and whole-of-government levels combined with improvements in project management discipline and project assurance activities is essential.

Additional detail on the makeup and analysis of the initiatives reported to the Audit can be found in *Annex - Initiatives*. In particular, details about the current status for the initiatives can be found in *Annex – Initiatives: Appendix C* and *Annex – Initiatives: Appendix D*, while a summary of each agency's performance in initiatives can be found in *Annex – Initiatives: Appendix E*.

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Relationship with industry

9 Relationship with Industry

Findings

- Government procurement processes can be too detailed – this approach can restrict the ability of industry to propose innovative solutions.
- Asking industry to provide components rather than overall outcomes limits innovation and increases the risk of failure.
- High level architectural positions (contained in the QGEA) are not used to guide industry understanding of the government's ICT roadmap.
- There are no repeatable approaches to enable early engagement with industry. This limits opportunities for innovative solutions to be presented to government outside formal procurement processes.
- The existing Government Information Technology Conditions (GITC Version 5) are seen as a significant overhead for industry.
- Many industry business models are based on the assumption of year on year revenue growth. This is no longer sustainable.
- Government recognises the need for strategic industry partners.

9.1 Introduction

This section acknowledges the critical importance of the ICT industry to the operations of almost every system across the Queensland Government.

The ICT industry was not in scope for the Audit, and as such there has been no detailed research into industry issues. There were, however, several formal meetings between QGCIO and the industry representatives where a range of ICT challenges facing government were discussed in an open and collaborative way. These meetings helped the Audit team better understand the breadth of solution options available to government and the challenge in the existing working relationships.

The Audit team recognises the time and effort made by a broad cross-section of the ICT industry to contribute to the audit program in an open, unbiased and independent way.

This section is based on the above industry contribution. It outlines a number of areas where relationships between government and industry could be improved. It is not meant to be a critical analysis, as there is already common agreement on most of these areas.

9.2 Why is the ICT industry important

ICT is arguably the central nervous system of government operations. All of the following activities rely on the provision of ICT services. In fact, none of them could operate properly in 2012 without ICT support.

A police office using a radio. A health professional reviewing a patient's test results. A front counter office receiving payment for a car registration. A person reporting damage after a storm to emergency services. A child safety officer reviewing a family history. A treasury official making a key investment decision. This list goes on and on...

Clearly government is heavily reliant on ICT and by definition the ICT industry. A healthy and innovative ICT industry (one that has a good understanding of government) will allow government to take advantage of new and innovative ways of doing business. ICT innovation has resulted in the creation of whole new service areas, as well as efficiency improvements.

9.3 The requirement for a close working relationship

The ICT industry and government should have a symbiotic relationship. Ideally this would drive a close working relationship on the ground. A relationship that was constructive rather than adversarial; one that sought mutual benefit rather than micro level win-lose negotiations; and one where either party ensured the wellbeing of the other. These aspirations, while admirable, have not become reality.

There have been several attempts to build better working relationships between the ICT industry and government (at the vendor and association level) over an extended period of time. While communications between government and industry could be described as good, genuine strategic engagement remains at a level where neither side is totally happy with the outcome. This is a situation that needs to be corrected.

There are a number of areas where the relationship between the ICT industry and government can be improved. Whilst not exhaustive, these areas are discussed below. These are key areas that could become the starting point for ongoing incremental improvement built on dialogue, trust and action.

9.4 Procurement is transactional

9.4.1 Specifications are too detailed

The government has a history of going to the market seeking ICT outcomes with a clear set of detailed specifications. On the surface this seems a logical approach, however, whilst it is appropriate for the acquisition of components it is not as useful in outcomes based procurement.

When looking for a new ICT system a detailed specification may lock out many of the innovative solutions that industry might be able to offer. Large parts of industry may simply 'no-bid' the opportunity, on the basis that they will be assessed against specifications they cannot align to, even though they may have a considerably better solution.

9.4.2 Without detail it is harder to justify decisions

When multiple innovative (different) solutions are provided, judgement will be required to pick a winner. Lack of detailed specifications means that a different approach will be needed to justify balanced decisions. Industry will have a responsibility in these circumstances to accept the referee's decision. Over time, subsequent debate over judgement calls has the potential to drive agencies back to a detailed specification approach – something neither government nor industry desire.

9.4.3 Breadth of solution

A key decision in any sourcing strategy is determining the boundary between what will remain in-house and what will be acquired from industry. Identifying the correct boundary is critical. Outsourcing strategic direction is clearly inappropriate, and insourcing low level commodity activities drives up costs. So what guidelines exist in determining the boundary? What is good practice and what is poor practice?

From an innovation perspective the scope of what industry is asked to do has a major bearing on the level of innovation industry can bring to the table. A good example is the government's SAP arrangements. SAP are one of the world's largest software companies. The government buys software licences and low level support from SAP and rarely anything else. The government bought software licences from SAP and then decided it was best placed to build a payroll system in Queensland Health. The success of that initiative is well documented. Consider two alternatives for the Health Payroll initiative.

- The government separately buys software licences from one vendor, consultancy services from another vendor, implementation services from a third vendor, and then runs the payroll system operations in-house through a shared services provider with infrastructure acquired from yet another vendor.
- The government asks the ICT industry to provide a payroll outcome as a fully managed service. (This option seeks to procure an outcome rather than components, and allows industry to bring a level of innovation to the entire problem space).

The Health payroll is a perfect example of outsourcing the spare parts that make up a complex machine while taking the total responsibility of assembling them and running them yourself. Not only is this very difficult to do but it also limits innovation as each provider of the unique components is limited to only being able to innovate within their own small component of the solution. It makes it very difficult to achieve innovation over the entire solution.

9.4.4 The lock down

During the procurement process there is an effective lock down which precludes vendors from communicating with government. However, there are instances where agencies can tend to avoid communication with vendors (avoid sales calls); even before the formal lock down period begins.

It is important that agencies design procurement processes that minimise the period during which the ICT industry and government cannot communicate. It is also important that agencies do not blame a lock down for an inability to communicate with industry.

9.5 Early engagement

9.5.1 Introduction

There are two key concepts in the ICT discipline used to describe the relationship between business systems and information technologies. These concepts are alignment and impact. Alignment refers to how well information technology supports a business system while impact describes how a business system might be redefined as a result of opportunities provided by technological breakthroughs.

Most government procurement systems support the concept of alignment by allowing business areas to specify in detail the level and type of ICT support required. The concept of impact does not get the same attention. To address the concept of impact requires knowledge of the technological breakthrough before the business requirements are developed. The concept of impact really means that until you see what you can have, you can't really say what you want.

For government to successfully address the concept of impact it will need to engage with industry at a different stage of the product lifecycle. Both industry and government agree that early engagement is important.

9.5.2 Assessment of promising products

At present the government does not have any mechanism to review promising new products. Vendors have to approach agencies where opportunities for engagement may or may not exist. This increases the cost of sales for vendors. This process is not ideal for vendors nor is it ideal for government.

From a government perspective the above approach results in individual agencies selecting products in isolation from other agencies and potentially in the absence of a government-wide direction. New and innovative products are unlikely to have any directions or guidance set in the Queensland Government Enterprise Architecture (QGEA). As a result government can end up with multiple solutions to the same problem with a range of different products compounded with different technology requirements and different sourcing strategies. This level of unmanaged diversity is bad for government and for industry.

Clearly the current arrangements are far from ideal. One possible solution might be the establishment of a lab to review and test drive new products that may be of value to government. The lab could make a number of recommendations for vendors of new innovative products, including:

- Good idea. The government is not the direct client but we can introduce you to a vendor who might make your product part of their product set.
- We are interested in the product but we need to align to a particular sourcing strategy (SaaS for example).
- We like the product and we would like you to add / change some features.
- Someone else has beaten you to the punch and we are using their product in a number of agencies already.
- We don't want to solve that problem that way but we can hand you over to someone in our innovation area who can provide assistance in establishing markets somewhere else.

Apart from a lab the government could assist industry by being clear about desired positions on sourcing, platforms, solution options and strategic direction.

9.5.3 Treatment of intellectual property

A key issue with early engagement, and specifically the Request for Information (RFI) process, is the vagaries that exist around intellectual property. Processes need to be established to allow vendors to register Intellectual Property (IP) before engaging in arrangements such as RFIs. This is complex, as much of the IP involved is too immature to meet formal patent processes. Government and industry need to resolve how IP can be confidently provided to government without the concern that it will be misused.

9.6 GITC – A barrier or an enabler

Government Information Technology Conditions (GITC) is a collection of different frameworks (with the same name and objective) used by every jurisdiction across Australia to establish a mechanism for government and industry to do business. In Queensland the GITC Version 5 framework appears on the QGCPO web site. There are 14 Modules in GITC Version 5 along with 22 schedules.

To be eligible to work with the Queensland Government there is a detailed application process and an annual schedule.

9.6.1 Multiple non-reciprocal GISC arrangements

Jurisdictions have different GISC frameworks, and none of them are reciprocal. This means that industry has to apply for and maintain up to seven different GISC accreditations before being eligible to do business with government across Australia. This is an unnecessary overhead to industry and a limitation to Queensland.

The Queensland Government limits itself to companies that have GISC version 5 accreditation. If a vendor with a unique offering is operating in New South Wales and Federally (two of the largest ICT markets in the country), they will have little motivation to undertake the GISC process to become accredited in Queensland where their market will likely be smaller.

The converse is also true. Queensland firms with GISC accreditation in Queensland cannot sell anywhere else in Australia until they complete the respective GISC processes in other states. If you can register a car in Queensland and drive across Australia why can't we do the same with GISC?

9.6.2 Reporting overheads

The reporting overheads for GISC are substantial and the benefits achieved for government are unclear. It is unlikely there are any benefits for industry. There is an argument that this area should be a target for red tape reduction.

9.6.3 Duplication of effort

It is common for vendors to be asked to provide information in responses for Request for Offers – that replicates information previously supplied to the GISC authority. This is a duplication of effort and should be avoided.

9.7 Responsibilities

9.7.1 Year on year revenue growth cannot be sustained

For decades the ICT industry has operated on the assumption that revenue must grow year on year. In an environment where the government's budget is limited and where commodity services are expected to fall in price, this assumption is clearly not sustainable. Put simply, governments will not continue to expend money for new ICT initiatives or increased charges unless there is a compelling reason.

Competition (especially in commodity areas) will also put pressure on year on year income growth. The new goals for industry should be sustainability and maintenance of margins through innovation. Just saying that an organisation wants a long term strategic partnership with government, while setting ever increasing sales targets, will be seen as inappropriate behaviour.

Internal industry key performance indicators (KPIs) seeking revenue growth will drive sales behaviour that is inconsistent with the government's strategic intent.

Being a strategic partner means helping government apply limited assets in the best possible way, not seeking an ever increasing share of these assets.

9.7.2 Cost of diversity

Unnecessary diversity, especially at the commodity layer, adds substantial costs to government. To manage these costs, government will deliberately limit the number of vendors in certain technology domains. This is a necessary trade-off between (a) the ideal outcome for industry which would be to give everyone (especially local organisations) a slice of the pie, and (b) cost / complexity reduction within government.

The government will make these decisions as openly and transparently as possible, always seeking the best balance between diversity (and its costs) and good industry policy. In the current revenue constrained circumstances the balance will necessarily tip in favour of cost / complexity reduction.

9.7.3 Being a true strategic partner

Government is looking for vendors to be true strategic partners. This type of relationship has the following characteristics which should be an aspirational target for both industry and government.

To be a strategic partner, industry should:

- ensure the sustainability of the relationship with government through quality products and/or services - not through vendor lock in mechanisms
- create low cost and easy mechanisms to exit products and/or services - that way government will be more likely to move to them
- avoid committed spend or lock in contracts - service quality is the way to keep government business
- not force government into expensive upgrades – instead, look for other ways to keep products up to date without it costing government time and money
- not allow government to pay too much for a service – if there is a lower price available, notify the government in a timely manner and ensure it is charged at the lower rate
- advise government when it is doing or about to do something sub-optimal - don't let government make bad decisions even if that is good for revenue
- work to eliminate complex contractual and billing arrangements.

To be a strategic partner, the government should also:

- establish independent governance arrangements that provide a mechanism for ICT industry representatives to participate in decisions that impact the ICT industry
- reduce unnecessary red tape – especially in procurement and contractual arrangements
- engage early with industry - so both parties can identify innovation opportunities.
- respect intellectual property concerns
- allow sufficient time for tender responses
- be transparent about decision making processes.

True strategic partners also have high levels of respect for each other. For example: Government should not release large tenders just before Christmas expecting them to be completed by early January. This is disrespectful to industry.

9.8 Accreditation

Ensuring the quality of a professional discipline is a challenge for peak industry bodies. The ICT industry is one of the few professional industries that has no high level body monitoring industry practice. This should be addressed urgently and where necessary, mechanisms should be put in place to sanction organisations that are operating outside agreed industry codes of practice.

If an appropriate and agreed accreditation program were in place for ICT professionals (individuals), the government would also consider supporting a program where all internal ICT professionals were obliged to become accredited.

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Constraints



10 Constraints

Findings

- Timely, high quality and fit for purpose agency approval and governance processes are needed.
- Visibility and capability to prioritise the right ICT investments at the right time will avoid waste through duplication and ineffective resource management.
- Implementing too much change quickly will undermine the achievement of successful outcomes and full benefits realisation.
- The capacity of the Government's workforce to absorb change will be a key factor in determining the pace at which government can transition to an ICT services model.
- Capability shortages in program and project management will affect government's ability to successfully deliver outcomes and embed transformational change.
- Careful sequencing of ICT initiatives and the steps involved in transitioning to an ICT-as-a-Service model will be required.
- Upstream cleansing and streamlining of business processes, policy and legislation are important parts of creating a sustainable ICT environment for government.
- With the transition to an ICT-as-a-Service model, government will need to be prepared for a degree of industry pressure to maintain the status quo.
- To achieve better One Government outcomes, all agencies will need to adhere to the principle that for the greater benefit of the sector, agencies may not always be able to pursue individual best-case outcomes.

10.1 Introduction

To actively progress the findings of the Audit, and to affect long term change in the management of ICT, the Queensland Government will need to be cognisant of, and willing to address a number of constraints.

10.2 Governance – agency approval processes

The ability to make timely decisions around an agency's ICT portfolio is an important aspect in managing risk and project performance. Some agency approval processes may take too long, or not be ideal for step change initiatives where a degree of initial piloting and agile exploration need to be accommodated.

The findings of the Audit showed that whilst most agency ICT governance bodies play a significant role in investment decision-making, agencies' peak governance bodies were a

catch-all for management of a broad range of issues. These issues range from operational 'run the business' aspects, through to those normally considered by a program management board. This results in agency decision making being effectively forced through a funnel. As a result, there is a high probability of delays and a heavy reliance on each agency's peak governance body to prioritise and action outcomes.

Moving forward, government will need to have quick, high quality and fit for purpose approval processes and governance bodies.

10.3 Flow on impacts of government policy

Current issues around the technical condition, financial condition, complexity and sustainability of the existing ICT environment, have been directly contributed to, by the subsequent and cumulative impacts of multiple business process changes, government policies and legislation.

The Audit makes a number of recommendations around how these impacts can be minimised going forward through new approaches in how ICT is sourced, organised and delivered – relying on ICT alone to solve the issue, however, is to ignore a key part of the problem.

The Audit has found that ICT complexity through over-customisation is a result of poor business processes and archaic industrial rules or legislation. These non-ICT causes effectively transfer the problem to the ICT platform, instead of tackling the true problem itself, through re-engineering / simplifying business rules, applying more standardised processes and revisiting legislation which have been layered upon layer over the years.

To make real progress in reforming the state of government ICT, government should:

- not look to transfer unnecessary business process complexity onto ICT solutions, without first streamlining and standardising business processes wherever possible
- not look to maintain old and out-dated policy and/or legislation that maintains and transfers unnecessary complexity to ICT systems.

10.4 People - capability and capacity

10.4.1 Change load management

Alongside the need for reform of government ICT, the business of running government continues unabated. Front line and corporate support staff have a finite capacity to absorb and implement strategic change within their agencies. The change load on staff from learning and implementing new processes and systems cannot be underestimated.

People need time to learn about new ways of working – but they will also have their own jobs to do each day. There is a limit to how much change an organisation can effectively absorb in a year before productivity and service delivery start to suffer.

Within the Audit, agencies reported that there are 304 active change initiatives under way across the sector, amounting to over \$643 million forecast expenditure – this is the current reported ICT-enabled business change load.

However, this does not account for unmet demand for change across agencies – with agencies reporting initiatives worth an additional \$215 million in unfunded forecast expenditure across the sector (plus \$1.6 million for QH alone) – this all represents additional potential change load.

From a program management perspective, too much change will undermine the achievement of successful projects and full benefits realisation. The change load capacity of the government's workforce will be a critical factor in determining how fast the government is able to progress the transition of ICT to a services model.

10.4.2 Capacity required to simply run ICT

Notwithstanding the capacity of the government to absorb strategic change, within the present environment, agency ICT resources are already stretched to capacity. In effect, the task of just running day-to-day ICT is consuming the bulk of available ICT resources, particularly given the recent Employment Management Program (EMP).

In addition, the Audit has identified both a range of agency nominated business change initiatives, and ICT transformation recommendations that will require a substantial ICT resource commitment to realise outcomes.

The ICT staff required to successfully embed transformational change are usually a shared resource, where many are also responsible for 'keeping the lights on'. This tends to cause resourcing conflicts which can be complex to overcome.

How government will be able to source sufficient skilled ICT capacity to do more than simply keep the lights on and maintain the status quo is an issue to be considered and addressed.

10.4.3 Project and program delivery

Embedding transformational change into the business is the role of program management, with project delivery being the controlled delivery of program outputs.

An independent assessment of each agency's maturity in managing ICT investments and change initiatives in the disciplines of portfolio, program and project management was conducted prior to the recent EMP. The assessment determined that, overall, government has low maturity in program and project management, particularly in the areas of organisational governance; management control; and benefits, financial, stakeholder, risk and resource management.

Starting from an already low base, the recent loss of capacity via the EMP has further diminished government's capacity to effectively deliver projects and programs successfully.

Since June 2012, the total reduction in FTEs in project and program management roles is down 26 from 361 – leaving 335 FTEs remaining in project manager, program manager or program director roles. Of particular concern is that the proportion of permanent program and project managers has reduced by 10% (17 FTEs) since June 2012.

10.4.4 Portfolio management

Government has a lack of capability in portfolio management. The primary role in this area is to manage risks at the whole-of-portfolio level and prioritise resource allocation ensuring that agencies are always focussing on doing the right things at the right time with the right people – thus optimising investment value and business change outcomes.

Portfolio management is a relatively new but important business discipline, with a lot of organisations around the world in the early stages of maturity. With the current low level of maturity, government is exposed to the risk of case-by-case decision making – with projects and programs approved and undertaken with little or no holistic consideration of the broader organisational strategic objectives.

In addition, the ability to independently monitor and report on the performance of significant change initiatives, particularly the delivery of outcomes and benefits is diminished.

10.4.5 Other strategic areas for retaining ICT expertise

In a similar vein to portfolio management, staff reductions in the strategic disciplines of business analysis and enterprise architecture have diluted the sector's ability to plan for and to help business implement the substantial change agenda needed to transition the government to new business models.

10.4.6 Strategies for overcoming capability shortages

Two strategies can be implemented to maximise government's initiative delivery capacity moving forward.

- Improve the visibility, pooling and prioritised allocation of specialist staff across agencies. Target roles include portfolio management, program and project management, enterprise architecture and business analysis.
- Improve the allocation of responsible and accountable senior business executives as key champions of business change initiatives. Without active senior sponsorship in agencies, most initiatives will find it difficult to deliver agreed outcomes in an environment of limited funds and competing business priorities.

10.5 Dependency management of initiatives

Portfolio management capability is essential to ensure the government's mix of ICT investments (i.e. ICT-enabled change initiatives) are regularly reviewed and assessed for delivery performance and risk profile. This review enables initiatives to be adjusted and (re)prioritised to maintain the optimum initiative portfolio for the sector, hence ensuring the government is doing the right things at the right time to achieve its strategic outcomes.

However, not all initiatives are strictly stand-alone without any reliance or dependency on certain underlying infrastructure components. This will be especially true as government transitions to an ICT as-a-service approach.

For example, to support the broader take-up of cloud based infrastructure, platform or software services, the Queensland Government will be required to establish foundational elements including:

- a government Applications Store (i.e. marketplace) to provide agencies with a catalogue of accredited cloud services
- an identity management capability to provide secure access to cloud services.

Dependency management is a significant issue and will be a limiting constraint on the portfolio mix of initiatives.

10.6 Other jurisdictions

10.6.1 Common pressures

It is not unrealistic to expect that other state jurisdictions have similar issues to Queensland in relation to how to manage ICT going forward in a manner that is both economically sustainable, and focussed on enabling the responsive and agile delivery of government services.

Some jurisdictions, like Queensland, may have already recognised the depth and severity of the issues. Other jurisdictions may be alerted through Queensland's experience, to the need to address underlying issues in the near future.

10.6.2 The need for a coordinated response

There needs to be a coordinated effort across jurisdictions to achieve economies of scale in the response to these common pressures. A coordinated approach by the states will also increase the intensity of the signals to industry, help create an appropriate market opportunity against which the ICT industry can respond, and provide the ability to maximise the effective use of finite industry-based commodity ICT service resources.

10.7 Industry capability

10.7.1 Introduction

To be successful in repositioning government ICT so that it is best able to address and deliver against the challenges over the next two decades and beyond, the Queensland Government needs to work closely with industry.

It has always been the case that government outcomes, enabled by ICT, are at their best and most productive when industry and government are able to leverage a trusted relationship with common goals that are clearly focused on solving defined problems.

However, as has been discussed, existing models of engagement and service delivery need to change if the relationship is to remain relevant for all parties in the decades ahead.

What is needed is a paradigm shift, and all parties must be able to deliver based on new business models, not yesterday's.

10.7.2 Ownership versus service models

The Audit has identified strengths and weaknesses in the provision of ICT across the Queensland Government. A key weakness discussed is the current commitment to ageing business models for the delivery of infrastructure and systems, highlighting that a shift from models based on asset ownership to business models based on 'ICT-as-a-Service' will be fundamental for future ICT provision.

The Queensland Government should:

- not look to build applications or buy software licences – with a strong preference to procure systems through a Software-as-a-Service (SaaS) approach
- not look to rent or buy space in data centres – with a strong preference to use SaaS or Infrastructure-as-a-Service (IaaS) approaches
- seek new arrangements for the provision of telecommunications that eliminate the need for government to own and manage telecommunications assets.

10.7.3 Impact on sales process - supply chains

A shift in government's business models for delivery of ICT may challenge some vendors who are unable to transition their sales processes to a new model. Key to this transition is the establishment of new supply chains for ICT products and services. The relationship between government and data centre providers illustrates this change.

Under both SaaS and IaaS approaches, government would no longer seek to rent data centre space. Renting data centre space assumes government owns applications or has data to store for later use.

Over time this will no longer be necessary because:

- government will look to acquire applications under a SaaS model where the SaaS vendor has the responsibility of meeting the performance and storage needs of the application
- if there is a data storage requirement separate to a specific application then government will look to acquire an IaaS from a vendor who may or may not be a data centre vendor.

Under the above examples, data centre vendors will need to review the supply chain for ICT storage and cycles, and target the appropriate customer base. In a cloud-based world this will be the provider of the SaaS to government or an organisation seeking IaaS. There will still be a need for data centre services, however, under the new model the Queensland Government may not be the direct customer of the data centre vendor.

10.7.4 Impact on sales process – products and services

Governments around Australia have traditionally been large consumers of ICT products and services. Over time, industry has tailored many of its products and services to meet the needs of government. This has been reinforced through government procurement processes.

It could be argued that this symbiotic relationship between industry and government has, to some extent, had an impact on the product offerings and underlying capability of the ICT industry. For example, under the existing model, government has required support for the in-house delivery of ICT. Industry has responded with businesses that provide a contract programming industry, a range of ICT specialist contractors and software development tools.

Government has also demanded better ways to manage operations. Industry has responded with businesses that provide operations support contractors, service management and operations management tools.

Looking across the existing government landscape, the current relationship has resulted in a number of key recurring themes: internally owned and operated infrastructure; large and complex software deployments with per user licence models; and government responsibility for software and infrastructure upgrades.

10.7.5 Transitioning to a new model – industry impediments

By its nature, the existing model has sought to address a number of issues and industry has, in turn, configured itself to help government resolve these issues. The only problem is that in doing so, the current model has actually generated a longer term set of consequences which are now unable to be resolved without altering the business model.

It is unclear if industry has the incentive or capacity to adjust if a new model were to take these challenges away.

Multi-national corporations

Multi-national corporations typically have 'one size fits all' models to delivering their offerings. Customisation is allowed, even encouraged at the product level, but not at the contract level. The way in which these firms bundle and license their products and services is usually strictly limited.

In a similar vein, local branches of multi-national corporations tend to be unable to significantly refine and create a unique business model for their respective clients, including the Queensland Government.

Vendor lock-in

One example of the need for a new business model relates to the current situation where agencies have progressively become deeply entwined with specific vendor products. This vendor 'lock-in' occurs through two primary mechanisms:

- The complexity and interconnectedness of vendor product suites can make it difficult to unwind a vendor's products from government's operations.
- Vendor licensing models tend to be constructed in a manner which promotes large scale procurement of a vendor's product's, with limited economic flexibility in how customers can mix and match multiple vendor products to best suit their needs. Whilst this type of commercial approach helps a vendor to optimise licensing revenue, it invariably locks the customer in to a defined vendor strategy.

When applied over a protracted time period, these mechanisms result in products being interwoven in such a way that makes it hard for agencies to extract themselves from. This does not mean that a vendor's product suite does not add value of and in itself. It does mean, however, that in a competitive and open environment, government is effectively not able to capitalise on other options that may be available.

The Queensland Government needs to be agile and the ability to remove dependencies that overly restrict its flexibility is critical. This is particularly relevant now, when it needs to be able to move beyond the current ownership model to a services-based model, where 'how a service is delivered and the underlying infrastructure components' is distinct and separate from the actual business functionality required.

Local ICT industry

The local ICT industry plays an important part in underpinning a vibrant Queensland economy. One means of doing this is by competing for business locally within Queensland. However this presents a limited market.

In order to grow, local companies are increasingly leveraging the digital economy to extend their market reach and customer base beyond the state and national boundaries. This evolution of their business model enables a wider and more stable revenue base than would normally be achievable within the relatively smaller confines of the Queensland economy.

It also promotes the establishment of strategic partnerships with other vendors – where the local firms may do ‘on the ground’ service delivery, or provide specialist sub-contracting input.

However, despite the requirement to evolve their business models, service offerings and market strategies, current practice is indicating that local vendors will still naturally seek to play to their existing revenue bases and perceived strengths, including to their current product and service lines. The challenge for these vendors will arise when they seek an opportunity to sell their current capabilities where they are no longer appropriate to the sourcing models and new environment the Queensland Government is looking to move to.

What this all means

The move by the Queensland Government and the broader ICT ecosystem to transition to an ICT-as-a-Service environment will drive a level of lobbying against the proposed new models if industry players believe they are excluded from new work.

As the Queensland Government and industry transition over time to a service-based model, those vendors that have the foresight to position themselves to help enable this change will benefit. However, government will need to be prepared for a degree of industry pressure to maintain the status quo – this is only to be expected given some firms’ commercial interests.

Ultimately, the transition to a service-based model will help develop a more mature, competitive and relevant Queensland ICT industry, able to compete in the global economy. This is good news for the state.

10.8 Agency support for a One Government agenda

If a one-government approach is to be most effective in delivering better outcomes for Queensland, the sector needs to agree and commit to the principle that the whole is greater than the sum of its parts. Agencies and executive government need to acknowledge that to achieve substantial one-government outcomes and efficiencies for the greater sector, some agencies may not always be able to achieve individual best-case outcomes.

Over time, this principle will likely have implications for all agencies, including:

- the need to minimise diversity in commodity infrastructure and services
- adjusting initiative timelines to ensure agency and sector change load and capacity limits are not exceeded. For this to happen, better visibility and input to prioritisation may be required.
- the need for ongoing and better visibility of agency ICT investments and information sharing

- strategic alignment of shared service providers to deliver in line with agencies' needs as opposed to provider nuances
- flexible and shared resourcing for specialist and/or high demand roles, with the ability to be (re)deployed to the areas of highest priority for government.

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Appendices



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Appendix A – Definitions and acronyms

The following terms have been used throughout the content of this document.

Term	Definition
Annual estimated total cost of operation (AETCO)	Includes annual internal, external, depreciation, licensing and other costs.
Application domain	The categories used as part of the application layer of the Queensland Government Enterprise Architecture (QGEA), to provide a consistent and convenient method of logically grouping applications into meaningful and manageable areas for analysis. (refer also to 'Domain')
Applications support	Includes the support of application management, application development and application base product software.
Aurion	A payroll and human resource information system used widely in the Queensland Government to pay employees and manage human resources information and entitlements.
Business As Usual (BAU)	ICT expenditure relating to ongoing activities to operate and maintain the current ICT capability, including: <ul style="list-style-type: none"> • monitoring, managing and operating the current ICT environment • maintaining, applying patches, installing service packs, providing break-fixes, minor enhancements and upgrades • replacing existing capability (e.g. desktop refresh) and provisioning redundancy (e.g. backup telecom line) that does not significantly enhance the current ICT or business capability • refreshing content on an intranet or internet web site • changes to resourcing model to fulfil BAU activities • procuring additional technologies to meet business demand (e.g. increasing storage capacity).
Benefits analyst	The benefits analyst is responsible for assisting the business to maximise the improvements that will be delivered from an Information, Communications and Technology (ICT) project. The benefits analyst will assist business change managers with defining, agreeing, monitoring, tracking and reporting the benefits with the business.
Benefits Management	The identification of potential benefits, their planning, monitoring and tracking, the assignment of responsibilities and authorities and their actual realisation as a result of investing in business change. It is usually carried out as a key part of program management or project management.
Business Process as a Service (BPaaS)	Business processes that are delivered based on the cloud services model.
Business analyst	The role responsible for reviewing and analysing an organisation's business, including its business intentions, business services, business processes and information needs. A business analyst is regarded as a conduit between the business units, organisational stakeholders and solutions delivery teams. A business analyst will liaise with key stakeholders in an organisation to develop a solid understanding of how the business is currently operating and the future goals of the business.
Business architect	Part of the enterprise architecture discipline that specialises in the business strategy, services and processes.

Term	Definition
Business continuity planner	The business continuity planner is responsible for ensuring that there are plans in place for an organisation to continue to function in the event of a disaster or catastrophic event.
Business critical system	Any system that provides vital services to the public or government in a disaster event and must be maintained irrespective of a loss of its supporting computing capability.
Business impact	<p>A measure of the significance of a system or technology to the business in terms of its coverage and support for existing business outcomes in meeting the operational and service delivery requirements.</p> <p>The evaluation criteria include:</p> <ul style="list-style-type: none"> • the operational/political/legislative impact of unexpected outage or failure • fitness for current purpose • scope of use • frequency of use.
Business process modeller	A business process modeller is responsible for graphically representing how business is done (as-is) or how business is to be done (to-be) across a business unit, organisation or between organisations.
Bring your own device (BYOD)	Bring your own device, a term referring allowing employees bring their own devices to access corporate systems and resources.
Capability manager	<p>The capability manager is responsible for meeting current operational requirements, with the sustainable use of current capabilities, and the development of future capabilities, to meet the sometimes competing strategic and current operational objectives of an enterprise. The capability manager is responsible for assisting the organisation in better understanding, and effectively integrating, re-aligning and applying the total enterprise ability or capacity to achieve strategic and current operational objectives.</p> <p>The capability manager is also responsible for developing and providing innovative solutions that focus on the holistic management of the defined array of interlinking functions and activities in the enterprise's strategic and current operational contexts.</p>
Capacity planner/analyst	<p>A capacity planner is responsible for ensuring that an organisation's ICT resources, that is, hardware, software and infrastructure resources will be able to cope with future demands.</p> <p>A capacity planner is required to identify the resources that are currently being used, then consider the growth in demand for those resources and then use that information to make decisions about what may be needed in the future.</p>
Capex – Capital expenditure	Funds used by an organisation to acquire or upgrade physical assets such as property, industrial buildings or equipment. This expenditure is depreciated over the life of the asset. Within the context of ICT spend, this could relate to major plant and equipment (including ICT systems and technologies) greater than \$5,000 (servers, storage, and networking) and software purchased or internally generated that amount to greater than \$100,000.
Case Management	Covers systems supporting a prolonged series of interactions with a client, or an organisation on an issue or set of issues.
Change Advisory Board	A group responsible for overseeing the process of controlling and approving changes to the infrastructure or any aspect of services, in a controlled manner.

Term	Definition
Change initiative	A series of actions taken to implement a transformation process which should properly begin with planning, then proceeding with communicating as <i>operational implementation</i> , solving problems, evaluating situations and making decisions.
Change management	Process of controlling changes to the infrastructure or any aspect of services, in a controlled manner, enabling approved changes with minimum disruption.
Change portfolio	The amalgamation of all changes being made to a business's portfolio.
Chief Information Officer (CIO)	The role within an agency, department or other business group, with responsibility for the information technology and computer systems that support the enterprise's goals. The CIO role is generally responsible for processes and practices supporting the flow of information (information and business layers of the enterprise architecture), whereas the CTO (Chief Technology Officer) is generally responsible for technology infrastructure.
Cloud	The delivery of system hosted services over the Internet. The service is sold on demand, such as by the minute or the hour. A user can have as much or as little of a service as they want at any given time and the service is fully managed by the provider.
Commercial Business Unit (CBU)	An agency business undertaking which operates, as far as practicable, on a commercial basis.
The Control Objectives for Information and related Technology (COBIT)	COBIT is a set of best practices (framework) for information technology management. The framework supports governance of IT by defining and aligning business goals with IT goals and IT processes.
Commodity	ICT services and products that are common to most if not all agencies. Examples: desktop, networks, data centres, commercial off-the-shelf business software and business systems that support common business functions across government. These commodities can be procured directly or as services through software-as-a-service, hardware as a service or infrastructure-as-a-service arrangements.
Common use supply arrangements	Arrangements established for whole-of-government and mandated by the State Procurement Policy for all budget-sector agencies. They are managed by the Queensland Government Chief Procurement Office (QGCPO) or a lead agency approved by the QGCPO. These arrangements may also be used by other Queensland Government bodies, approved non-government organisations, or the Commonwealth, territory and other state governments.
Configuration management	Configuration management is focussed on controlling the products being delivered by a project, knowing where they are at any point in time, what their status is, who is working on them and which is the latest version. Normally supported by software tools, it gives management precise control over the project assets (e.g. the products of a project), covering identification, control, status accounting and verification of the products. Maintains integrity and security over accepted products.
Consumerisation	The growing trend for information technology to emerge first in the consumer market and then spread into business and government organisations as opposed to the earlier prevalence of business and government being the primary driver of information technology innovation.

Term	Definition
Replacement cost	Replacement cost is an estimate of the budget that is likely to be needed to maintain the integrity of the ICT portfolio at an acceptable level for the needs of the business. Replacement cost accrues normally as part of an ageing system or technology platform. Unless an organisation makes adequate annual financial allowances to service the replacement cost, system maintenance and replacement can suffer impacting on critical frontline services that rely upon ICT.
Contractor	A non-permanent appointment to a position with a known end date with a specific approved contractual obligation. This includes Section 122 and Section 70 appointments for example.
Cranfield Grid (<i>in the context of the QGCIO ICT Planning Methodology</i>)	<p>A framework showing the spread of individual initiatives in a portfolio. Used in the ICT Planning Methodology to ensure that an organisation has a balanced portfolio of ICT investments.</p> <p>Within the grid the following quadrants are defined:</p> <ul style="list-style-type: none"> • Strategic – these are initiatives that are critical to the future business success. • Key Operational – initiatives that sustain the existing business operation, helping to avoid any disadvantage arising. • Support – represent initiatives which improve business efficiency and management effectiveness, but in themselves, do not sustain a business or provide competitive advantage. • High Potential – initiatives that are innovative and may create opportunities to gain a future advantage or benefit, but are as yet not wholly proven.
Customer Service and Support	Includes systems that service and support the customer both before and after the customer's purchase of a product or service.
Data centre	Manages the operation of secure and controlled facilities supporting information technology and telecommunications equipment operations that store, process and transmit government information.
Data storage	Includes the management and connectivity of storage devices, data protection and archive software.
Database management	Includes the management of data management systems and software including database management systems and database replication and clustering software.
Delivery	The creation of temporary programs and projects formed to transition in new or changed business and ICT services.
Design	The activity of planning and organising people, information, systems, products and other components of a business service in order to improve the quality of the outputs and the interaction between the provider of the services and their customers. The design process undertakes to understand the behaviour of the customers, their needs and motivations and design services that are user-friendly, competitive and relevant to the customers.
Desktop Fleet	The Queensland Government's holdings of desktop computers.
Developer	A developer is a person concerned with the facets of the software development process including, design, coding, and some aspects of software product management.
Disaster	A disaster is the impact or a natural or human-made hazard that negatively and significantly affects Queensland Government IT capability and the business services that it supports.
Document and Records Management	Includes systems that manage documents throughout their lifecycle, from inception, through creation, review, storage and dissemination all the way to their destruction.

Term	Definition
Domain	The categories used as part of the Queensland Government Enterprise Architecture (QGEA) to provide a consistent and convenient method of logically grouping business processes, information assets, applications and technologies and ICT initiatives into meaningful and manageable areas for analysis.
Dust gatherers	Legacy applications which can be decommissioned. Some may first need an effective archive or replacement strategy.
ECC – SAP ERP Core Component	The core of SAP ERP system subsequent to SAP R/3.
Enterprise License Agreement (ELA)	A licensing agreement for large organisations that helps to standardise the ICT assets, achieve volume discounts and simplify licence management
Enterprise architect	An enterprise architect works to build a holistic view of an organisation. This includes areas such as business processes, information gathered, technology used and strategy. The enterprise architect then uses this extensive knowledge of the organisation to help ensure that the business and IT are aligned in respect to the future direction to be taken.
Enterprise architecture	The discipline of translating the enterprise's vision and strategy into a future state expressed in terms of services, business process, information, applications and technologies.
Enterprise Mobile Broadband	A Telstra mobile data plan which allow an agency to access their private data network via Telstra's Internet Protocol Wide Area Network service using a device such as a data card or wireless router (supersedes Mobile IPWAN).
Enterprise Resource Planning (ERP)	The class of enterprise applications with broad functionality typically spanning finance, human resources, manufacturing, supply chain management and customer relationship management.
Establishment Management Program	The program within the Queensland Government designed to ensure recruitment decisions regarding non-frontline vacancies are aligned with Government priorities.
Estimated Replacement Cost (ERC)	Estimated Replacement Cost (for purchasing and/or building the system or technology) if the system were to be replaced.
Financial Management	Includes those systems that can support the financial processes of an organisation including general ledger, budgeting, costing, receipting and payments
Forester	Forester is a global research and advisory firm providing proprietary research, consumer and business data, custom consulting, events and online communities, and peer-to-peer executive programs. They guide leaders in IT, marketing and strategy, and the technology industry through independent fact-based insight.
Full Time Equivalent (FTE)	A unit that indicates the workload of an employee in a way that makes workloads comparable across various contexts. As an example, an FTE of 1.0 means that the person is equivalent to a full-time worker, while an FTE of 0.5 signals that the worker is only half-time.
Full Time Equivalent (FTE) licensing model	An FTE licencing model uses FTEs as a simplified licence metric that provides a right to use software regardless of the number of computer devices or users by charging a fee for an agreed number of Full Time Equivalents (FTE) in an organisation. This is in contrast to standard licence metrics that usually charge a licence fee per user or per device. FTE licence metrics offer the advantages of reducing the risk of software licence audits and simplifying software licence administration as the organisation is fully licenced as long as they have paid the agreed fee per FTE.

Term	Definition
Gartner	Gartner, Inc. is a leading information technology research and advisory company that delivers the technology-related insight necessary to making the decisions.
Government Wireless Network (GWN)	This program is about sourcing a current technology 'digital' network which can support current and future communication needs, and preferably facilitate closer cooperation with other jurisdictions.
GovNet	A portal to information from various sources, including Queensland Government web sites, Commonwealth Government web sites and external service providers. It also provides basic interconnectivity between Agencies and to resources in the 317 Edward Street data centre.
Hardware as a service	A procurement process where a managed service provider (MSP) remotely monitors and administers hardware on a client's site on a subscription basis.
Hosting	Includes the management and operation of servers, server operating systems, server support utilities, clustering and virtualisation.
Human Capital Management	Systems designed to meet the HR function of an enterprise. HR systems store employee information, automates business processes and generates reports for management.
ICT Expenditure	ICT expenditure represents an organisation's costs to provide business-enabling ICT services. ICT services encompass the design, development, implementation, maintenance, support, operation and management of technologies to manipulate and communicate business information. These services include software, hardware and support services to convert, store, protect, process, and transmit data, information and voice.
ICT Operations	The superset of all processes and services that are both provisioned by IT staff to their internal or external clients and used by themselves, to run themselves as a business.
ICT policy officer	An ICT policy officer works to assist the organisation to meet best practice standards in the development, use and maintenance of ICT systems, information and related assets. An ICT policy officer will research, analyse, interpret and provide feedback on standards and directions. The ICT policy officer will then consult with relevant staff across the organisation, usually senior management, and staff from human resources, finance areas and legal departments to discuss the implications of any new policy direction that needs to be taken.
ICT strategist	An ICT strategist works with key stakeholders in the organisation to determine how ICT can be utilised in the most efficient and economic manner. The ICT strategist will look at the way that ICT is used across the whole of the organisation and will make recommendations on how the organisation can improve the use of ICT and improve the way business is conducted.
ICT workforce	Refers to any employee that fulfils a role defined by the Queensland Government ICT career streams including roles that administer and support the ICT governance, strategy, policy, applications and technologies of the organisation. ICT workforce also include any corporate services staff such as finance, human resources marketing and communication staff who may directly support the central ICT organisation and form part of its organisational structure. The ICT workforce may be part of the central ICT organisation or be deployed to business units or regional areas and offices that do not form part of the central ICT functions within the agency.

Term	Definition
Information	Information is any collection of data that is processed, analysed, interpreted, classified or communicated in order to serve a useful purpose, present fact or represent knowledge in any medium or form. This includes the presentation in electronic (digital), print, audio, video, image, graphical, cartographic, physical sample, textual or numerical form.
Information and Communications Technology (ICT)	Concerned with the development, management, and use of computer-based information systems and telecommunications.
Information architect	Part of the enterprise architecture discipline that specialises in information and data.
Information management	Information management is the identification, classification and analysis of information as an organisational asset. It evaluates the data and information an organisation has and requires in order to function and meet current and future requirements. Information management practitioners are typically responsible for: <ul style="list-style-type: none"> • identification of information assets and their sources as well as managing the information assets register • classification of information to one or more classification frameworks • indexing and cataloging of information to assist with the retrieval and retention of information • promoting information custodianship • database design and data structure for electronically stored information • conduct of information audits to understand the information holdings, the value of this information, the integrity of the information, the extent and ability to share information across business units and organisations and the ability to integrate information across business systems. • preparation and implementation of asset management plans and strategies.
Information security specialist	The role responsible for information confidentiality, integrity and availability. They facilitate the security classification of information assets as well as understanding and maintaining the risk profile of the organisations information assets, identifying appropriate protection and risk mitigation strategies relevant to the risk profile of information assets.
Information Steering Committee (ISC)	An advisory committee usually made up of high level stakeholders and/or experts who provide guidance on key issues regarding information and communication technology.
Information Technology Infrastructure Library (ITIL)	ITIL® (the IT Infrastructure Library ®) is the most widely accepted approach to IT service management in the world. ITIL provides a cohesive set of best practice, drawn from the public and private sectors internationally.
Information Technology Partners (ITP)	A leading provider of innovative information technology design and support services for the distributed processing marketplace.
Infrastructure-as-a-service (IaaS)	A cloud service model that provides computers as physical or more often as virtual machines, and other resources.
Infrastructure management	The management of essential ICT operational components, such as policies, processes, equipment, data, human resources, and external contacts to ensure effective operations and performance. Equipment includes server hardware, virtualisation, operating systems, storage, data protection, ICT Systems management, database software.

Term	Definition
Initiative	Projects, programs or a recommended course of action collated for analysis and possible incorporation into a forward work plan or portfolio for the organisation.
Innovation	The successful application of new ideas to bring about change and continuously reinvent products, services, ways of doing business and the nature of the business itself. Innovation is an important contributor to increased productivity and performance.
Intranet / Websites	Includes the management and support of technologies that allow the creation and mark up documents to be presented in a format suitable for the Internet. This includes the support of authoring suites integrated into content management systems, HTML as well as software programs used to locate and display information on the internet or on an intranet. This also includes the support of products and activities that enable users to produce and edit content in a variety of presentation formats including sound, still images, video images and, animations.
ISO 27001	Part of the growing ISO/IEC 27000 family of standards, ISO 27001 is an information security management system standard published in October 2005 by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).
IT Service Management (ITSM)	ITSM refers to the implementation and management of quality IT services that meet the needs of the business.
Legacy	A legacy system or technology is classified as having one of the following attributes: 1) an age greater than the average age of all government systems; 2) past its end-date of use; or 3) is classified as 'retire' or 'streamline' as part of the ICT Planning Methodology.
'Lights On'	A descriptor used for expenditures and activities that are absolutely necessary for maintaining a company's critical business operations.
Light technology	ICT solutions that provide business capability without a high level of customisation and business complexity.
Likert scale	A scale commonly involved in research that employs questionnaires. The range captures the intensity of feeling for a given item.
Machinery of Government (MoG)	Machinery of Government - the interconnected structures and processes of government, such as the functions and accountability of departments in the executive branch of government. The term is used particularly in the context of changes to established systems of public administration where different elements of machinery are created.
Maintenance Management	Systems that support functionality for work and materials management for fault, repair, preventative maintenance and service activities.
Managed desktops (desktop, laptops, tablets)	Includes the support of personal computing devices and operating environments for desktop PCs, laptops and tablet computers. This also includes the support of personal productivity software and standard office suite software deployed to these computing devices.
Managed Systems	All systems reported to the ICT Baseline that are not classified as 'significant'. There were 1282 which were reported to the ICT Audit.

Term	Definition
Maximum Acceptable Outage (MAO)	The maximum amount of time a system can be unavailable before its loss will compromise the organisation's objectives and services.
MBRS Suite	The Telstra MBRS Suite is an online billing solution consisting of the Online Information Management System (OIMS), Services Inventory Management System (SIM) and Bill Reporting System (BRS)
Mobile Internet Protocol Wide Area Network (IPWAN)	Mobile IPWAN is a Telstra mobile data plan which allows an agency to access their private data network via Telstra's Internet Protocol Wide Area Network service using a device such as a data card or wireless router (now superseded by Enterprise Mobile Broadband).
Natural Systems	ICT solutions that negate the need for an organisation to source their own unique service, whether through buy and run, build and run, or even outsourced fee for service.
Networks	Includes the management and operation of devices that provide network connectivity between IT devices. This includes fixed and wireless networking via LAN, MAN and WAN as well as network performance monitoring
NICTA	Australia's Information and Communications Technology (ICT) Research Centre of Excellence, funded by the Australian Government and members, with strong ties to academic bodies.
Operating Systems and Utilities	The master set of software that controls the overall operation of the computer and facilitates the running of system software.
Operations and management	Activities required to maintain the ICT organisation as well as provide and support the ICT services offered by the ICT organisation. This includes the formulation of ICT strategy and policy, management of ICT assets through the asset lifecycle and the monitoring and measurement of the ICT organisation's performance.
Opex – Operational expenditure	An ongoing cost for maintaining or running a business. This could represent a fixed duration of on-going costs for initiatives or for maintaining currently owned ICT assets.
Organisational change management	Activities required to manage the effects of new business processes, changes in organisational structure or cultural changes within an enterprise.
Platform as a Service (PaaS)	A category of cloud computing services that provide a computing platform (includes a hardware architecture and software and application frameworks) and a solution stack as a service
Performance Indicator	A type of performance measurement commonly used by an organisation to evaluate its success or the success of a particular activity in which it is engaged.
Permanent	A full time or part time position created as part of the budgeted resource establishment for the organisation.
Planning and Governance	Systems that support the management of planning processes as well as functions that are essential to good governance.
Portability	How readily an information, application or technology asset can be used in a different technology environment other than the one in which it was created without requiring major rework.
Portfolio	A grouping of programs, projects, activities, investments or assets selected, managed and monitored to optimise business return and strategic alignment.
Print services (print, imaging, fax)	Includes the support of print and imaging services including printer devices, multifunction devices, imaging and fax hardware and software.

Term	Definition
Problem Management	Aims to resolve the root causes of incidents and thus to minimise the adverse impact of incidents and problems on business that are caused by errors within the IT infrastructure and to prevent recurrence of incidents related to these errors.
Program	A temporary structure created to coordinate, direct and oversee the implementation of a set of related projects and activities in order to deliver outcomes and benefits related to an organisation's strategic objectives. A program produces an end-state and is finite (albeit often years in duration).
Program manager	A program manager is responsible for leading and managing the setting up of the program through to the delivery of the new capabilities.
Program Office	The function providing the information hub to the program and its delivery objectives. Provides assistance to program role holders. Often project support is contained within the Program Office
Program office manager	A program office manager is the lead role in the program office. The program office may be dedicated to supporting a single program, or it may support a number of programs.
Project	A temporary process or endeavour, which has a clearly defined start and end time, a structured set of activities and tasks, a budget and a specified business case. It is developed to achieve a unique and well-defined product, service, goal or objective or deliver well defined benefits.
Project manager	A project manager is responsible for ensuring the project is completed on time, on budget, within scope, to the business requirements and meeting quality standards. The project manager is responsible for the creation of project documents and reports that are used to determine the progress and success of the project.
Project, Program and Portfolio Management (P3M3)	A coordinated set of methodologies to address these strongly related management activities.
QP707 Arrangement	A standing offer arrangement for the provision of desktop, laptop and server computers with related ICT services.
Queensland Government Enterprise Architecture (QGEA)	The collection of ICT policies and associated documents that guides agency ICT initiatives and investments to improve the compatibility and cost-effectiveness of ICT across the government.
Relationship management	The management of the business relationship between the ICT organisation and its targeted clients and suppliers.
Release Management	Includes processes to manage the smooth and timely deployment of software products or updates including the transition of system and technology changes through development, test and eventual deployment into a production environment.
Risk Management	The identification, selection and adoption of countermeasures justified by the identified risks to assets in terms of their potential impact upon services if failure occurs, and the reduction of those risks to an acceptable level.
SAP	An enterprise resource planning system implemented to support common business functions such as financial management and human resource management and payroll. Produced by SAP AG, a German multinational corporation.
Software-as-a-Service (SaaS)	A different model of purchasing software where you pay a fee for your access to a software product rather than pay for a licence. This is usually done in an online environment.

Term	Definition
Scheduling and Bookings	Systems that provide scheduling and timetabling services to customers as well as taking bookings for services or other resources.
Secure Sockets Layer (SSL)	A technical acronym 'Secure Sockets Layer' which is a protocol for encrypting information over the Internet. In the report it is used to refer to any of a number of protocols used to support secure web browser communication with web servers. This is typically visible in a web browser when the pad lock is displayed.
Security	Includes the management of hardware and software whose main purpose is to provide security for a network, internet operations as well as the physical access to ICT facilities and equipment.
Security architect	A security architect is responsible for the security countermeasures of one or more systems, applications, components, or centres.
Security specialist	A security specialist is responsible for ensuring that the information an organisation gathers, stores and utilises is only available to those people who need access to that information. Information security specialists are broadly responsible for information, confidentiality, integrity and availability.
Service-centric	Service-centric systems are systems that integrate heterogeneous elements in terms of services from different providers regardless of the underlying operating systems or programming languages of those applications.
Service Desk	All service desk or help desk activities including call and email response management as well as recording, classifying and prioritising problems and seeking a solution while keeping users updated.
Service Level Agreement (SLA)	A written agreement between a service provider and customer(s) that documents agreed service levels for a service.
Service Management	Management of services to meet the customer's requirements.
Service Oriented Architect (SOA)	A style of loosely connecting ICT systems in which the systems are generally smaller and more modular than singular monolithic systems.
Shared Service Provider (SSP)	Organisational body that provides services to multiple agencies.
Significant Procurement Plan (SPP)	Procurement of goods and services in high in either business risk, expenditure or both are significant procurements for which a plan is required. The SPP relates directly to the justification of a particular form of procurement for the goods or services being sought.
Six Sigma	A business management strategy that seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in manufacturing and business processes. It uses a set of quality management methods, including statistical methods.
Software Maintenance	Updating software, adding new functions, fixing bugs and solving problems. Technology vendors often sell a maintenance contract with their software. This contract is usually calculated as an annual fee based on some percentage of the total software cost. It generally provides for overall support and maintenance of a software product, including applications. Support may include telephone assistance time as well.

Term	Definition
Solutions architect	The solutions architect is responsible for the development of the overall vision that underlies the projected solution and transforms that vision through execution into the solution. The solution architect becomes involved with a project at the time of inception and is involved in the functional analysis of developing the initial requirements. They then remain involved throughout the balance of the project.
Standing offer arrangement (SOA)	Standing offer arrangements are agreements involving one or more suppliers to provide goods and services over a set period, according to agreed terms and conditions, including price. An SOA can be established and managed by the QGCPO or another agency.
Strategic/business planner	<p>The strategic/business planner is responsible for ensuring that there are plans in place for an organisation's future course. Strategic planning is the formal consideration of an organisation's future course.</p> <p>The strategic/business planner is responsible for knowing where the organisation stands (What do we do?), determining where the organisation is going, and how it will get there. The resulting document is called the 'strategic plan'.</p> <p>The strategic/business planner is responsible for setting strategic objectives and defining a roadmap of ways to achieve those objectives. The strategic business planner is also responsible for ensuring that the strategies are embedded within the business operational plans and performance management plans.</p>
System	An ICT system deployed by the agency which has part of an agency's business process embedded within it. A system relates to particular business processes (for example, SAP which would typically be provided only for finance, assets management or procurement staff); whereas a Technology is involved with either essential infrastructure or general productivity (such as systems management software or standard issue tools like Microsoft Office which would typically be provided to all staff).
Systems administrator	The systems administrator is responsible for the management of an organisation's computer systems and needs. This includes the planning, development, installation, configuration, maintenance, support, and optimisation of all computer systems. In some cases, especially in smaller organisations, the responsibilities of a system administrator and network administrator often overlap.
Systems analyst	The system analyst works with the client to develop user requirements, however, they focus on the technical requirements required for the solution to be created. Systems analysts will also advise the client on the ability of an existing system to support proposed change of an existing system.
Technical Condition	A major characteristic in the Queensland Government ICT Portfolio Assessment Methodology. It measures the health of the system or technology in terms of performance, maintainability and alignment with the corporate architecture to determine whether its use should be encouraged or curtailed. The dimensions of the evaluation vary between systems and technologies.
Technology	The technologies required to support business systems, including software technologies, hardware, and network support. This includes infrastructure software which is broad based or commodity in nature. Technologies are involved with either essential infrastructure or general productivity software and hardware.

Term	Definition
Telecommunications	Telecommunications is the transmission of signals over long distances. It includes the support of special purpose devices including voice and video communications devices including telephones, radio devices, mobile devices, pagers, audio and video devices, and IP telephony devices and software.
Telecommunications Expense Management (TEM)	TEM services encompass the processes undertaken to order, provide, support and optimise corporate communications services, both fixed and mobile.
Temporary appointment	A non-permanent appointment to a position with a known end date that may or may not form part of the budgeted establishment of the organisation.
True-up	A process initiated by Microsoft to see if you have deployed more software licenses than what your company has licensed under an agreement or if you have licenses that are currently unallocated.
Ubiquitous Computing	Where simultaneous information processing has been thoroughly integrated into everyday objects and activities and therefore in the course of ordinary activities, some engages many computational devices and systems.
Usability	How easy an application is to use
Vendor relationship manager	A vendor relationship manager is responsible for building and maintaining relationships with each company that the organisation has a commercial relationship. Vendor relationship management has at its heart the concept that the customer is not passive in the commercial relationship.
Virtualisation	<p>Defined by Gartner as the abstraction of IT resources that masks the physical nature and boundaries of those resources from resource users.</p> <p>An IT resource can be a server, a client, storage, networks, applications or OS's.</p> <p>Abstraction enables better flexibility in how different parts of an IT stack are delivered, thus enabling better efficiency (through consolidation or variable usage) and mobility (shifting which resources are used behind the abstraction interface), and even alternative sourcing (shifting the service provider behind the abstraction interface, such as cloud computing).</p>
Whole-of-government (WoG)	Defines scope of context to all of the Queensland Government
Windows and MS Office	Microsoft desktop operating system and productivity suite.
Windows Server	A brand name for a group of server operating systems released by Microsoft.
Workforce planning	A planning process used to align the needs and priorities of the organisation with those of its workforce to ensure it can meet its legislative, regulatory, service requirements and organisational objectives.

Acronyms

The following acronyms have been used throughout the content of this document.

Term	Definition
AETCO	Annual Estimated Total Cost of Operation
BAU	Business As Usual
BPaaS	Business Process as a Service
BYOD	Bring Your Own Device
CEDA	Committee for Economic Development of Australia
CEO	Chief Executive Officer
CIO	Chief Information Officer
COBIT	The Control Objectives for Information and related Technology
DG	Director General
DDG	Deputy Director General
ELA	Enterprise License Agreement
EMG	Executive Management Group
EMP	Employment Management Program
ERC	Estimated Replacement Cost
ERP	Enterprise Resource Planning
FTE	Full Time Equivalent
GFC	Global Financial Crisis
GITC	Government Information Technology Conditions
GWN	Government Wireless Network
ICT	Information and Communications Technology
IaaS	Infrastructure-as-a-Service
ISP	Internet Service Provider
ITIL	Information Technology Infrastructure Library
ITSM	Information Technology Service Management
MAO	Maximum Acceptable Outage
Mobile IPWAN	Mobile Internet Protocol Wide Area Network
MoG	Machinery of Government
NICTA	National ICT Australia Ltd.
Opex	Operational Expenditure
PaaS	Platform as a Service
PSC	Public Service Commission
P3M3	Project, Program and Portfolio Management
QGEA	Queensland Government Enterprise Architecture
SaaS	Software-as-a-Service
SDPC	Service Delivery and Performance Commission
SFIA	Skills Framework for the Information Age
SLA	Service Level Agreement
SOA	Service Oriented Architect
SSP	Shared Service Provider
SOA	Standing Offer Arrangement
SRU	Server Resource Unit
SSL	Secure Sockets Layer
TEM	Telecommunications Expense Management
WoG	Whole-of-government

Queensland Government Departments

Post 2012 Machinery of Government Departments

Acronym	Department
DAFF	Department of Agriculture, Fisheries and Forestry
DATSIMA	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs
DCCSDS	Department of Communities, Child Safety, Disability Services
DCS	Department of Community Safety
DETE	Department of Education, Training and Employment
DEWS	Department of Energy and Water Supply
DJAG	Department of Justice and Attorney-General
DLG	Department of Local Government
DNPRSR	Department of National Parks, Recreation, Sport and Racing
DNRM	Department of Natural Resources and Mines
DPC	Department of Premier and Cabinet
DSDIP	Department of State Development, Infrastructure and Planning
DSITIA	Department of Science, Information Technology, Innovation and the Arts
DTESB	Department of Tourism, Major Events, Small Business and the Commonwealth Games
EHP	Department of Environment and Heritage Protection
HPW	Department of Housing and Public Works
QH	Queensland Health
QPS	Queensland Police Service
QTT	Queensland Treasury and Trade
TMR	Department of Transport and Main Roads

Pre 2012 Machinery of Government Departments

Acronym	Department
CITEC	CITEC
DCS	Department of Community Safety
DEEDI	Department of Employment, Economic Development and Innovation
DERM	Department of Environment and Resource Management
DET	Department of Education and Training
DJAG	Department of Justice and Attorney-General
DLGP	Department of Local Government and Planning
DoC	Department of Communities
DPC	Department of Premier and Cabinet
DPW	Department of Public Works
QH	Queensland Health
QPS	Queensland Police Service
QSS	Queensland Shared Services
SSQ	Smart Service Queensland
TMR	Department of Transport and Main Roads
Treasury	Queensland Treasury

Historical Departmental Acronyms

Acronym	Department
DATSIP	Department of Aboriginal and Torres Strait Islander Policy
DC	Department of Communities
DChS	Department of Child Safety
DCOMM	Department of Communities
DE	Department of Energy
DEA	Department of Education and the Arts
DEIR	Department of Employment and Industrial Relations
DES	Department of Emergency Services
DETA	Department of Education, Training and the Arts
DH	Department of Housing
DI	Department of Innovation
DIP	Department of Local Government and Planning
DIR	Department of Industrial Relations
DLGPSR	Department of Local Government, Planning, Sport and Recreation
DLGSR	Department of Local Government, Sport and Recreation
DME	Department of Mines and Energy
DMR	Department of Main Roads
DNRMW	Department of Natural Resources, Mines and Water
DNRW	Department of Natural Resources and Water
DPIF	Department of Primary Industries and Fisheries
DSDT	Department of State Development and Trade
DSDTI	Department of State Development, Trade and Innovation
DSQ	Disability Services Queensland
DTFTWID	Department of Tourism, Fair Trading and Wine Industry Development
DTRDI	Department of Tourism, Regional Development and Industry
EIDI	Employment, Industry Development and Innovation
EPA	Environmental Protection Agency
QAO	Queensland Audit Office
QCS	Queensland Corrective Services
QT	Queensland Transport
SSA	Shared Services Agency

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Appendix B – Savings and waste reduction opportunities

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Applications rationalisation			
1 Decommission CITEC SAP <i>There is an opportunity to subsume the CITEC instance of SAP into the DSITIA SAP instance.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$300,000 to \$1M ▪ Stage: CONSULTATION ▪ Confidence level: 35% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ CITEC provided the costs to support the CITEC SAP system via the ICT Baseline. This system can be decommissioned upon ERP consolidation with DSITIA. ✓ While this information has been analysed, the conclusion will be confirmed during consultation with CITEC and DSITIA. 	CITEC with DSITIA
2 Remove dust gathering systems <i>Identify and treat applications with low business impact; high cost; a low number of users; and low frequency of use. Decommission applications that are of low value to the business and little potential for the future.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$8M to \$10M per annum ▪ Stage: DECISION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Medium ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Analysis of agency baseline data and confirmation through agency consultation has confirmed the value of the savings potential. 	QGCIO with Queensland State Archives All Queensland Government Agencies QGCIO

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Business service delivery			
3 Agency library consolidation <i>Reduce internal and external costs by consolidating agency library facilities and services.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$100,000 to \$1M ▪ Stage: ANALYSIS ▪ Confidence level: 20% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: not yet confirmed. 	Current status: <ul style="list-style-type: none"> ✓ Information regarding government library facilities was obtained from the Department of the Premier and Cabinet. ✓ Some activity has occurred in this area in recent years and anecdotally agencies have begun to reduce services in this area during the period of the the Audit. 	Department of the Premier and Cabinet
4 Services migration to online (internet) channel <i>Significantly reduce the cost of front line service delivery by leveraging online self-service and mandating agency use.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$4M to \$20M per annum ▪ Stage: GATHER DATA ▪ Confidence level: 25% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 		Smart Service Queensland
5 Travel management system (TMS) <i>Identify the savings that could be achieved if the TMS was decommissioned and agencies did the same amount of travel.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$8.8M to \$9.8M per annum ▪ Stage: DECISION ▪ Confidential level: 95% ▪ Frequency: Recurrent ▪ Time to Realisation: Medium ▪ Savings realised to date: NIL 		QGCPO

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Business service delivery			
6 Vehicle registration stickers <i>Avoid costs for Motor Vehicle Registration labels by relying upon currently installed traffic management systems in use by Police and Department of Transport and Main Roads.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$100,000 to \$3M ▪ Stage: GATHER DATA ▪ Confidence level: 20% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: ✓ Early discussions have been conducted between the QGCIO and executives within the Department of Transport and Main Roads.	QGCIO
7 Website optimisation <i>Avoid costs via optimising website redevelopment.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$20,000 to \$500,000 per annum ▪ Stage: GATHER DATA ▪ Confidence level: 15% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: ✓ Information regarding the number of websites and support costs were provided by Smart Service Queensland although by admission this information was out-dated and incomplete.	Smart Service Queensland

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
ICT efficiency			
8 Cloud email <i>Comparison of government provided email with cloud hosted solutions.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$3.7M to \$17M ▪ Stage: CONSULTATION ▪ Confidence level: 45% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current Status: <ul style="list-style-type: none"> ✓ The QGCIO has compared internal government email solutions to potential cloud hosted email solutions. ✓ The preliminary cost modelling indicates a saving of approximately \$8 per month per user. ✓ The best case savings estimate is the difference between the worst case government costs and the lowest market cost (Google), whereas the low savings estimate is the difference between the best case government costs less the highest market costs. 	QGCIO ICT Strategic Sourcing (DSITIA)
9 Cloud provisioning of hosting infrastructure <i>Comparison of the costs to provision and maintain hosting and storage solutions between government and Cloud service providers.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$5M to \$12M per annum ▪ Stage: CONSULTATION ▪ Confidence level: 45% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 		QGCIO ICT Strategic Sourcing (DSITIA)
10 Data storage consolidation and outsourcing <i>Consolidate and outsource data storage service for all agencies where the per unit costs exceeds comparable industry offerings.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$10M to \$20M per annum. ▪ Stage: CONSULTATION ▪ Confidence level: 60% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Agency costs and units have been modelled and compared to standard industry offerings. The current industry prices offer substantial savings in comparison to agency supplied data storage costs. 	ICT Strategic Sourcing (DSITIA) All Queensland Government agencies
11 Desktop consolidation and outsourcing <i>Consolidate and outsource desktop personal computers for all agencies where the per unit costs exceeds comparable industry offerings.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$34M to \$40M per annum. ▪ Stage: CONSULTATION ▪ Confidence level: 70% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Agency costs and units have been modelled and compared to standard industry offerings. 	ICT Strategic Sourcing (DSITIA) All Queensland Government agencies

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
ICT efficiency			
12 ICT service costing models <i>The Queensland Government can avoid costs by using a standard government cost model. The costs to develop a typical ICT costing and pricing model is estimated to be \$200k.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: <ul style="list-style-type: none"> ▪ \$200,000 to \$1M per annum ▪ Stage: CONSULTATION ▪ Confidence level: 55% ▪ Frequency: Recurrent ▪ Time to Realisation: Medium ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ If five or more large agencies reuse a standard model then the government can avoid an estimated \$1M in expenditure. 	All Queensland Government Agencies
13 Minimise transaction costs <i>Minimise transaction costs and GST revenue leakage by examining inter-agency and procurement transactions and identify more cost effective approaches.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$3M to \$10M per annum ▪ Stage: ANALYSIS ▪ Confidence level: 30% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ After initial delays in receiving the requested transaction data, the transaction information has been received in a variety of formats from numerous SAP systems. ✓ The ICT Audit team mapped the transaction data to determine procurement spend however competing priorities meant the full analysis was prioritised as a post-audit activity. 	QGCIO
14 Optimise ICT asset management <i>Transfer asset custodianship of unutilised assets across departments to ensure assets are utilised and to avoid unnecessary purchases.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$20,000 to \$500,000 per annum ▪ Stage: GATHER DATA ▪ Confidential level: 30% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ ICT asset utilisation rates are currently under examination. ✓ Early findings indicate that while demand is increasing for most ICT infrastructure, the demand for personal computers and mobile devices may decrease due to a reduction in the government workforce. 	QGCIO

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
ICT efficiency			
15 Optimise Internet Service Provider (ISP) bandwidth <i>Optimise the expenditure across government on ISP charges.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$1.2M to \$1.4M per annum ▪ Stage: REALISATION ▪ Confidence level: 95% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ The QGCIO brokered a better deal on ISP charges which enabled the realisation of \$1.3m. ✓ The Queensland Government ISP service provided by CITEC was at risk as DETE, the largest customer, was offered a substantially lower price by UQConnect. ✓ A number of cost and service options were discussed including several offers and counter offers until DETE accepted a substantially revised offer from CITEC. 	CITEC
16 QGCPO administration charges <i>Reduce the cost of ICT purchases to agencies through mandated Standing Offer Arrangements by removal of QGCPO 2% administration and management fee to reduce the cost of ICT purchases to agencies.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$1.76M to \$1.8M per annum ▪ Stage: DECISION ▪ Confidence level: 95% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 		QGCPO (DSITIA)
17 Security Software Licensing costs reduction <i>Utilise industry providers for security products (such as Secure Sockets Layer) rather than develop in-house.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$20,000 to \$100,000 per annum ▪ Stage: DECISION ▪ Confidence level: 70% ▪ Frequency: Recurrent ▪ Time to Realisation: Medium ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ CITEC and QGCIO consulted to discuss opportunity for reduced ICT security cost approaches. 	The QGCIO

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
ICT vendor management			
18 Adobe invoice consolidation <i>Reduce internal invoice processing costs by the consolidation of Adobe invoices.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$88,000 to \$110,000 per annum ▪ Stage: DECISION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 		All Queensland Government Agencies
19 ICT license management – minimise unplanned expenditure following software audits (Exposure): >\$10M per annum in unplanned expenditure due to true-up requirements with software licence terms and conditions.	<ul style="list-style-type: none"> ▪ Potential savings range: <i>Cost avoidance opportunity</i> ▪ Stage: CONSULTATION ▪ Confidence level: 40% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: ✓ Preliminary data collection has determined this to be a viable opportunity to prevent unnecessary waste due to true-up requirements with software license terms and conditions.	All Queensland Government Agencies ICT Strategic Sourcing Group (DSITIA)
20 Microsoft purchase order consolidation <i>Reduce internal invoice processing costs by consolidating Microsoft purchase orders.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$168,000 to \$210,000 per annum ▪ Stage: DECISION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 		All Queensland Government Agencies

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
ICT vendor management			
21 Microsoft 'true-up' cost avoidance <i>Avoidance of Microsoft 'true-up' costs and license penalties due to the reduction in the size of the public service since December 2011.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$980,000 to \$1M per annum ▪ Stage: REALISATION ▪ Confidence level: 95% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current Status: <ul style="list-style-type: none"> ✓ Under the State's Enterprise Agreement for the Microsoft Core CAL Suite, the State is obliged to make 'true-up' payments, proportional to the annual growth in actual employees in budget sector agencies as at 30 June. ✓ Based on the average growth over the previous two years of the three-year agreement, the State would have expected to pay \$1M to Microsoft in December 2012. ✓ As a result of sector wide staff reductions the cost of the Microsoft true up has been reduced by as much as \$1M. 	
22 'Right size' software application licenses <i>Savings opportunity in reducing maintenance charges for unused licences. Right size application licenses for largest vendors including IBM, Microsoft, Adobe, Oracle, Cisco, and SAP.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$1.4M to \$5M per annum ▪ Stage: ANALYSIS ▪ Confidence level: 25% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 		All Queensland Government Agencies
23 Right size SAP licenses	<ul style="list-style-type: none"> ▪ Potential savings range: \$700,000 to \$5,5M per annum ▪ Stage: DECISION ▪ Confidence level: 60% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 		DSITIA
24 Standard and extended warranties <i>Avoid costs for standard and extended warranties for ICT assets which have a low failure rate and minimal risk impact.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$0 - \$40k ▪ Stage: CONSULTATION ▪ Confidence level: 35% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 		

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
ICT vendor management			
25 Reduce vendor costs via whole-of-government approach Ensure visibility of vendor contracts to optimise procurement arrangements and increase government bargaining power	<ul style="list-style-type: none"> ▪ Potential savings range: \$50k - \$3M ▪ Stage: ANALYSIS ▪ Confidence level: 26% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 		ICT Strategic Sourcing Group (DSITIA)

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Print services			
26 Colour printing reduction <i>All of government savings opportunity by reducing the percentage of printouts using colour.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$600,000 to \$1.8M per annum ▪ Stage: ACTION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: Active yet unmeasured 		QGCIO
27 Print volume reduction <i>Demand management and policy direction to reduce volume of printing.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$100,000 to \$1.1M per annum ▪ Stage: ACTION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 		QGCIO
28 Printing invoice management reduction <i>Reduce processing costs of invoices by centralising and consolidating vendor invoices.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$100,000 to \$500,000 per annum. ▪ Stage: ACTION ▪ Confidence level: 60% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: ✓ Data has been provided by DETE, CITEC, and for rest of government indirectly from QGCPO. QSS data is still outstanding.	QGCIO

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Telecommunications			
29 Cancel idle mobile telecommunications services <i>Identify mobile service lines which have a consistent nil or unbilled usage and review them to ascertain if these are surplus service lines, or alternatively, services necessary to provide emergency or safety facilities.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$2.1M - \$2.8M per annum ▪ Stage: ACTION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Currently analysing costs to validate the opportunity. ✓ A total of 6,578 (12.8% of the total number of mobile services billed in July 2012) mobile services have been identified. 	All Queensland Government Agencies
30 Cancel idle fixed telecommunications services <i>Identify fixed line telecommunications services, which have a consistent nil or unbilled usage, and review them to ascertain if these are surplus services, or alternatively, services necessary to provide emergency or safety facilities.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$4.8M to \$6.5M per annum ▪ Stage: ACTION ▪ Confidence level: 75% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ A total of 16,661 (19.6% of the total number of fixed voice services billed in August 2012) have been identified. 	All Queensland Government Agencies
31 Consolidate telecommunications accounts. <i>Consolidate/rationalise telecommunications accounts to minimise invoice processing costs and enable savings from service provider discounts relating to intra-account billing. Including: (verify ownership of telecommunications services)</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$1.5M - \$2.3M ▪ Stage: DECISION ▪ Confidence level: 65% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Initial analysis confirmed the value of engaging a specialist telecommunications third party to investigate detailed government telecommunications account details and provide further information on a range of potential telecommunications savings opportunities. ✓ Fastlane Software was engaged to analyse and identify cost reduction opportunities and benchmark the latest rates/service charges. ✓ Based on a sample of 3,700 fixed and mobile services billed to DEEDI, only four services have been positively identified as generating charges that are not the responsibility of DEEDI or other government entities. 	

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Telecommunications			
32 Introduce Voicemail <i>Utilise Voicemail to avoid fixed to mobile call diversions.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: Not yet identified ▪ Stage: GATHER DATA ▪ Confidence level: 35% ▪ Frequency: Recurrent ▪ Time to Realisation: n/a ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Currently gathering data to validate the opportunity. ✓ Obtained agreement for data provision. 	QGCIO
33 Minimise fixed line fax costs <i>Utilise fax gateways to avoid fixed line fax costs.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$10,000 - \$100,000 per annum ▪ Stage: DECISION ▪ Confidence level: 70% ▪ Frequency: Recurrent ▪ Time to Realisation: Medium ▪ Savings realised to date: NIL 	Current Status: <ul style="list-style-type: none"> ✓ Currently analysing data to validate the opportunity. Obtained agreement for data provision. ✓ QGCIO consulted with agencies and received the number of dedicated fax machines from some agencies. ✓ Most large agencies do not have visibility of the numbers of dedicated fax machines and were not able to provide this information as requested within the timeframes of the ICT Audit. 	All Queensland Government Agencies
34 Minimise fixed voice call costs <i>Reduce costs for fixed voice service by ensuring agencies are using the optimum Optus plan for pre-selectable calls</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$587,700 - \$653,000 per annum ▪ Stage: ACTION ▪ Confidence level: 90% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: <ul style="list-style-type: none"> ✓ Analysis completed 	All Queensland Government Agencies

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Telecommunications			
35 Minimise mobile voice costs <i>Reduce costs for mobile voice service by ensuring agencies are using the optimum mobile voice plan for their usage.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$457,834 - \$500,000 per annum ▪ Stage: ACTION ▪ Confidence level: 90% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: ✓ Analysis completed	QGCIO
36 Optimise mobile telecommunications data plans <i>Optimise costs for mobile data plans by ensuring agencies are using the right mobile data and voice plans that suits their usage.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$3.7M - \$4.7M per annum ▪ Stage: ACTION ▪ Confidence level: 80% ▪ Frequency: Recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: NIL 	Current status: ✓ Analysis from the Fastlane Software has confirmed the potential to optimise savings opportunities.	All Queensland Government Agencies
37 Optimise WAN costs	<ul style="list-style-type: none"> ▪ Potential savings range: Not yet identified ▪ Stage: GATHER DATA ▪ Confidence level: 25% ▪ Frequency: Recurrent ▪ Time to Realisation: Long ▪ Savings realised to date: NIL 	Current status: ✓ Preliminary data gathering was hindered by inaccurate information available to fully articulate the savings opportunity.	QGCIO

Opportunity	Potential savings range/waste reduction opportunity	Current status	Responsibility
Telecommunications			
38 Telecommunications service provider billing anomalies <i>Identify anomalies in service providers' billing charges.</i>	<ul style="list-style-type: none"> ▪ Potential savings range: \$146,035 to \$149,015 per annum ▪ Stage: REALISATION ▪ Confidence level: 99% ▪ Frequency: recurrent ▪ Time to Realisation: Short ▪ Savings realised to date: \$434,626.50 	Current status: ✓ A service provider has agreed to credit agency accounts for excess charges totalling \$434,626.50 billed since 10 November 2009.	All Queensland Government Agencies

Appendix C – Analysis of Travel Management System savings

Background

Since 2003, the Queensland Government Chief Procurement Office (QGCPO) has been managing contracts from travel suppliers. In February 2009 a contract was signed with the supplier HRG Australia Pty Ltd (HRG), and adoption of the Travel Management System (TMS) began in the Queensland Government.

The three key functions of the TMS are the:

- booking and purchase of air travel, accommodation, car hire, and air charter
- provision of a consolidated whole-of-government view of travel expenditure. This was a key driver that led to the development of the TMS
- capture of staff meal allowances as part of travel bookings. However, QGCPO has been required to invest in a proprietary and customised middleware solution, in order to integrate with the QSS payroll (to ensure staff were paid the necessary meal allowances).

With the government's focus on implementing austerity measures, (including a reduction in Queensland Government travel and accommodation expenditure), there is an expectation there will be a subsequent decline in the use of TMS.

Table 20 shows a summary of total travel and accommodation expenditure recorded within TMS for 2011.

Table 20 - 2011 expenditure recorded within the Travel Management System (TMS)

Bookings and purchases	Total 2011 expenditure
Air travel	\$64.7 M
Accommodation	\$24.1 M
Car hire	\$8.0 M
Air charter	\$14.1 M

Scope

QGCIO conducted analysis to assess whether TMS provides value to government, by reviewing the air travel costs for flights available within TMS, and comparing these costs against other external travel service providers, to determine their price competitiveness. In 2011, air travel accounted for 58.3% of all travel expenditure incurred through TMS. Since this represented the majority of travel expenditure within TMS, the Audit focused on benchmarking only air travel costs. There may be a requirement to undertake a further benchmarking assessments in the areas of accommodation, car hire and air charter booking, in order to obtain a complete assessment of TMS' travel offerings.

Travel Benchmarking Analysis

A cost comparison of over 100 flights was undertaken (comprising of flights from all major Australian capital cities, and several Queensland regional centres). The costs of these flights were assessed from four alternative solutions:

- the TMS solution from HRG
- Webjet
- Flight Centre
- Direct from airlines

Qantas and Virgin were both selected as suitable alternatives due to their consistent coverage across all of the destinations that are considered to be common destinations for public service travel. Comparisons for each individual flight were made on the same day (ensuring a consistent comparison was made across each provider), before comparing the next flight. TMS was used as the primary source for obtaining the destinations and flight offerings that were compared. In addition, costs were compared with and without the administrative fees charged by each provider. The costs presented within this analysis include administrative fees in order to accurately reflect the total cost from all providers.

Travel Benchmarking Summary

- Across more than 100 flights, direct bookings through the airlines were consistently cheaper, by an average of 10.9%.³⁸ There is above 95% confidence that the savings would be between 9.5% and 11%. This provides a potential saving of between \$6M and \$7M (against the total air travel costs of \$64 M incurred in 2011).

³⁸ This analysis was based on the cheapest flight available.

- TMS performed consistently better than other providers in the area of flexi flights, where they were on average 14.4% cheaper. However it should be noted that public servants are actively discouraged from purchasing these flights, and instead are required to obtain the cheapest available flights. This reduces the usefulness of TMS' cheaper offerings, as they are not able to be utilised.
- The Audit also found that as the departure time decreased there was a decrease of flight availability in the TMS. These flights were still available directly from the airline. A larger number of cheaper fares were also offered by the airlines which were not available in TMS.

Analysis of total cost

There are additional operational expenses incurred by QGCPO in managing, training and customising information brokerage with QSS. These are (but not all costs):

- \$3.7 million annually in supporting the TMS.

If we total these and multiply it by 58.3% to account for the percentage of travel products related to air travel, there is an estimated \$2.7 million overhead on top of the ticketed prices. The opportunity cost therefore to government by keeping TMS as opposed to direct procurement of air travel through airlines is \$8.9 million to \$9.8 million.

TMS Justification

There are other reasons that have been cited by the QGCPO in legitimising the use of TMS, including:

- process reduction and improvement
- consolidated reporting of travel costs for government and agencies
- an ability to gain priority allocation of flight bookings for state-declared natural disasters.

Though a full process study can be conducted, Queensland Government staff already use similar online systems that provide similar functionality to TMS, and do not require training. It appears (at least from a user perspective), that there is no increased efficiency from using TMS. Users also cite that meal allowances are calculated at the end of the TMS process, and entering these details would be similar to any other allowances they had to approve under existing employee awards.

Further discussion with QSS will be required or the relevant payroll provider to assess this and determine if the backend administration is more complex. However it should be noted that there would be no need to maintain the customised software between HRG and the QSS payroll system if TMS was removed.

In relation to consolidated cost reporting and priority in disasters, any future service agreement with a provider should include this reporting requirement and some level of priority SLA during disasters.

Further analysis can be undertaken with respect accommodation but initial review indicates there are many providers offering rates cheaper and sometimes more expensive arrangements than the TMS. Putting a cap (which already exists) on accommodation would be enough because there are various ranges of class/grades between providers. Staff also already choose accommodation based on this and generally do not go above this price point. It is the opinion of this review that choice in accommodation will increase and savings will remain stable because of the existing caps in place.

Figure 30 shows a comparison of costs from service providers from a number of different departure locations.

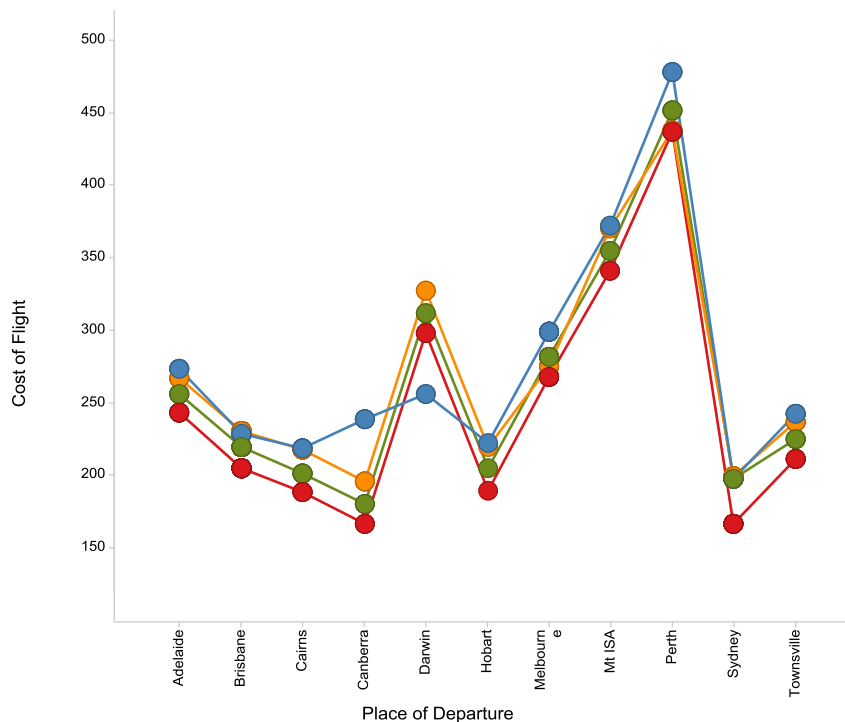


Figure 30 - Cost of flights for major points of departure - per service provider

Figure 31 shows a comparison of costs per service provider to specific destinations.

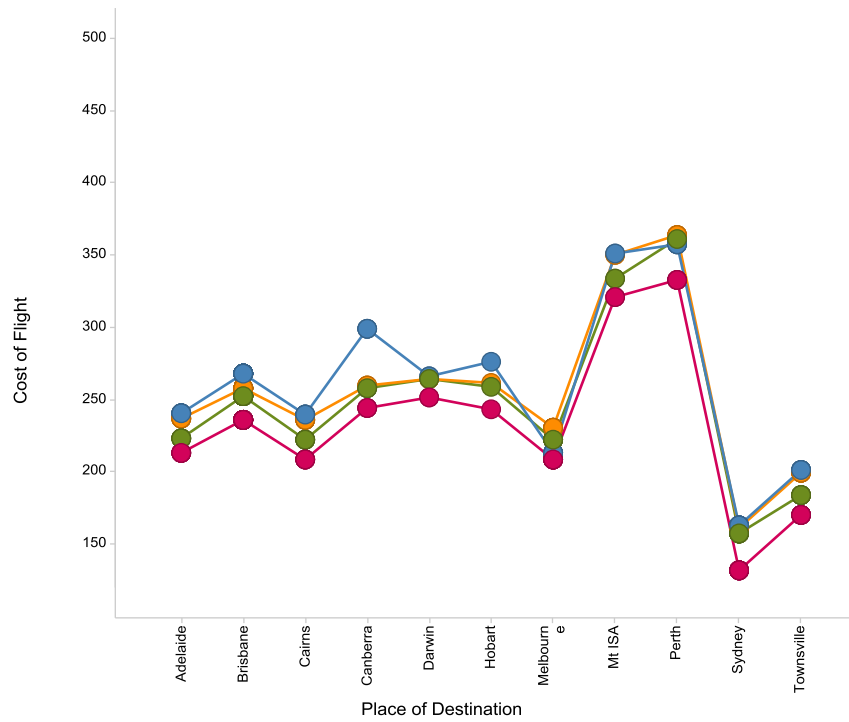


Figure 31 - Cost of flights for major destinations - per service provider

Both figures clearly illustrate that direct airline flights are always cheaper than TMS.

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Appendix D – Analysis of Adobe and Microsoft procurement savings

The Queensland Government is a significant consumer of Microsoft and Adobe products with Standing Offer Arrangements (SOA) established for these products. These SOAs enable agencies to procure Microsoft and Adobe products at consistent prices, and include standard terms and conditions for all agencies including software license compliance.

Whilst agencies can deploy Adobe software during each quarter, they are only required to place an order for those products at the end of that quarter. Similarly, Microsoft software, which has been deployed during a calendar month, is only required to be purchased at the end of that month. This process is deliberately designed to reduce red tape and the associated costs incurred by government in processing multiple orders and purchase orders, etc.

However, as shown in Figure 32 and Figure 33, actual data shows that agencies are generating many more orders than needed, resulting in wasted effort and processing costs. The green bars represent the savings that could be realised, while the blue bars represent the optimum cost of purchasing. The costs of the 'procure to pay' cycle (from raising a purchase order, reconciling the subsequent invoice and payment) have been assumed to average \$200.

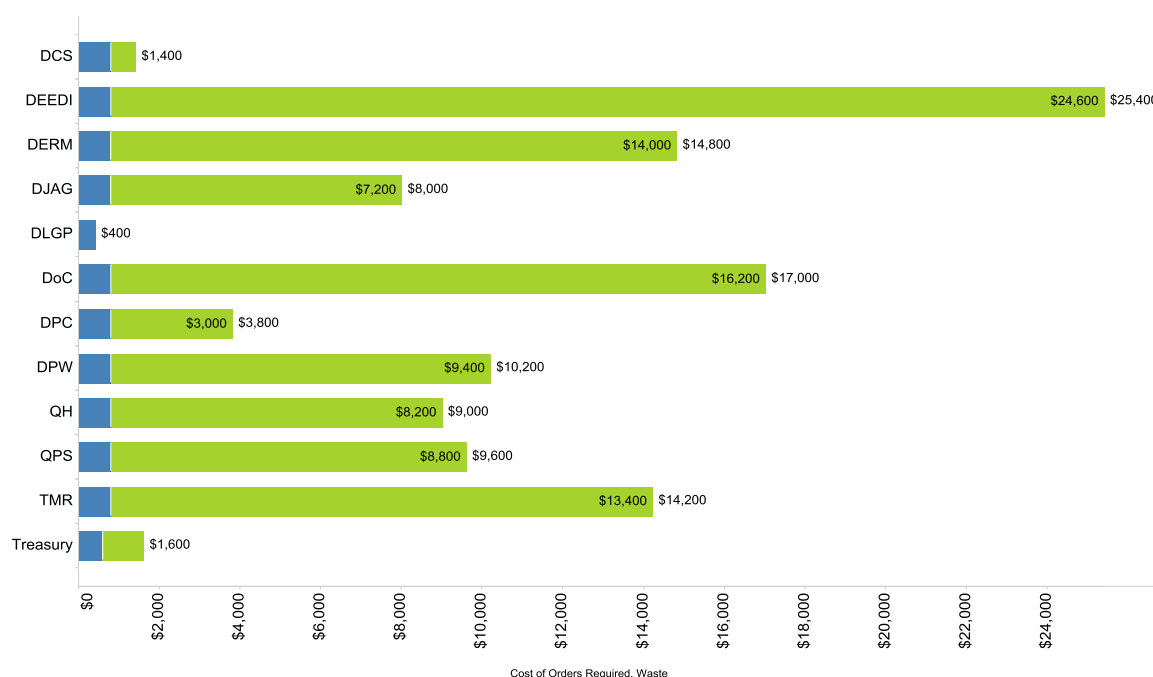


Figure 32 - Adobe purchase order and invoice processing costs for fiscal year 2011-2012

Based on the previous procurement profile during 2011-12, savings of approximately \$106,000 per annum could be realised if all customers ordered Adobe products no more than once per quarter.

Customers are only required to order Microsoft software deployed during the month at the end of each month. Ordering more frequently has led to waste during the term of Standing Offer Arrangement PW-ICT-062, as shown in Figure 33.

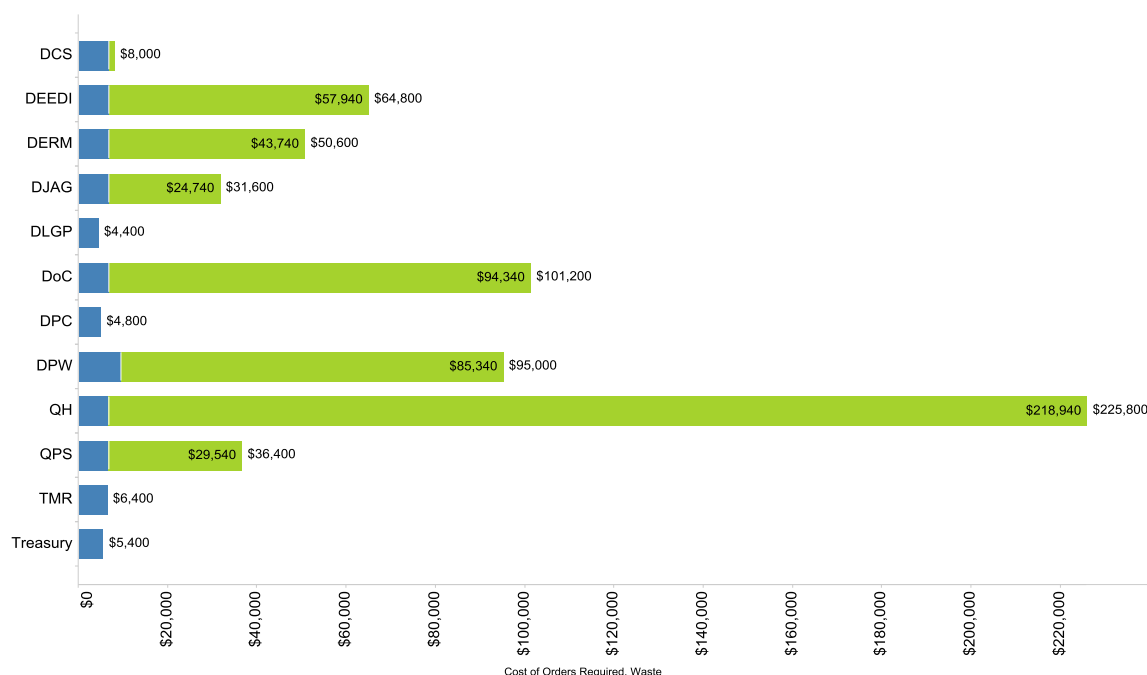


Figure 33 - Microsoft purchase order and invoice processing costs Dec 2009 – Jul 2012

Based on the previous procurement profile since December 2009, savings of approximately \$210,000 per annum could be realised if orders for Microsoft products were placed no more frequently than once per month by all customers.

Appendix E – Analysis of Telstra services savings

Fastlane Software was engaged to review Telstra's billing data for Queensland Government agencies, to determine what savings might be available if:

- inactive mobile and voice services were cancelled
- mobile voice plans were optimised
- mobile data plans were optimised
- fixed voice plans were optimised
- billing accounts were rationalised.

Fastlane Software provided a report that detailed anomalies in Queensland Government telecommunication charges against negotiated charge rates; and areas where the Queensland Government could optimise or eliminate expenditure.

Mobile Services

The Queensland Government spends approximately \$23 million per annum on Telstra mobile services.³⁹ Savings opportunities of up to \$8 million (including GST) per annum were identified from more than 49,000 mobile services that were billed by Telstra in July 2012 (as shown by and).

Table 21 - Savings opportunities from Telstra mobile services

Item	Monthly Savings (including GST)	Annual Savings (including GST)
Cancellation of Idle or Inactive Services	\$236,444	\$2,837,328
Cancellation of Idle Data Plans	\$32,125	\$385,500
Minimisation of Over Plan Data Charges	\$27,690	\$332,280
Optimisation of Data Plans for Active Mobiles	\$98,404	\$1,180,848
Replacement of Mobile IPWAN plan with Enterprise Mobile Broadband plan	\$235,422	\$2,825,064
Optimisation of Voice Plans for Active Mobiles	\$42,392	\$508,704
Total	\$672,477	\$8,069,724

³⁹ Based on expenditure over the six months to August 2012

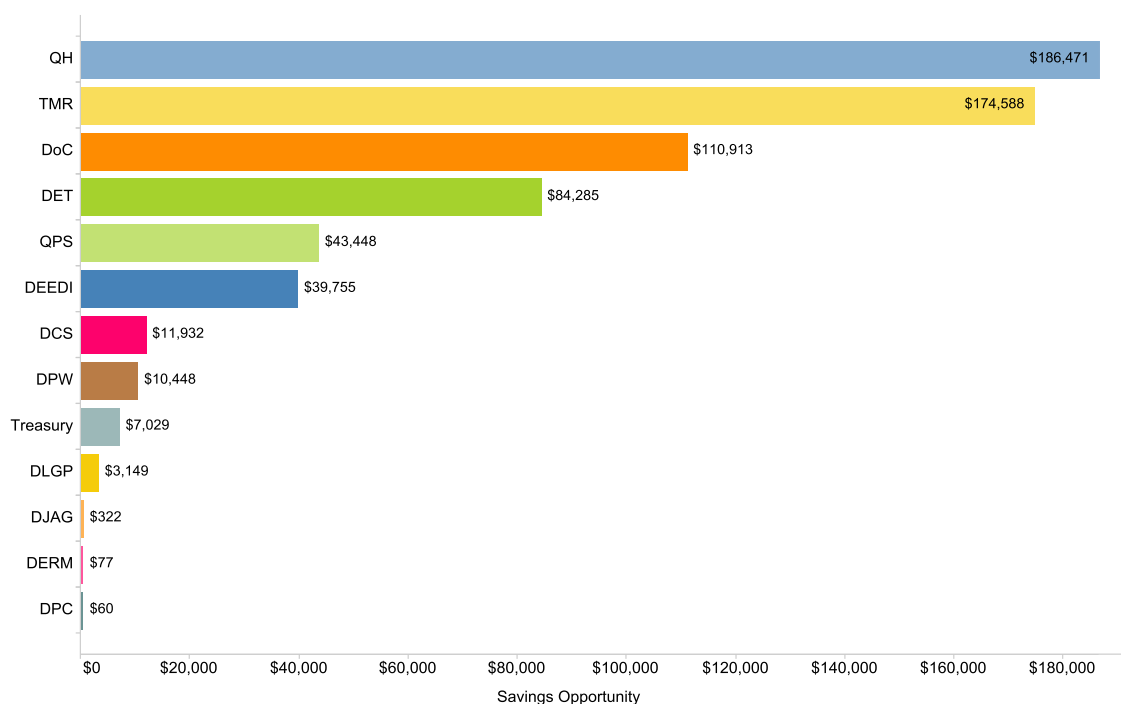


Figure 34 - Monthly savings opportunities from optimising Telstra mobile services

Some components of these savings can be realised quickly by completing contracts with Telstra that apply current pricing plans to Telstra billing for services; while some will take more time and resources to realise, e.g. cancellation of services that are idle.

As shown by , a total of 6,587 (12.8% of the total number of mobile services billed in July 2012) mobile services have been identified as idle.

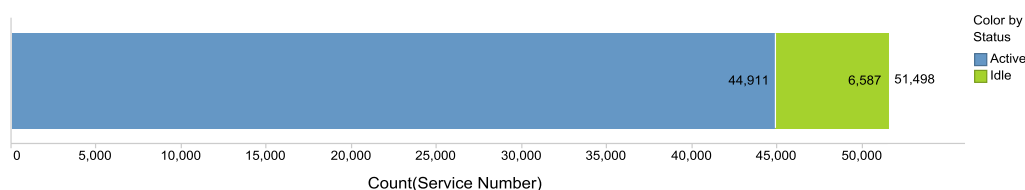


Figure 35 - Count of Telstra mobile services

Idle services

Analysing the billing data identified 6,587 Telstra mobiles that had no voice usage, data usage or even uncharged usage (i.e. same account call to another mobile) over the five-month period. Cancelling these services would provide a saving of \$2,837,340 (including GST) per annum based on July 2012 service and equipment charges. However, there will be termination payments associated with some of these services and redeployment may be a better option than cancellation for some services.

The criteria used for identifying idle services are as follows:

- The service must have existed in March 2012.
- The service has no voice call charges from March 2012 to July 2012.

- The service has no data usage from March 2012 to July 2012.
- The service has no other calls that are not charged (i.e. same account call to another mobile) from March 2012 to July 2012.

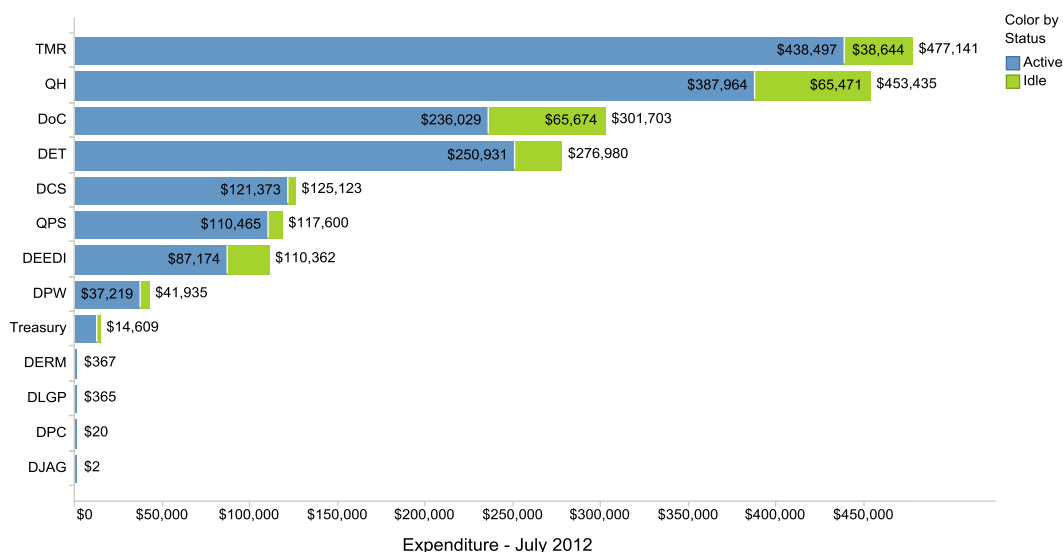


Figure 36 - Maximum monthly savings available from cancelling idle mobile services

Mobile data plan optimisation

There were 759 data plans in use, as at July 2012, that had no data usage for March 2012 to July 2012. The mobiles have separate voice activity, so they are not idle or inactive. As no data usage is occurring, these data plans can be cancelled saving \$385,500 per annum in service and equipment charges.

The most significant area where savings can be achieved with the greatest benefit is with correct and appropriate implementation of mobile data plans. A mobile with no data plan at all or a data plan whose cap is significantly less than that required can lead to thousands of dollars in additional mobile data usage charges. Similarly, paying for a data plan for a mobile with no data usage is also a significant cost.

shows a summary of mobile data plan optimisation savings.

Table 22 - Summary of mobile data plan optimisation savings

Item	Annual Savings (including GST)
Cancellation of Idle Data Plans	\$385,500
Minimisation of Over Plan Data Charges	\$332,280
Optimisation of Data Plans for Active Mobiles	\$1,180,848
Replacement of Mobile IPWAN ⁴⁰ plan with Enterprise Mobile Broadband plan	\$2,825,064

⁴⁰ Mobile IPWAN is a Telstra mobile data plan which allow an agency to access their private data network via Telstra's Internet Protocol Wide Area Network service using a device such as a data card or wireless router, which has been superseded by the Enterprise Mobile Broadband plan

As shown in , significant monthly savings may be realised by agencies entering a contract variation for the Enterprise Mobile Broadband (EMB) plan with Telstra - shows an agency breakdown of this opportunity.

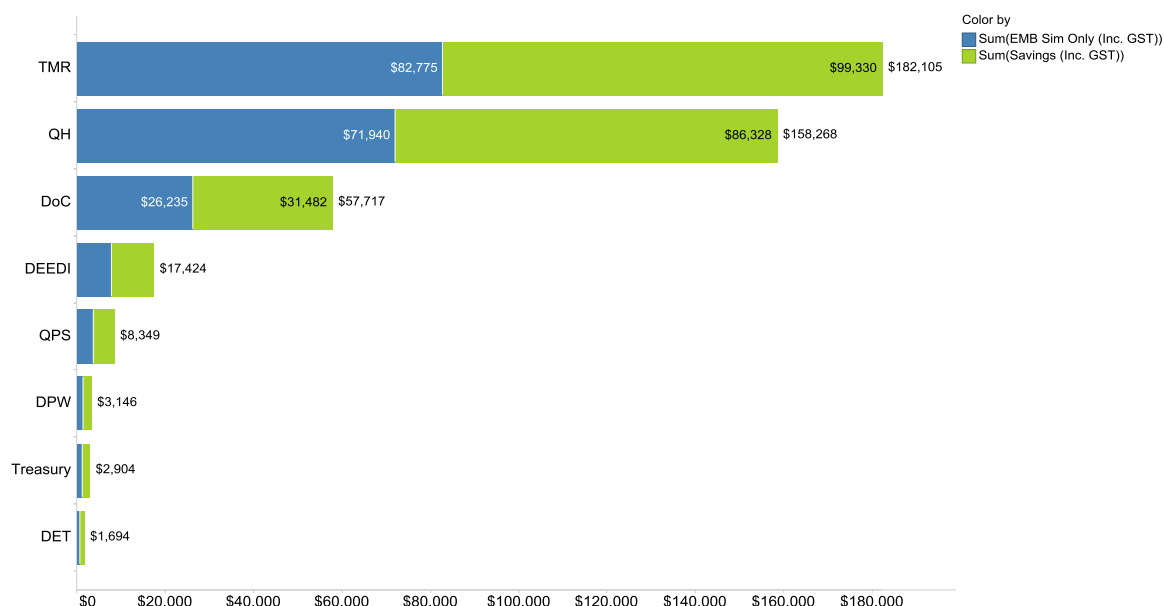


Figure 37 - Savings obtained by entering a contract variation for the EMB plan with Telstra

Mobile voice plan optimisation

The Queensland Government utilises a number of different Telstra mobile voice plans with migration to the latest Telstra offering of Enterprise Fleet Plan 10 slowly occurring. Moving all services not on Enterprise Fleet Plan 10 to this plan would generate a saving of \$508,536 per annum based on the July 2012 billing data.

Benchmarking

Benchmarking by Fastlane Software illustrates that the Telstra Enterprise Fleet Plan 10 compares favourably with deals negotiated by similar sized organisations in the public and private sector.

Fixed voice services

The Queensland Government spends approximately \$36 million per annum on Telstra voice services.⁴¹

⁴¹ Based on expenditure over the six months to August 2012

Idle fixed voice services

shows that the Queensland Government has a total of 16,661 idle fixed voice services (19.6% of the total number of fixed voice services billed in August 2012), currently costing \$544,161 per month (based on expenditure in August 2012).

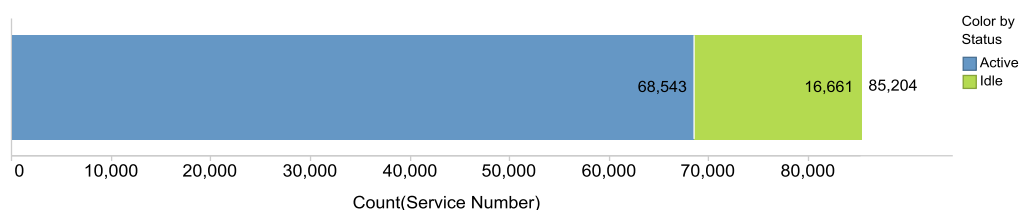


Figure 38 - Count of Telstra fixed voice services

The services included in this category are those that are still incurring recurring charges but have no usage for either outgoing calls or incoming calls for a reasonable period. Incoming calls were identified by checking the Telstra fixed voice and mobile billing data.

To be identified as idle the service:

- must have existed in March 2012
- has no usage charges from March 2012 to August 2012
- has no incoming calls from March 2012 to August 2012.

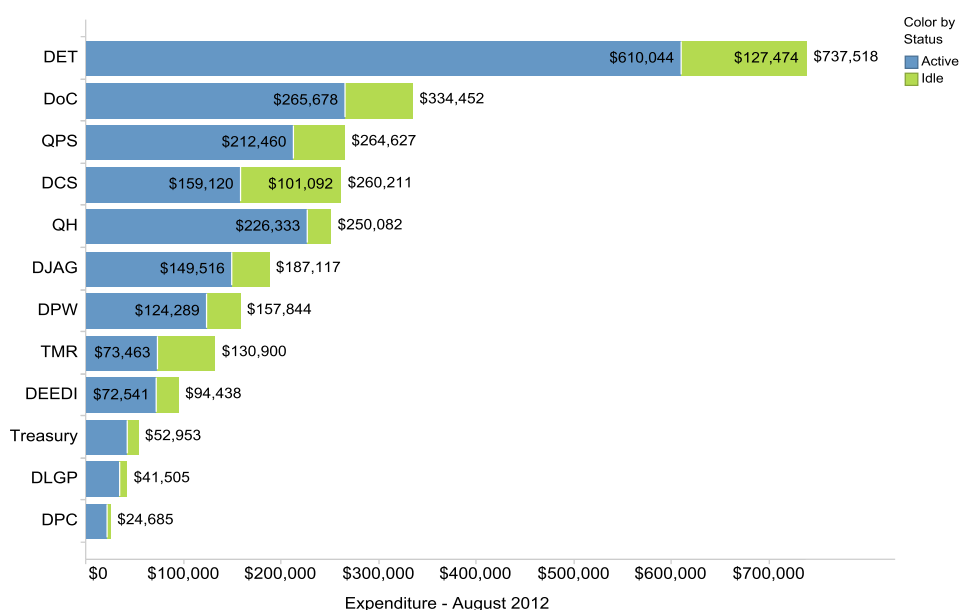


Figure 39 - Maximum monthly savings available from cancelling idle fixed voice services

Cancelling all these services would provide a saving of \$ 6,529,932 (including GST) per annum, based on the August 2012 service and equipment charges.

Care must be taken with cancelling these services as some will be security alarms, lift phones, Interactive Voice Response (IVR) services used by the public, roadside emergency phones and other critical services that are rarely used, do not make outgoing calls and are not called by Queensland Government services.

CustomNet services

CustomNet is a Telstra voice access service that provides telephone features similar to those provided by a PABX.

Almost 39,000 Telstra CustomNet services were being billed to agencies in August 2012. The base price for these services is \$30 per month. However, under Standing Offer Arrangement PW-ICT-067, Telstra discounts these services.

An analysis of the Telstra billing records over the period from March to August 2012 inclusive revealed that DLGP and DPC were not receiving the available discount for all of these services.

Following representations to Telstra by the QGCIO regarding these anomalies, Telstra agreed to:

- credit agency accounts for excess charges, totalling almost \$435,000 billed since 10 November 2009, and apply the discount to future bills for these services (almost \$12,400 per month savings, based on August 2012 billing)
- offer the Public Service Commission the opportunity to obtain the available discount on CustomNet Services (formerly managed through DPC) through completion of a Customer Contract (almost \$500 per month savings, based on August 2012 billing).

Local calls

Almost 16 million local calls were billed to agencies by Telstra in the six months to August 2012, at a total cost of \$858,677.

Under Standing Offer Arrangement PW-ICT-067, Telstra offers these services at various rates, depending on the minimum contact term.

An analysis of the Telstra billing records over the period from March to August 2012 inclusive revealed that QH and QPS were being billed at rates exceeding this range of call costs for nearly all of their services.

Telstra advised that three departments (DLGP, QH and QPS) had not completed contracts for calls originating from fixed voice services that entitled them to the rates offered subsequent to October 2009.

QPS and DLGP completed contracts on 20 August 2009 and 26 October 2009 respectively for terms of three years. However, QH last completed a contract for these calls in February 2001, more than 11 years ago.

Under the Arrangement with Telstra, agencies may complete new contracts at any time, either during the term of contract or following the expiry of a contract to take advantage of the cheaper rates on offer.

Account rationalisation

The most significant saving from reducing the number of accounts is a reduced bill-processing fee, which is an indirect cost. The Western Australian Government has benchmarked the cost of processing a single invoice as averaging out at approximately \$250 per invoice. This includes the cost for verification and payment.

As telecommunications invoices are more complicated, the verification costs are higher than the average. Reducing the number of invoices that need to be processed will therefore result in an indirect cost saving to an organisation.⁴²

Figure 40 shows there were 1,191 accounts for the August 2012 billing period. Account rationalisation down to around 200 accounts would result in an indirect saving due to a reduction in processing cost of almost \$2.4 million per annum, assuming an average processing cost of \$200 per invoice.

⁴² Fastlane Software Pty Ltd

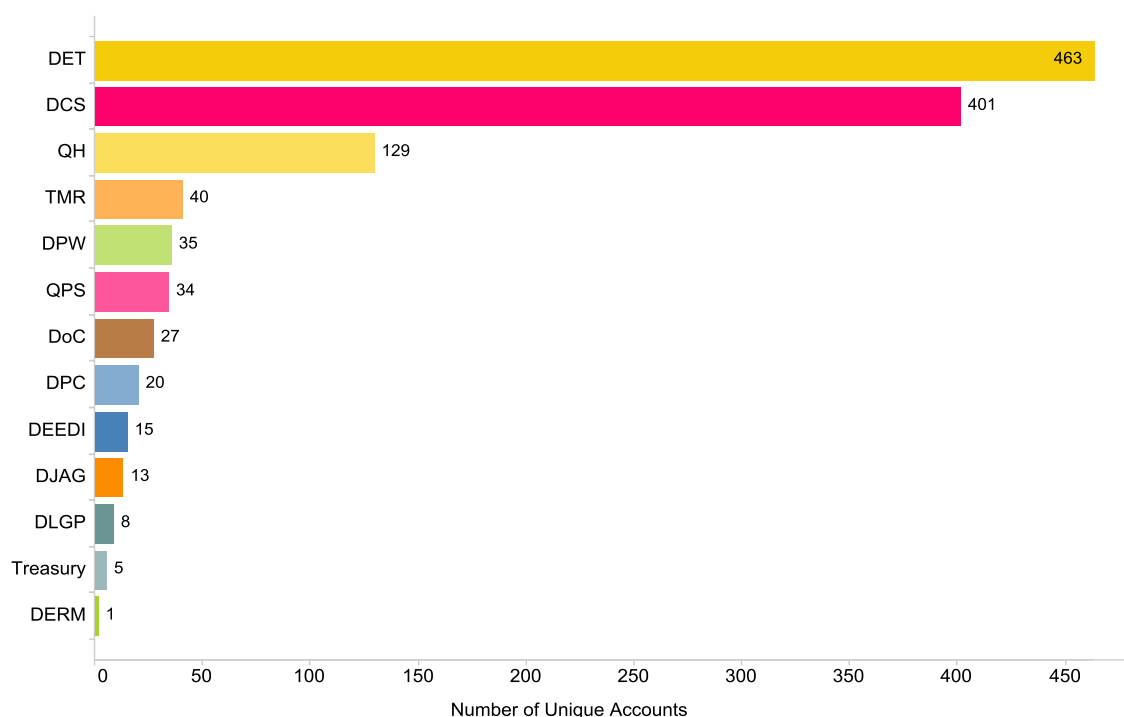


Figure 40 - Unique count of Telstra accounts

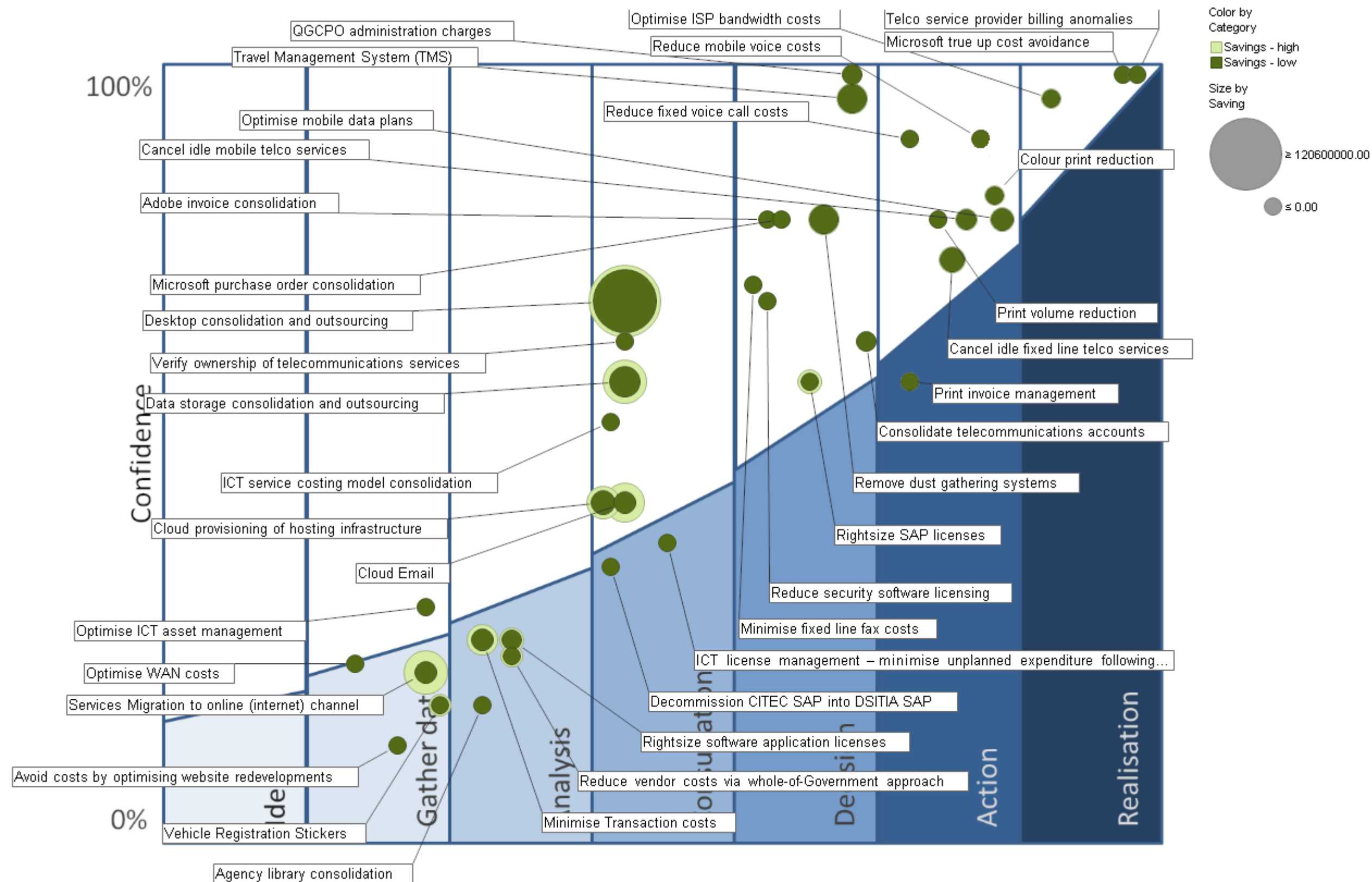
Conclusion

The failure by some agencies to periodically review the prices they are paying for common telecommunications services and optimise the number of telecommunication accounts is wasting money unnecessarily. Current pricing information may be readily obtained from the [Queensland Contracts Directory](http://gcd.govnet.qld.gov.au/Pages/Home.aspx)⁴³ and Telstra billing data is made freely available to all agencies for review and analysis from Telstra's [MBRS](https://www.cobs1.telstra.com/QLDGovtCIO/BRS/dashboard/default.aspx)⁴⁴ bill reporting website.

⁴³ <http://gcd.govnet.qld.gov.au/Pages/Home.aspx>

⁴⁴ <https://www.cobs1.telstra.com/QLDGovtCIO/BRS/dashboard/default.aspx>

Appendix F – Savings realisation framework with labels



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Appendix G – High risk systems

A number of business critical and significant systems were reported to the audit or identified through agency interviews and other stakeholders. The tables below lists those systems which have been assessed as significant or business critical and represent a high risk to the government. The list does not document all significant and business critical systems.

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DCS	DCS	Interim report Business critical systems	Human Capital Management System (HCMS) DCS's core HR management system, servicing a diverse range of key community safety personnel including fire, ambulance and emergency management. A severe impact (priority 1) BCP-DR system. HCMS is supported by Queensland Shared Services (QSS). Systems include: <ul style="list-style-type: none"> Standard HR Offering Service Lattice V3.1 - \$75m replacement Existing Human Resource Solution Lattice V2.5 - \$75m replacement. 	High	Poor	Jun 2008	\$150M	HR Payroll Business Solution Program Business continuity for HR payroll services that provides a strong basis for workforce management. Current projects include: <ul style="list-style-type: none"> SABA Upgrade – in progress Electronic payslips – on hold Operational Staff Recruitment Management System – on hold Lattice Infrastructure Improvement – in progress. 	\$104.6M	Jun 2016	Critical	Active In progress - defining a program Fully funded	Program
DCS	DCS	Interim report Extreme business exposure Business critical systems	Disaster Management Portal Collaboration tool for sharing information across the Disaster Management Community.	High	Poor	Apr 2011	\$0.04M	All Hazards Information Management Program To build the capability of Disaster Management agencies, stakeholders and the community to ensure they are prepared and capable of effectively responding to a disaster. Dependencies include: <ul style="list-style-type: none"> all frontline communications projects including relevant Queensland Police Service initiatives. 	\$8.1M	Jun 2013	Critical	Active In progress – managing program tranches Fully funded	Program
DCS	DCS	Personal Safety	Ambulance Arrivals Board (AAB) ⁵¹	High	Good	Jul 1905	\$0.08M	Ambulance Arrivals Board (AAB)					
DCS	DCS	Personal Safety	Electronic Ambulance Report Form (eARF)	High	Good	Jun 2015	\$3.8M	No identified initiative					
DCS	DCS	Personal Safety	ESCAD	High	Good	Jun 2018	\$12M	Various					

⁵¹ DCS have since provided an updated end-of-life date of 2015 that has not been analysed

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DCS	DCS	Personal Safety	GPS Offender Monitoring	High	Good	Sep 2013	\$0.09M	Global Positioning System Dangerous Prisoners Sex Offender Act Tracking					
DCS	DCS	Extreme business exposure and end date before July 2014. Business critical system	Knowledge Place	High	Poor	Jun 2012	\$1.7M	Related initiative: Microsoft Reporting					
DCS	DCS	Personal Safety	ProQA	High	Good	Jun 2015	\$0.5M	No identified initiative					
DCS	DCS	Personal Safety	PSIAM	High	Good	Dec 2013	Data not provided	No identified initiative					
DCS	DCS	Personal Safety	RFA Online	High	Poor	Jul 2015	\$1.5M	No identified initiative					
DEEDI	DNRM	Interim report	Mineral and Energy Resource Location and Information Network (Merlin) An integrated set of databases and systems that provide a range of functions including mining tenure management, geoscience and resource management, lost time accidents statistics, exploration data centre, management of land restrictions, spatial data maintenance, spatial data enquiry (being decommissioned), royalty, rent and security deposit accounting.	High	Good	Dec 2009	\$5M	Streamlining Business Systems Program Streamline the lifecycle of mining and petroleum permits to: <ul style="list-style-type: none"> • reduce time taken for permit approval • improve transparency and certainty for government and the industry • reduce cost of service delivery for government and industry. Current projects include: <ul style="list-style-type: none"> • Mines Online Geographic Information System (Mines Online GIS) • Exploration Permit – Minerals. 	\$16.3M	Jan 2016	Critical	Active In progress – managing program tranches Fully funded	Program
DEEDI	DNPRSR	Extreme business exposure and end date before July 2014. Business critical system	Laboratory Information Management System (LIMS) (RSC)	High	Poor	Dec 2010	\$2.2M	Laboratory Information Management System (LIMS)					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DERM	DNRM	Interim report	Automated Titling System (ATS) A mission critical system for all land and property related transactions	High	Good	Dec 2025	\$40M	ATS Client Modernisation (ATS-CM) A new software platform for ATS to address non-support for the existing platform from 2015. This is identified as a high risk under the government's software currency framework. The ATS Client software is developed in VB6, and the current end-of-life for mainstream support of the VB6 runtime is 13-Jan-15.	\$3.5M	Oct 2013	High	Minimal work is being undertaken, just enough to keep some momentum given the high risk nature of the software currency issue and the significance of ATS to Queensland Government revenue	Project
								ATS Property Exchange Australia (PEXA) Stage 1: Single Party Transactions. ATS System upgrade to meet COAG reporting commitments.	\$2.5M	Oct 2014	High	Active In planning - initiation stage Awaiting funding approval	Project
DERM	DSITIA	Personal Safety	Air Quality Database	Low	Good	Dec 2015	\$0.05M	Air Quality Management System (AQMS)					
DERM	EHP	Personal Safety	Coastal Data System	High	Good	Dec 2020	\$0.2M	No identified initiative					
DERM	EHP	Personal Safety	EMR/CLR	High	Good	Jun 2016	\$0.4M	Environmental Management Register / Contaminated Land Register (EMR/CLR) System Redevelopment					
DERM	DNPRSR	Extreme business exposure and end date before July 2014. Business critical system Personal Safety	IAParks Version 2	High	Poor	Jun 2012	\$0.8M	IA Parks Operators and Web Redevelopment (IA Parks) - RUFUS_QPWS Authorities Management System					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DERM	DNPRSR	Personal Safety	ParkInfo	High	Good	Jun 2012	\$2M	ParkInfo v2.0	\$4.7M	Jun 2013	High	Active Revised business case under consideration Fully internally funded	Project
DERM	DSITIA	Personal Safety	Point Source Database	High	Good	Dec 2012	500,000	No identified initiative					
DERM	DEHP	Personal Safety	Property Location Service	High	Good	Sep 2011	Data not provided	No identified initiative					
DERM	DNRM	Personal Safety	WAS - Water Accounting System (ex SWDB - Surface Water Database)	High	Good	Dec 2020	\$2M	No identified initiative					
DET	DETE	Extreme business exposure and end date before July 2014. Business critical system	DET Internet	High	Poor	Jun 2013	\$3M	No identified initiative					
DET	DETE	Extreme business exposure and end date before July 2014. Business critical system	Maximizer	High	Poor	Jan 2014	\$0.15M	To be decommissioned 31/12/12					
DET	DETE	Extreme business exposure and end date before July 2014. Business critical system	VET Systems Reporting (VSR)	High	Poor	Jan 2012	\$0.2M	To be decommissioned					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DJAG	DJAG	Extreme business exposure and end date before July 2014. Business critical system	Dalet	High	Poor	Jun 2013	Data not provided	Tender for replacement expected in November					
DJAG	DJAG	Personal Safety	Electrical Licensing System (ELS)	High	Good	Jun 2100	Data not provided	No identified initiative					
DJAG	DJAG	Personal Safety	ODPP (Office of Director of Public Prosecutions) Case Management System	High	Good	Jun 2100	Data not provided	No identified initiative					
DJAG	DJAG	Extreme business exposure and end date before July 2014.	Queensland Juries Administration System (QJAS)	High	Poor	Jun 2013	Data not provided	Queensland Juries Administration System (QJAS) - Process Analysis					
DJAG	DJAG	Personal Safety	QWIC	High	Good	Jun 2100	Data not provided	Related initiative: Criminal Justice Analytics - Single Person Identifier (SF) (Premier Mandate), JSS ICJ ETCR, Oracle Foundation Infrastructure Project, QWIC JAG Enhancements					
DJAG	DJAG	Personal Safety	Resolve - Office of the Adult Guardian	High	Good	Jun 2100	Data not provided	No identified initiative					
DJAG	DJAG	Personal Safety	Visualfiles - ODPP	High	Good	Jun 2100	Data not provided	CMS Enhancement Program					
DLGP	DSDIP	Interim report	eDA (previously Smart eDA) Electronic Development Assessment (eDA) is a jointly developed online system that will advance the development assessment process in Queensland – improving the efficiency of the development assessment process, and ultimately reduce the timeframe for development approvals.	High	Poor	Dec 2014	\$0.7M (under-stated)	Electronic Development Application Management (eDAM) Release 1 – TMR	NA				
DLGP	HPW	Extreme business exposure and end date before July 2014.	PADLS	High	Poor	Jun 2013	\$0.4M	PADLS Replacement					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DoC	DCCSDS	Interim report Extreme business exposure Personal Safety	Carepay Foster carer payments system that provides for the calculation of foster carer payments in respect to the placement of children including respite care.	High	Poor	Jan 2010	\$1M	Carepay Program The Carepay system is the system utilised for Foster and Kinship Carer allowances. The system has been identified through the ICT Baseline process as a candidate for replacement due to the age and risk associated with its underlying platform.	\$3.4M	Jun 2013	High	On-hold / postponed Progress at 30% complete – during managing program tranches	Program
DoC	DCCSDS	Interim report Personal Safety	Business Information System (BIS) Formerly known as DISQIS. A client information management system to support, measure and report on service delivery and the management of information about people with a disability, family and contacts, providers and funding.	High	Good	Dec 2012	\$44M	Stronger Information Program (SIP) This is an over-arching Disability Services program which aims to determine the effectiveness of the existing and planned information management systems, departmental capacity and processes. Incorporates AS&RS Service Management System.	\$60M	Jun 2013	High	On-hold / postponed Progress at 80% complete – in delivery stage Awaiting funding approval	Program
DoC	DCCSDS	Interim report Personal Safety	Integrated Client Management System (ICMS) A state-wide database managing detailed assessment and casework information on children, young people and their families, who have contact with the child protection system. ICMS also supports: the management of children and young people placed in foster care; and the youth justice function.	High	Good	Dec 2019	\$45.5M	Core Application Management Program (CAMP) The Core Applications Management Program is established to enable an integrated future direction to support business systems, processes and services. All projects on hold and include: <ul style="list-style-type: none"> • ICMS Forms Roadmap & Replacement (\$1.1m forecasted current FY expenditure) • complex Cold Fusion Replacements • server Hosted Development Environment • integration Platform Expansion. 	\$1.3M	Jun 2015	Critical	On-hold Progress at 50% complete – during managing program tranches Awaiting funding approval	Program

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DoC	HPW	Interim report Personal Safety	SAP RE (Real Estate) - Housing Tenancy Management SAP PM (Plant Maintenance) – Management of Property Maintenance requests and completed work. SAP PS (Project Systems) – Management of Capital Projects relating to Property. These modules collectively support Property and Tenancy Management functions for the Department, and have some integration with SAP FI (Finance module).	High	Low	Jan 2016	\$75M	FOPATS Replacement for Housing's current SAP and associated systems	\$75M	2015-2017	High	Active In planning - initiation stage Developing business case	Project
DoC	DCCSDS	Personal Safety	BMC Remedy Action Request System	High	Good	Dec 2017	Data not provided	No identified initiative					
DoC	HPW	Personal Safety	Bondscape	High	Good	Jan 2016	\$11.7M	DHPW Fopats Program					
DoC	DCCSDS	Personal Safety	Community Recovery Processing System	High	Good	Dec 2014	\$0.45M	Community Recovery Program					
DoC	DCCSDS	Personal Safety	Critical Incident Recording, Management and Reporting System	High	Good	Jul 2014	\$0.02M	Critical Incidents					
DoC	DCCSDS	Extreme business exposure and end date before July 2014. Business critical system	Critical Incident Reporting Management System	High	Poor	Dec 2012	\$0.55M	No identified initiative					
DoC	DJAG	Personal Safety	DCOIS	Low	Good	Jul 2021	\$3.8M	No identified initiative					
DoC	DCCSDS	Needs replacement, poor technology condition.	GMS - Office for Women Grants System	Low	Poor	Jul 2012	Data not provided	No identified initiative					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
DoC	DATSIMA	Extreme business exposure and end date before July 2014.	Grants Administration System	High	Poor	Jul 2012	\$0.6M	No identified initiative					
DoC	DCCSDS	Needs replacement, no identified initiative, poor technology condition.	Grants Budget System	Low	Poor	Jul 2012	Data not provided	No identified initiative					
DoC	DCCSDS	Extreme business exposure and end date before July 2014.	Grants Management System	High	Poor	Jul 2012	\$1.6M	No identified initiative					
DoC	DCCSDS	Personal Safety	IJIS/EMMA	High	Good	Jan 2019	\$1.8M	No identified initiative					
DoC	HPW	Personal Safety	Loanscape	High	Good	Jan 2015	\$2.5M	DHPW Fopats Program					
DoC	HPW	Personal Safety	PRIME	High	Good	Dec 2015	\$0.8M	DHPW Fopats Program					
DoC	DJAG	Personal Safety	QUEST	Low	Good	Dec 2012	\$0.1M	No identified initiative					
DoC	DCCSDS	Personal Safety	Shift Worker Employee Allowance Payments	High	Poor	Nov 2009	\$0.6M	Service provided by QSS					
DPW	HPW	Personal Safety	BEMIR	High	Good	Jul 2015	\$4M	BEMIR Re-Development/Replacement					
DPW	HPW	Extreme business exposure and end date before July 2014. Business critical system	CARS+	High	Poor	Jul 2013	\$0.1M	No identified initiative					
DPW	HPW	Extreme business exposure and end date before July 2014.	Maximise	High	Poor	Jul 2013	\$0.08M	Will be decommissioned					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
QH	QH	Interim report Personal Safety	AUSCARE A web-based clinical diagnostic reports viewer based on the AUSLAB system. It is designed to provide easy access for clinicians across QH.	High	Medium	Jun 2016	\$5M	LISS Replacement Procurement and Implementation. AUSLAB system replacement includes a major procurement process and rollout across the state.	\$131M	Jun 2016	High	Planning stage Project has approved funding for \$64,426	Project
QH	QH	Interim report Personal Safety	AUSLAB AUSLAB is a laboratory information system used by Pathology, Forensic and Population Health departments for results reporting and management. This clinical & scientific information system provides workflow management; allows for analytical instrument interfacing; provides for standardised reporting; allows for billing and information management and accommodates extended database queries. (refer <i>Appendix A</i> for further detail)	High	Medium	Jun 2020	\$131M	Health Services Support Agency (HSSA) is currently finalising detailed ICT planning activities including the development of an ICT Investment Roadmap for the next 4 years. It is anticipated that additional investment opportunities will be identified to address key priorities which may include further enhancements to AUSCARE/AUSLAB. AUSCARE and AUSLAB are key critical clinical systems which support pathology and other clinical services state-wide.					
QH	QH	Interim report	Integrated electronic Medical Record (ieMR) – aka Cerner Originally reported in the 30 Day Report – under development as part of a current initiative. A commercial-off-the shelf integrated eMR solution from Cerner Corporation. The arrangement is expected to apply to Queensland Health state-wide and underpin the ongoing transition from a paper based medical record to an electronic Medical Record (eMR). Cerner Corporation is also establishing a Queensland based hosting service for the eMR software and related services.	Not applicable – under development as part of a current initiative.				ieMR (Integrated electronic Medical Record) Program The ieMR Program will deliver an authoritative single source of the patient record across the State. It will provide clinicians with the ability to: <ul style="list-style-type: none"> access information that is integrated, accurate and clinically relevant support decision making and better use of information optimise management of patients, resources and provision of services deliver location independent diagnostic and treatment services support interaction across a network of providers that enables providers to be located, information to be transferred and multidisciplinary providers to collaborate. 	\$179.6M	Dec 2014	High	Active In progress – managing program tranches Fullyfunded	Program

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
QH	QH	Interim report Personal Safety	Hospital Based Corporate Information System (HBCIS) A patient administration system that includes: patient demographics; patient admissions, transfers and discharges; and patient appointments and scheduling	High	Good	Sep 2015	\$250M	QPAS - Replacement / Upgrade of Queensland Patient Administration System (HBCIS) HBCIS (Hospital Based Corporate Information System) is the current Patient Administration System (PAS) for Queensland Health and the primary system for registering and managing all patients. It is the largest corporate information system in use in Queensland Health. Activity for HBCIS Consolidation and Disaster Recovery also reported.	\$438.8M	Unknown (early stages)	Critical	Not started Pre project stage Proposed funding	Project
QH	QH	Interim report	Queensland Health payroll solution Included for completeness sake – originally reported in the 30 Day Report, however it is out of scope for the current ICT audit. HR/payroll and financial solution based on SAP	High	Good	Dec 2010	\$40M (potentially under reported)	QH payroll solution out of scope of audit Related QSS projects: <ul style="list-style-type: none"> Queensland Health HR Technical Separation Project. Queensland Health Transition Project. 					
QH	QH	Business critical systems	Finance business solution (FAMMIS) Finance and Materials Management Information System.	High	Good	Jun 2012	\$4.1M (based on application as a service)	SAP Assets Procurement Finance Information Resource (SAPFIR) Project	\$80M	Jun 2014	High	Active In progress – delivery stage Fully funded	Project

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
QH	QH	Interim report Business critical systems Personal Safety	Medical Aids Information System Multiple capabilities related to the documentation and management of medical aids supporting assets and services.	Low	Good	Jul 2011	\$1.2M	MAIS (Medical Aids Information System) This project is to streamline business processes, increase efficiency and decrease time to complete transactions. This will decrease the amount of time the patient needs to wait (by approx. 50%) for the service and improve the collection of accurate data for planning purposes. This application supports the Medical Aid Subsidy scheme which is a state-wide service for the provisions of aids and equipment, and processes in excess of 120,000 requests for medial aids each financial year. The new system will automate many manual functions including electronic/online application submission function, track status of the application, and interface to SAP to eliminate double entry of orders.	\$4.1M	Not reported	High	On-hold/postponed Progress at 10% complete – in planning stage Proposed internal funding source	Project
QH	QH	Interim report Business critical systems Personal Safety	Operating Room Management Information System (ORMIS) The Operating Room Management Information System (ORMIS) is a medical theatre management system	High	Poor	Jul 2019	\$1.8M	ORMIS v7 Implementation of the Operating Room Management Information System (ORMIS) v7, a multi-campus enterprise application into all facilities currently using HBCIS-TMS or ORMIS v5.	\$2.3M	Jun 2013	High	Delivery stage Fully funded	Project
QH	QH	Personal Safety	Aged Care Evaluation System (ACE)	High	Good	Jun 2016	\$0.5M	No identified initiative					
QH	QH	Personal Safety	CaSS Antibody Register/Transfusion Backup ⁵²	High	Good	Jun 2016	\$0.2M	No identified initiative					
QH	QH	Personal Safety	CaSS ECRI-AIMS	High	Good	Jun 2020	\$0.2M	No identified initiative					
QH	QH	Personal Safety	CaSS FSS Digital Radiology System	High	Good	Jun 2018	\$0.8M	No identified initiative					
QH	QH	Personal Safety	CaSS High Risk Medication Reports	High	Good	Jun 2016	\$0.04M	No identified initiative					
QH	QH	Personal Safety	CaSS Kinship DNA Matching System	Low	Good	Jun 2020	\$1.2M	No identified initiative					
QH	QH	Personal Safety	CaSS National Organ Matching System (NOMS)	High	Good	Jun 2020	\$0.01M	No identified initiative					
QH	QH	Personal Safety	Client Directory (CD)	High	Good	Jul 2014	\$5M	Demographic service, Person Service (CD replacement)					
QH	QH	Personal Safety	Clinical Co-ordination Retrieval Information System (CCRIS)	Low	Good	Jun 2016	Data not provided	No identified initiative					

⁵² Queensland Health excluded all projects not controlled by central Health Information Division and these systems have been marked 'No identified initiative'.

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
QH	QH	Personal Safety	Clinical Decision Support System (CDSS)	High	Good	Jul 2012	\$0.5M	No identified initiative					
QH	QH	Personal Safety	Consumer Integrated Mental Health Application (CIMHA)	High	Good	Jul 2018	\$7.8M	Consumer Integrated Mental Health Application (CIMHA) Phase II					
QH	QH	Personal Safety	Emergency Department Information System (EDIS v9)	High	Good	Dec 2019	\$2.1M	No identified initiative					
QH	QH	Personal Safety	Enterprise Liaison Medication System (eLMS)	High	Good	Jun 2016	\$0.6M	No identified initiative					
QH	QH	Personal Safety	Enterprise PACS	High	Good	Data not provided	Data not provided	Digital Image Service					
QH	QH	Personal Safety	Environmental Health Information Network (EHInfoNet)	High	Good	Jun 2014	\$0.2M	No identified initiative					
QH	QH	Personal Safety	ICU Bed Availability Register (ICUBED)	High	Good	Jun 2015	\$0.25M	No identified initiative					
QH	QH	Personal Safety	ICUIS	High	Good	Jul 2036	\$10M	ICU CIS (Intensive Care Unit Clinical Information System) Stage 1	\$11.3M	Nov 2013		Active In progress – delivery stage Fully internally funded	Project
QH	QH	Personal Safety	Monitoring of Drugs of Dependence System (MODDS)	High	Good	Jun 2012	\$3M	No identified initiative					
QH	QH	Personal Safety	Notifiable Conditions System (NOCS)	High	Good	May 2012	\$5M	No identified initiative					
QH	QH	Personal Safety	Pap Smear Register (PSR)	High	Good	Jul 2012	\$3.5M	No identified initiative					
QH	QH	Personal Safety	Queensland Radiology Information System (QRiS)	High	Good	Jun 2016	\$0.19M	Digital Image Service, Enterprise Provider Directory Release 2					
QH	QH	Personal Safety	Surgical Access Team Reporting (SATR)	High	Good	Jun 2016	\$0.4M	No identified initiative					
QH	QH	Extreme business exposure and end date before July 2014. Business critical system	Travel Manager Queensland Health Travel Information System	High	Poor	Jul 2010	\$0.49M	Com-Pair Interface Tool Hosting of Application on SSI Domain					
QPS	QPS	Interim report Personal Safety	Weapons Licencing Management System (WLMS)⁵³ A new weapons licensing system which is planned to be delivered in three stages (2009 through 2015) with a view to streamlining processes and providing efficiency of service to licence holders, firearm dealers and shooting clubs.	Not reported	Not reported	Jan 2018	\$4.2M	Weapons Licensing Management System The WLMS Project is implementing a new weapons licensing system which is planned to be delivered in three stages with a view to streamlining processes and providing efficiency of service to licence holders, firearm dealers and shooting clubs.	\$19.6M	Aug 2012	High	Active In progress – delivery stage Fully internally funded	Project

⁵³ QPS have since provided clarification that has not been analysed.

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
QPS	QPS	Personal Safety	COMFIT ⁵⁴	High	Good	Jan 1900	\$0.1M	No identified initiative					
QPS	QPS	Personal Safety	Forensics Register	High	Good	Jan 2015	\$3M	No identified initiative					
QPS	QPS	Personal Safety	Policelink Customer Relationship Management (CRM) ⁵⁵	Data not provided	Good	Jan 2018	\$3M	No identified initiative					
QPS	QPS	Personal Safety	QCAD ⁵⁶	Data not provided	Good	Dec 2021	\$34.5M	No identified initiative					
QPS	QPS	Personal Safety	QPRIME	High	Good	Jun 2025	\$53.8M	Enhance QPRIME User Interface - Mobile Services (including Automatic Number Plate Recognition (ANPR)) - Technology Refresh & Improvement Program (TRIP)					
QPS	QPS	Personal Safety	QPRIME Mapping	High	Good	Jan 2018	\$1.5M	Enhance QPRIME User Interface - Mobile Services (including Automatic Number Plate Recognition (ANPR)) - Technology Refresh & Improvement Program (TRIP)					
QPS	QPS	Personal Safety	Traffic Camera Scheduling & Reporting System (TSRS)	High	Good	Jan 2012	\$0.85M	TMR program: CDOP Intelligent Traffic Camera System (I-TCS)	\$35M	May 2013	High	Active In progress – managing program tranches Fully externally funded	Program
QPS	QPS	Interim report Business critical systems Personal Safety	Incident Management System (IMS) IMS is a computer aided dispatch system. It is used for the recording and management of the response to requests for police assistance.	High	Poor	Jun 2013	\$5M	Computer Aided Dispatch (CAD) Replace Computer Aided Dispatch (CAD) system(s) currently operational in the seven scoped Police Communications Centres (PCCs) with a modern, integrated and highly reliable CAD solution providing state-wide coverage on a single platform	\$35.1M	Jun 2013	Critical	Active In progress – delivery stage Fully internally funded	Project

⁵⁴ QPS have since provided clarification that has not been analysed.⁵⁵ QPS have since provided clarification that has not been analysed.⁵⁶ QPS have since provided clarification that has not been analysed.

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
QSS	DSITIA - QSS	Interim report	Corporate Finance, HR systems (excluding Health and Education) HR/payroll and financial solution provided by QSS	Multiple systems, multiple instances				Implement 2012 MOG Activity to implement the 2012 Machinery of Government changes Proposed Shared Systems Program of Work –submission currently under review	Unknown (early stages)	Unknown (early stages)	High	Active In planning Funding unknown	Activity
QSS	DSITIA - QSS	Extreme business exposure and end date before July 2014.	DCP; Financial Mgmt Reference Only	High	Poor	Dec 2012	Data not provided	No identified initiative					
QSS	DSITIA - QSS	Extreme business exposure and end date before July 2014.	DTN; Financial Mgmt Reference Only	High	Poor	Dec 2012	Data not provided	No identified initiative					
QSS	DSITIA - QSS	Extreme business exposure and end date before July 2014.	ESP; Financial Mgmt Reference Only	High	Poor	Jan 2013	Data not provided	No identified initiative					
QSS	DSITIA - QSS	Extreme business exposure and end date before July 2014. Business critical system	PWP; Financial Mgmt	High	Poor	Jan 2013	\$1.4M	Upgrade of SAP 3.1i to ECC5					
QSS	DSITIA - QSS	Extreme business exposure and end date before July 2014. Business critical system	QTP; Human Resources Mgmt	High	Poor	Dec 2012	\$1.4M	No identified initiative					

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
TMR	TMR	Interim report	Road Management Information System (ARMIS) Provides load, management, summary and access of current and historical road condition and structural data. ARMIS is an integrated suite of ICT applications and supporting databases that have at its core the Road Reference System.	High	Good	Feb 2015	\$40M	A Road Management Information System (ARMIS) Remediation The scope of this project is to upgrade Oracle toolset Oracle Forms version 11g, upgrade ARMIS database to version 11g, redevelop ARMIS security to operate in the new environment and to integrate with the corporate directory, redevelop GIMS GIS components to operate in the new environment, upgrade ARMIS Reports to version 11g, test the upgraded ARMIS and release to production.	\$1.6M	Sep 2012	High	Active In progress – delivery stage Fully funded	Project
TMR	TMR	Interim report	ExcessMass (aka Heavy Vehicle Permit Management System) Secure system for Heavy Vehicle Management and issuing of permits to transport overmass or overdimension loads on QLD roads.	High	Good	Jun 2013	Not reported	Permit Management System Establish a more effective State-wide Heavy Vehicle Operations and Permits process including provision of a new system that will meet the expected future requirements for the management of heavy vehicle permits. (This will preferably be a commercial off-the-shelf (COTS) system). It is likely that the system implemented by TMR will be adopted by the National Heavy Vehicle Regulator (NHVR) for its use, and could result in the replication of the system in other states.	Unknown (early stages)	Aug 2014	High	Active Yet to start - pre project stage Awaiting funding approval	Project
TMR	TMR	Interim report	Statewide program investment delivery application (SPIDA) A Lotus Notes bespoke system that is used for the development, management, delivery and publication of the (multi-billion dollar per annum) Queensland Transport and Roads Investment Program (QTRIP).	Not reported	Not reported	May 2017	Not reported	TIP – Portfolio & Program TIP – QTRIP/RAP SPIDA provides a 'source of truth' for infrastructure investment portfolio/ program/ project information for years 1-4 for the scope of the portfolio (acknowledging the recent inclusion of transport investment data).	\$0.1M \$0.3M	Unknown (early stages)	High	Active Yet to start - pre project stage Funding unknown	Project
TMR	TMR	Interim report	Transport registration and integrated licensing system (TRAILS) Containing major business functionality such as accounting, vehicles and vessels, customer and involved parties, plates, licensing, infringements, registrations and vehicle inspections	High	Good	Jun 2017	\$60M	RnL Apps Rationalisation The current TRAILS system which provides registration and licensing functionality is a monolithic legacy system. The RnL apps Rationalisation project will be the first step in breaking the legacy system into more manageable modules	\$0.3M	Jun 2013	High	Active Yet to start - pre project stage Awaiting funding approval	Project

System details (application)								Related initiative information (project)					
Pre MOG agency	Post MOG agency	Category	System and description	Business impact	Technical condition	End of life date	Estimated replacement cost	Initiative and description	Total estimated expenditure	Planned end date	Agency assigned priority	Status	Initiative type
TMR	TMR	Interim report	Asset Management & Maintenance System (AMMS) AMMS is a bespoke system that is used for the management of asset maintenance backlog information, scheduling of work and data to update the Asset Management System (ARMIS), remit against schedules to allow payment to and by RoadTek and some local authorities across the state.	High	Good	Dec 2012	\$0.9M	Transport Infrastructure Asset Management System (TIAMS) The TIAM function does not have a comprehensively defined framework to provide coherence to the future development of TIAMS. The existing departmental asset management systems have limited life and expansion capability, and asset managers are highly dependent on system capability to deliver reliable information and analysis, in a timely manner.	\$3.1M	Unknown (early stages)	High	Active Yet to start - pre project stage Awaiting funding approval	Project
Treasury	QTT	Interim report	TriData The Queensland Government's primary budgeting and reporting system. Consisting of a number of modules, it is designed to meet all of Treasury's financial management requirements under an accrual accounting environment.	High	Good	Dec 2009	\$5M	Tridata review Business review of Tridata system and reporting. The objective of the review is to: <ul style="list-style-type: none"> • redesign a framework for the reporting system • to build a new server side process and a new web based front-end • to permanently remove Microsoft Access as part of the Tridata development tool set • to provide a new development platform to customise new reports 	\$0.2M	Unknown (early stages)	Not reported	On-hold Yet to start Fully funded	Activity (finite duration)

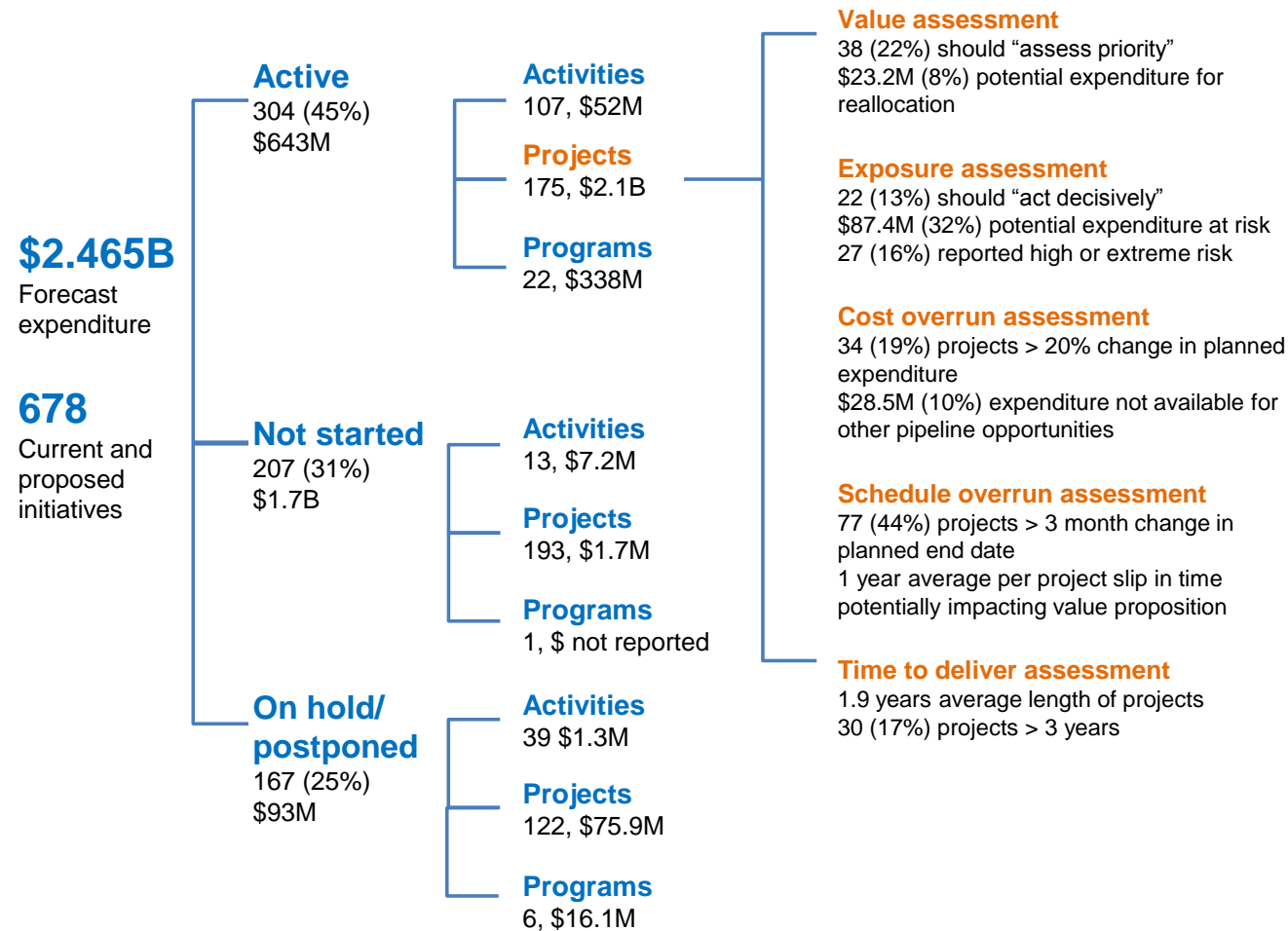
Appendix H – Agency initiative portfolio snapshots

This appendix highlights government initiative portfolios, including number of initiatives, expenditure and summary findings.

The snapshots start with whole-of-government and are then alphabetically ordered by agency name. Since the investment information entails 'forward' programs of work, current agency names are used (i.e. post machinery of government changes).

Whole-of-Government

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

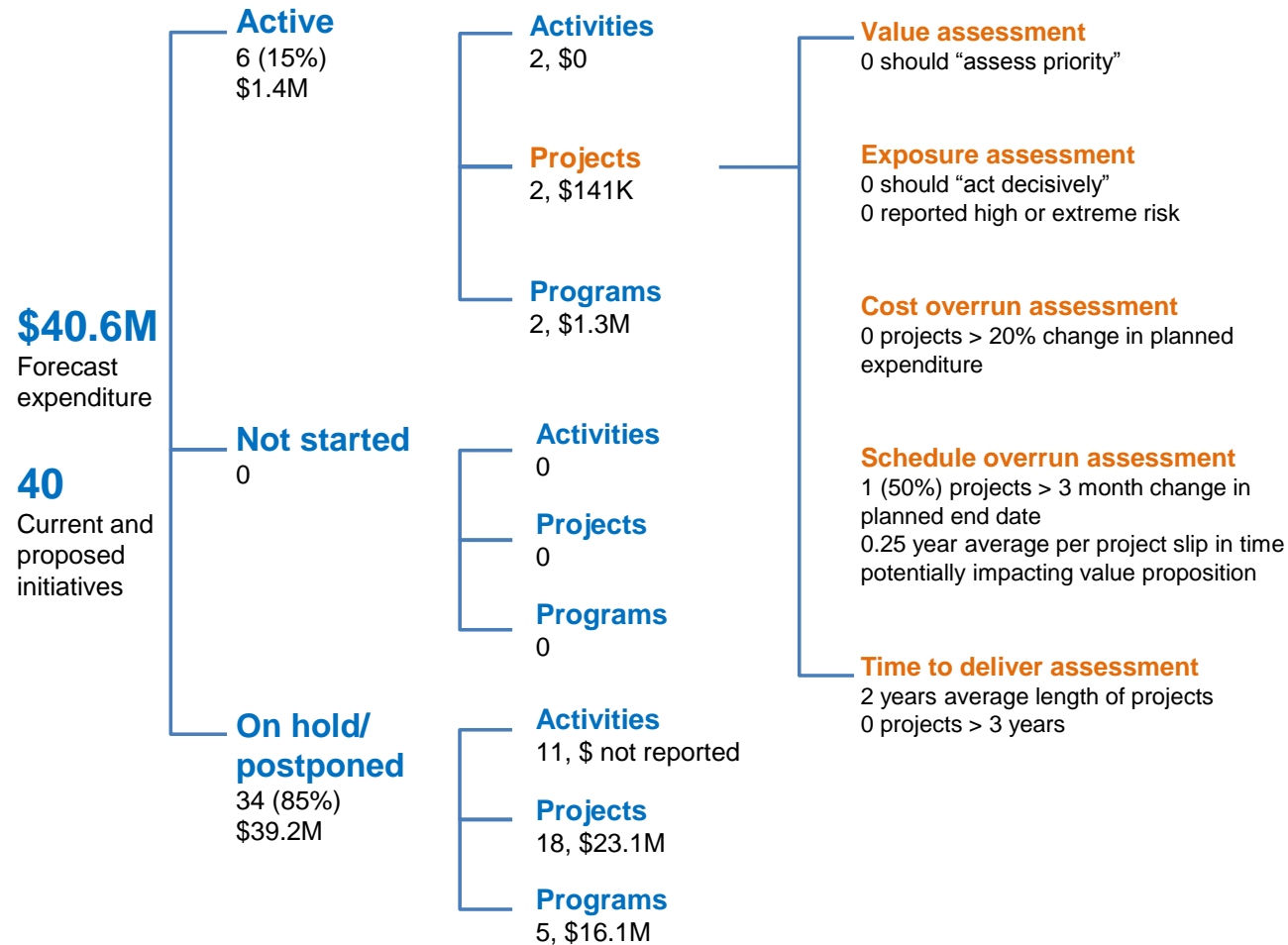
Research and findings show that initiatives which take more than one year to deliver and initiatives without business justification (e.g. business cases) increase the probability of:

- Poor project outcomes (time or cost overruns)
- Poor use of government resources
- Pressure on project pipeline (unmet demand)
- Dis-benefits outweighing benefits
- Solution becoming unviable over time

Whole-of-Government findings show that there are opportunities to: improve government's ability to deliver value, make better use of government resources, and enable greater visibility of investment information.

DCCSDS

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

- Compared with many other agencies, the proportion of initiatives on hold is much greater than the sector average
- There is evidence of portfolio prioritisation
- Housing initiatives were not reported

Notable initiatives include:

- **Child Safety Service Improvement Program (CSSIP)** - initiative with highest expenditure – completed in August 2012
- **Document and Records Management Program** - on hold initiative with highest remaining expenditure

DCS

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates

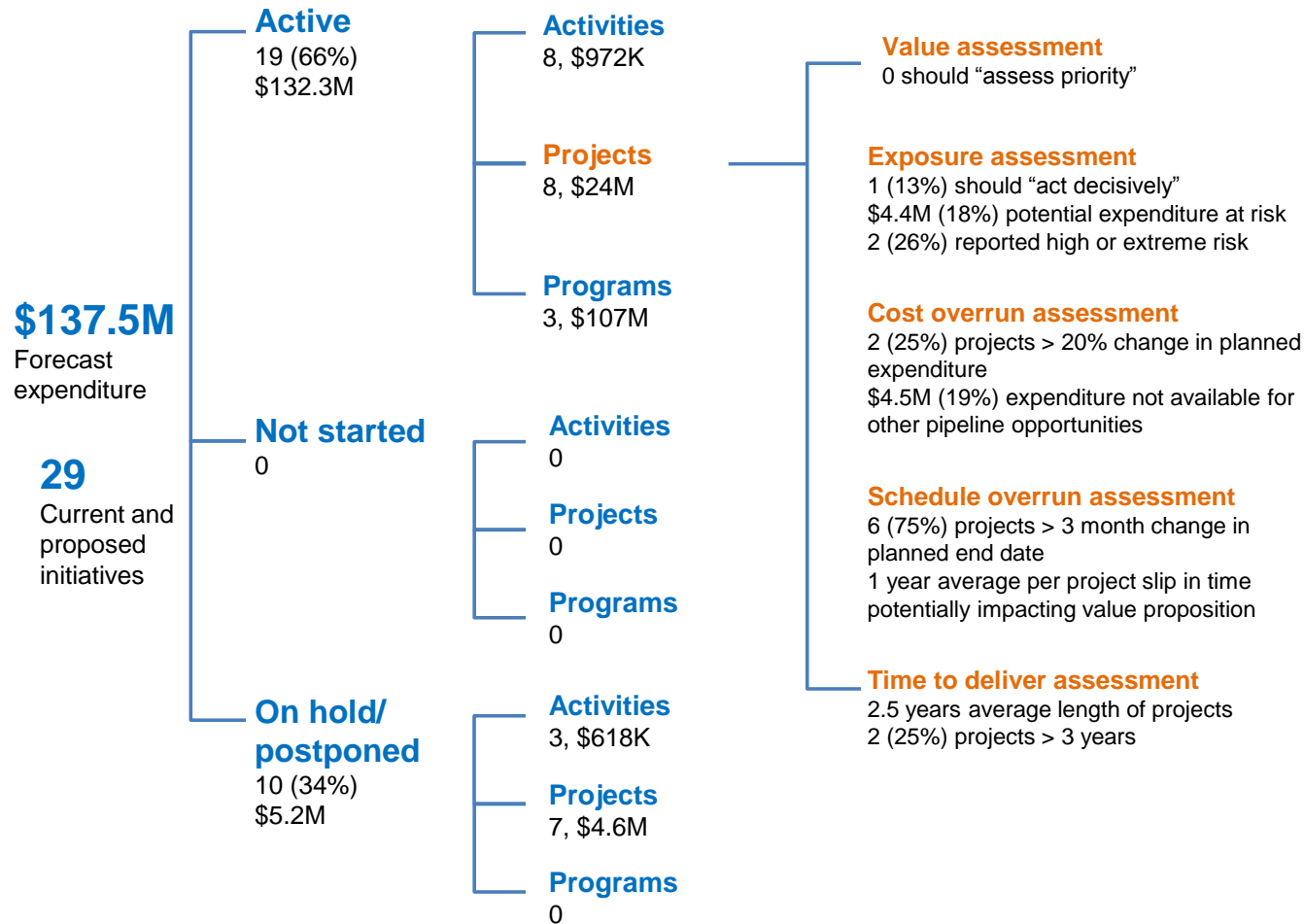
Summary assessment

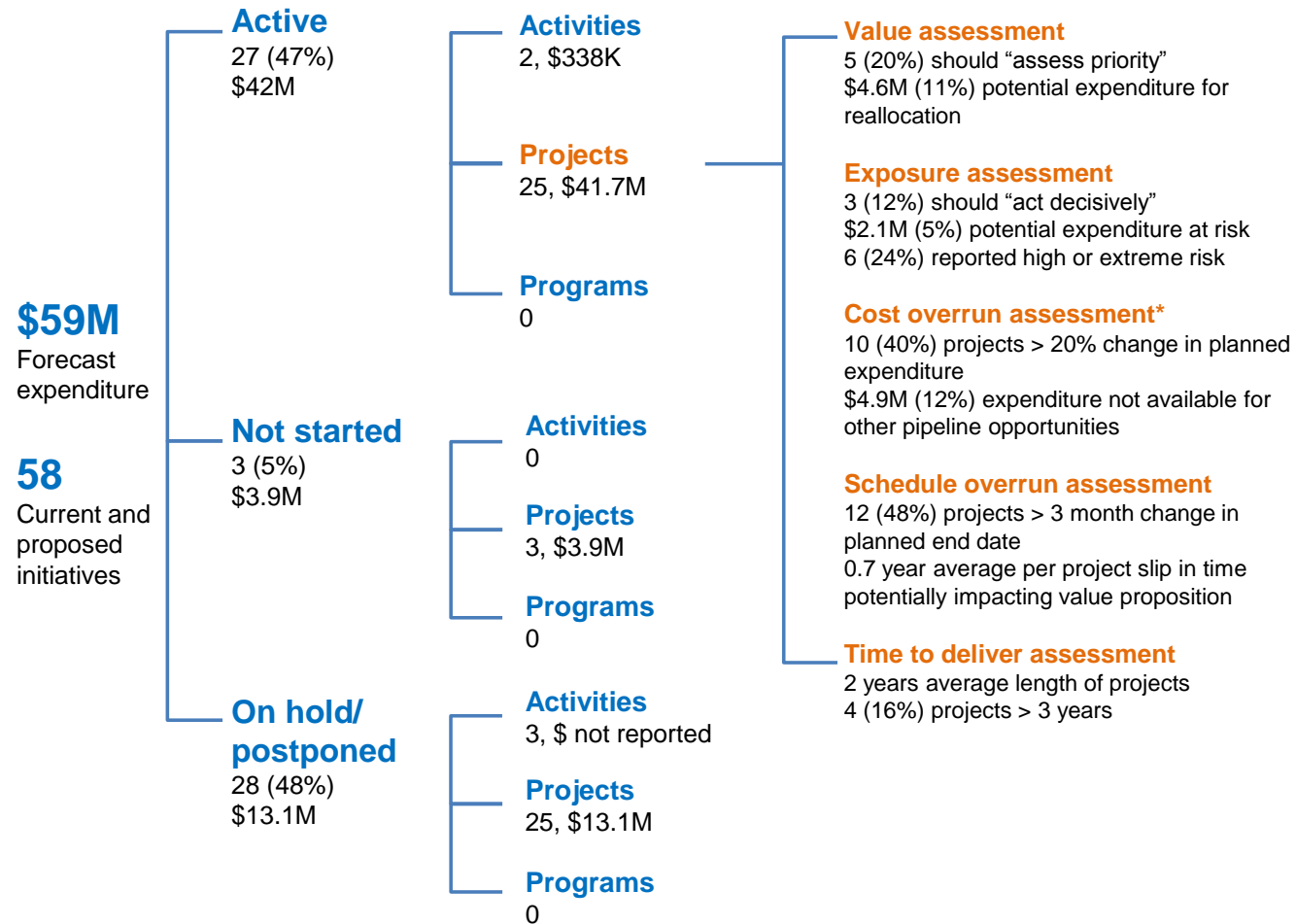
Overall agency findings show that:

- Decisions about initiative prioritisation visible and appear to be effective
- Some initiatives reviewed appear to be lacking appropriate levels of rigour for the level of exposure
- Time to deliver appears above the whole-of-Government average

Notable initiatives include:

- **Lattice infrastructure improvement project** - extreme exposure and critical priority, highlighted as an example portraying inter-agency governance issues
- **HR business solution program** – recent CBRC funding and high exposure
- **All hazards program** - critical priority
- **Triple zero** - DCS's active initiative with highest expenditure





DETE

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates

Summary assessment

Overall agency findings show that:

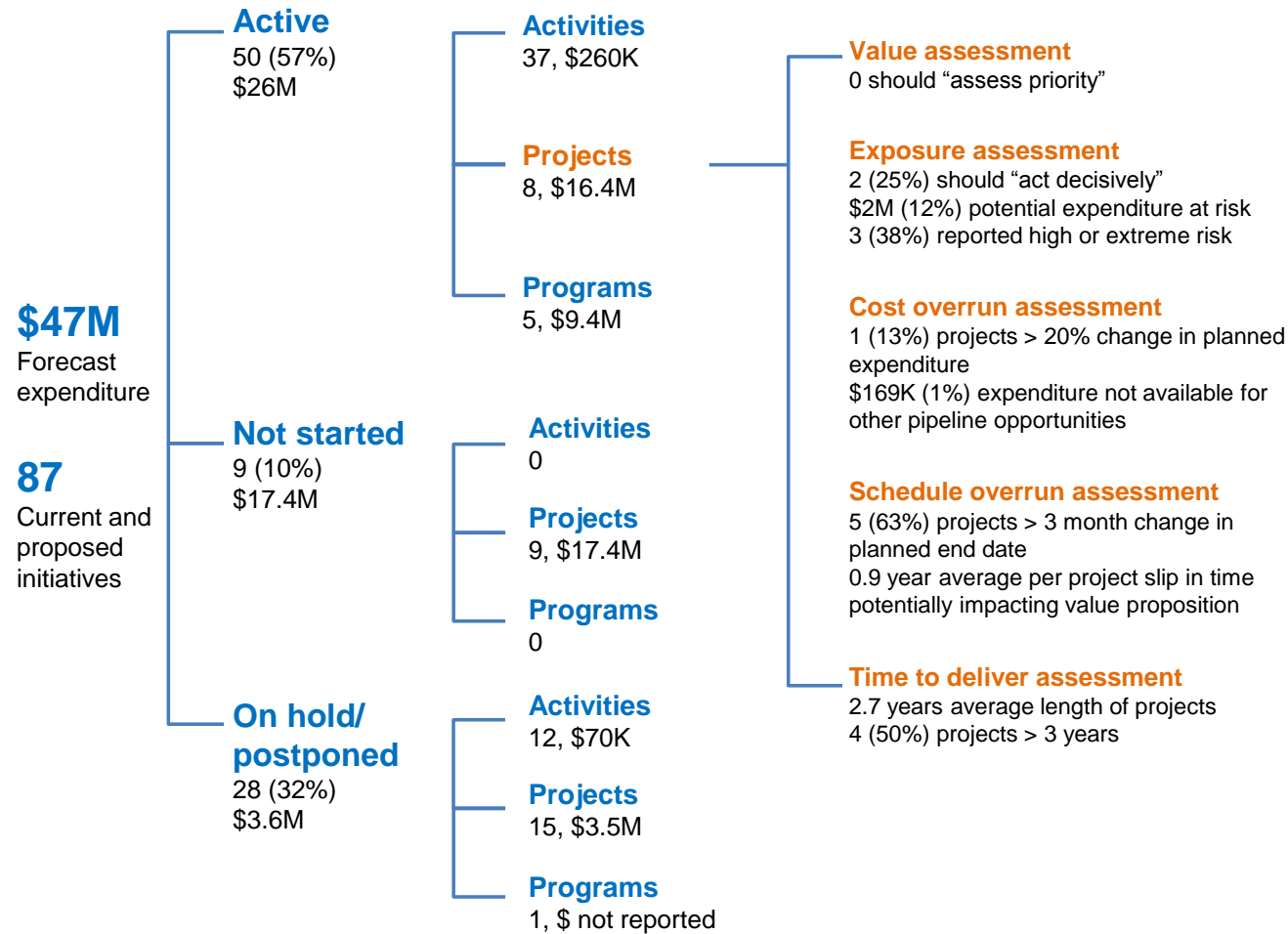
- Prioritisation appears to be working well
- As the total budget is managed at the portfolio level, these are not considered by DETE as project cost overruns*

Notable initiatives include:

- **TSS payroll refresh** - highlighted as example of good project rigour
- **ERP6 project** - highest cost initiative
- **International students management system (ISMS)** - was assessed with an overall low result due to four out of five assessments scoring low

DJAG

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

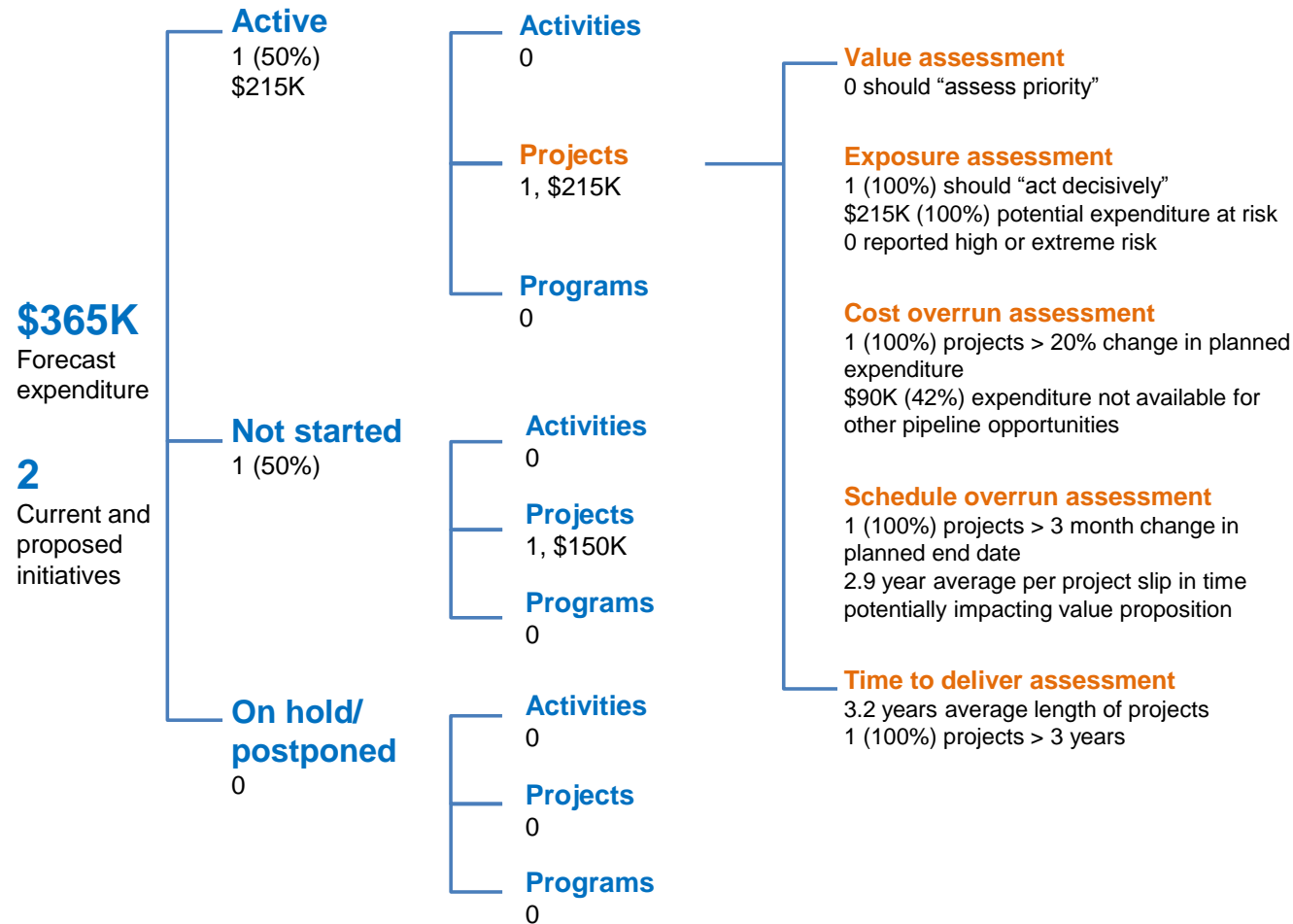
- There is a pattern of schedule overruns
- Decisions about prioritisation not visible, although aware of the business being involved with prioritisation
- BAU type activities (including IM) are a large part of DJAG's change agenda

Notable initiatives include:

- **Youth justice program** – transferred from DoC; initiative closed in late July; now considered BAU
- **BDM digitisation project** - DJAG's initiative with highest expenditure

DLG

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

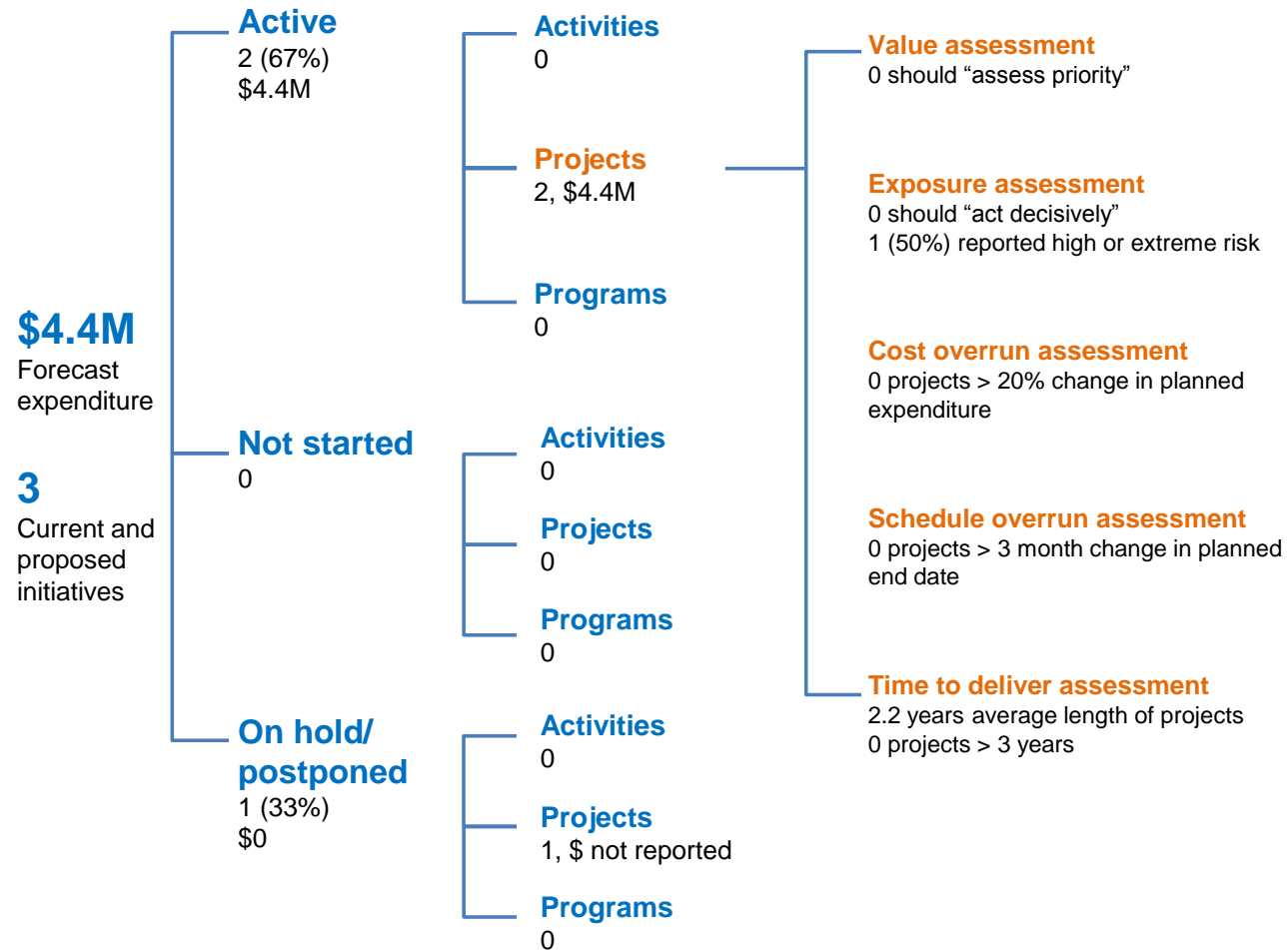
- There is a pattern of schedule overruns
- As a small agency, the DLG portfolio consists mainly of operational type activities

Notable initiatives include:

- **Local laws enhancement** - was assessed with an overall low result due to four out of five assessments scoring low

DPC

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



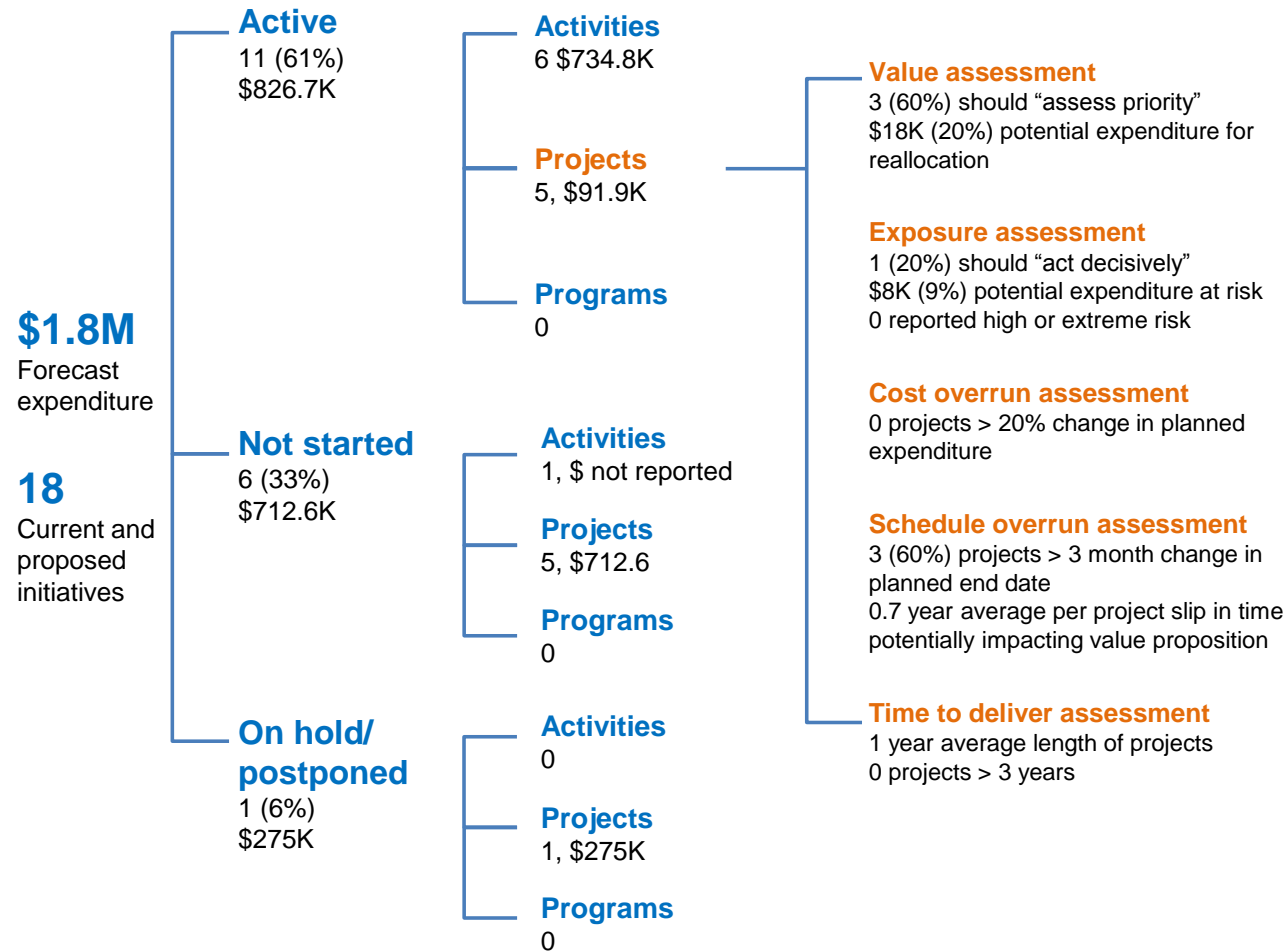
Summary assessment

Overall agency findings show that:

- In line with whole-of-Government findings showing a pattern with time to deliver greater than 1.5 years
- BAU type activities are a large part of DPC's work, however neither IM nor vendor management activities were reported

Notable initiatives include:

- **eLegislation** – enabling online access to legislation



DSDIP

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates

Summary assessment

Overall agency findings show that:

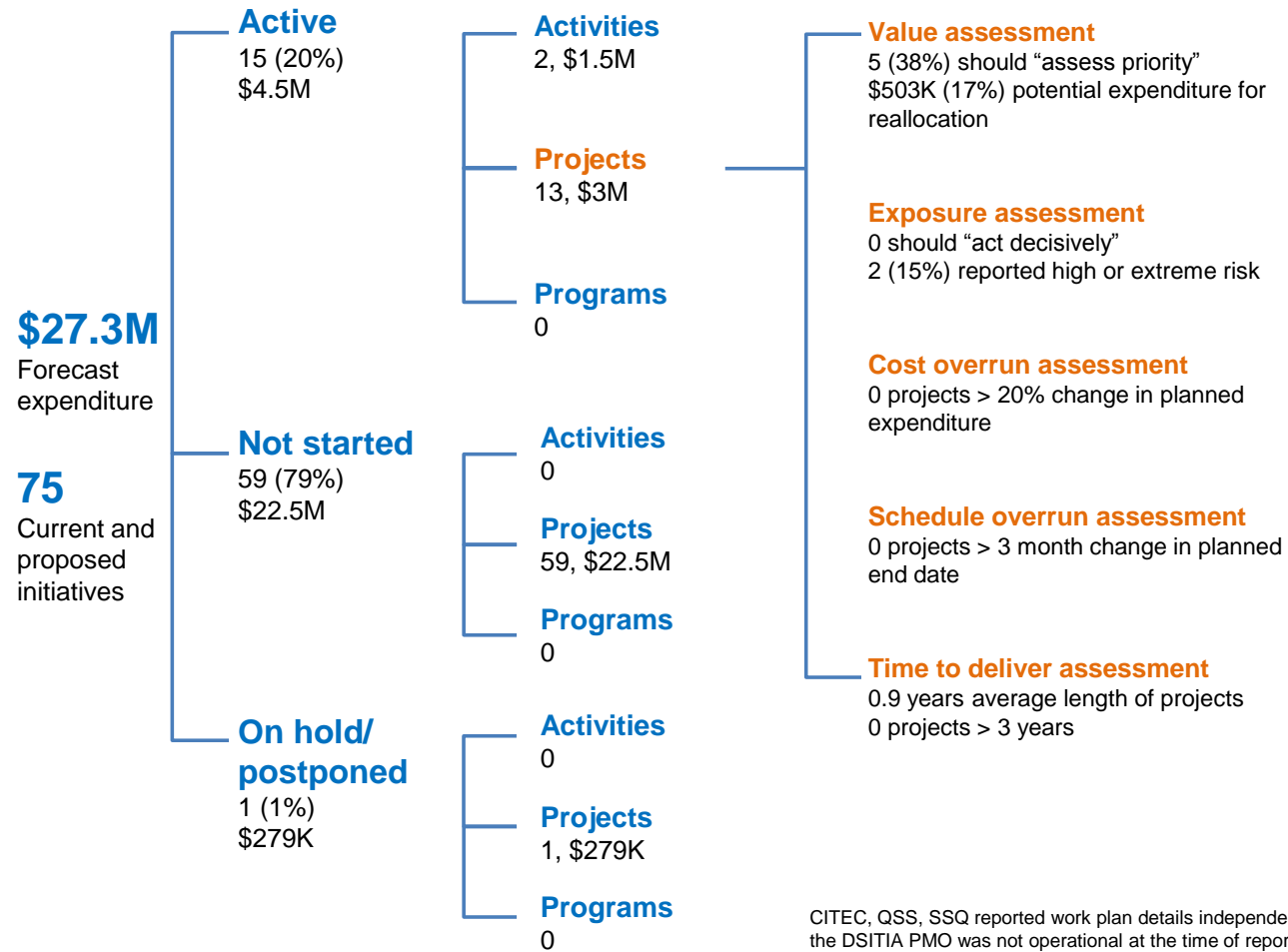
- As a small agency, the DSDIP portfolio consists mainly of operational type activities
- Limited project documentation has equated to 3 “assess priority” results

Notable initiatives include:

- None

DSITIA - CITEC

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

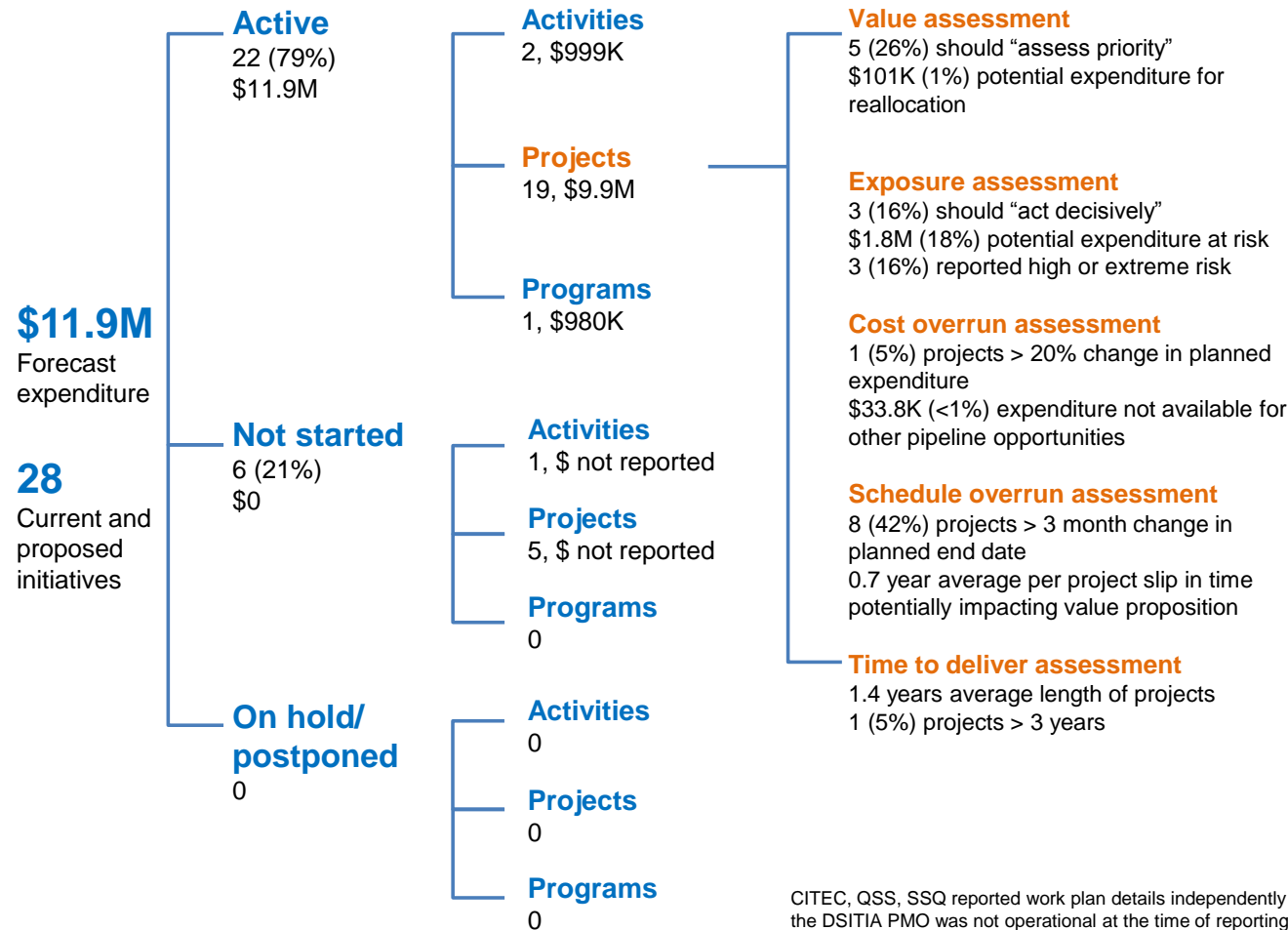
- CITEC generally reported internal infrastructure projects with low impact. These account the five “assess priority” results
- As a service provider, CITEC is not accountable for the budget or schedule of agency sponsored initiatives

Notable initiatives include:

- **DCS Lattice infrastructure improvement project** - highlighted as an example portraying inter-agency governance issues

DSITIA - QSS

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



CITEC, QSS, SSQ reported work plan details independently as the DSITIA PMO was not operational at the time of reporting. These agency names are used throughout the report.

Summary assessment

Overall agency findings show that:

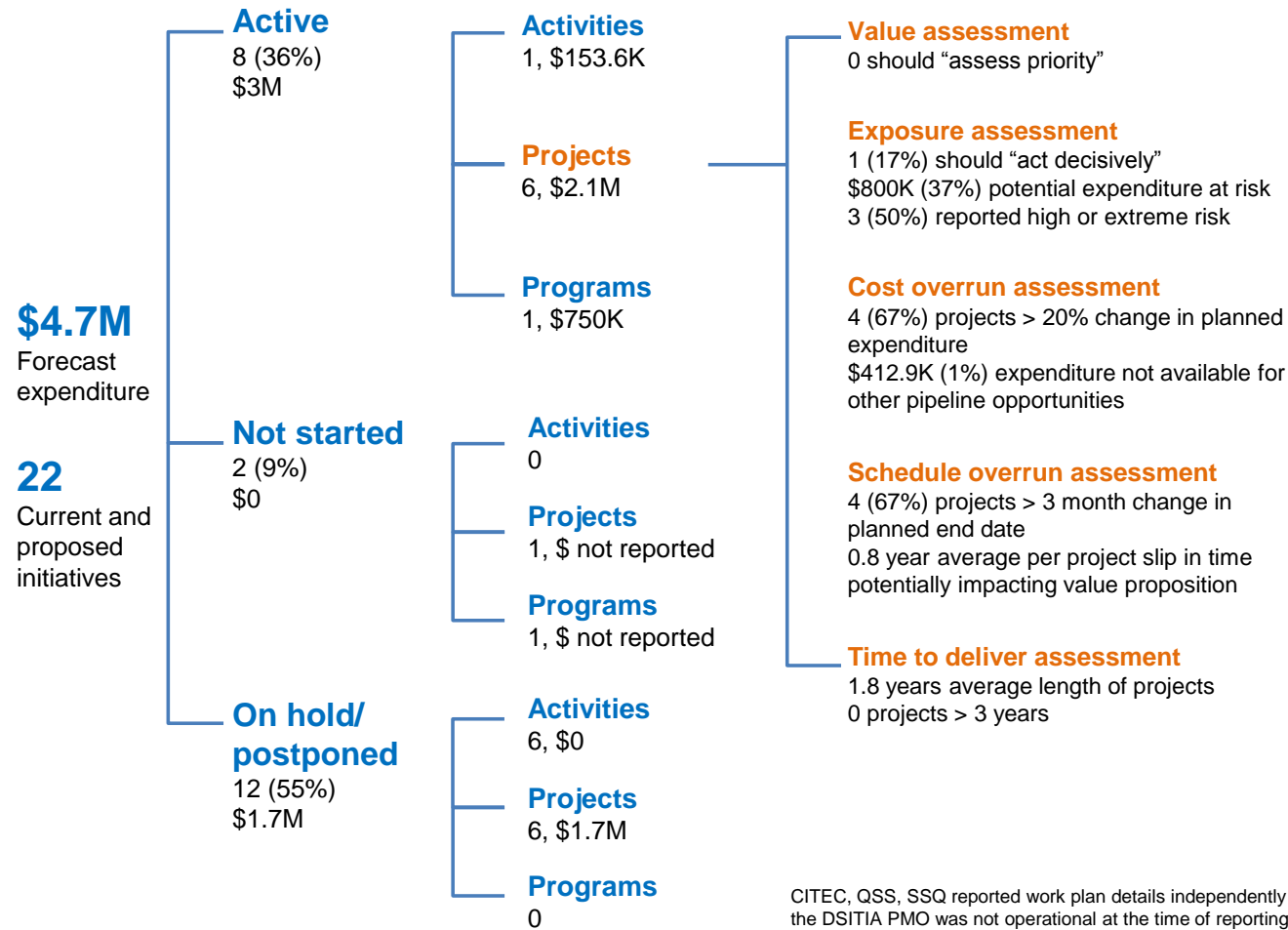
- One of the few agencies that did not report “on hold” initiatives
- No explicit evidence of prioritisation

Notable initiatives include:

- **Shared systems program of work** - not clearly articulated in work plan, although some reporting at project level – see examples below
- **DCS lattice infrastructure improvement project** - highlighted as an example portraying inter-agency governance issues
- **Aurion upgrade** - highest expenditure

DSITIA - SSQ

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

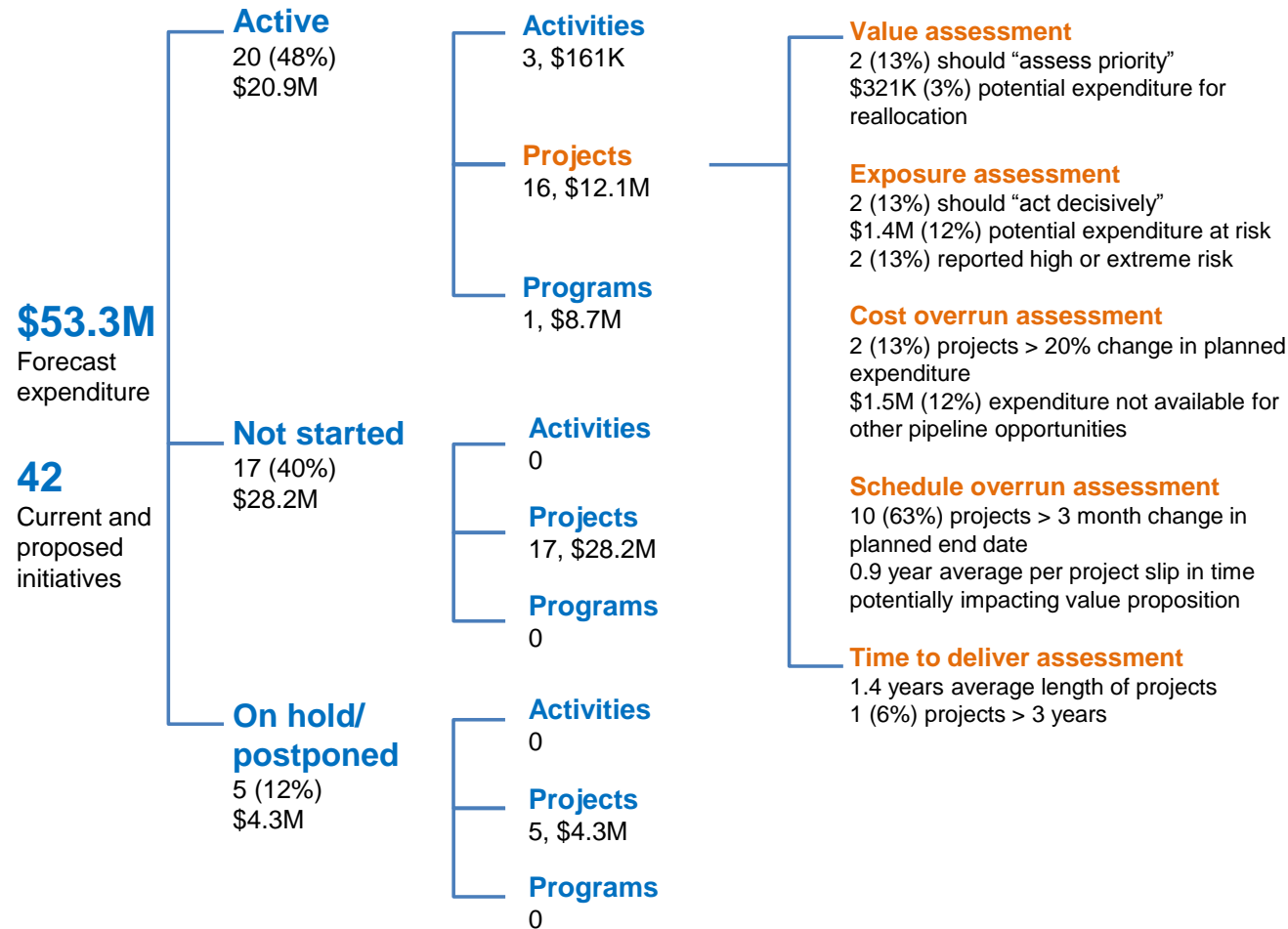
- SSQ relies on agency contribution and participation – potentially impacting the results
- The proportion shown for cost and schedule overruns likely reflects the above situation
- Compared with many other agencies, the percentage of initiatives on hold is greater

Notable initiatives include:

- **QGov online program** - overarching initiative to deliver seamless customer-centric online service delivery channel for Queensland Government. There will be project work continuing until 2014 to consolidate the franchises and move to operational BAU mode.

HPW

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

- Proportion of schedule overruns is greater the sector average
- Decisions about prioritisation not visible
- List does not include Housing initiatives

Notable initiatives include:

- **iSPACE** - high priority and high cost
- **DPW IDES implementation** – has “Low” overall assessment and will be highlighted as a candidate for closure
- **Standardised desktop** - HPW’s highest expenditure

ITP

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates

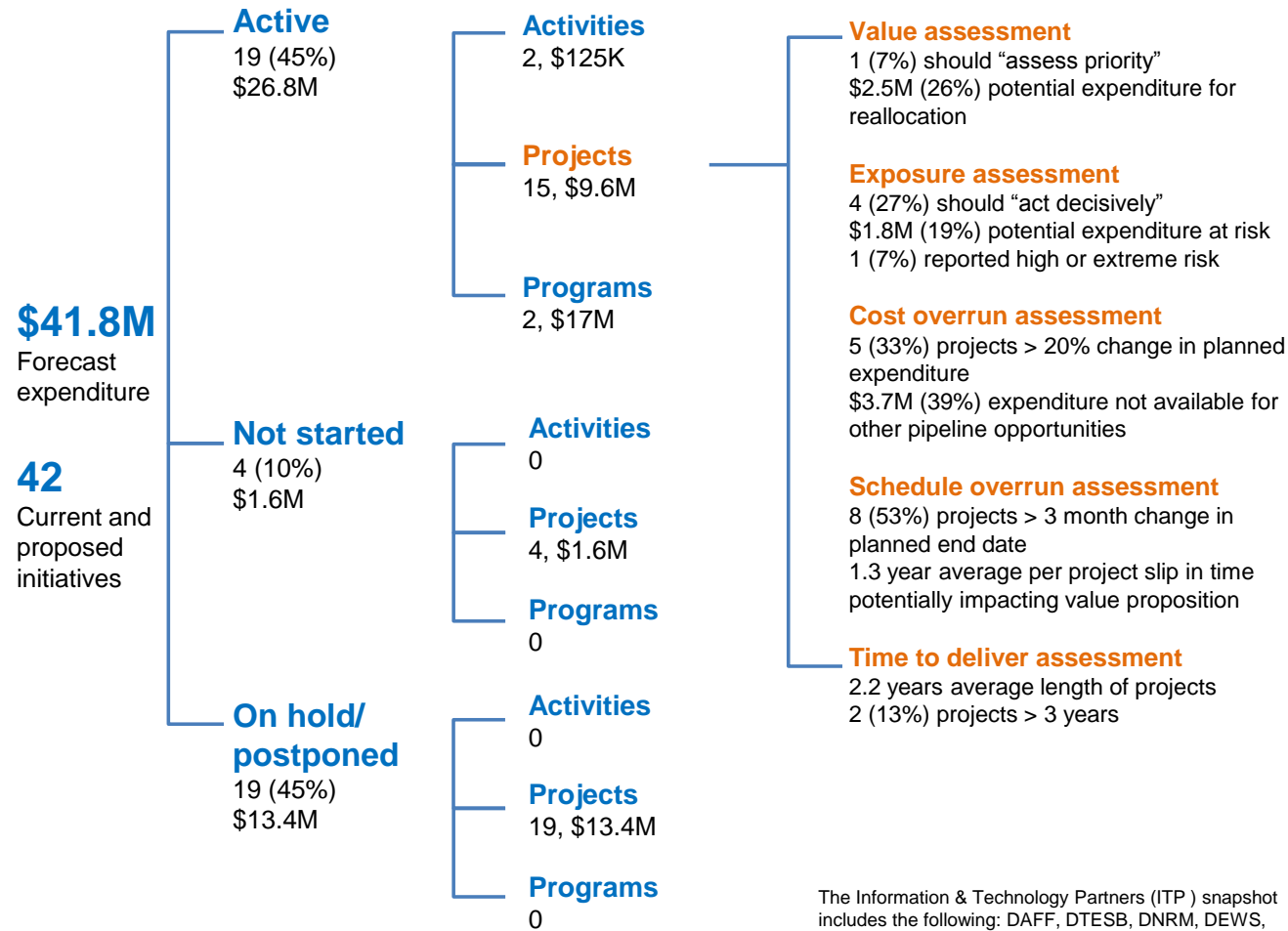
Summary assessment

Overall agency findings show that:

- Despite oversight challenges associated with multiple agency responsibilities, ITP demonstrated appropriate levels of governance
- Expectations that there should be more information management and vendor management activities moving forward

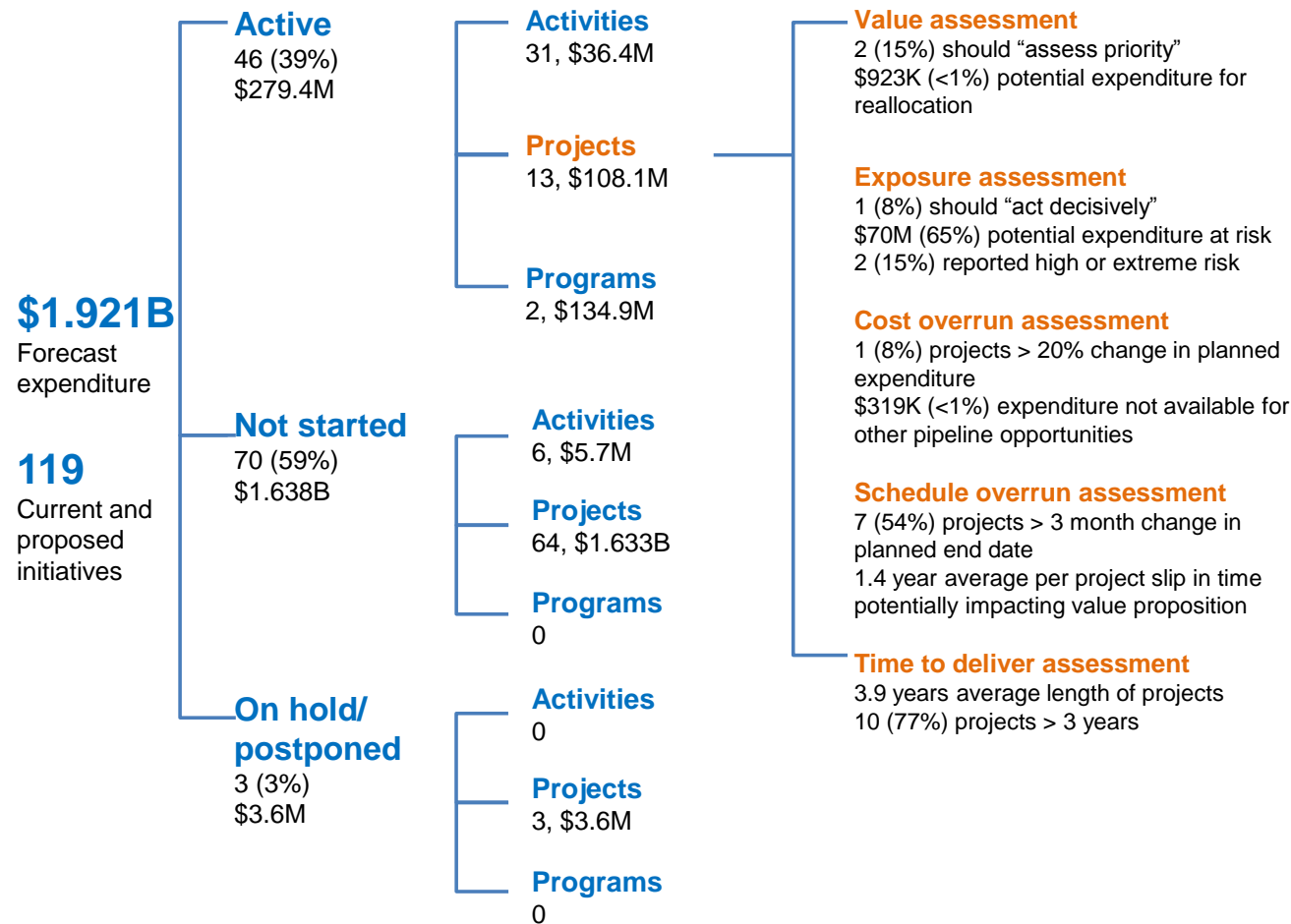
Notable initiatives include:

- **Online services program** - initiative with highest expenditure
- **Streamlining tenures program** and associated projects - newsworthy, high expenditure and example of agile development
- **Parkinfo v2.0** - reporting does not reflect true picture, highlighted as an example portraying procurement/ vendor management issues



QH

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

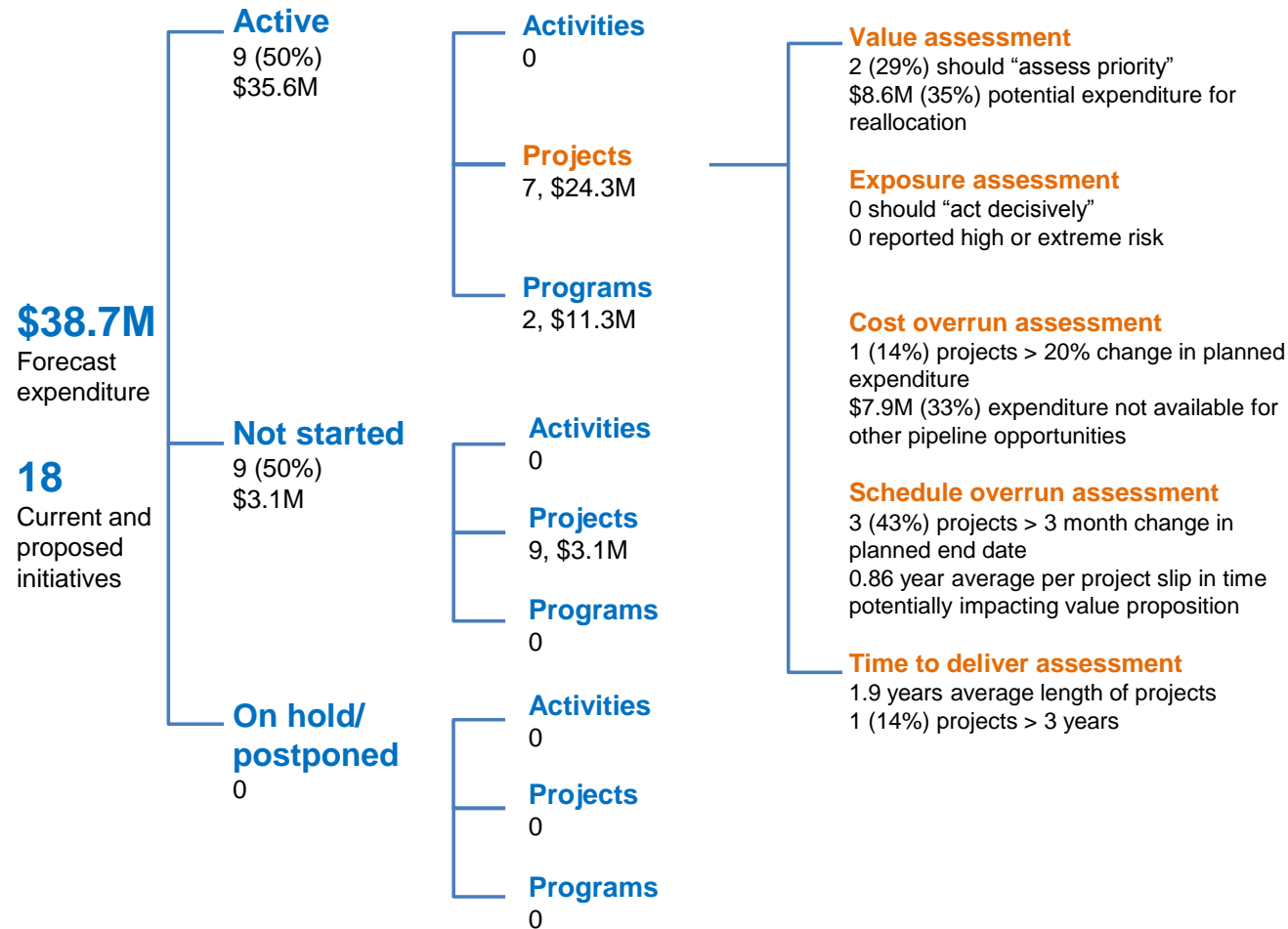
- Schedule overruns appear in line with whole-of-Government findings
- Time to deliver is greater than sector wide average, which QH indicates is due in part to a complex operational environment
- Most unfunded initiatives sector wide equating to \$1.6B forecast expenditure

Notable initiatives include:

- **QPAS – replacement /upgrade of Queensland Patient Administration System (HBCIS)** - noted as highest priority for QH, but still awaiting funding
- **SAPFIR** – due to exposure assessment, high expenditure and recent PwC review
- **ieMR program, GroupWise to Exchange, Cardiac information solution program** - active initiatives with forecast expenditure greater than \$10M each

QPS

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



Summary assessment

Overall agency findings show that:

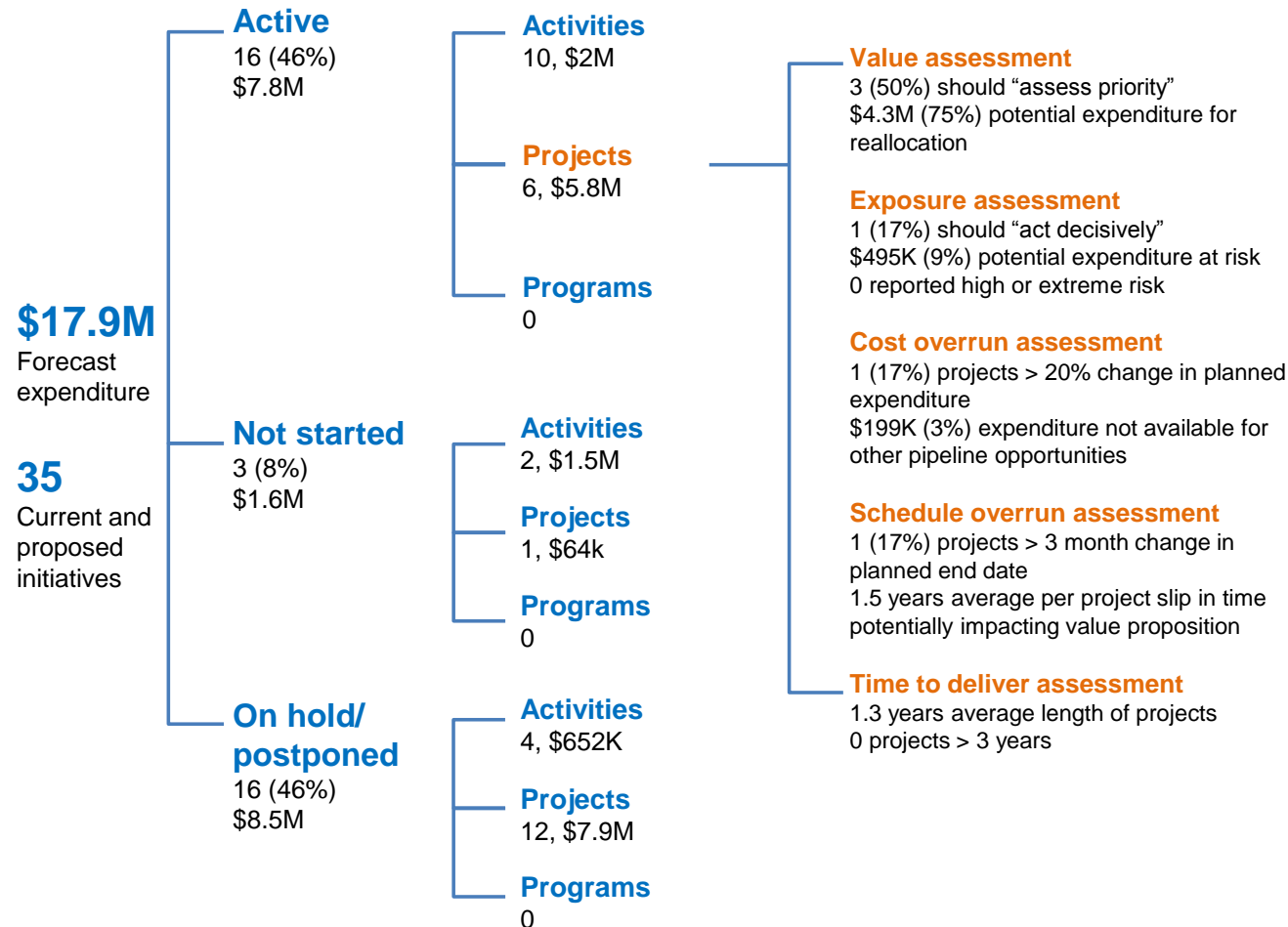
- There were no operational type activities reported, which understates the level of resources required for information management and security
- Decisions about initiative prioritisation visible and appear to be effective

Notable initiatives include:

- **Computer aided dispatch** - initiative with highest expenditure and highlighted as an initiative with appropriate rigour against the level of exposure
- **Weapons licensing** - high expenditure, design and newsworthy
- **Public safety frontline communications** – QPS contribution to Government Wireless Network

QTT

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates



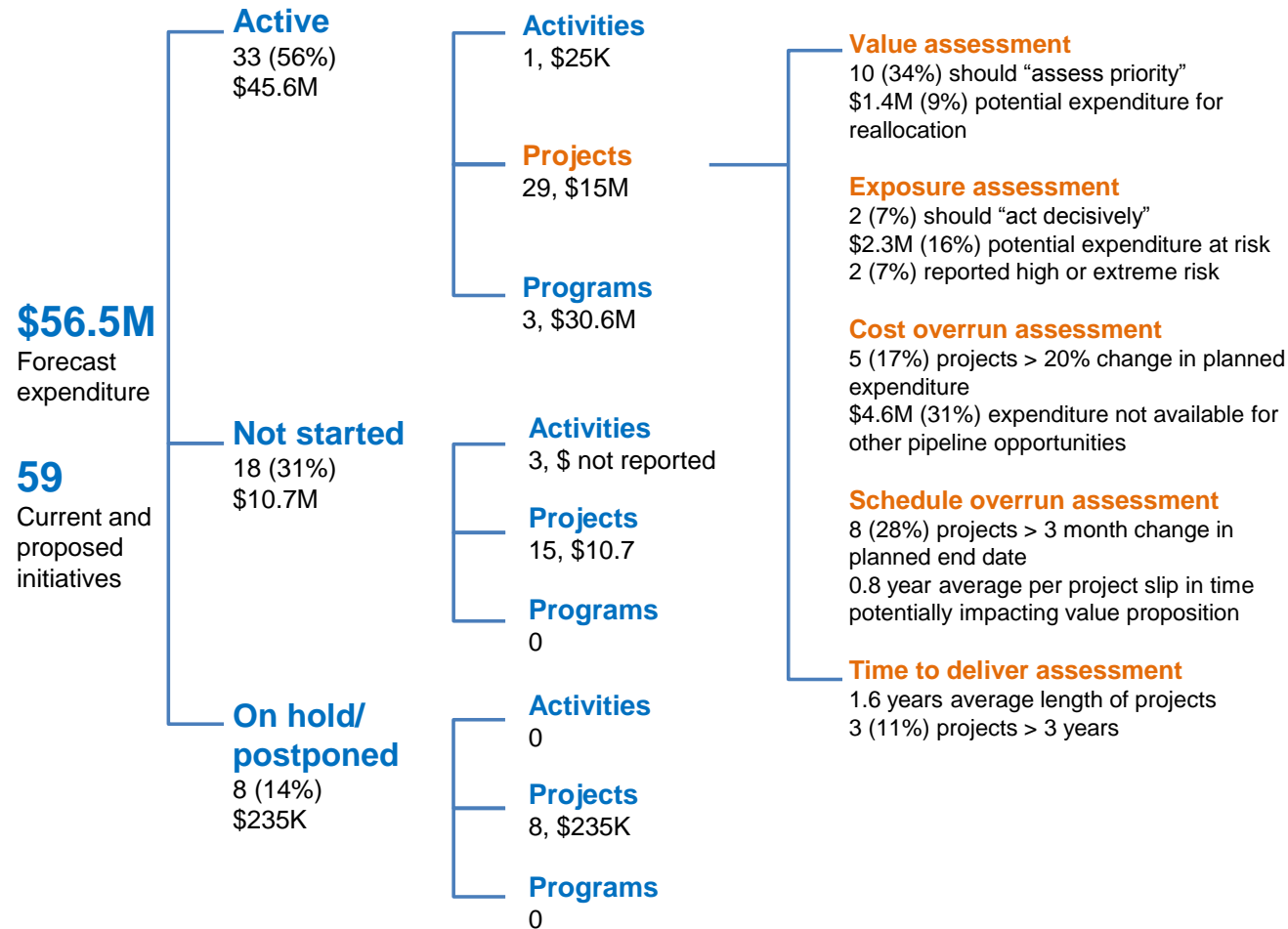
Summary assessment

Overall agency findings show that:

- Assessments appear to be misrepresenting QTT’s current position (e.g. business impact)
- Project condition was not reported for active grants initiatives

Notable initiatives include:

- **Royalties** - noteworthy due to focus around revenue collection and links with mining; reuse of existing RMS; recently successfully completed
- **Project link** - high expenditure; agile development by OIC with QTT IS support
- **3 grants projects** - noteworthy due to parallel grants activity through the Commission of Audit; in-house development based on reuse of RMS; newly established grants reference group



TMR

Point in time snapshot as of 1 Sept 2012
All figures are based on agency estimates

Summary assessment

Overall agency findings show that:

- Decisions about prioritisation not visible
- Limited reporting of IM and IS activities

Notable initiatives include:

- **CDOP intelligent traffic camera system** - TMR's highest cost initiative
- **Laboratory information management system (LIMS)** - example of long running initiative contributing to poor project outcomes

Appendix I – Top agency initiatives

This appendix provides an overview of 45 top agency initiatives. Although infrastructure projects or programs in some agencies are significant programs of work with high expenditure, these types of initiatives have been excluded to focus on applications that generally support transformational change.

Since the investment information entails ‘forward’ programs of work, current agency names are used (i.e. post machinery of government changes).

The top agency initiatives are ordered by total estimated expenditure.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
1.	QH	<p>QPAS - Replacement / Upgrade of Queensland Patient Administration System (HBCIS)</p> <p>HBCIS (Hospital Based Corporate Information System) is the current Patient Administration System (PAS) for Queensland Health and the primary system for registering and managing all patients. It is the largest corporate information system in use in Queensland Health. It incorporates eBilling capability</p>	<p>Not started</p> <p>Pre project stage</p> <p>Proposed funding</p>			\$438,800,000	\$438,800,000	Of QH unfunded initiatives, this is the highest priority.
2.	QH	<p>ieMR (Integrated electronic Medical Record) Program</p> <p>The ieMR program will deliver an authoritative single source of the patient record across the State. It will provide clinicians with the ability to:</p> <ul style="list-style-type: none"> • access information that is integrated, accurate and clinically relevant • support decision making and better use of information • optimise management of patients, resources and provision of services • deliver location independent diagnostic and treatment services • support interaction across a network of providers that enables providers to be located, information to be transferred and multidisciplinary providers to collaborate. collaborate. 	<p>Active</p> <p>In progress - managing program tranches</p> <p>Fully funded</p>	Oct 2009	Dec 2014	\$179,581,291	\$124,783,291	<p>Dependencies include:</p> <p>Availability of Simulation Centre;</p> <p>Ability to leverage messaging services, medical objects, argus and health-link;</p> <p>Enhancements to CDR;</p> <p>Integration of data from AUSLAB, eLMS, HBCIS, ORMIS, ICU CIS, EDIS, PACS and AARK;</p> <p>Availability of eMR Viewer; Availability of supporting infrastructure such as eMPI, Clinical Data Service, eOrder Management, eReferrals and Single Sign-On</p>

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
3.	QH	<p>Personally Controlled Electronic Health Record (PCEHR) Integration - National eHealth readiness</p> <p>COAG has invested significant funds in national eHealth infrastructure to underpin healthcare reform, including establishing the individual healthcare identifier service, the healthcare provider identifier service and acceleration of a national personally controlled electronic health record (PCEHR) system. A jurisdictional impact assessment (JIA) was undertaken for QH integration with the PCEHR. The key activities were: Sending of discharge summaries, event summaries, shared health summaries and specialist letters to the PCEHR; Viewing the PCEHR; Assisted consumer registration; Provider education and recruitment; Sending of pathology and Diagnostic Imaging result reports to the PCEHR; and Development of a PCEHR conformant repository.</p>	<p>Not started</p> <p>Pre project stage</p> <p>Funding source unknown at this stage</p>			\$140,370,526	\$140,370,526	National PCEHR and associated foundational eHealth projects
4.	DCS	<p>DCS HR Payroll Business Solution Program</p> <p>Business continuity for HR payroll services that provides a strong basis for workforce management. Projects include:</p> <ul style="list-style-type: none"> • SABA Upgrade • Electronic payslips • Operational Staff Recruitment Management System • Lattice Infrastructure Improvement 	<p>Active</p> <p>In progress - defining a program</p> <p>Fully funded</p>	Jul 2010	Jun 2016	\$104,563,717	\$101,500,000	The program has recently received funding approval. The Lattice Infrastructure Improvement Project has experienced inter-agency governance issues which have prolonged business exposure associated with old infrastructure. DCS have indicated that they will ensure accountability and strong governance for the program moving forward.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
5.	QH	RIP - Queensland Health Teleradiology Network Phase 2 The Queensland Health Teleradiology Network Phase 2 will extend the Radiology Informatics Program (RIP) to all Queensland Health hospitals.	Not started Pre project stage Funding source unknown at this stage			\$93,740,000	\$93,740,000	
6.	QH	SAP Assets Procurement Finance Information Resource (SAPFIR) Project The SAPFIR project involves the greenfield implementation of the latest version of SAP finance, materials management and plant maintenance modules (ECC6). This system will ensure that Queensland Health and its Local Health and Hospital Network (LHHN) are able to comply with statutory finance and performance requirements.	Active In progress - delivery stage Fully externally funded	Nov 2010	Jun 2014	\$79,736,000	\$70,052,000	This initiative was referred to as 'NHHN ICT Program' as part of last year's QH ICT Work Plan submission. To ensure continuation of data the project needs to be aware of configuration changes to systems that supply or extract data from FAMMIS, QH's current finance system. The Activity Based Funding (ABF) project will be making changes to enterprise and state-wide systems and may have additional requirements that impact this project.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
7.	DCCSDS	SIP - Growing Stronger ICT The project will implement capability that will enable the business to achieve their goals: a) BIS R3.2: Service catalogue, provider management, enhancements, reporting, Integrated and Transition Support Plan (excl. content), data migration. b) BIS R3.3: Provider management to support funding model, service inventory, full ISP and Transition ISP; functionality to support AS&RS, reporting, Register of need, data migration. c) BIS3.4: Functionality to support Community Care providers and contract management; functionality to support payments to providers; simplification of fee for service processing.	On-hold/ postponed Progress at 80% complete - in delivery stage Awaiting funding approval	Oct 2009	Jun 2013	\$59,722,826	\$7,000,000	
8.	QH	BreastScreen Queensland Digital Image System (BSQ) The project will deliver the ability to capture, store, distribute, view and interpret digital images and associated information electronically within the Breast Screen Services and potentially across the continuum of care.	Active In progress - delivery stage Fully funded through other funding source	Jul 2006	Dec 2012	\$35,716,000	\$1,821,000	This initiative has multiple funding sources. Only funding from ICT CAP have been reflected as it relates to actuals and forecasts. Migration of the BreastScreen Registry Application to a new platform (i.e. database, operating system and hardware).

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
9.	QPS	<p>Computer Aided Dispatch (CAD)</p> <p>Replace Computer Aided Dispatch (CAD) system(s) currently operational in the seven scoped Police Communications Centres (PCCs) with a modern, integrated and highly reliable CAD solution providing state-wide coverage on a single platform that aims to:</p> <ul style="list-style-type: none"> • Improve efficiencies in tasking frontline resources and response to calls for service • Reduce administrative burden for operational police in documenting occurrences • Enhance police and community safety through improved intelligence reporting • Enhance ability to respond to planned and unplanned events 	<p>Active</p> <p>In progress - delivery stage</p> <p>Fully internally funded</p>	Jul 2010	Jun 2013	\$35,123,000	\$8,292,000	<p>Three out of seven site implementations completed.</p> <p>Scope extended by two sites and inclusion of LCAD at stations and mobile MDT client.</p> <p>All delivery milestones met on schedule and below budget.</p>
10.	QH	<p>Primary and Community Care - Release 2 - Regional</p> <p>This initiative is an interim option and part two of a three-release journey. Far North Queensland is a challenging geographic and service delivery environment. This project will improve the eHealth infrastructure for primary and community care settings in regional far north Queensland. This initiative would reduce the fragmented nature of information systems currently in place, improve links with partner organisations and enable Queensland Health to participate flexibly and strongly in the changing national primary and community health care environment and the context of National Health Reform.</p>	<p>Not started</p> <p>Pre project</p> <p>Funding source unknown at this stage</p>			\$35,000,000	\$35,000,000	

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
11.	TMR	CDOP Intelligent Traffic Camera System (I-TCS) Program Replace the Traffic Camera Office (TCO) legacy Back Office System (BOS) with a digital Redflex Integrated Infringement Processing System (IIPS) BOS, and deliver proof of concept digital cameras for use by the TCO. The I-TCS Project is funded from the Camera Detected Offence Program (CDOP) and is in Stage 2 of a three Stage program.	Active In progress - managing program tranches Fully externally funded	Jun 2008	May 2013	\$34,954,666	\$14,996,103	
12.	QH	AARK (Automated Anaesthetic Record Keeping) Tranche 2 The Automated Anaesthetic (Perioperative) Record-Keeping (AARK) was initiated to deliver an integrated state wide anaesthetic record keeping solution which is an essential pre-requisite in enabling the State-wide Anaesthetic Network to implement good practice. Tranche 2 of AARK will complete: a) rollout of the procedural and recovery module for the remaining 12 hospitals within Queensland (Beaudesert, Cunnamulla, Miles, Theodore, The Prince Charles, Royal Children's, Robina, Gold Coast, Mater, Noosa, Queensland Children's Hospital and the new Sunshine Coast Hospital). b) rollout the pre-procedural clinical assessment module to tranche 1 and 2 hospitals; c) rollout the acute pain module to tranche 1 and 2 hospitals; d) commission the enterprise database.	Not started Pre project Funding source unknown at this stage			\$33,500,000	\$33,500,000	

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
13.	QPS	Weapons Licensing Management System The WLMS Project is implementing a new weapons licensing system which is planned to be delivered in three stages with a view to streamlining processes and providing efficiency of service to licence holders, firearm dealers and shooting clubs. Stage 1, delivery of the new WLMS, essentially a mandatory end-of-life replacement activity for 3 legacy systems. Stage 2, delivering an internet service for the public to be able to apply and pay for licence and weapon applications on-line (including Permits To Acquire (PTAs)).	Active In progress - delivery stage Fully internally funded	Jan 2010	Aug 2012	\$19,617,433	\$2,955,000	During agency consultation, the project team advised that on-line forms will go live in mid-November; and (stage 2) project will be closed by the end of December 2012. Stage 3 will be considered at a later time when other priorities (e.g. GWN for G20) have been addressed.
14.	DTESB	Online Services Program formerly Integrated Services Delivery eBusiness Implement a franchise model for business and industry on-line service delivery.	Active In progress - managing program tranches Fully internally funded	Nov 2010	Dec 2014	\$16,400,000	\$3,400,000	Program is delivering the Business and Industry Franchise for WoG (www.business.qld.gov.au)
15.	DNRM	Streamlining Business Systems Program formerly Streamline Tenure Approvals Streamline the lifecycle of mining and petroleum permits to: reduce time taken for permit approval; improve transparency and certainty for government and the industry; and reduce cost of service delivery for government and industry. Projects include: • Mines Online Geographic Information System (Mines Online GIS) • Exploration Permit - Minerals (EPM)	Active In progress - managing program tranches Fully funded	Jul 2009	Jan 2016	\$16,318,000	\$13,602,000	Dependencies on legislative change, industry cooperation, business transformation

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
16.	DETE	ERP6 Project DETE to implement an ERP6 SAP finance instance separate from the current whole-of-government instance, configured to meet DETE's specific requirements.	Active In planning - initiation stage Awaiting internal funding approval	Jan 2012	Aug 2013	\$15,942,702	\$15,000,000	ICT Control - Shared with Finance
17.	DJAG	BDM Digitisation The foundation Digitisation project will image the Registry's 6 million records and source documents (in physical form) and fully transcribe 2.5 million of the most frequently accessed birth, death and marriage records to establish a full electronic repository. The tender for the outsourced work was awarded in October 2011 and delivery will commence from June 2012. The contractor is Salmat Limited, an Australian incorporated company. Imaged and transcribed records will be provided to the Registry on secure hard drive, checked for accuracy and uploaded into the Registry's production life event system.	Active In planning - initiation stage Fully funded	Jul 2009	Dec 2014	\$14,082,000	\$13,192,000	
18.	DCS	Triple Zero Statewide Telephony Implementation of new 000 emergency telephony system to provide increased call taking management and business continuity capability for QAS Communications Centres.	Active In progress - delivery stage Fully internally funded	Mar 2010	Jun 2015	\$13,300,000	\$9,992,000	Dependency with Communications Centre Modernisation Project ECM is limited to \$13.3M

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
19.	DCCSDS	Document and Record Management Program The DRMP will provide a consistent and seamless approach to document and records management that will enable improved frontline service delivery through better information sharing as well as ensuring the department's recordkeeping complies with relevant legislation. The introduction of a single eDRMS will mitigate the legislative, environmental, financial and frontline service delivery risks the department faces through current documents and records management practices, as well as improving client services through frontline staff having easier access, improved availability and greater visibility of departmental document and records.	On-hold/ postponed Progress at 26% complete - during managing program tranches Awaiting internal funding approval	Nov 2010	Jun 2016	\$12,621,986	\$10,330,000	
20.	QH	Public Health Information and Clinical Services Solution (PHICSS) The objective of the PHICSS project is to procure and implement an enterprise 'paperless' electronic medical record into these sites. It includes migration of a limited set of core client data from disparate legacy applications and where necessary, additional equipment to support a paperless clinical consulting environment.	Active In progress - delivery stage Fully funded through other funding source	Nov 2007	Apr 2013	\$11,312,000	\$2,395,405	This initiative has multiple funding sources. Only funding from ICT CAP have been reflected as it relates to actuals and forecasts Dependencies on AUSLAB/LISS and Private pathology providers; External Connectivity Project; eVici Interface

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
21.	QH	Cardiac Information Solution Program (CISP) The Cardiac Information Solutions Program (CISP) is an initiative of the State-wide Cardiac Clinical Network (SCCN) in partnership with the Information Division eHealth Program and hosted by RBWH Information Technology Services. The CISP is a multiyear program of work initiated to meet the objectives of the SCCN to resolve information management barriers to the provision of safe, effective and efficient cardiac clinical care within Queensland Health. Projects include: CCL Heartlab project - Cardiac Image and Reporting System CCCR project - Central Cardiac Data Registry	Active In progress - delivery stage Fully funded through other funding source	Jan 2010	Nov 2013	\$11,290,000	\$10,137,000	This initiative has multiple funding sources. Only funding from ICT CAP have been reflected as it relates to actuals and forecasts Dependencies on Radiology Informatics Program; Telecommunications and Connectivity Program; Processing & Storage Program
22.	QH	ICU CIS (Intensive Care Unit Clinical Information System) Stage 1 ICU CIS is an enterprise clinical information system that will provide a comprehensive intensive care unit medical record and clinical data repository that is specifically designed for the Queensland Health intensive care unit environment. This initiative is a current in-flight project that has procured a solution and is currently implementing into sites that are categorised as Clinical Services Capability Framework (CSCF) level 6 intensive care services. (Original scope 4 sites. eHPB approved additional 2 sites, April 2012, total 6 sites). In July 2012 the ICU CIS Project Board approved the extension of the project into Stage 7.	Active In progress - delivery stage Fully internally funded	Jul 2007	Mar 2013	\$10,782,000	\$998,000	Project is dependent on the data within these related initiatives: Anaesthetic Clinical Information System (AARK); Server Virtualisation Project; Establishment of the Queensland Children's Hospital; AusLAB, Client Directory, HBCIS, CDR, EDS, and ePADT; Inter-district infrastructure projects such as WAN link capacity and security conducted by the Telecommunications Program (TCP).

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
23.	DETE	Curriculum Into the Classroom To support school staff implement the Australian Curriculum released in late 2010. The project seeks to simplify the curriculum planning process further, by clearly articulating the core knowledge and understandings outlined in the AC and providing quality assured unit and lesson plans (developed for teachers by teachers) that will clarify for staff exactly what is required to be taught resulting in time saving.	Active In progress - delivery stage Fully internally funded	Feb 2011	Jun 2013	\$10,457,000	\$1,400,000	Responsibility transferred to Education Qld (corporate unit) with recent organisational restructure. Involves curriculum development - will be delivered using existing investment in core ICT systems. Cost of content development unknown. Cost includes full project lifecycle costs.
24.	DETE	VET Purchasing Solution Development of a Training Purchasing System (TPS) for managing VET procurement and migration of the current TPS into a flexible, user friendly system that meets the requirements of DET enterprise architecture.	On-hold/postponed Progress at 50% complete - delivery stage Partially internally funded	Dec 2009	Mar 2013	\$9,059,886	\$100,000	
25.	DCS	All Hazards Information Management Program Build the capability of Disaster Management agencies, stakeholders and the community to ensure they are prepared and capable of effectively responding to a disaster. Dependencies include all frontline communications projects, including relevant Queensland Police Service initiatives. Projects include, Disaster Management Portal Project, Emergency Virtual Operations Centre Project, All Hazards Public Engagement Project.	Active In progress - managing program tranches Fully funded	Apr 2011	Jun 2013	\$8,101,223	\$3,565,133	Dependency on all frontline communications projects including relevant Queensland Police Service initiative. Resourcing limitations associated with the EMP process. High level of cooperation with external agencies including local government, utilities, NGOs.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
26.	HPW	iSPACE To purchase and implement a commercial off-the-shelf system that supports the planning, design, management and utilisation of the Queensland Government's real estate portfolio. The system will replace existing systems.	Active In progress - delivery stage Fully internally funded	Apr 2011	Apr 2013	\$7,458,429	\$4,844,182	
27.	QSS	Aurion Upgrade Aurion version 9 has been on extended maintenance since 2002. The current extended support expires in July 2012. Negotiation of support on this version will be required at additional cost if migration to the current version 10 offering is not complete by this time. Legislative obligations will not be met if either of these requirements is not met in this timeframe. The ACE solution is currently responsible for paying 8,000 employees. It is also a target environment to receive a number of separate instances of Aurion in the near future. This upgrade has a number of downstream dependencies that also have similar requirements.	Active In planning - initiation stage Fully funded	Oct 2011	Sep 2013	\$7,030,830	\$6,390,477	
28.	DETE	SAP BI Project DETE to engage an implementation partner to work with the business to configure and implement a business intelligence capability taking advantage of the DETE configured ERP6 SAP instance.	Active In planning - initiation stage Awaiting internal funding approval	Jan 2012	Sep 2013	\$6,674,391	\$6,425,000	ICT Control - Shared with Finance

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
29.	TMR	Laboratory Information Management System (LIMS) The LIMS project will deliver a core business solution for TMR's Materials Services Branch and regional laboratories. The solution will be used to manage materials testing activities and will replace and consolidate existing legacy systems into one single state-wide system.	Active In progress - delivery stage Fully externally funded	Jul 2007	Nov 2012	\$6,239,222	\$2,189,222	Financial benefits only realised if rolled out to industry. Approved project budget has been up to \$11.7M but has recently been reduced along with scope to comply with recent government priority changes.
30.	QPS	Enhance QPRIME User Interface To maximise QPRIME usability and quality through system and process improvement. EQUIP - NC5 will deliver a new method of data entry for front line operational police that is streamlined and targets specific policing activities in QPRIME.	Active In progress - delivery stage Partially internally funded	Oct 2010	Dec 2013	\$5,667,000	\$2,889,000	Lite PID exists (rather than Business Case).
31.	DETE	The Solution Series (TSS) Payroll Refresh A TSS payroll system software and hardware refresh to ensure continued operation until beyond 2015.	Active In planning - initiation stage Awaiting internal funding approval	May 2012	Jun 2013	\$5,620,000	\$5,600,000	

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
32.	QH	Credentialing Implement a state-wide credentialing information repository and provide financial assistance to Districts to procure local credentialing solutions to improve the efficiency and effectiveness of the credentialing process and provision of a central repository of eligible medical and dental practitioner Clinical Scope of Practice.	Active In planning - initiation stage Fully internally funded	Oct 2010	Jun 2014	\$5,580,000	\$5,580,000	
33.	DETE	Learning Management System Business Continuity TAFE Queensland has a requirement to provide business continuity in the provision of e-learning capability when the current contractual arrangements expire in Sept 2013. This is being done in conjunction with Education Queensland (corporate office) to provide the opportunity for establishing a shared licensing arrangement and optimised financial benefit for the Queensland Government.	On-hold/postponed Progress at 10% complete - pre project stage Awaiting internal funding approval	Mar 2012	Jun 2015	\$5,066,369	\$5,026,369	
34.	DNPRSR	ParkInfo v2.0 The ParkInfo system will manage the Queensland Parks and Wildlife Service (QPWS) estate through providing a portal to present, capture, integrate, and interact with the full range of QPWS data.	Active In progress - delivery stage Fully internally funded	Oct 2010	Jun 2013	\$4,713,981	\$1,420,981	October 2010, when contract was signed, is now considered the start date. However, the Business Case was first raised in September 2007. All figures relate to the later date.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
35.	QH	MAIS (Medical Aids Information System) This project is to streamline business processes, increase efficiency and decrease time to complete transactions. This will decrease the amount of time the patient needs to wait (by approx. 50%) for the service and improve the collection of accurate data for planning purposes. This application supports the Medical Aid Subsidy scheme which is a state-wide service for the provisions of aids and equipment and processes in excess of 120,000 requests for medial aids each financial year. The new database will automate many manual functions including electronic/online application submission function, track status of the application, interface to SAP to eliminate double entry of orders.	On-hold/ postponed Progress at 10% complete - in planning stage Proposed internal funding source	Sep 2008		\$4,117,000	\$3,574,000	
36.	QTT	Royalties Implementation of Mining Royalties into RMS	Active In progress - delivery stage Fully internally funded	Oct 2011	Nov 2012	\$3,825,000	\$1,840,000	New project/activity due to machinery of Government change

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
37.	TMR	131940 The 131940 system is a comprehensive system that collects data from disparate systems, provides a single source of truth for traffic and travel information that provides information to TMR, other authorised agencies and the people of Queensland through a variety of mediums. The 131940 system has been evolving for several years and is now a mature system that potentially requires redevelopment in light of its changing role in the community.	Active In progress - delivery stage Fully externally funded	Jul 2011	Oct 2012	\$3,808,833	\$1,342,606	A single integrator contract finalised by 1 October 2012. Service transition from Road Corridor use to Information Division to be completed by 1 September 2012.
38.	DPC	eLegislation WoG access to legislation	Active In planning - initiation stage Fully funded	Jul 2011	Dec 2013	\$3,805,591	\$3,500,000	
39.	DETE	eLearning for special needs student The eLearning for special needs students election commitment will provide tablets for use by students with special needs directly to State Special Schools, State Schools and non-government schools with special education programs.	Active In progress - delivery stage	Apr 2012	Dec 2012	\$3,505,000	\$3,500,000	Ongoing costs still to be determined
40.	DNRM	ATS Client Modernisation (ATS-CM) Develop and implement a new software platform for the Automated Titles System (ATS) to address non-support for the existing platform from 2015. This is identified as high risk under the government's software currency framework.	On-hold/ postponed No progress - in pre project stage	Aug 2012	Oct 2013	\$3,500,000	\$3,500,000	Submission documentation only. Update: 9-Aug-12 - Minimal work is being undertaken, just enough to keep some momentum given the high risk nature of the software currency issue and the significance of ATS to Queensland Government revenue.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
41.	DCCSDS	CarePay Program The Carepay system is the system utilised for Foster and Kinship Carer allowances. The system has been identified through the ICT Baseline Process as a candidate for replacement due to the age and risk associated with its underlying platform.	On-hold/ postponed Progress at 30% complete - during managing program tranches	Nov 2011	Jun 2013	\$3,439,593	\$3,143,000	Constraint is that Carepay solution should interact with ICMS platform
42.	SSQ	QGov Online Program The Franchise Implementation Project is the overarching project required to complete the QGov Online Program of Work—to deliver a seamless customer-centric online service delivery channel for the Queensland Government. This is being achieved using the franchise model, different agencies take a lead role for a sub-section of www.qld.gov.au (a 'franchise') but deliver a seamless experience by following a central set of defined processes and tools for its delivery and maintenance.	Active In progress - managing program tranches Partially internally funded	Apr 2011	Dec 2014	\$3,182,753	\$750,000	An options paper undertaken which led to a mandate of QGOV online supports the single entry point for citizens within the online channel for whole-of-government. Dependent on the ability of franchise owners to adequately resource franchise teams to undertake appropriate customer research, content editing and publishing and stakeholder engagement. Program continuation and completion also dependent on allocation of funding internally from Smart Service Queensland. Budget for this overarching program of work covers projects - Franchise Implementation Tranche 2 and Franchise Implementation Tranche 3.

	Post MOG agency	Initiative and description	Status	Start date	End date	Total estimated expenditure	Expenditure remaining	Comments
43.	DETE	ECEC Grants Management Solution The scope of the project is to replace the current ECEC grants applications with a contemporary Grants Management Solution to manage the end-to-end process of the grants lifecycle in ECEC. As a result of the Universal Access to Kindergarten legislation and other initiatives, the ECEC anticipates funding approximately 2,000 service providers in the next four years and \$90 million recurrent and capital grants per year, by 2014. The current solution to manage grants relies on a legacy bespoke application from DCCSDS that is non-compliant with DETE's Enterprise Architecture and does not have the capability to meet the current or future business requirements.	Active In progress - delivery stage	Feb 2011	Jan 2013	\$2,351,405	\$705,000	
44.	QTT	Project Link formerly PCS/PCMS replacement Replace the Claims Management systems (PCS and PCMS) used by the Office of the Insurance Commissioner (OIC) and its statutory authorities. The project will identify, procure and implement an insurance focussed business system that will provide efficient and comprehensive functionality to support industry best practice processes, for both the CTP scheme and general insurance, in a 'leading edge' or 'state-of-the-art' software package.	Active In progress - delivery stage Fully funded through other funding source	Mar 2012	Dec 2013	\$2,000,000	\$1,860,000	
45.	DSITIA - CITEC	Public Safety Frontline Communications The GWN will deliver a state-wide digital communications network for mobile voice and data for all operational public safety personnel.	Active In early planning	May 2012	TBA	TBA	TBA	This is a multi-agency initiative led by DSITIA that includes QPS and DCS. A request for expression of interest was released to industry in October 2012.