Monitoring and managing ICT projects

Report 1: 2018–19

Queensland
Audit Office

Better public services

Content

Audit objective and scope

The Queensland Government launched its information and communications technology (ICT) dashboard in 2013. This dashboard presents information about major ICT projects that departments undertake and allows the departments to communicate with the public about how well they are running their ICT projects.

The Queensland Government Chief Information Office (QGCIO) has defined ICT and ICT-enabled projects as any initiatives requiring information technology and or communications technology to realise outputs, outcomes, and/or benefits.

In this audit, we explore whether monitoring projects at the departmental and whole-of-government levels have improved successful delivery of ICT programs and projects. We assess whether the:

- ICT dashboard is a reliable source of information and has increased transparency of how departments are running their projects

- whole-of-government assurance processes are improving departmental skill levels in monitoring and managing ICT projects

- governance processes for one program—Human Resources Information Solutions (HRIS)—and one completed project—My Development Assessment System (MyDAS)—were effective.

Our scope included detailed review and analysis of the ICT dashboard. We also surveyed all departmental chief information officers on their use of the ICT dashboard.

Appendix B contains more information about audit objectives and methods.

Key facts

'$5.4 billion is wasted in Australia alone on projects that don't deliver a benefit' (INTHEBLACK, 1 November 2016)

The estimated cost of projects currently underway and reported on the Queensland ICT dashboard is $1.3 billion

The Queensland Government plans to spend $2.6 billion on ICT projects over the next four years

'67 per cent of companies fail to terminate unsuccessful projects' (Harvard Business review, September 2011)

18 per cent of the projects reported on the Queensland ICT dashboard have been in delivery phase for more than three years

Introduction

In this section, we outline the three areas of scope for this audit.

The ICT dashboard

In 2013, in response to some high-profile information and community technology (ICT) project failures, the Queensland Government announced that departments would provide high-level overviews and status updates of major ICT investments through an ICT dashboard. The target audience for the dashboard is the public.

The ICT dashboard is intended to make information easily accessible, visible, and available for use by the public in a timely manner. This is also intended to make it easier to identify underperforming projects and to focus action on the projects that need it most.

Stage two of the dashboard was intended to report progress against the *Queensland Government ICT strategy 2013–17* (the ICT strategy). However, the Queensland Government Chief Information Office (QGCIO) did not receive approval to progress to stage two. The Queensland Government then replaced the ICT strategy with a digital strategy—*DIGITAL1ST Advancing our digital future* (the DIGITAL1ST strategy).

This strategy aims to modernise and deliver digital services to the public as well as to other government departments. The QGCIO is now working on the next release of the ICT dashboard, which will report on how projects align with the DIGITAL1ST strategy.

The QGCIO has published guidelines to help departments decide which projects to report on the ICT dashboard. The guidelines are not prescriptive, but the QGCIO recommends that, at a minimum, departments report projects that meet any of their seven criteria. (For example, one of the QGCIO's criteria suggests departments publish projects that have planned expenditure of $100 000 or greater.)

Currently, departments have reported ICT programs and projects with an estimated total cost of $1.3 billion, as shown in Figure A.

Figure A
Snapshot of the Queensland ICT dashboard on 23 April 2018
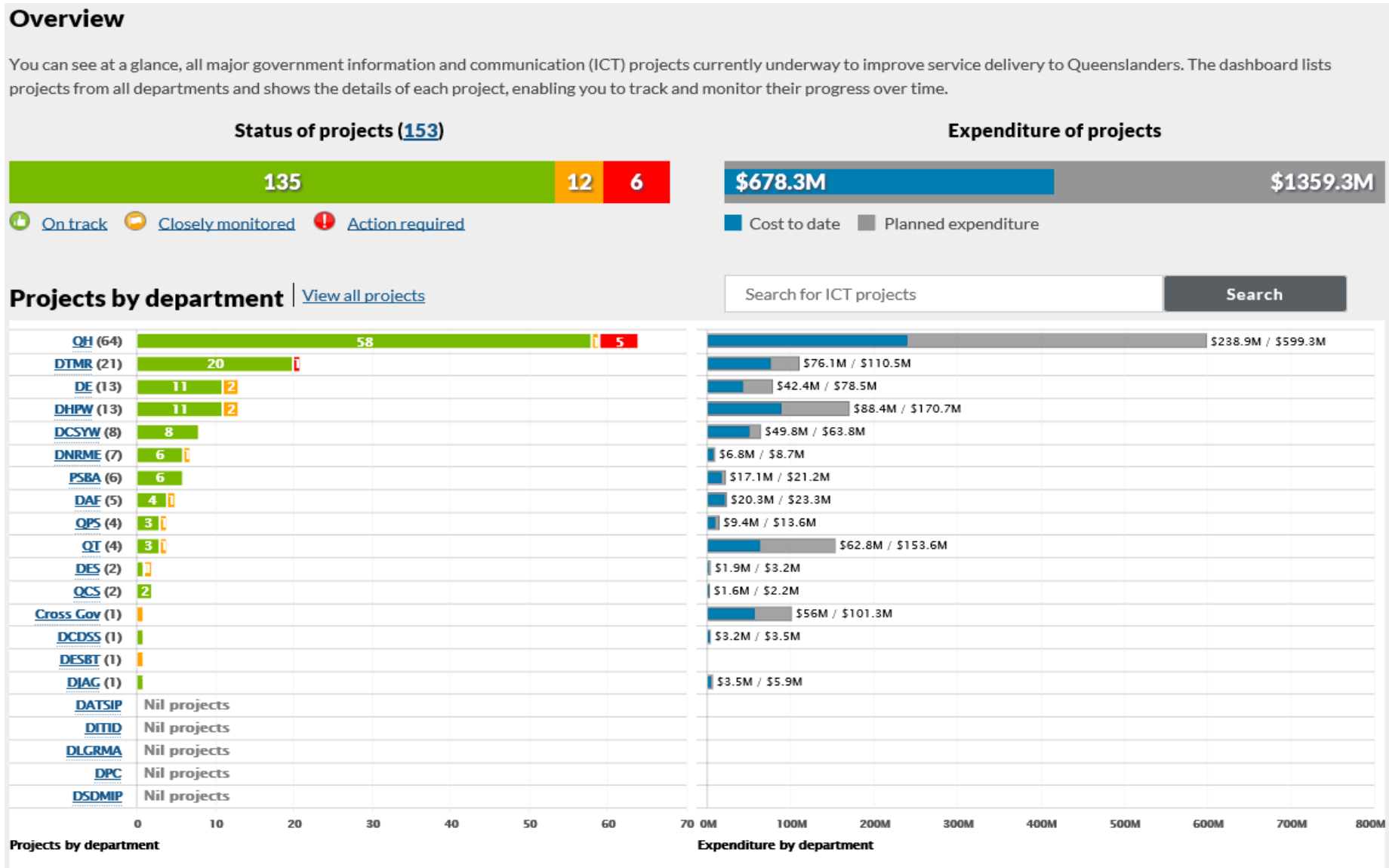
Source: Queensland Government Chief Information Office.

While the QGCIO is the custodian of the ICT dashboard, each department is responsible for publishing data about its own ICT programs and projects. (A program is a set of related projects that collectively deliver on common strategic outcomes.)

Monitoring and assurance of ICT programs and projects

Each department is accountable for making investment decisions and monitoring and delivering on its investments—including its ICT projects and programs. This is a legislative requirement.

Entities at the whole-of-government level, such as the QGCIO, which is part of the Department of Housing and Public Works (since January 2018), and the ICT Director-General Council also play significant roles in providing assurance and oversight of investments in ICT projects.

The QGCIO has developed standards and methodologies, and established investment review and assurance processes at the whole-of-government level. These processes supplement departmental governance in monitoring and managing ICT programs and projects. The QGCIO also uses these processes to provide support to the ICT Director-General Council.

The ICT Director-General Council provides oversight and advice to the departmental directors-general on applying ICT to their business. It reviews all requests for funding major ICT-enabled programs and projects.

Departments use Queensland Treasury's Project Assessment Framework to undertake reviews of programs and projects at important decision points/project milestones. These are called 'gate reviews'. These reviews confirm whether the project meets the criteria to pass a gate. Figure B describes the points at which gate reviews should occur and the purpose of the gates. (Gate 0 relates to programs and gates 1 to 5 are for projects.)

Figure B
Gate review points

Program and project assurance gates
Gate 0: Strategic assessment—to confirm the program has strategic outcomes with good governance
Gate 1: Preliminary evaluation of project—to confirm that stakeholders approve intended benefits
Gate 2: Readiness for market—to examine the project's business case and procurement strategy
Gate 3: Investment decision—to confirm the project is still required, affordable, and achievable
Gate 4: Readiness for service—to confirm business is ready to use the solution
Gate 5: Benefits realisation—to confirm that project benefits are actively managed

Source: Queensland Treasury Project Assessment Framework and Queensland Audit Office.

Under the investment review process, the ICT Director-General Council advises on two of the gate reviews:

- strategic assessments of programs (Gate 0), which report on whether programs are in line with strategic directions and intended outcomes

- investment decision of project (Gate 3), which report on whether projects have a business case and whether the options that will deliver the most value have been selected.

In addition to the gate reviews, departments can commission project assurance reviews or project health checks at any time within the lifecycle of the project. The purpose of project assurance or project health checks is to provide an objective assessment of the project—including any early warning signs that would indicate if a project is at risk of not meeting its objectives or not reaching the next gate within time and budget.

Monitoring the HRIS program and the MyDAS projects

The Human Resource Information Solutions (HRIS) is a $101 million project intended to replace the Lattice payroll system and human capital management solutions within four entities. These entities are Queensland Fire and Emergency Services, Inspector-General Emergency Management, Queensland Corrective Services, and the Department of Health (Queensland Ambulance Service).

The program started in September 2010 and has continued despite many organisational restructures, changes in government policy, and changes in machinery of government (which is when government changes how it structures its departments).

Responsibility for the program moved from the Public Safety Business Agency to the then Department of Science, Information Technology and Innovation (DSITI) in December 2016. Since the machinery of government changes in January 2018, the program now reports to the Department of Housing and Public Works.

The My Development Assessment System (MyDAS) project is a series of projects (MyDAS, MyDAS2 and MyDAS2 commencement), which together cost around $14 million. The current version of the system, MyDAS2, allows applicants to lodge development applications where the state is the assessment manager or a referral agency. The projects spanned more than three years—as follows:

- The then Department of State Development, Infrastructure and Planning started the MyDAS project in January 2013 and delivered it, as planned, in July 2013. However, the system had many problems at this stage. Users and staff found it challenging to use the system.

- The then Department of State Development, Infrastructure and Planning started a new project in January 2014 and the then Department of Infrastructure, Local Government and Planning (DILGP) closed it in December 2015. DILGP had commissioned a review of the project and had taken steps to bring the project back on track, but the project did not deliver a fully functioning system.

- DILGP started a new project in January 2016, and it used the application developed in the previous projects to deliver the current, working system in July 2017. The project team implemented learnings from previous projects and recommendations from project review reports.

Summary of audit findings

Is the ICT dashboard a reliable source of information?

The ICT dashboard (the dashboard) has made it easier to keep abreast of what is happening with major ICT projects across departments. This information was not publicly available before the Queensland Government Chief Information Officer (QGCIO) introduced the dashboard. To this end, the dashboard has met some of its objectives, as it allows the public and industry to readily access a single view of the departments' portfolio of major ICT projects and their status.

However, for the dashboard to be a reliable source of information, there needs to be improvements in:

- ensuring that the dashboard contains a complete list of all major ICT or ICT-enabled projects across departments

- accurately reporting relevant information that provides sufficient insights into how projects are progressing, changing throughout their lifecycle, and delivering outputs and outcomes

- publishing timely data, including trends in project performance over time.

These three points are covered in more detail in the following paragraphs.

Completeness

The QGCIO has developed and communicated comprehensive guidelines for departments to use when deciding which projects to report on the dashboard. However, it is not mandatory for departments to comply with these guidelines. As a result, the dashboard does not include all projects that meet the guidelines.

In this audit, we identified 32 projects, with a total planned expenditure of $161.4 million, that were not on the dashboard, but met the QGCIO guidelines. Departments did not publish these projects mainly because they:

- have publishing guidelines that are different to those of the QGCIO

- have their own interpretation of what a major ICT project is

- had a breakdown in internal processes.

Some departments consider that the $100 000 criteria for publishing projects on the dashboard is too low in the current economic environment. These departments have established their own, much higher reporting thresholds. (One department has set a $1 million threshold for publishing.)

In addition, the dashboard does not include projects in the 'initiate' stage. This is because the QGCIO's publishing guidelines specifically exclude projects in this stage. We found at least 24 projects, with a total planned expenditure of $109 million, that departments considered to be in the initiate stage. These projects either started more than a year ago or are more than 10 per cent complete. Under the current arrangement, none of them has to be published on the dashboard.

Relevance and accuracy

While departments have processes in place to review the information they publish, we found some content and quality control gaps. We found gaps in some projects' explanatory notes, and it was not always evident when changes were made to the original scope, cost, and schedule, which is known as the 'baseline'.

The baseline represents the standard that is used to measure the performance of the project. Once the project starts, any changes to the baseline need to be appropriately approved through formal project change control processes.

Sixty of the 161 projects currently on the dashboard did not have enough explanatory notes about key decisions and major changes that occurred throughout their lifecycle. We also noted that the dashboard does not display information on how complete the projects are (as a percentage) or what deliverables and outputs they have achieved. Sometimes, projects close without achieving their outcomes and/or are replaced by another project. This information is not easily accessible from the dashboard. This makes it difficult to assess whether departments are realising value for money.

We found that at least 18 per cent of the projects on the dashboard have been in a delivery stage for more than three years and that 69 per cent of these have been re-baselined (that is, changes have been made to either scope, cost or schedule). While departments report the revised time and cost, they show these projects as being on track. This is because their governance bodies have approved the re-baselining.

This increases the risk that projects will go on for a much longer time than originally planned. This is not easily recognised from the dashboard, which only provides point-in-time information.

In addition, the dashboard does not have in-built automated controls or rules to validate data on entry. This increases the risk of errors not being detected when information is entered into the dashboard. It also means that departments can make changes to information when they shouldn't. For example, the dashboard guidelines require departments to record their original budgets on the dashboard, and these are to remain unchanged. However, there are no controls to prevent users from altering the original details of the project.

Timeliness and comparability

Most departments publish their data in accordance with the QGCIO guidelines (with an average time delay of 42 days). However, some of the data is more than 60 days old. (We measured the timeliness of data published from January 2015 to January 2018). Each department has its own processes for collecting, collating, and publishing data on the dashboard, and some of these processes are time consuming.

In addition, there are inconsistencies in the types of information reported on the dashboard. For example:

- One department reported the planned cost of a project as the approved budget amount, while others reported the planned cost as the total expected cost of the project.

- Some initiatives are reported as programs and some as projects, with no facility to link projects to their respective programs or to whole-of-government ICT strategies.

Are whole-of-government assurance processes effective?

At the whole-of-government level, the ICT Director-General Council (the council) reviews investment and oversees assurance for those projects with high business impact. These processes are not working as effectively as they could in terms of the:

- investment review process—the council is responsible for reviewing investments for all high business impact projects. However, QGCIO has not clearly defined the term 'high business impact'. It has provided guidelines that departments may interpret differently, and there is a risk that departments may bypass the investment review process.

  In addition, neither the council nor the QGCIO has developed performance indicators to assess whether the investment review process is improving the delivery of ICT programs.

- assurance review process—the council is responsible for overseeing the assurance review process for high business impact projects. The QGCIO prepares the assurance information for the council to review. While programs and projects submit their assurance plans, the QGCIO does not always follow up when departments don't undertake assurance reviews on time. This means departmental and whole-of-government governance processes may miss early warning signs that a project is not on schedule.

Departments are aware of the gate reviews they are required to undertake. These reviews provide assurance that a project is on track to meet strategic outcomes and is achievable (as long as it implements the recommendations from the reviews). These reviews are important elements of project control.

However, projects often face challenges before reaching the gates for the reviews. For the projects and the program we audited, we found that project health checks (before the gate reviews) were useful tools in highlighting risks and recommending ways to bring projects back on track. The QGCIO could consider including project assurance reviews and/or project health checks, that provide an objective assessment of whether it is likely that the project will achieve its objectives, as complementary controls for all projects with high business impact.

While the QGCIO collates assurance reports from the gate reviews and publishes lessons learnt (with identifying details removed), it does not analyse the reports to see if there were warning signs for projects that failed.

It does not have a process to report on projects that don't address known project risks (risks that have occurred in the past in other ICT projects). As a result, the same or similar risks, already documented for high-profile project failures, materialise in new projects. This results in repeat control failures that impact on multiple projects.

The QGCIO is also not analysing ICT project performance information to determine whether the rate of success is improving over time. For example, there is no measurement and reporting at an overall project portfolio level of:

- projects with high business impact that are in departmental work plans and have bypassed the investment review process

- whether projects that underwent investment review are achieving the intended outcomes and are contributing towards the Queensland Government digital strategy

- number and type of assurance reviews and their contribution to success of projects.

This type of information would be helpful in determining if improvements to governance and assurance processes are effective.

How well are departments monitoring and managing ICT programs and projects?

The HRIS program and MyDAS project went through long, drawn-out processes before delivering functional systems. While the program governance structures were appropriate for the size and nature of the program/project, they were not effective in terms of making timely decisions to maintain high productivity throughout the lifespan of the program/project. (While HRIS is an ongoing program, currently planned to complete in December 2019, the MyDAS project is complete.)

Both HRIS and MyDAS used a QGCIO-endorsed project management methodology (PRINCE2) for their program/projects, and both improved in terms of managing and delivering over time. They had differing areas in which their methodology could have been improved, and both shared information about their challenges on the dashboard.

HRIS

This program was heavily influenced by organisational restructures and by changes in policies regarding outsourcing of services. This led to delays in decision-making, which in turn increased costs. The business cases for this program were developed after the decisions about its approach were already made (by government). As a result, the business cases were not fully informed by costed options analysis as required by the Queensland Treasury Project Assessment Framework.

Based on the information that was available at the time of making the investment decision, it is difficult to determine whether the program selected the option that would deliver the best value for money.

The program has now delivered a payroll system for Inspector-General Emergency Management and Queensland Corrective Services. It has also delivered a human capital management solution for Queensland Fire and Emergency Services.

The program is now planning to replace the Lattice payroll system for Queensland Fire and Emergency Services and the Queensland Ambulance Service and to implement a human capital management solution for Queensland Corrective Services. In addition, the program is developing a business case for a human capital management solution for the Queensland Ambulance Service.

The program needs to assess the software solutions and the costs of each component. This will highlight the affordability of the new services. In addition, it needs to ensure that those charged with governance have enough information to make timely decisions in order to progress the projects.

MyDAS

The MyDAS project has run for longer than originally intended and cost considerably more money than originally planned. The three iterations of the project spanned 3.5 years and cost about $14 million (not including ongoing support costs). The final cost of the system is more than five times the original budget.

One of the major issues was that the business unit leading MyDAS ran software development projects with little to no collaboration with its information technology (IT) team. As a result, there wasn't enough integration between the business unit leading the project and IT, who could have provided input and insights into software development.

The first project was originally estimated to cost $2.4 million. It ran for six months but delivered a system that had significant problems. The second project was established in 2014 to fix the issues from the first project and enhance the system. This project made progress but did not deliver a fully functioning system. These projects did not use fit-for-purpose systems development methodologies, which led to duplication and inefficient use of resources.

The third project improved the project management and systems development disciplines and delivered a functioning system. The final system incorporated legislative changes of the *Planning Act 2016*.

Audit conclusions

The Queensland Government has improved the governance processes for ICT projects and programs since 2013. The QGCIO has designed the ICT dashboard and made it available to the public. It has also implemented some additional investment and assurance review processes.

The ICT dashboard enables transparency about the number and planned cost of major projects across departments. However, there are several weaknesses with the completeness and controls over the accuracy of the content within the dashboard, resulting in reduced user confidence in its reliability.

There is also inconsistency in the information that departments publish about their projects, because it is not mandatory for them to follow the QGCIO's guidelines for the dashboard. These issues detract from the usefulness and reliability of the information for the public.

The monitoring of major ICT programs through the assurance process at the whole-of-government level is not being carried out as well as it could be. The whole-of-government and departmental governing bodies are not using the information they have available through the new processes to increase the success rate of ICT programs and projects. Valuable information obtained through the QGCIO's gate reviews is not being effectively used to minimise the repetition of mistakes.

At the departmental level, there are still significant challenges to improve the successful delivery of major ICT projects. Both the HRIS program and the MyDAS series of projects demonstrate that keeping programs and projects running while significant policy, structural and legislative changes occur contributes to slow progress and high delivery costs. Timely project decision-making needs to occur when changing projects to reduce the inefficient use of public funding that is occurring.

Recommendations

Queensland Government Chief Information Office

We recommend that the Queensland Government Chief Information Office:

1. enhances the ICT dashboard and updates the publishing guidelines by:

    - working with departments to publish one set of agreed criteria and supporting guidelines to be used by all departments

    - considering an increase in the estimated cost criteria of projects to be reported

    - including projects funded to initiate and or to develop a business case, with timelines and budgets for the initiate stage

    - including the ability to explain changes in projects in the delivery stage and provide information on outcomes and outputs achieved to date

    - requiring departments to include more information about key decisions and corrective actions for projects that change significantly (re-set or re-baseline)

    - automating controls to validate data when it is entered

    - expanding features on the dashboard to include links between projects, programs, and the DIGITAL1ST strategy (Chapter 2)

2. strengthens whole-of-government assurance frameworks that currently complement departmental processes for monitoring ICT projects by:

    - defining the meanings of ICT, digital, or digitally-enabled projects, and projects with high business impact

    - reporting projects that are defined as high business impact and have not undergone the investment review process

    - analysing and reporting ICT project performance information to assess the effectiveness of the investment review and project assurance processes

    - encouraging departments to schedule sufficient project health checks in addition to gate reviews in the assurance plans for all high business impact projects, and following up on these if they don't occur on time

    - assisting departments in identifying root causes for project failures and successes, collating these, publishing information for learning, and encouraging departments to look for early warning signs so they can mitigate these risks. (Chapter 3)

All departments

We recommend that all departments:

3. implement efficient and automated processes for collecting, collating, approving, and publishing dashboard data (Chapter 2)

4. publish data to the dashboard that is consistent with the QGCIO publishing criteria and guidelines and provide sufficient detail in the explanatory notes when changes are made to projects' scope, time, or budget (Chapter 2)

5. consider the need for projects with high business impact to undergo periodic health checks in addition to gate reviews and that the focus of these health checks includes the financial management (Chapters 3 and 4)

6. use learnings (including the QGCIO's summary of systemic issues) from project health checks and gate reviews in monitoring and managing programs and projects. (Chapters 3 and 4)

The Department of Housing and Public Works

We recommend that for the HRIS program, the Department of Housing and Public Works:

7. undertakes a full analysis of the relevant end-to-end payroll and human capital management processes for the remaining entities:

    - to assess proposed solutions

    - to calculate cost estimates for the services (Chapter 4)

8. ensures the program continually assesses that it provides enough information to enable those charged with governance to make timely decisions. (Chapter 4)

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