

Queensland Government Enterprise Architecture

# Information sharing

Lessons learned report

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*Information sharing – Lessons learnt report*

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## Information security

This document has been security classified using the Queensland Government Information Security Classification Framework (QGISC) as PUBLIC and will be managed according to the requirements of the QGISC.

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## Introduction

The information challenge facing the Queensland Government has been well identified in the *ICT strategy 2013–17 action plan*:

*Information across the Queensland Government is not shared readily or effectively between departments, with other jurisdictions or with the public. This results in duplication and excessive costs to create and manage information and data. Inability to access and reuse data reduces public confidence in the government's transparency, accountability and ability to deliver services. The growth of industry is also stifled due to the lack of information to inform strategic decisions<sup>1</sup>.*

This report is the result of a review of information-sharing activities across the Queensland Government. It identifies the high level learnings and principles which have been identified with success through an analysis of current strategic and tactical documents and projects related to information sharing.

This will be used to establish forward work plans at a whole-of-government level to improve information access and sharing activities across Queensland Government, and a series of recommendations is included to aid this process.

## Purpose

This report seeks to document those issues which have hampered information-sharing attempts within the Queensland Government in the past. It also seeks to identify how past experiences in information sharing between departments can be leveraged to ensure future success.

## Scope

### In scope

- Review of information-sharing activities within the Queensland Government from the last five or so years
- Documentation of significant lessons learnt from information-sharing activities within the Queensland Government
- A series of recommendations for items to inform discussion and consultation at agency level, which will then drive actions for the next iteration of the ICT strategy action plan

### Out of scope

- Initiation or development of solutions to any issues raised
- Development of policy or guideline instruments to support any proposed changes
- Recommendations as to resourcing and action identified.

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<sup>1</sup> Queensland Government, *ICT strategy 2013–17 action plan*: <http://www.qld.gov.au/dsita/assets/documents/ict-strategy-action-plan.pdf>

## Where we have come from

The Queensland Government has been working towards solutions to improve information sharing within the sector for many years; however, despite hard work and good intentions, the level to which agencies are sharing their information today is still comparatively low.

There is increasing pressure for governments across the world to share their valuable stores of information, both internally and with the public, and there is no better program to illustrate how this can work, at least in part, than Open Data. However, while Open Data has placed the spotlight on the benefits of information sharing with the public, as a government, we are still (generally speaking) not leveraging our own information internally as well as we could.

There are pockets of innovation where it is being done well, but the Queensland Government as a whole lacks a cohesive and aligned direction for how we as a government should be sharing information among ourselves.

Perception and over-estimation of risk are significant barriers to more dynamic information sharing within the Queensland Government. As public servants, we are all 'information managers', but receive no formal training as to what this means. Coupled with a lack of strategic and tactical direction for information management across the Queensland Government, this generates a fertile environment for the perpetuation of invalid concerns about sharing government information.

For the most part, perceived impediments to sharing such as privacy, confidentiality, security and other legislative barriers can be reasonably overcome with little or no risk to the government or information custodians, which results in the right information reaching the right people to make informed decisions. In fact, in many cases overall risk is reduced, and where a genuine risk exists, it can often be appropriately balanced against the benefits of sharing.

Nothing illustrates this point better than the recent report compiled by the Queensland Audit Office on the management of child safety information<sup>2</sup>.

Among other things, this report mentions that information is being shared insecurely due to limitations in the security model of the host system, and proposes the need for an information-sharing model or architecture to guide information-sharing activity.

This is a common issue with many of our corporate systems, and highlights that information sharing is not a technology problem. This concept must be embraced by business and information custodians, as responsibility for the solution lies with solid business and information direction – technology is only an enabler.

Within ICT, we are currently at a crossroads. With the advent of commodity computing, the focus has moved from buying and maintaining our own computing infrastructure to simply purchasing the capability as a service from a third party, with the benefits of decreased cost and improved efficiency.

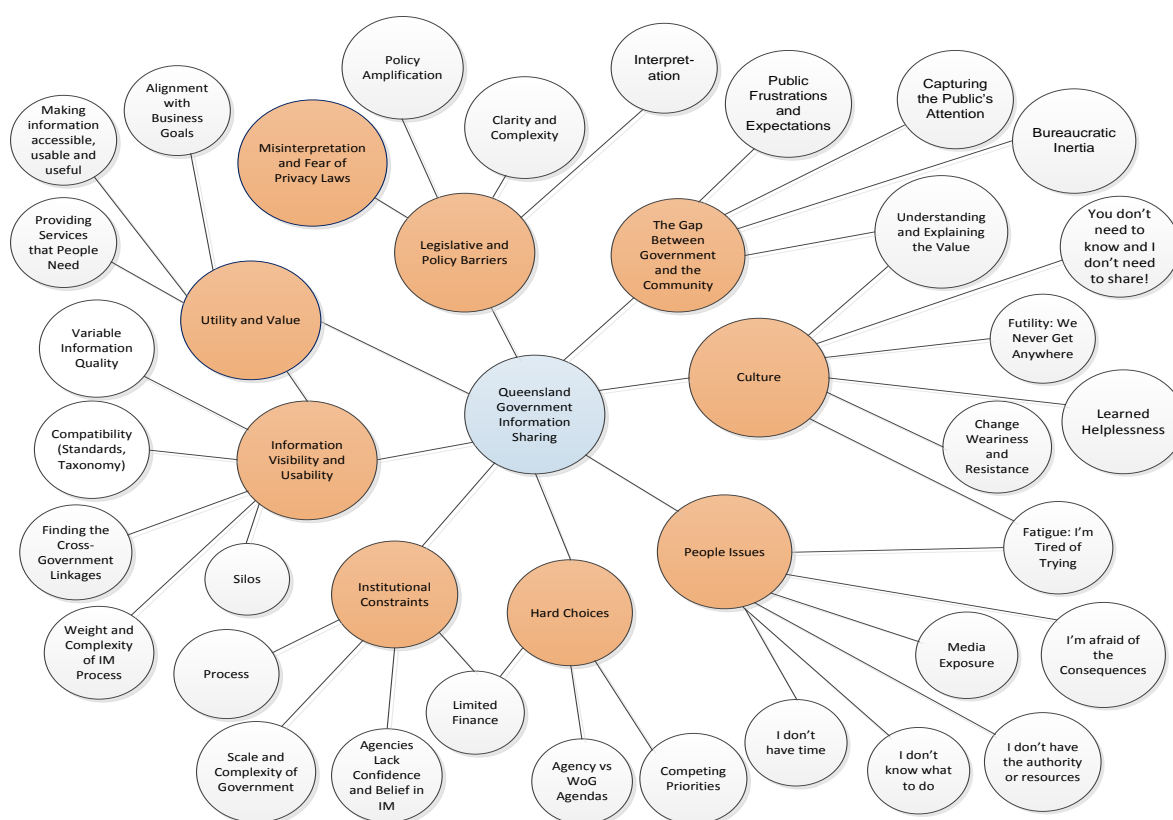
This shift is highlighting the importance of both business-driven solutions for our information management problems, and the need for business and information architecture to ensure that content is able to be discovered and shared.

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<sup>2</sup> Queensland Audit Office 2015, *Managing child safety information*:  
<https://www.gao.qld.gov.au/files/file/Reports%20and%20publications/Reports%20to%20Parliament%202014-15/RtP17Securityofsensitiveinformation.pdf>

Figure 1 below depicts the issues and problems associated with the management and sharing of information.

**Figure 1 – Identified pain points<sup>3</sup>**



## Current state

Over the last 10 years, the Queensland Government Chief Information Office (QGCIO) has been constantly evolving its information management program to seek and develop tools and policies (in conjunction with physical support) to assist departments to better manage and share their information.

Past approaches based on 'doing information management for information management's sake' have not been very successful, so an approach was required which connected good information-sharing practice with tangible outcomes.

Understandably in the complex business environment of government departments, it's been extremely difficult to see the important role that information management plays in the delivery of services – in fact, many areas within departments are performing information management functions without calling them that.

In March 2014, QGCIO released a revision to the Queensland Government Information Architecture (QGIA) that represented a new approach to information management. Rather than outlining a set of policies and tools on their own, the revision focuses on the concept of 'business-led information sharing' which uses the existing valuable tools and policies within the Queensland Government Enterprise Architecture (QGEA).

<sup>3</sup> Queensland Government 2014, *Information sharing blueprint*.

The revised QGIA reflects best practice, and can support business and information architects within departments through a range of methodologies, white papers, frameworks and similar tools.

In the place of consistent government-wide information architecture being used, common practice has been for agencies to develop and use their own information architecture (or lightweight alternative) for managing information within their environments. This is particularly the case where information is kept for local use, and where the benefit from a whole-of-government architecture would not be realised.

This approach has created information silos, where data is stored in local repositories and is neither interoperable nor easily shared with other agencies. What may have started as a small project built with local practices can incrementally evolve into an important agency system that uses custom methods for information sharing that do not permit easy access or sharing. Such systems are common across government and represent a legacy burden that is difficult to manage.

Where information sharing does occur between agencies, it can be done on a point-to-point basis with carefully crafted data exchange agreements, through simple web service interfaces or through information-sharing systems that are local to a particular environment. Agencies such as Queensland Police, Queensland Health, Department of Education and Training and the Department of Transport and Main Roads generate and manage massive volumes of information that are frequently being used through local information management practices. However, it can be difficult to meet service delivery expectations most effectively.

The updated QGIA was established to enable these key capabilities for information sharing:

- more frequent standardised information sharing (reducing bespoke point-to-point connections)
- more consistent information sharing (using standard information formats, interchange mechanisms and interfaces)
- better governance over information sharing (e.g. interchange agreements, information custodianship) that is supportive of open data access for government datasets
- compatible with infrastructure as a service (where underlying applications and technology may be abstracted), better information access and sharing for government service suppliers working in an agile future environment
- more cost-effective development and delivery of solutions using standardised information elements and access methods.

The revised QGIA was developed in conjunction with key information managers across Queensland Government, and the identification of past barriers to freer information sharing was a key component of the approach.

In addition to this work, there have been several high profile reviews which have identified key information-sharing issues that have hampered service delivery:

- Information sharing blueprint (2014)
- Revision of the Queensland Government Information Architecture (2014)
- Queensland Floods Commission of Inquiry interim report (2011)
- Carmody Review – Taking responsibility: A roadmap for Queensland child protection (2013)
- Keilty Review – Sustaining the unsustainable: Police and community safety review (2013)
- Queensland Health Payroll System Commission of Inquiry report (2013)
- Queensland Audit Office – Managing child safety information (2015).

In many of these situations, the issues related to information sharing are the same. In most cases, several attempts were made to better share information and improve outcomes, and although there were some successes, a large number of issues were identified which have impacted on service delivery.

It is important to note that, in resolving these problems, there is a real opportunity to not only solve information-sharing issues per se, but to revise business processes to improve efficiency and quality of service as part of the process. Historically, many of our systems are simply ICT-enabled versions of old paper-based systems, and in many cases there is the chance to deliver services in a totally different way with associated benefits.

The below table is a summary of the important issues highlighted across the sector related to the access and use of information, both within departments and across them.

These have led to a series of recommendations at the end of the report, based on the issues identified in table 1 below.

**Table 1: Queensland Government issues and learnings – consolidated table**

Lesson learnt/barrier	Mitigation	Source
Many of the barriers preventing improvement in information sharing are not technological	Applications and technologies don't generally solve information-sharing issues without appropriate information architecture, business plans and supporting governance – ensure business layer downwards approaches are taken	General theme <i>Taking responsibility: A roadmap for Queensland child protection</i> (2013), p. 425
Information sharing is a process of continuous improvement as part of business as usual, and should not be considered a project with a set duration	Information management improvement activities should be structured as short sharp development cycles, focused on one single end-to-end business process at a time as part of an ongoing program	General theme
Information management is not a single approach, but many approaches at multiple levels – business, information, application and technology	Ensure that representation from all organisational levels is part of the information-sharing solutions	<i>Information sharing blueprint</i> (2014), p.10
Success relies entirely on good business planning practice	Actively pursue an agenda for the management of content important for the delivery of business services that are focused, aligned, consistent and don't duplicate functions across business units	General theme



Lesson learnt/barrier	Mitigation	Source
Ensure there is a shared vision for information sharing across Queensland Government	The QGIA exists as a visionary document; however, there is no high level endorsed government strategy for information sharing – there is an opportunity to include this in the new QG ICT strategy	Queensland Government Information Architecture (2014), p. 20
Make information management both a whole-of-government and agency agenda	It needs to be top down – not bottom up – high level executive accountability for information management outcomes, and ministerial sponsorship is key	Queensland Government Information Architecture (2014), p. 23
Information is difficult to find and to access	Information sharing can be successfully facilitated by regularly publishing information asset details to an endorsed searchable repository, which is accessible to the intended audience	<i>Information management blueprint</i> (2015), p. 8
Allow government services to only create and retain minimum information needed to provide effective and efficient service	Establish endorsed points of trust for common government information – and make them highly accessible	Key principle of master data management
Don't just do information management for information management's sake	Connect information sharing to an endorsed and clearly articulated business outcome, linked into business strategy	QGCIO learning in response to ongoing issues of information sharing across the sector
Build sharing capability into information at creation	Whole-of-government guideline on information creation process (flowchart)	General theme
Information sharing is not coordinated across the sector. It is done ad hoc as part of agency agendas	Align information-sharing activities with Queensland Government's ICT strategy. Ensure there is a solid, well-communicated governance model, external to agencies, with executive level sponsorship and ongoing commitment	General theme

Lesson learnt/barrier	Mitigation	Source
Always work towards reducing unnecessary duplication of Queensland Government information	Establish endorsed points of trust for common government information – and make them highly accessible. This builds trust and makes quality more controllable	Key principle of master data management
Information quality measurement underpins trust in content, which then drives re-use	Adoption of the QGEA information quality framework	General theme
Improving the quality of information is important, but not as important as measuring and communicating it	Adoption of the QGEA information quality framework	General theme
Generate a willingness to share information	Greater openness of information can be facilitated by better processes around defining issues like privacy and confidentiality, and risk assessments to balance the risks of appropriate vs inappropriate access to information	<i>Sustaining the unsustainable: Police and community safety review</i> (2013), p. 61
Generate and promote a culture of sharing across organisations – information sharing needs to be embedded in each department	Information management and sharing is part of almost all roles within Queensland Government	Queensland Government Information Architecture (2014), p. 19
Actively debunk incorrect perceptions related to interpretations of legislative, privacy, security and confidentiality constraints that may prevent information from being shared	Custodians and Queensland Government must accept some level of shared risk in the sharing of information. The establishment of a governance body to provide direction and assistance in navigating information management issues is mandatory	<i>Information sharing blueprint</i> (2014), p. 17
Whole-of-government programs should not necessarily be placed in an agency – it is possible that agency priorities can distort the program outcomes	Establishing a governance body, accountable for information sharing, outside of any department is vital to facilitate and drive information-sharing outcomes across departmental boundaries	Queensland Government Information Architecture (2014); <i>Information management blueprint</i> (2015)

Lesson learnt/barrier	Mitigation	Source
Information sharing should be driven by the needs of services and not restricted by departmental or jurisdictional boundaries	Establishment of subject-based cross-agency and cross-jurisdiction groups to promote the sharing of information. An example of this is the Queensland Government Customer Details Management Community of Practice	In part: <i>Queensland Floods Commission of Enquiry interim report</i> (2011), p.155  In part: <i>Taking responsibility: A roadmap for Queensland child protection</i> (2013), p. 422
Some departments lack a well-defined departmental plan for how they are going to manage and share their content	Development of information architectures or models goes a long way towards enabling agencies to understand their information holdings and how best to share them	<i>Managing child safety information</i> (Report 17: 2014–15), p. 2
Perceptions of risk related to privacy, confidentiality and security are often not balanced against positive sharing outcomes	Debunk and properly quantify risks to sharing information, share risk with whole-of-government information champion, assess risk of not sharing information to balance decision-making	General theme

## Future state

The business of government is continually evolving as agencies strive to meet and surpass the expectations of citizens in increasingly efficient ways. Information sharing and wider digital disruption will be key enablers of the innovation required to meet these competing and often diametrically opposed goals.

The speed of information dissemination, the potentially inclusive opportunities provided by social media and the phenomenal analytical power now available as 'big data' matures represent both an opportunity and a challenge for government.

Our citizens rightly demand that the highest levels of privacy protection and integrity are applied to their information, but equally they expect us to act as one government. They rightly demand best practice security, but do not expect government to collect the same information many times and not be able to share it for the convenience or protection of individuals or the greater good of society.

Information sharing, both with the public and within government, has been hailed consistently as a 'Holy Grail' of economic opportunity and government efficiency, yet benefits continue to evade us in any meaningful way. While some of these barriers are legislative in nature and in need of review in the modern context, often the obstacles are cultural, or arise from an excess of caution based on a lack of understanding of the relevant rules.

The Queensland Government needs a consistent governance regime with clear accountabilities that can make decisions, promote a culture of appropriate and effective information sharing, and assure that a transparent and rigorous assessment of the risks and

rewards has been undertaken. Importantly, individual custodians should be supported in decisions that enhance wider social and government benefits.

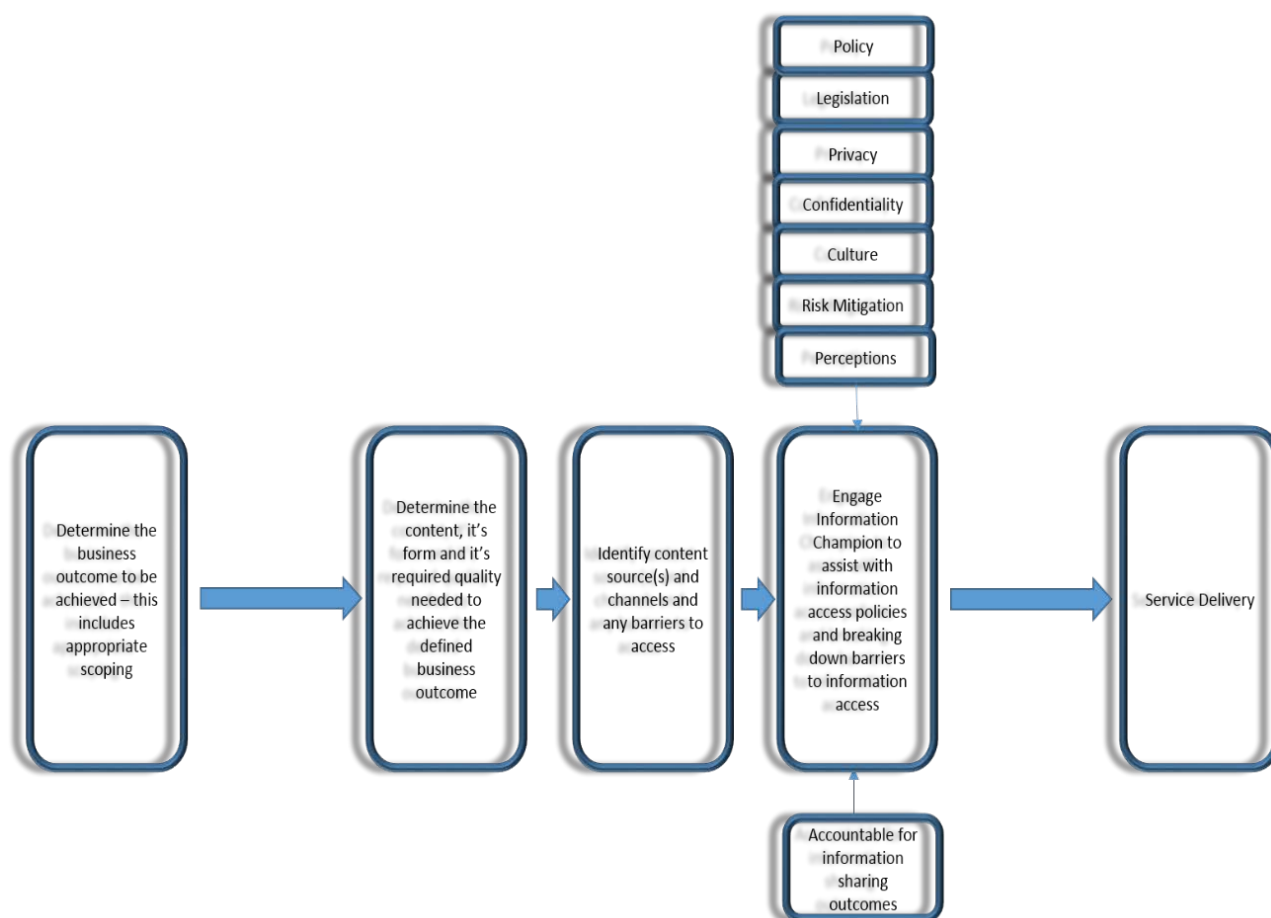
Information governance should ideally be integrated into an existing policy and governance regime in order to minimise red tape, but for the foreseeable future, it needs a dedicated high profile and independent 'champion' with direct access to CEOs and ministerial level decision-makers until the practices of good information sharing can be imbedded into the wider government culture.

This role would be dedicated to realigning and redefining barriers to sharing in order to ensure that Queenslanders receive the maximum benefits from their information, while providing assurance that it is securely managed by government custodians.

This approach is underpinned by departments taking a business-led approach to information sharing that ensures information management activities are firmly tied to a business outcome. This instils persistence and relevance to information management, and ensures that activities which manage and use government information are highly visible.

Coupled with this is ongoing support for a whole-of-government information strategy or model which aligns information-sharing efforts and a culture of clearly specifying business and information outcomes and requirements before enabling any technology.

**Figure 2: Possible information-sharing model**



This is a challenge, as traditionally we have looked to technology to solve information management problems in the past. Now we need to look to the business for direction, and the direct connection to those information assets that support business outcomes. This will involve a significant cultural shift in the way we conduct information projects.

Analysis and appropriate scoping of the business outcome to be achieved by information sharing must precede the identification of supporting content. Technology solution specification is the last step in the process.

Successful information-sharing patterns can then be captured within an information pattern sharing library, and standard templates depicting information asset publication and consumption can also be made available. This ensures Queensland Government is leveraging its investment in information-sharing approaches.

All of this must be coupled with a solid and widespread communication plan and culture change process to ensure that the message related to a more open information-sharing culture is visible to all levels within departments. This aspect should be considered as a critical factor for success, and must be made part of 'business as usual' for departments to ensure that, over time, it is well understood.

## Examples of successful information sharing

### Open Data program

The Queensland Government Open Data program<sup>4</sup> was instigated in 2012 as a vehicle for Queensland Government departments to publish their large information stores and make the data available to the general public for re-use.

Open data is:

- supporting the development of better and more timely public services and innovative solutions
- encouraging more interactive and mobile access to government information
- making government more accountable to the community
- supporting higher productivity and streamlining of business processes
- driving innovation and stimulating the economy
- supporting research and education
- helping reduce red tape through more efficient collection of data
- driving the delivery of more efficient public services
- helping us collect valuable feedback to improve government services and processes
- allowing government to focus on delivering core public services
- building increased transparency and public trust in government processes.

To date over 1600 government datasets have been published to the Open Data portal and are now available for public download.

The success of this information-sharing initiative is due to a number of things done well; however, the primary driver was the highly visible ministerial support for the program, and as such is a key learning for any information-sharing project which needs to cross departmental boundaries.

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<sup>4</sup> Queensland Government: <https://data.qld.gov.au/>

## Mines Online

Mines Online<sup>5</sup> is a public-facing web portal which allows users to submit statutory notices, including entry notices and notices in relation to wells and boreholes for petroleum and gas authorities.

These applications require information to be shared among several departments, and in the past this process was entirely manual. The Mines Online workflow allows information to be automatically shared between government departments in order to complete the application in a much shorter time than in the past.

In a similar way to the Open Data portal, Mines Online also had the benefit of direct ministerial and executive sponsorship.

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<sup>5</sup> Queensland Government: <https://www.business.qld.gov.au/industry/mining/mining-online-services/mines-online>

## Recommendations

### ***Recommendation 1 – Advance the information-sharing agenda in the new Queensland Government ICT strategy.***

The new Queensland Government ICT strategy is currently being developed. There is significant scope to influence the strategy to adopt a more information-centric approach, and to provide strategic direction to information-sharing activities across the sector.

The Office of the QGCIO will take primary responsibility for progressing this recommendation.

### ***Recommendation 2 – Establish a whole-of-government governance structure accountable for information-sharing outcomes within Queensland Government, for assessing the business benefits versus risk profile for information to be shared, and for supporting the custodian decision to share.***

Successful and persistent information-sharing activities rely on high level organisational commitment. A position or body which is accountable for information-sharing outcomes can break down barriers to information sharing and alter perceptions related to the risk of sharing information between agencies.

The Office of the QGCIO will take primary responsibility for progressing this recommendation.

### ***Recommendation 3 – Identify ministerial sponsorship to oversee the Queensland Government departmental information-sharing agenda.***

Our two successful information-sharing examples illustrate the importance of ministerial sponsorship to drive information-sharing. The governance structure proposed in Recommendation 2 would rely on having appropriate sponsorship to ensure that information-sharing outcomes are not hampered by outdated legislative or political issues.

The Office of the QGCIO will take primary responsibility for progressing this recommendation.

### ***Recommendation 4 – Establish a whole-of-government community of practice with high level membership to strengthen information management capability across government.***

Many information-sharing problems are similar in nature, so a vehicle for capturing and re-implementing solutions is required to not only ensure efficient use of resources, but also to ensure alignment in solution architectures. This also includes the establishment of community of practice groups focused on subject types such as 'customer' (existing) and 'address'.

The Office of the QGCIO and the ICT Modernisation Program will be jointly responsible for progressing this recommendation. Specific actions will be outlined in the ICT Modernisation Plan.

***Recommendation 5 – Develop and implement a cultural change pilot program/s to test ways of embedding information-sharing principles within Queensland Government agencies.***

Information sharing is a culture, not a process – and information management and information sharing are embedded in just about every role in Queensland Government. The issue is that many departmental officers are doing information management without realising it, so the goal is to bring this to front of mind. Work is needed with departmental information asset custodians to roll out cultural awareness and change programs around the sharing of information, both within departments as well as across them.

The Office of the QGCIO and the ICT Modernisation Program will be jointly responsible for progressing this recommendation. Specific actions will be outlined in the ICT Modernisation Plan.



## Appendix A References/sources

- Carmody Review – Taking responsibility: A roadmap for Queensland child protection (2013)
- Keelty Review – Sustaining the unsustainable: Police and community safety review (2013)
- Queensland Government Information sharing blueprint (2014)
- Queensland Audit Office 2015, Managing child safety information
- Queensland Floods Commission of Inquiry interim report (2011)
- Queensland Government Open Data program
- Queensland Health Payroll System Commission of Inquiry report (2013)
- Revision of the Queensland Government Information Architecture (2014)