Information management maturity development resource guideline

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*Information management maturity development resource guideline*

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Information security

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

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# Introduction

## Purpose

1. A QGEA guideline is not mandatory. This guideline provides advice to help departments develop their information management maturity utilising the Information management development resource as a self-appraisement tool. It is intended to be used by Queensland Government departments to assess their information management maturity and assist in developing strategies to improve their information management practices.

## Audience

The audience for the IM development resource is Queensland Government departments and in particular staff involved in managing information assets in their departments, including information management managers, senior staff with responsibility for information management, auditors and consultants.

## QGEA domains

|  |  |
| --- | --- |
| Classification framework | Domain |
| Information management  | 1. IM-1 Information governance
2. IM-3 Information asset management
3. IM-4 Information asset management access and use management
 |

# Background

1. The IM maturity development resource is based on the domains of the Queensland Government IM policy framework. By capturing the characteristics of information management at domain and sub-domain level, the resource supports planning for a staged progression towards a level of information maturity defined by the organisation.
2. The IM maturity development resource is focussed on the domains of information governance, information asset access and use and information asset management and their accompanying sub-domains. The resource enables departments to establish their current maturity level and identify areas for improvement that may drive future initiatives and activities. This resource recognises that information management is a process of continual improvement, responding to changing organisational needs and activities. The IM development resource may be used by departments to determine the maturity of their organisation.

# Benefits of assessment

1. Completing an assessment using the IM development resource enables departments to establish their current ‘state of play’ with regard to information management and assist them to prioritise areas for improvement. This appraisement will help a department to:
* identify its strengths, thereby providing evidence of the effect of previous and current investment in this area
* identify areas of good practice as exemplars to encourage further development
* identify areas requiring additional resources and efforts which can be built into the annual IM work plan
* provide data for internal audit and quality appraisement purposes
* provide data to inform the development of a strategic approach to information management
* measure progress over time through repeated maturity appraisements at set intervals
* inform the department’s strategic decision making process and thereby raise the overall profile of information management as a strategic enabler.

# Elements of IM development resource

## Relationship to Queensland Government Enterprise Architecture (QGEA) artefacts

1. The IM maturity development resource has been developed within the general context of the information layer of the QGEA and is based on the domains of the IM policy framework and its accompanying information standards, principles and policy requirements.
2. It is envisaged that the IM maturity development resource will provide departments with a more detailed picture to help them move beyond the minimum requirements identified in the information standards.
3. For purposes of transparency, the compliance requirements associated with information standards, policies and positions have been placed in the IM maturity development resource at level 3.

## A process driven model

1. The process reference model which is used in the development resource has been adapted from the AS/NZS ISO/IEC 15504.1:2005 Information technology – Process appraisement (See appendix A).
2. The IM maturity development resource has been designed around a process driven approach since this approach facilitates:
* self-appraisement
* provides a clear basis from which to plan for improvement
* can be context and organisationally aware
* has a large degree of applicability across domains.

### Process reference component

1. The process reference component of the model has been developed based on the achievement, completion or implementation of a number of process attributes:
* Process – A series of steps or actions performed to bring about a particular outcome, in terms of information to be gathered, decisions to be made and results which must be achieved.
* Product – Any tangible or measurable input, to or output from, a process activity. A product may itself be a collection of other products, e.g. schedules, policies, guidelines, asset register.

For the purpose of this guideline Performance is defined as:

* activities undertaken to measure and validate, value and report on process and product performance, e.g. review, benchmarking, reporting.

These processes or activities, when implemented and performed collectively, achieve a set of objectives that demonstrate a particular level of maturity. Adoption of a process driven approach means that it is scalable, can be applied to any information environment and uses a series of established benchmarks to assess an organisation’s level of information maturity.

1. See attachment A for more detail of the process attributes across the five levels of maturity.

### **Measurement framework component**

1. The measurement framework component of the IM development resource provides a way of assessing the capability of an implemented process across a five point scale ranging from level 1 – ‘ad hoc’ to level 5 – ‘optimised’. These maturity levels have been adapted from the information maturity model (IMM) defined by the meta group:
* Level 1 organisation has no common information practices. Any pockets of information management maturity that the organisation has are based on the experience and initiatives of individuals.
* Level 2 organisation has little in the way of enterprise information management practices. However, certain departments are aware of the importance of professionally managing information assets and have developed common practices used within their projects. At the enterprise level, a level 2 organisation reacts to data quality issues as they arise.
* Level 3 organisation has a significant degree of IM maturity. Enterprise awareness, policies, procedures, and standards exist and are generally utilised across all enterprise projects. At level 3, the information management practices are sponsored by and managed by IT.
* Level 4 organisation manages information as an enterprise asset. The business is heavily engaged in information management procedures and takes responsibility for the quality of information that they manage. A level 4 organisation has many mature and best-in-class practices and utilises audits to ensure compliance across all projects.
* Level 5 organisation considers information to be as much an enterprise asset as financial and material assets. A level 5 organisation has best-in-class information management practices that are utilised across all enterprise projects. The distinguishing characteristic of a level 5 organisation is the focus on continuous improvement. At level 5, all data management practices and assets are regularly measured and the results are analysed as the basis for process improvement.

The measurement framework identifies the key requirements for the relevant processes for each level of the domain. When all these requirements have been assessed by the department the result will indicate the level of information maturity for each domain. In effect an organisation’s level of maturity is determined by the extent to which individual process requirements have been implemented.

### **Assessment**

1. The assessment process of the IM maturity development resource provides a two-dimensional view of process capability (See figure 1 page 7). In one dimension is the process reference component which describes the set of process attributes as defined in the process reference component (see section 4.2.1).
2. In the other dimension is the measurement framework component which assesses the capability of these implemented processes (see section 4.2.2).



Figure : Measuring maturity in a process driven model

1. Application of the IM maturity development resource provides a more detailed picture of an organisation’s ‘state of play’ with regard to information management.

## Maturity assessment and planning IM initiatives and activities

1. Undertaking a maturity appraisement is not a prerequisite for developing or reviewing an IM initiatives and activities. However, the development resource provides a way to assess the current performance of your organisation and to assist in identifying information management priorities which can then be used to identify target areas for future IM initiatives and activities.

# Information management maturity – assessment process

## Gathering information

1. Before the assessment, assemble any relevant documentation. Types of documents that will be useful include:
* existing information management strategies, policies and plans, guidelines and procedures such as the ICT resources strategic plan and ICT work plan
* documentation from any recent reviews of information management issues, such as the QGEA self-assessment or the ICT baseline survey
* information management tools, such as classification schemes
* resourcing documentation.

## Preparing for the assessment

1. A review of documentation may not be sufficient to complete the maturity assessment. It may be necessary to seek input from stakeholders across the department on some of the elements of some of the domains. For example in order to respond to a number of the requirements in the sub-domain of access you may need to seek advice from Right to Information staff in your department.

## Conducting the assessment

1. The IM maturity development resource has first layer (or general) statements across all five levels level 1 (ad hoc) to level 5 (optimised) of the domains of governance, information asset management and information access and use.
2. The first layer provides a high level strategic indicator or perceived level of maturity for a department as an entity. By analysing information gathered from each department it will be possible to provide a level of information maturity for government as a whole. Establishing a solid overview of information maturity across government makes it possible to develop initiatives.
3. The statements in the first layer reflect the key assessment elements in the process reference model – process, product and performance. The statements provide the department with a general indicator of the types of activities which should occur in the relevant sub-domains. Respondents should place an ‘X’ in the level at which they perceive themselves for each of the sub-domains.
4. The second layer identifies a number of specific requirements which departments will need to meet to reach a specific level of maturity for each sub-domain. Each requirement has a ‘yes/no’ response. By selecting an appropriate response to each requirement it is possible to identify the level of maturity for each sub-domain. Affirmative responses are required for each requirement before it is possible to move to the next level of information maturity. Results from this layer will populate the domain graphs provided in the development resource.
5. The second layer is intended to enable departments to identify areas of strength and areas of need. Combining both sets of information can assist in developing future IM initiatives and activities and support related departmental planning.
6. The use of two layers in the resource is intended to provide two different but complementary types of information.
7. The development resource will automatically provide two types of results for this second layer.
* A single figure assessment based response to the requirements provided for each sub-domain across level 1 to level 5. This figure will provide data for inclusion in the overview assessment.
* A percentage score is provided for each maturity level of each sub-domain to inform users of areas of strengths and weakness for each sub-domain. This score will provide greater granularity for internal use. This percentage score is not used to populate any graphs. It is intended to assist with any departmental internal reporting process.
1. Comparing the selection made in the first layer with those decisions in the second layer provides respondents with a useful cross validation between strategic and granular level of maturity.
2. In combination these findings provide indicators of information maturity levels for each sub-domain and provide an indication of priority areas so that resourcing can be allocated for best effect.
3. In general, when selecting one level to reflect a range of performance, the lowest applicable level should be selected. Otherwise an overly-positive view of information management within the organisation may be obtained and mask the need for improvements.
4. Figure 2 below provides an example of how responses to individual sub-domains contribute to providing an improved view of an organisation’s information maturity. It is apparent that while there is a need for a general improvement in governance areas, of particular concern would be information architecture and quality management sub-domains. Overall the maturity level of the governance domain is level 2, as this is the lowest score achieved. However the average maturity of this domain is 2.86, highlighting that only a small improvement will result in the department reaching level 3.

Figure : Levels of information maturity in governance sub-domain

## Future IM initiatives and activities

1. The indications of levels of maturity across the sub-domains provide a useful overview of information management performance in an organisation. However the real value lies in identifying findings, conclusions and improvement opportunities to increase the department’s level of maturity.
2. Departments may take the ‘outputs’ from the IM maturity development resource, whole-of-Government priorities and departmental priorities to identify a number of future IM initiatives and activities to progress IM maturity.
3. 1. The process reference model in an information maturity environment

The current IM maturity development resource has been developed as a process driven model.

* + - 1. Examples of the generic information management statements from level 1 to level 5 are provided in table 1 below. Changes in organisational information maturity are reflected in increasingly more complex and sophisticated attribute requirements as the organisation moves from level 1 to level 5.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Level 1 – Ad hoc | Level 2 – Repeatable | Level 3 - Defined | Level 4 - Managed | Level 5 - Optimised |
| 1. Process performance –Partially achieved
 | 1. Process performance - Partially achieved
2. Work product development - Partially achieved
 | 1. Process performance - Largely achieved
2. Work product development – Largely achieved
3. Work product management – Partially achieved
4. Work product deployed - Partially
 | 1. Process performance – Largely achieved
2. Work product development – Fully achieved
3. Work product management – Fully achieved
4. Work product deployed – Largely achieved
5. Performance management – Partially achieved
6. Process measurement - Partially achieved
 | 1. Process performance – Fully achieved
2. Work product management – Fully achieved
3. Performance management – Fully achieved
4. Work product deployed - Fully achieved
5. Process measurement – Fully Achieved
6. Process optimisation occurring
 |

Table : Generic process driven statements across information management maturity levels

Table 2 (page 11) translates generic statements outlined in table 1 above into a number of activities that would be likely to be undertaken in an organisation within the sub-domain of governance at an information management maturity of level 3 – defined. The sample statements are *not* intended to encompass all IM management activities that may be undertaken by an organisation in that domain.

|  |
| --- |
| Generic types of information management processes/products/performance statements |
| * Governance processes are in place to ensure compliance, e.g. all QGEA mandated requirements are met.
* Governance processes are largely in place and are addressing departmental information management issues, e.g. governance body is operational and IM issues are included as part of agenda at every meeting
* Arrangements for roles and accountability are in place and largely understood, e.g. information owners and custodians are assigned and are active
* Governance body has oversight of work product management, e.g. policies and guidelines are endorsed by governance body.
* Documentation and controls are in place, e.g. mandated policies and guidelines are in place and approved.
* Planning processes are being undertaken as part of governance requirements, e.g. IM Work Plan is being oversighted by governance body, some forward planning is occurring.
* Performance reporting to governance body occurs but only for specific outputs, e.g. progress against IM Work Plan.
* Oversight of resourcing is occurring for business as usual operations. Arrangements for additional work are reactive and not yet prioritised.
 |

Table : Sample of IM maturity business activities in a process driven model

* 1. The IM maturity development resource in use – layer 1 information governance

The statements in the ***first layer*** reflect the key assessment elements in the process reference model – process, product and performance. The statements provide the department with a general indicator of the types of activities which should occur in the relevant sub-domains. Respondents should place an ‘X’ in the level at which they *perceive* themselves for each of the sub-domains. The figure below shows the information governance sub-domains of information planning, principles and policies and information architecture. The ‘X’ is recorded as a maturity level and placed on the column on the extreme right of the table.

Once all of the sub-domains have been populated and the necessary maturity level indicators located on the extreme right of the graphic shown previously, a chart for that particular domain, similar to that presented in below, is generated.

Figure : Information governance sub-domains by IM maturity level

This sample chart, which has been completed for all sub-domains of the information governance domain, enables the user to identify priority areas for information governance domain. Similar charts are generated for the information asset management and information access and use domains since they too are populated at the sub-domain level.

As well as providing individual charts for each of the sub-domain within a domain, the data provided by the user is collated and reproduced in an additional chart which provides an overview across the three domains. This chart can be used as a reporting tool. A sample chart is provided below.

Figure IM Maturity Levels across Domain

This shows that the department’s information management maturity level is 2 (the lowest score is used). However, the overall average information management maturity is 2.7. Information gathered from the second layer will provide users assist users in establishing priority areas within the access and accessibility domain.

* 1. The IM maturity development resource in use layer 2 – the maturity requirement statements

The ***second layer*** identifies a number of *specific requirements* which departments will need to meet to reach a specific level of maturity for each sub-domain. Each requirement has a ‘yes/no’ response. By selecting an appropriate response to each requirement it is possible to identify the level of maturity for each sub-domain. Affirmative responses are required for each requirement before it is possible to move to the next level of information maturity. Results from this layer will populate the domain graphs provided in the development resource.

The second layer for information planning environment sub-domain of the information governance has been completed and is provided below.

Figure Layer 2 - Sample responses to requirement statements

Initially all the responses to requirement statements are set to ‘greyed out’ and the progress indicators to ‘Level ‘x’ requirement not met’.

As the user registers ‘yes’ to each requirement statement a progressive percentage score is provided in the cell next to ‘Level ‘x’ requirements not met’. Once all requirement statements register ‘yes’, the percentage score will register 100% and the ‘Level ‘x requirements not met’ statement will change automatically to ‘level ‘x’ requirements met’ as indicated in level 1, level 2 and level 3 above. The ‘current maturity level’ indicator will change as each maturity level is achieved.

It is not necessary to move methodically from maturity level 1 to maturity level 5, users may respond ‘yes’ to any of the requirements statements which they already meet, e.g. a user may already be able to respond ‘yes’ to several items in level 4 or a single item in level 5 while listed at maturity level 3.

In the graphic provided the user has answered ‘yes’ to all items in level 3 and most in level 4 and one in level 5 but remains rated at a maturity level 3 since movement across maturity levels requires 100% affirmative responses to all statements at a particular maturity level.

However, while the maturity level remains at 3 until all the requirement statement of level 4 are met the positive responses in level 4 and level 5 are registered as part of an overall percentage progress score.

The ‘overall percentage score’ for each sub-domain function is intended to provide users with a much more precise indicator of their progress across the sub-domains achieving a specific maturity level as well as identify specific areas for attention and provide a more granular reporting tool and complement the maturity level rating.

As the user responds to the requirement statements for each maturity level a chart, providing a progressive percentage score for that particular sub-domain, similar to that presented in below, is generated. These charts, which are created for each of the three domains, enable the user to identify progress across the domain and sub-domains generally. Provision of these charts when combined with layer 2 responses provides a more granular understanding of information maturity levels within and complements the maturity level rating.

Figure Overall percentage score by Information Governance sub-domain

Figure : Overall percentage score by information governance sub-domain