



Digital Archives Migration Methodology

A structured approach to the migration of digital records

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Executive summary

What is the Digital Archives Migration Methodology?

The Digital Archives Migration Methodology supports the transfer of digital records from NSW Government agencies to the State archives. Rather than adopting a single approach for all such transfers, State Records NSW defines custom migration plans to suit the particular requirements of different sets of records. Each transfer is managed as a separate project. The methodology is a framework to guide these projects.

Which digital records are eligible for transfer to the State archives?

Digital records, like paper or other formats, are eligible to become part of the State archives when:

- they are identified as required as State archives in a current authorised retention and disposal authority, and
- they are no longer in use for official purposes.

[Guidelines](#) issued by State Records under section 29 of the *State Records Act 1998* establish the basic requirements to be met for a transfer of records (in any format) to the State archives. These should be read in conjunction with this methodology.

Why use the methodology?

By blending project management and data migration techniques, the Digital Archives Migration Methodology provides a structured and planned approach to each migration project. It also permits flexibility, for dealing with many types of migrations, from very simple ones to complex ones involving many stakeholders.

Using the Digital Archives Migration Methodology will help to ensure that:

- migrations are effective and undertaken based on migration plans that are tailored to the system/s and the agency concerned
- digital records required as State archives are managed appropriately by State Records NSW in the Digital Archives
- agencies continue to have access to their permanent value digital records if and when required; and

- the public can use open access digital format State archives that document NSW Government decision making, functions, history, heritage and the rights and entitlements of citizens.

Can the methodology be used in other contexts?

The focus of the methodology is on managing the migration of records which are required to be retained as digital State archives. However, this methodology also represents a useful management tool that may be adapted for use by agencies who are seeking to ensure the digital continuity of their records through migrations not involving State Records NSW, for example in situations such as transfer of function or agency mergers. It is complemented by State Records' detailed advice on the migration of digital records in the guideline [Managing digital records](#).

What are the deliverables?

The primary deliverable of a project will be the safe migration of digital records of continuing value into the State digital archives. Other deliverables can include:

- a remote access delivery service for the agency to its records while they remain closed to public access
- open to public access records made available via State Records' website
- the ability for the agency to decommission or otherwise delete source records and systems
- documentation for State Records and the agency of the migration process, preservation actions taken and authorisations for the transfer of control.

Who should be involved?

It will vary for each project; at a minimum, an agency representative authorised to approve the transfer of control of the records to State Records will be involved in the project. They may be assisted by records management professionals, ICT professionals, third party providers of services such as data hosting, or representatives from the business.

Why use the methodology?

The following table outlines some of the identifiable benefits in undertaking a migration project. These should be considered in planning, in comparing these with costs and risks.

Migration benefits	
Effective management of digital records	Records are retained for their specified retention periods and are not destroyed without authorisation. Records required as State archives are migrated to the State Records NSW Digital Archives when no longer needed for business use.
Reducing costs of software licences and vendor support	Legacy data can be costly to maintain regarding licencing and support and is at risk of becoming unsupported by software vendors. There is a burden on agencies to maintain this cost as well as face the risk of records becoming inaccessible. Migration of digital format State archives to the Digital Archives allows for decommissioning legacy systems that are costly to maintain.
Reducing costs of storage	With the ease of creating records in digital formats and systems, legacy data accumulates quickly and, over time, can become large in volume. In addition, administrative change in Government often results in control of legacy data shifting from one agency to another. As this accumulation grows storage costs will be a greater burden on agencies. Migration of digital format State archives to the Digital Archives can help reduce storage costs incurred by agencies.
Reducing costs of hardware infrastructure	Closely linked with storage costs are the hardware infrastructure costs associated with managing legacy systems and large numbers of records no longer needed for business use. Decommissioning legacy systems or disposing of records no longer required for business use can provide savings in ICT hardware infrastructure expenditures.
Reducing costs of managed services	Where agencies outsource managed services for either software or storage solutions there are still cost issues relating to legacy data that is no longer required for business use. Over time these costs can escalate. Migrating legacy data required as State archives to the Digital Archives can assist in reducing costs of managed services.
Digital continuity	Records remain accessible for as long as they are required to be used including migration to the Digital Archives for permanent retention of records required as State archives. This allows for accessibility of records to enable and support sharing and use of NSW Government information.
Effective management of	Records are retained for their specified retention periods and are not destroyed without authorisation. Records required as State archives are migrated to the State

digital records	Records NSW Digital Archives when no longer needed for business use.
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Identifying the benefits of undertaking migrations and reviewing these against costs and risks provides greater perspective to understanding the value proposition involved. This value runs across effective management of records, business process and ICT and supports identifiable goals in both the NSW State Plan and ICT Strategy.

When should it be used?

From a recordkeeping and archives perspective, there are a number of scenarios that might involve migration.

Migration scenarios
Decommissioning a legacy business system where only some of the records are required for permanent retention as State archives under an existing disposal authorisation schedule
Decommissioning a legacy business system where all of the information is required for permanent retention as State archives under an existing disposal authorisation schedule
Decommissioning a legacy business system and a separate but related/linked document management system where all of the records in the legacy system are required for permanent retention as State archives and the records stored in the document management system are also required for permanent retention as State archives
Migrating unstructured information no longer required for business use in a network directory where these have been identified as State archives under an existing disposal authorisation schedule requiring them to be retained permanently as State archives
Migrating digital records relating to Royal Commissions or Commissions of Inquiry where these records may include metadata stored in relational databases or business systems and accompanying digital files where all metadata and related files are required to be retained as State archives
Migrating from a legacy business system to a new business system where only some of the records from the legacy business system are required in the new business system and the remaining records from the legacy business system are required for permanent retention as State archives
Migrating digital files no longer required for business use from an Electronic Document and Records Management System where these have been identified as required for permanent retention as State archives under an existing disposal authorisation schedule

Who should be involved?

Migration project stakeholders

Migrations require stakeholder engagement. To address this, the migration methodology identifies stakeholder groups that are involved in migrations as follows:

- Project management
- Business management
- Records management
- ICT management

The methodology allows that stakeholder groups will intersect throughout the course of the migration project as part of a collaborative process and each will have input into how the migration proceeds throughout the project lifecycle through to completion.

It is acknowledged that migrations will differ so there needs to be flexibility in how these stakeholder groups are engaged and utilised as part of migration projects.

Agencies involved in undertaking migration projects will be responsible for the business management. Specifically this will involve business owners of the records, business knowledge about the records and Executive sponsorship for migration projects. The following table outlines the roles of each of the stakeholder groups.

Stakeholder Group	Outline	Roles and responsibilities	Responsible
Project management	Project management provides the planning and reporting structure that allows effective management of: • project scope • resourcing • costs • risks • timeframes • deliverables Project documentation such as the project plan, risk and issue logs/reports, Gantt charts, status reports and stage reports are useful	The responsibility for leading the project and providing overall project management should be identified as part of the process of defining roles and responsibilities during project stakeholder identification.	Project governance and project management are shared responsibilities between State Records NSW and agencies.

	tools to manage projects. The project management method used should be tailored to suit migration projects in line with the framework of the migration methodology.	Project management is used throughout the migration project lifecycle. Responsibility for managing migration project costs needs to be identified in the project plan. Each project should include a cost/benefit analysis with the understanding that State Records NSW will be responsible for ongoing storage and management costs of digital records migrated to the Digital Archives.	
Business management	Business management incorporates: • business owners of the records • business knowledge about the records • business users of the records • the procedures and processes supporting records and systems • business process analysis • business process redesign or re-engineering The business owner of the records should be able to: • identify drivers for migration projects • identify business justification for migration projects • collaborate with resourcing for migration projects • ensure ongoing sponsorship and support in agencies for migration projects	The business is a key stakeholder in the migration project and, as the identified business owner of the records, plays an integral role as one of the key decision makers. The business owner of the records provides approval for the formal transfer of custody and control of digital records required as State archives from an agency to State Records NSW. Agency support for migration projects must come from the business	Agencies involved in undertaking migration projects will be responsible for the business management. Specifically this will involve business owners of the records, business knowledge about the records and Executive sponsorship for migration projects.

		owners and relevant authority in the agency. This support is essential for maintaining required agency activity on migration projects through to project completion.	
Records management	Records management identifies requirements for the management of records in relation to statutory, regulatory and legislative requirements. The <i>State Records Act 1998</i> is central to this although other key legislation includes the <i>Privacy and Personal Information Protection Act 1998</i> , the <i>Government Information (Public Access) Act 2009</i> and any other legislation that may be relevant to the management, access and use of government information managed by agencies operating in specific functions and domains of activity.	Records management determines the retention requirements for records. These requirements are defined in general and functional disposal authorities registered by State Records NSW. These disposal authorities incorporate appraisal, sentencing and disposal functions.	The skill sets and resources for records management can come from both the agency and State Records NSW although there will be cases when the agency does not have adequate resources.
ICT management	ICT management encompasses: - management of agency ICT infrastructures inclusive of software and hardware configurations/platforms - ICT roles, responsibilities and professional expertise required in undertaking migrations. The technical skill sets involved in undertaking migrations can include in-house expertise within agencies and also specialist roles that can be provided either internally where	ICT provides essential services to the business regarding the management of records including storage and access for users of agency records. ICT also has a strong relationship with records management to ensure the ongoing accessibility and usability of agency	Agencies will need to supply ICT resources to assist in the migration project. These resources may be sourced internally or externally to the agency involved in the migration project. State Records NSW is responsible for migrating records into the Digital Archives, including identified

	available or by external stakeholders such as vendors and consultants. ICT represents an important stakeholder within migration projects because of the strong relationship with agency business divisions and units.	records. The ability to undertake migration projects effectively requires ICT stakeholders to have a close and collaborative role in project planning and migration planning as well as the migration itself. This role includes not only ICT skill sets but also resources to support the migration project.	digital preservation actions, and the ongoing management of the records once migrated.
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Methodology phases

The Digital Archives Migration Methodology is a management tool to support a project-based approach for transfers of digital records that are no longer in use in agencies to State Records NSW as digital archives.

The methodology breaks migration projects up into four phases:

The [Project Planning](#) phase establishes responsibilities and sets out the scope of the project and its deliverables. The [Migration Planning](#) phase defines the processes to be undertaken in the [Migration](#) phase. The [Project Closure](#) phase closes the project and identifies any required post-project activities (such as the disposal of source records).

Activities in each phase

The first two phases of the methodology deliver two key documents: the **project plan**, which manages the overall migration project, and the **migration plan** which identifies actions to be performed during the migration phase. The key deliverables of both plans are reviewed at project closure.

The activities and actions that take place during each phase are determined based on the identified requirements of each migration project. However, in all projects the phases will include these components:

These components provide direction about what needs to occur but they are not prescriptive. This allows migration projects to be tailored to suit the requirements of particular environments and records systems. The methodology can expand or contract to adapt to the scope and complexity of different projects.

Key elements of the methodology

While all migration projects will individual project and migration plans, the activities in the below table will be common to all projects.

Activity	Phase
Overall project planning to determine roles and responsibilities, project scope, costs, risks and timeframes	Phase 1 Project Planning

Disposal determination to identify records required as State archives	Phase 1 Project Planning
Assessment of access requirements and restrictions for both agency and public access	Phase 1 Project Planning
Description of the records to support ongoing management and access	Phase 2 Migration Planning
Format assessment to identify transformations required for digital continuity	Phase 2 Migration Planning
Metadata assessment and mapping	Phase 2 Migration Planning
Migration planning to outline the migration process including the migration path, timeframes and resourcing	Phase 2 Migration Planning
Preparation, testing and validation for migrations	Phase 3 Migration
Action on source records from a migration	Phase 4 Project Closure

Phase 1: Project planning

The Project planning phase establishes a framework for the migration project. It is in this phase that the goals of the project are defined and the identification of stakeholders/risks/costs/resources etc. takes place. The depth of planning required in this phase will vary depending on the complexity of the project. The key deliverable of this phase is the **project plan**.

In addition to the project plan there are other project management tools that can be used to document and manage projects. These include:

- risk register/log
- issue register/log
- status reports
- risk reports
- issue reports
- stage plans and reports
- Gantt chart
- change management assessment
- communications plan

Project planning components

The following table outlines the components that make up Phase 1 Project planning:

Component	Details	Responsibilities
Project start up	There will be different drivers for commencing a migration project. Some examples of potential drivers include: • technological obsolescence • decommissioning legacy systems	• Generally agencies contact State Records requesting records management advice and guidance • State Records is responsible for responding to such requests • Agencies are responsible for identifying the business

	• storage costs or limitations • business process redesign • administrative change • records identified as no longer required for business use • routine disposal of records Depending on the driver(s) for the migration project it is expected that agencies will contact State Records NSW regarding a suitable course of action. Once contact has been made State Records NSW will undertake preliminary investigation to determine what action is required. The preliminary investigation is an important means of assessing the core requirements for the migration project. Preliminary investigation also allows some initial overall planning as part of project start up. Activities at this stage include: • project scoping • stakeholder identification • stakeholder engagement • identifying project drivers • identifying business justification for the project • obtaining project sponsorship support • identifying agency resources and capacity • identifying State Records NSW resources and capacity Once preliminary investigation is complete and the migration project has moved through start up activities the next step is to establish the project plan.	owners of records • Agencies are responsible for providing information to State Records • State Records is responsible for undertaking preliminary investigation activities • Agencies and State Records are responsible for providing adequate resources for preliminary investigation • Agencies and State Records identify key migration project stakeholders
Project plan	A period of further information gathering is usually	• Agencies and State Records

	needed in order to create the project plan. In cases In cases where core requirements for the project are easily established, this may not be necessary. The role of the project plan is to: • maintain business justification for the project • capture knowledge and re-use lessons learned in previous projects • establish project governance • identify project stakeholders • define roles and responsibilities • manage project resources • manage required changes to project operations • manage project targets and deliverables • manage project schedules and timeframes • identify project costs • flag action on source records • manage project issues and risks Depending on the project, other factors may be involved during project planning such as business process re-design, organisational restructuring and change management. In order for migration projects to move on to Phase 2 Migration Planning the project plan must be approved by State Records NSW and agencies.	collaborate on developing a project plan • Agencies and State Records are responsible for identifying migration project requirements • Agencies and State Records are responsible for identifying migration project stakeholders from the four stakeholder groups – project management, business management, records management and ICT management • Agencies are responsible for determining and authorising access directions • State Records is responsible for registering new access directions • Agencies and State Records are responsible for providing adequate resources for the migration project • Agencies are responsible for ensuring executive support for migration projects within the agency • Costs and responsibilities for costs are identified in the project plan • Agencies and State Records are responsible for approving the project plan
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Phase 2: Migration planning

The goal of the Migration planning phase is to develop the **migration plan** that, once approved by the project stakeholders, will direct the migration activities in Phase 3. Like the project plan, the migration plan will be tailored to suit the requirements of the particular project. The decisions and lessons learned in each project are, however, documented by State Records NSW and can be re-used in subsequent projects.

Migration planning components

The following table outlines the components that make up Phase 2 Migration Planning:

Component	Outline	Responsibilities
Migration assessment	Assessment activities will vary depending on the needs of each project. Broadly, assessment involves: • file format analysis and identification • determination of preservation actions • metadata analysis • metadata mapping • assessment of complex objects/systems such as databases • identification of requirements for ongoing access and use of information • description of the records being migrated • registration of information in State Records NSW control system required for ongoing management of and access to migrated digital State archives • identify options for action on source records Successful assessment will normally require a high level of stakeholder engagement and collaboration. If any additional costs or risks to the overall project are identified during this process, these should be incorporated back into the project plan. The outputs from migration assessment activities	• Agencies are responsible for providing information, resources, access to digital records/systems and technical support to undertake assessment • State Records is responsible for undertaking assessment to determine migration project requirements to be captured in the migration plan • Agencies and State Records provide resources to support assessment activities • Stakeholders required to be involved in assessment are identified in the approved project plan

	are used to determine how the digital records will be migrated to the Digital Archives. This is outlined in the migration plan.	
Migration plan	The migration plan details how the migration will be undertaken. It defines: • required actions including format transformations, source to target mapping and metadata mapping • access requirements (agency and public access) • how the migration will be tested and validated (pre and post migration) • actions on source records and decommissioning planning The migration plan is one of the key project documents along with the project plan. Decision making on any adjustments to the migration project should be reflected in all both of these key pieces of project documentation. As with project plans, in order for migration projects to move to the next phase, the migration plan must be approved by State Records NSW and agencies.	• Agencies and State Records collaborate on developing a migration plan • State Records is responsible for identifying migration requirements • Agencies and State Records are responsible for providing adequate resources for the migration project – these resources will include stakeholders identified in the project plan • Additional costs and responsibilities for costs for the migration are added to the project plan • Agencies and State Records are responsible for approving the migration plan

Phase 3: Migration

In the Migration phase, the activities described in the **migration plan** are performed.

Migration components

The following table outlines the components that make up Phase 3 Migration:

Component	Outline	Responsibilities
Migration preparation	Migration preparation covers actions that should be undertaken before the migration is commenced. Migration preparation activities can include: • data cleansing • project stakeholder meetings • pre-migration testing • any other preparatory activities detailed in the migration plan Pre-migration testing is an important activity that can be used to validate actions set out in the migration plan. This can be an iterative process with changes made to the migration plan based on the results of testing. Any changes to the migration plan should be documented and executed in accordance with the change management procedures outlined in the project plan. Sampling can be used as part of the testing strategy where large numbers of records are involved.	• Responsibilities for migration preparation activities are determined during migration assessment and outlined in the migration plan that is approved by agencies and State Records • Migration preparation may require collaboration between agencies and State Records
Migrate	The migration of records to the Digital Archives incorporates automated and customisable workflows in the Digital Archives system which will be deployed based on the requirements of the migration plan.	• Responsibilities for migration activities are determined during migration assessment and outlined in the migration plan that is approved by agencies and State Records • State Records will provide resources for required migration actions to ingest digital records

		into the Digital Archives repository
Migration validation	Migration validation covers tests that should be undertaken after the migration has been performed. Post-migration testing validates that the migration plan has been executed successfully. If any errors are identified or any issues require fixes then these will need to be addressed before the migration is deemed complete. This may require the migration to be re-run. Any changes to the migration plan should be documented and executed in accordance with the change management procedures outlined in the project plan. Once the migration has been validated and all required actions in the migration plan have been completed the migration project can move onto Phase 4 Project Completion.	Responsibilities for migration validation activities are determined during migration assessment and outlined in the migration plan that is approved by agencies and State Records

Phase 4: Project completion

The final phase in the migration methodology is project completion, the logical companion to the project planning phase where project start up activities commenced the migration project.

Project completion components

The following table outlines the components that make up Phase 4 Project completion:

Component	Outline	Responsibilities
Transfer of control	Once the records have been successfully migrated into the Digital Archives repository, State Records takes control of the records from the transferring agency in accordance with Part 4 of the State Records Act 1998 and is then responsible for the ongoing management of the records. This includes providing for authorised access to the records.	State Records is responsible for accepting formal control of the records migrated to the Digital Archives
Source records	Actions relating to source records may be included in the migration plan. This includes the deletion of source records under GA33 – Source records that have been migrated. The minimum retention of source records after a completed migration is 6 months. It is anticipated that agencies will generally seek to destroy source records following migrations and rely on the Digital Archives for ongoing access. However some agency may choose to retain 'read only' sets of records for reference purposes	- Agencies are responsible for undertaking the action on source records - Agencies are responsible for ensuring this action is authorised
Project wrap up	The project wrap up ensures that all project stakeholders are satisfied that identified project deliverables and outcomes have been achieved and formally closes the project. Wrap up activities can include: - Meetings - Matching project deliverables against project outcomes - Formal project sign off - Shared documentation and reports to be captured	- State Records and agencies are responsible for the assessing migration project deliverables and outcomes - State Records and agencies are responsible for approving the formal closure of migration projects

	as records of the migration project	
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Post migration project

Once a migration project has been completed there will be ongoing requirements in relation to access to records and management of records.

Access to records

Agencies will have [access](#) to records they have created or control and have been migrated to the Digital Archives when required. Records migrated to the Digital Archives will be open to public access based on the access direction that was determined by the agency in consultation with State Records during planning activities. Access directions determine when records will become open to public access.

If records migrated to the Digital Archives are closed to public access agencies must continue to make determinations on access requests made under the [Government Information \(Public Access\) Act 2009](#).

Public access to State records that are in excess of 30 years old is covered in [Part 6 of the State Records Act 1998](#). Records stored in the Digital Archives that are open to public access will be searchable via search facilities located on the [State Records NSW website](#).

Management of records

Once records are migrated to the Digital Archives, State Records is responsible for repository management, preservation planning and access (to agencies and/or the public depending on the access direction[s] in place). This is in accordance with State Records NSW's role as the NSW Government's archives and records management authority.

Migration is an integral part of this ongoing management and is factored into repository management and preservation planning. State Records NSW will use the migration methodology to manage migrations required for digital continuity purposes as part of the operations of the Digital Archives.

Appendix A: Migration methodology checklists

Phase 1 Project planning

Phase 2 Migration planning

Phase 3 Migration

Phase 4 Completion

Phase 1 Project planning checklist

Migration preparation activities have commenced	
Migration project stakeholders have been identified	
Migration project stakeholders have been engaged	
Preliminary investigation is complete	
The records are eligible for transfer under State Records' s.29 guidelines	
Information gathering is complete	
The migration project is justified	
The migration project is supported	
The migration project scope has been defined	
The migration project can be resourced	
The project plan has been drafted	
The project plan has been approved	
Risk and issue management in place	

Project governance has been established	
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Phase 2 Migration planning checklist

The migration scenario has been analysed	
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Assessment requirements have been determined	
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Migration assessment outputs have been analysed	
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Migration requirements have been determined	
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Action on source records has been determined	
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Any additional risks have been identified	
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The migration strategy has been determined	
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The migration can be resourced	
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Migration assessment is complete	
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The migration plan has been drafted	
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The migration plan has been approved	
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The migration schedule is in place	
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Roles and responsibilities have been defined	
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Risks and issues have been monitored and managed	
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Phase 3 Migration checklist

Migration preparation activities have commenced	
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Pre-migration testing has commenced	
Any errors from pre-migration testing have been identified and fixed	
Pre-migration testing is complete	
Migration preparation activities are complete	
Any required changes to the migration plan have been made	
Records are migrated to the Digital Archives repository using defined workflows	
Post-migration testing has commenced	
Any errors from post-migration testing have been identified and fixed	
Post-migration testing is complete	
The migration is validated	
Risks and issues have been monitored and managed	

Phase 4 Project completion checklist

State Records has taken formal control of the records	
Planning for action on source records is in place	
If required, source records have been deleted under authorisation	
Project deliverables have been assessed	
Project outcomes have been assessed	
Risks and issues have been monitored and managed	

Formal sign off for project closure from key project stakeholders has been done	
Any relevant documentation and reports created during the migration project have been shared	
Documentation and reports created and shared during the migration project are captured as records	
The migration project is closed	

For more information

For advice on starting a migration project:

- Email digitalarchives@records.nsw.gov.au
- Call (02) 9673 1788 or
- Visit www.records.nsw.gov.au/digitalarchives