UNIVERSITY LIBRARY

Digital Preservation Strategy & Roadmap

June 2021

Contents

Change	Version	Date	Action Officer
Document development	Draft	April 2021	Sam Farnsworth
Edits	Draft	April - June 2021	Sam Farnsworth
LLT Endorsed document	1.0	9 June 2021	Sam Farnsworth

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INTRODUCTION

University Library

The purpose of the University Library is to provide a wide range of library services responsive to the needs of its users, including:

• expert information management advice and support
• management, storage and preservation of the collection, whether in physical or digital format
• expert advice and support for the discovery of information resources
• management and provision of facilities and spaces.

It achieves this by strategically:

• being a leader in information management
• having staff who are highly skilled, motivated and innovative
• having quality facilities, resources, systems and services
• pursuing proactive partnerships.

Nature of the University Library's Digital Collections

The University *Collections Policy* defines collections as University assets and encourages their prudent and compliant management.

Digital information resources are critically important and an increasingly growing component of the University Library's collection, supported by an "e-first" policy. Such resources include:

• licensed electronic resources – including online journals, e-books, streaming media, databases
• published and unpublished information assets/files, such as records, the Archives and personal papers managed as manuscripts published and unpublished research data and outputs, including theses, grey literature, digital artworks
• material digitised for access and/or preservation purposes
• content from the University website harvested for recordkeeping purposes.

Collection selection criteria of the University Library are defined in its *Collection Strategy*.

Of these resources, a proportion are of continuing value because they are of cultural, scholarly and/or corporate significance to the University and/or the wider community.

Collection Management Mandate

The University Library is mandated to perform the Collection Management function in accordance with the University's *Information Management Policy* and *Collections Policy*. The below table summarises which information resources each policy applies to, the assigned responsibilities of the University Library and how these relate to particular Collection Management activities.

These two documents also provide a University-wide policy mandate and context for the Library's digital preservation priorities and approaches, as shown overleaf, combined with the following Digital Preservation Principles.

Information Management Policy		Collections Policy	
INFORMATION ASSETS •Records •Research Data and Outputs (including theses) •Web Pages		**LIBRARY COLLECTIONS** •Published Resources – e-publications; web archive •Unpublished Resources – manuscripts •Information Assets – the Archives; research data and outputs (including theses) •Digitised material	
Policy Mandate/Responsibility	**Collection Management Activity**	**Policy Mandate/Responsibility**	**Collection Management Activity**
•Develop and maintain the *Information Management Procedure Manual*.	**Governance**	•Develop and maintain the *Collections Policy* on behalf of the University.	**Governance, Management**
•Maintain a Disposal regime for Information Assets in accordance with legislative and compliance requirements.	**Governance, Risk Management,**	•Ensure the University Disaster Response and Recovery Plan for the Collections is maintained and kept up to date.	**Risk Management, Preservation**
•Maintain the University Archives to support the ongoing retention, preservation and accessibility of permanent value Information Assets.	**Management Preservation, Access**	•Strategically oversee the management of the Collections in its custody, including the allocation of necessary resourcing such as appropriate space, qualified staff and recurrent funding.	**Governance, Management**
•Administer and upgrade as necessary the University's dedicated Electronic Recordkeeping System.	**Capture/ Acquisition, Management**	•Care for, store, manage, use and provide access to the Collections held in its custody in accordance with this Policy, related procedures, relevant Collection Management industry standards and best practice codes.	**Governance, Management, Preservation, Access**
•Administer public access to archival Information Assets within the constraints of security, confidentiality, privacy, contractual obligations, ethical considerations and archival access conditions.	**Access**	•Regularly review and update the insurance and indemnity cover of the Collections in its custody in consultation with Legal and Risk Services.	**Risk Management, Management**
		•Organise, as needed, the valuation of the Collections held in its custody.	**Risk Management, Management**
		•Provide advice to those academic faculties, departments and/or administrative areas responsible for locally managing a particular Collection.	**Governance**

Strategy & Roadmap Objectives

• To provide a framework for the University Library's digital preservation program as part of its overall collection management function.
• To focus initially on actions and priorities for preserving digital information under the control of the University Library.
• To identify and assign actions that, progressively implemented, will enable the University Library to reach its desired level of maturity for digital preservation.
• To provide a reference document for discussing digital preservation with the wider University.

Related Documentation

- University *Collections Policy*
- University *Information Management Policy*
- University Information Management Roadmap
- University Library Strategic Plan
- University Library Operational Plan 2021
- University Library Collection Strategy
- University Library Research Support Framework.

Responsibility

The Digital Preservation Working Group shall report to the Associate University Librarian, Academic Engagement who has ultimate responsibility for this document and for reporting on progress to the Library Leadership Team (LLT).

Approval and Review

This document was endorsed by the LLT on 9 June 2021. The Digital Preservation Working Group will review this document each year following completion of the annual *Digital Preservation Coalition (DPC) Rapid Assessment Model* (DPC RAM) and a report and/or revised document will be submitted to the LLT for endorsement.

DIGITAL PRESERVATION: OVERVIEW

What is Digital Preservation?

For the purposes of this Strategy & Roadmap, digital preservation is defined as:

> *a formal coordinated endeavour to ensure that digital information of continuing value, and irrespective of format, remains accessible and useable.*

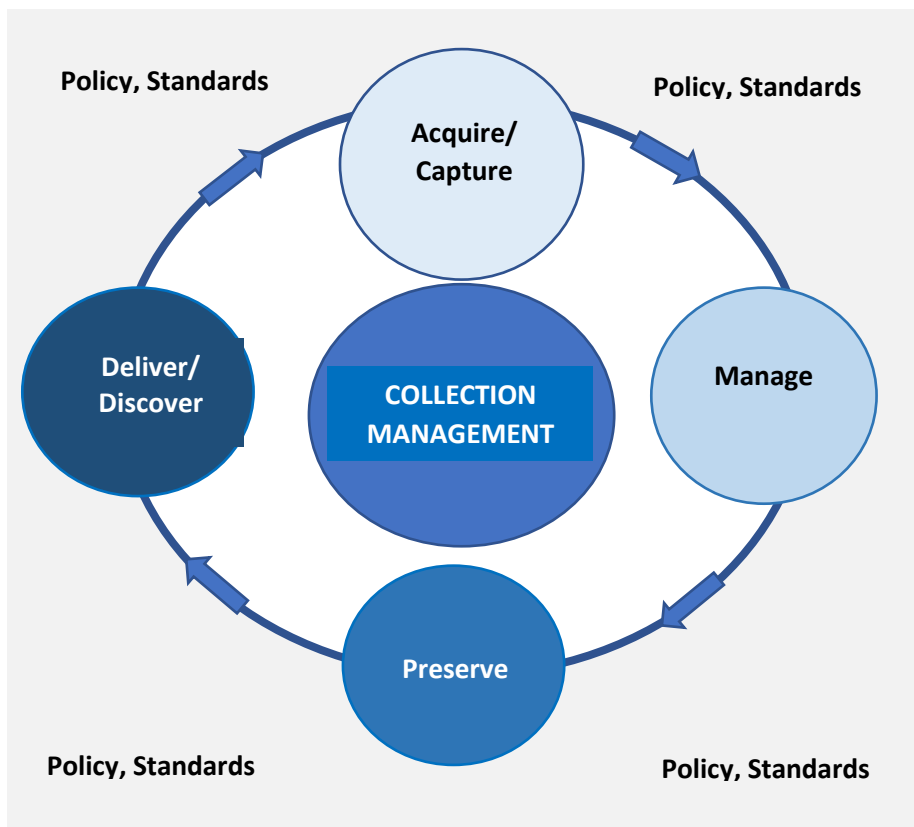In relation to the University Library's digital collections, this includes:
- licensed electronic resources – University Press publications for which the University Library has ongoing responsibility; the support of dark archives such as Portico and Clocks
- published and unpublished information assets/files – information assets deemed as permanent in accordance with the University's records disposal schedules; personal papers managed as manuscripts and accepted as an ongoing responsibility of the University Library in accordance with *the Collections Policy*
- published and unpublished research data and outputs – Higher Degree Research (HDR) theses
- material digitised for preservation purposes
- University website content harvested because of its permanent value to the University.

Digital Preservation ensures the sustainability of information as digital objects so they can be accessed in the future. This sustainability relies upon:
- robust governance
- the continued use of appropriate equipment and technological platforms
- active processes to protect permanent digital assets from the point of creation or transfer
- staff and continued investment in human infrastructure and skills.

Digital Preservation is not a one-off activity. Successful preservation requires a series of managed activities to extend the usable life of digital resources and to protect them from the threats of poor decision making at creation, benign neglect, media failure, physical loss, obsolescence and disrupted custody.

Digital preservation is a part of the University Library's overall collection management function, as represented below.

More specifically, digital preservation practices are intrinsic to a range of University Library responsibilities including:

• institutional repository management
• archival management of the University's permanent digital records
• custodianship of born digital manuscript collections
• capture and discovery of theses
• ad-hoc and planned project digitisation activities.

Digital Preservation Challenges

While the overarching approach is self-evident, the actual implementation is complex and fraught because of

• the vast volume of digital content
• the diversity of file formats and original hardware/ software
• the inherent vulnerability of digital files due to poor decision making at creation, neglect and/or unintentional destruction
• the persistent threat of obsolescence.
• the Library's limited control over activities that occur prior to its acquisition of digital assets that impact the information's suitability for preservation
• the ongoing need for having skilled staff to do digital preservation.

Digital Preservation Principles

The University Library's *Digital Preservation Strategy & Roadmap* has been developed with reference to the following ten key principles to guide decision-making on current and future digital preservation activity and projects.

Access	Prioritise access and potential future re-use as the primary purpose of Digital Preservation
Standards	Plan for the long term by aligning with Open Archival Information System (OAIS), ISO 14721 and/or ISO16363 wherever practicable
Metadata	Use metadata to provide full descriptive information, technical specifications, access & rights including reuse, and preservation actions
Technically robust	Commit to an interoperable, reliable, and scalable digital archive focusing on open source technologies with adequate, secure, and geographically diverse backup and disaster recovery safeguards
Authentic	Ensure the digital objects can be trusted as an accurate representation of the original files with documented chains of custody and transparent preservation strategies
Integrity	Ensure the digital objects are complete and protected against unauthorised or accidental alteration via fixity checking of digital objects and auditable preservation actions
Collaborative	Adhere to community standards in our approaches and contribute back to that community especially through the DPC, including participation on collaborative digital preservation solutions
Legally compliant	Comply with intellectual property, regulatory, copyright, privacy, and ownership rights for preservation of and access to all digital objects

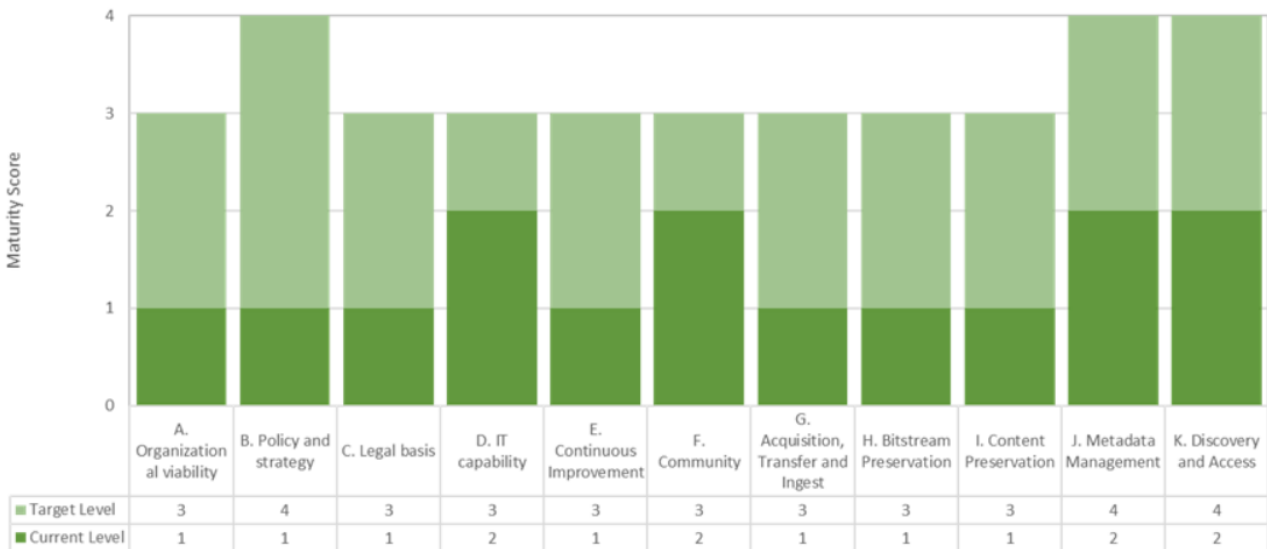| Currency	Maintain current documentation including procedures and practices and commit to on-going training and education shared widely with staff
Sustainable	Recognise the financially feasible with a risk analysis to determine the most cost-effective, transparent and auditable management of digital objects

DIGITAL PRESERVATION: ROADMAP
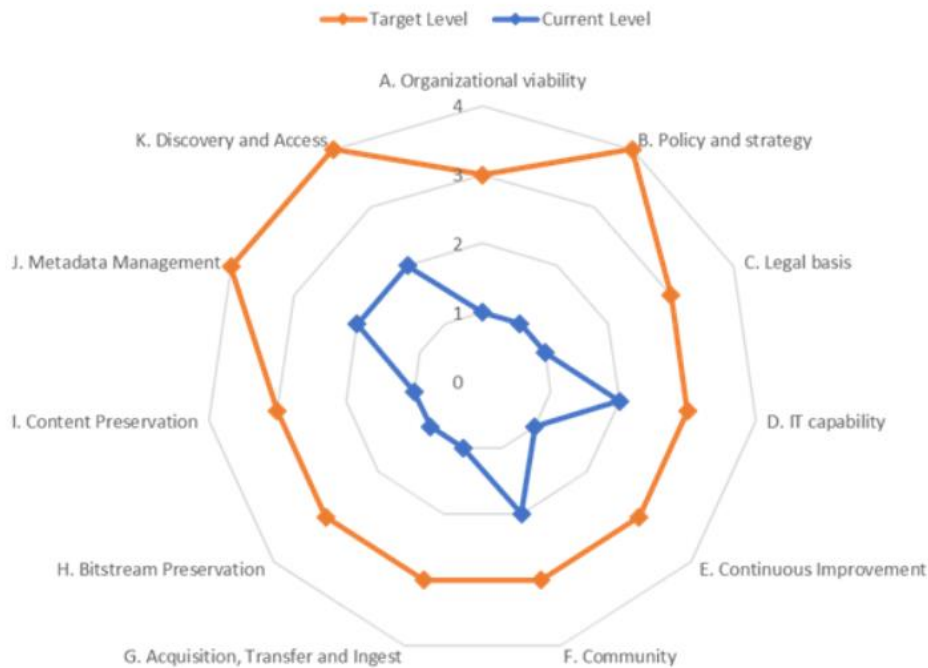
Current Level

The current state of digital preservation at the University Library is summarised below. The Library's organisational readiness has been initially determined following completion of its first DPC RAM in July 2020.

The DPC RAM is a maturity modelling tool that has been designed to enable a rapid benchmarking of an organisation's digital preservation capability whilst remaining agnostic to solutions and strategy[1].

Digital Preservation Coalition Rapid Assessment Model (DPC RAM):
University of Adelaide Library, 24 July 2020

	A. Organization al viability	B. Policy and strategy	C. Legal basis	D. IT capability	E. Continuous Improvement	F. Community	G. Acquisition, Transfer and Ingest	H. Bitstream Preservation	I. Content Preservation	J. Metadata Management	K. Discovery and Access
■ Target Level	3	4	3	3	3	3	3	3	3	4	4
■ Current Level	1	1	1	2	1	2	1	1	1	2	2

Digital Preservation Coalition Rapid Assessment Model (DPC RAM):
University of Adelaide Library, 24 July 2020

Overall, the University Library is currently at an Awareness (1) or Basic (2) Level of maturity across the 11 elements of the DPC RAM model, which are grouped under Organisational and Service Capabilities.

To fulfil its collection management mandate, the University Library aims to achieve digital preservation at the Managed (3) or Optimised (4) Level of maturity by progressively completing the priorities of action in the following Roadmap tables.

The DPC RAM will continue to be completed annually by the University Library to assess whether its levels of maturity are improving.

Target Level

The following tables provide the Roadmap for progressing and improving digital preservation in regards to both Organisational and Service Capabilities. For the purposes of the Roadmap, the DPC RAM capabilities have been grouped under the following three strategic themes:

- **Governance and Policy Environment** [DPC RAM elements A, B, C, E]
- **People** [DPC RAM element F]
- **Asset Management** [DPC RAM elements D, G-K].

Under each strategic theme the Roadmap tables set out the following:
- **WHY**: for the Library to progressively achieve its desired levels of digital preservation maturity by defining,
- managing and excelling
- **HOW**: by completing the priorities of action as part of Collection Management activities
- **WHEN**: in three-phases, with defined timeframes set by the Library through operational and project planning
- **WHAT**: those categories of digital information of continuing value managed by the University Library
- **WHO**: assigned Library individuals, operational teams and work/project groups as identified under Responsibility.

1. GOVERNANCE & POLICY FRAMEWORK (Organisational)

TARGET: *Responsibility is taken for the strategic oversight and governance of digital preservation initially within the University Library based on a risk approach. Includes the allocation of resourcing and the development and implementation of fit-for-purpose procedures and processes.*

	WHY	HOW	Collection Management Activity				Phase			Digital Information Category					WHO
	Outcome	Priorities of Action	Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	Responsibility
1.1	DEFINE	Develop terms of reference and establish Library multi-team Digital Preservation Working Group (LDPWG), with responsibility for collaborating, progressing and reporting on Roadmap actions to Associate University Librarian, Academic Engagement	✓	✓	✓	✓	➙ (1→3)			✓	✓	✓	✓	✓	• Manager, Digital Innovation • LDPWG
1.2	MANAGE	LDPWG to report into Information Management Governance Committee as required	✓	✓	✓	✓	➙ (1→2)			✓	✓	✓	✓	✓	• LDPWG
1.3	DEFINE	Desktop review and gap analysis of Library policies and procedures for existing systems/applications and related processes in relation to CM activities and digital information of continuing value	✓	✓	✓	✓	➙ (1)			✓	✓	✓	✓	✓	• Manager, Digital Innovation • Library Applications Team • Library System Owners
1.4	MANAGE	Update existing procedures or prepare/adapt new procedures for existing systems/applications and related processes to align where practicable with OAIS ISO standard 14721 and/or ISO16363	✓	✓	✓	✓	➙ (1→2)			✓	✓	✓	✓	✓	• Manager, Digital Innovation • Library Applications Team • Library System Owners
1.5	EXCEL	Develop procedures based on community standards if a dedicated digital archives solution is implemented	✓	✓	✓	✓			➙ (3)						•
1.6	DEFINE	Conduct risk assessment for systems/applications and collection types within the Library's control to determine those at high risk of failure or loss and prioritise these for initial review and action	✓	✓	✓	✓	➙ (1)			✓	✓	✓	✓	✓	• Library Applications Team • Library System Owners

1. GOVERNANCE & POLICY FRAMEWORK (Organisational) (cont'd)
TARGET: *Responsibility is taken for the strategic oversight and governance of digital preservation initially within the University Library based on a risk approach. Includes the allocation of resourcing and the development and implementation of fit-for-purpose procedures and processes.*

	WHY	HOW					WHEN			WHAT					WHO
	Outcome	Priorities of Action	Collection Management Activity				Phase			Digital Information Category					Responsibility
			Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	
1.7	DEFINE	Identify and document what legal rights and responsibilities the Library must adhere to regarding digital information of continuing value	✔	✔		✔	➡			✔	✔	✔	✔	✔	• Manager, Digital Innovation • Copyright & Open Access Coordinator
1.8	MANAGE	Monitor the Library's level of digital preservation maturity by completing the DPC RAM every twelve months			✔		➡			✔	✔	✔	✔	✔	• Manager, Digital Innovation in consultation with Library teams
1.9	EXCEL	Investigate and secure funding streams/resourcing for digital preservation program and/or specific digital preservation projects	✔	✔	✔	✔		➡		✔	✔	✔	✔	✔	• Manager, Digital Innovation • LLT

2. PEOPLE (Organisational)
TARGET: Designated staff internal and external to the University Library are trained and upskilled. The University Library also furthers its digital preservation program by engaging with and contributing to the wider digital preservation community.

	WHY	HOW	Collection Management Activity				WHEN			WHAT					WHO
	Outcome	Priorities of Action					Phase			Digital Information Category					Responsibility
			Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	
2.1	DEFINE	Develop and deliver initial information and refresher sessions for **all** University Library staff including: background in the importance and complexity of digital preservation; introduction to legal, compliance, research benefits, and cultural heritage benefits of preservation; pointers on spotting data at risk; and bringing it to the attention of the right people in a timely fashion	✔	✔	✔	✔	→			✔	✔	✔	✔	✔	• Manager, Digital Innovation • Library staff
2.2	MANAGE	Develop and deliver Digital Preservation Champions workshop for **targeted** University Library staff, with the objective of creating 'go to' people within library teams who can advise on or resolve issues with digital preservation as they arise	✔	✔	✔	✔	→			✔	✔	✔	✔	✔	• Manager, Digital Innovation • Designated staff within Library teams
2.3	MANAGE	Deliver relevant training to **targeted** University Library staff (this may include general training such as the Novice to Know How program, or more specialist training)	✔	✔	✔	✔	→			✔	✔	✔	✔	✔	• Manager, Digital Innovation • • LDPWG
2.4	MANAGE	Continue to share experiences and updates on digital preservation progress with **all** University Library staff to promote a learning culture and continued awareness	✔	✔	✔	✔		→		✔	✔	✔	✔	✔	• Manager, Digital Innovation
2.5	DEFINE	Identify appropriate **ITDS representatives** to champion digital preservation across the University, contribute to Roadmap deliverables and participate on the LDPWG	✔	✔	✔		→			✔	✔	✔	✔	✔	• Manager, Digital Innovation • • LDPWG

2. PEOPLE (Organisational) (cont'd)

TARGET: Designated staff internal and external to the University Library are trained and upskilled. The University Library also furthers its digital preservation program by engaging with and contributing to the wider digital preservation community.

	WHY	HOW	Collection Management Activity				Phase			Digital Information Category					WHO
	Outcome	Priorities of Action	Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	Responsibility
2.6	EXCEL	Share experiences with senior managers **external** to the University Library to foster awareness of digital preservation	✔						→	✔	✔	✔	✔	✔	• LLT
2.7	EXCEL	Adapt Digital Preservation Champions workshop materials to suit a **non-Library** audience	✔				→	→	→		✔	✔			• Manager, Digital Innovation
2.8	EXCEL	Support digital preservation of research outputs as part of the University Library's *Research Support Framework*	✔				→	→	→			✔			• Manager, Digital Innovation • Senior Manager, Academic Liaison
2.9	EXCEL	Include digital preservation advice and assistance as part of the University Library's information management/records services. Includes liaising and collaborating with appropriate University bodies such as Research Services and the Adelaide Graduate Centre, as well as Information Custodians responsible for business systems	✔					→	→			✔			• SpARK
2.10	EXCEL	Engage with and contribute to Australian and international digital preservation community through involvement in DPC and other relevant professional communities, eg CAUL, Digital Dexterity, Figshare user group, etc	✔	✔	✔		→	→	→	✔	✔	✔	✔	✔	• Manager, Digital Innovation • LDPWG

3. ASSET MANAGEMENT (Service)

TARGET: The University Library effectively manages the collection management lifecycle of digital information of continuing value in relation to acquisition/capture, ingest, processing, metadata, storage, preservation and delivery/discovery.

	WHY	HOW					WHEN			WHAT					WHO
	Outcome	Priorities of Action	Collection Management Activity				Phase			Digital Information Category					Responsibility
			Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	
3.1	DEFINE/ MANAGE	Work with Special Collections team to create, document and socialise digitisation procedures and decision-making frameworks	✓	✓	✓	✓	→→→						✓		• SpARK • LDPWG
3.2	DEFINE	Assess digital backlog by completing survey of holdings of digital content on physical media in special collections			✓			→			✓				• SpARK
3.3	MANAGE	Commence reformatting of high-risk media (eg AV) to accessible media/system. May include external resourcing options, including University and external grant programs		✓	✓			→			✓				• SpARK
3.4	DEFINE	Review existing descriptive metadata capture, quality and management within University Library systems against community standards and prepare gap analysis		✓	✓	✓	→			✓	✓	✓	✓	✓	• Metadata Project Team • LDPWG • SpARK
3.5	MANAGE	Implement descriptive metadata improvements through development/revision of procedures and related BAU processes, eg acquisition and ingest of material/content		✓		✓		→		✓	✓	✓	✓	✓	• Metadata Project Team • Collections & Access Services • SpARK • LDPWG
3.6	EXCEL	Define and implement preservation metadata within relevant system/s			✓			→		✓	✓	✓	✓	✓	• Collections & Access Services • SpARK • Library Applications Team
3.7	DEFINE	Identify and address access issues and improvements for digital information of continuing value				✓	→			✓	✓	✓	✓	✓	• LDPWG • Discovery Project Team

3. ASSET MANAGEMENT (Service) (cont'd)

TARGET: The University Library effectively manages the collection management lifecycle of digital information of continuing value in relation to acquisition/capture, ingest, processing, metadata, storage, preservation and delivery/discovery.

	WHY	HOW	Collection Management Activity				WHEN Phase			WHAT — Digital Information Category					WHO
	Outcome	Priorities of Action	Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	Responsibility
3.8	DEFINE	Review capabilities of existing University Library systems/applications to manage digital information throughout lifecycle from acquisition/capture to discovery	✓	✓	✓	✓	→			✓	✓	✓	✓	✓	• Library Applications Team • Library System Owners
3.9	MANAGE	Establish formal monitoring and auditing procedures/processes of asset management activities (service capabilities) conducted within existing University Library systems/applications	✓	✓	✓	✓		→			✓				• Library Applications Team • LDPWG
3.10	EXCEL	Benchmark audit processes in comparison with relevant colleague institutions							→	✓	✓	✓	✓	✓	• Manager, Digital Innovation • LDPWG
3.11	EXCEL	Review capabilities of existing University Library systems/applications to manage ***digital objects*** against OAIS ISO standard 14721 and/or ISO 16363	✓	✓	✓	✓	→			✓	✓	✓	✓	✓	• Library Applications Team • Library System Owners
3.12	MANAGE/ PROACTIVE	Review existing University Library web-archiving program/process against OAIS ISO standard 14721 and/or ISO 16363 and identify any gaps	✓	✓	✓	✓	→							✓	• SpARK
3.13	EXCEL	Sandbox digital preservation activities (eg file fixity, bit-sum checks, virus-scanning, etc) for at least one information type (eg research outputs - theses) using open source, free and OAIS-compliant software such as Archivematica and Bit Curator to trial processes and improve learnings to inform future BAU digital preservation	✓	✓	✓	✓		→				✓			• LDPWG or dedicate project team

3. ASSET MANAGEMENT (Service) (cont'd)

TARGET: The University Library effectively manages the collection management lifecycle of digital information of continuing value in relation to acquisition/capture, ingest, processing, metadata, storage, preservation and delivery/discovery.

	WHY	HOW	Collection Management Activity				WHEN Phase			WHAT Digital Information Category					WHO
	Outcome	Priorities of Action	Acquire/Capture	Manage	Preserve	Discovery	1	2	3	E-Publications	Unpublished Assets – Archives, manuscripts	Research Outputs	Digitised Material – Preservation copies	Web Archive	Responsibility
3.14	EXCEL	Use sandbox/trial to determine options around dedicated systems (eg Preservica) versus integrations of existing system/s (eg dSpace) with digital preservation software (such as Archivematica)	✔	✔	✔	✔			➡	✔	✔	✔	✔	✔	• LDPWG or dedicate project team
3.15	EXCEL	Investigate HathiTrust membership as a means of: • primary and/or secondary repository storage for University Library digital publications and/or • access and discovery of content contributed by other member institutions			✔	✔			➡	✔					• Manager, Digital Innovation • Collections and Access Services • LDPWG

DEFINITIONS

- **Collection** – those collections intended to be held in trust and for the benefit of the University and users because of their teaching and learning, research, historical, cultural and/or scientific significance and/or rarity. Includes Library Collections, Museum and Heritage Collections, Art Collections, Archives, Rare Books and Manuscripts in electronic or physical format
- **Collection Management** – incorporates the various of activities involved in selecting, acquiring, developing, caring for, storing, preserving, disposing, deaccessioning and providing access to collections
- **Define** – Assess current practices, processes, systems and/or governance to establish a baseline and/or identify gaps and areas for improvement
- **Digital Object** – information assets and resources managed in accordance with digital preservation standards
- **Digital Preservation** - a formal coordinated endeavour to ensure that digital information of continuing value, and irrespective of format, remains accessible and useable
- **Excel** – lead digital preservation activities within the broader University and/or participate in proactive initiatives as part of the wider digital preservation community.
- **Information Assets** – Information, data and records in any format, where it is created or received through the conduct of University business and treated as an asset and resource that the University harnesses to meet its strategic, operational and legal needs
- **Library Collection** – a collection maintained by and in the custody of the University Library. Includes the main collection, neighbourhood collections, collections held at Waite, Roseworthy and the Barr Smith Library, as well as Special Collections
- **Library System Owner** – the University Library staff member or team responsible for the management and administration of a University Library System, eg ALMA, HPE Content Manager, EMu, etc
- **Manage** – Progressively implement improvements or new practices, processes and/or systems within an established and documented governance framework to achieve desired levels of maturity

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