

Digital Strategy 2024–2027

7 June 2024



The National Library of Australia acknowledges Australia's First Nations Peoples – the First Australians – as the Traditional Owners and Custodians of this land and gives respect to the Elders – past and present – and through them to all Australian Aboriginal and Torres Strait Islander people

Table of Contents

Executive Summary 1

Our Vision..... 1

Context 1

Our Principles 3

Our Strategic Priorities..... 3

First Nations 5

Collect..... 5

Connect 6

Collaborate..... 6

Capability 7

Enabling Capabilities 9

Dependencies and Risks 10

Glossary 11

Executive Summary

Australian society is in the midst of a major digital transition that fundamentally changes the ways in which collecting and memory institutions must operate. The digital deluge – the sheer volume and dynamic nature of content documenting our society, and the need to make sense of, capture, securely store and provide meaningful access to it – is a significant challenge for the Library.

The Library is a respected custodian of Australia's published, written, oral, visual and digital heritage and a world-leading provider of digital access to that heritage. We have a track record of delivering innovative technology-based solutions, providing national digital infrastructure that enhances the visibility and accessibility of collections from hundreds of partners to the Australian public and the world. Our collaboration role is unique amongst cultural institutions and the outcomes of national digital infrastructure have been profound for Australia's cultural landscape.

We will leverage increased ongoing, indexed funding announced in May 2023 to continue to build digital library collection, services and storage that can be sustained and scaled using secure interoperable architectures, replacing and decommissioning Trove's end-of-life software elements and consolidating our technology portfolio. We will responsibly adopt nascent technology to improve Library workflows and digital services to the public.

This document outlines an adaptive Digital Strategy through which we will leverage capability from across the Library to respond to changes in our operating context, whilst continuing to deliver access to the digital collection and sustainable and innovative services to our partners and to the Australian public.

Our Vision

Build on our strong foundations to deliver a secure, sustainable, innovative, and ambitious digital cultural infrastructure for the nation.

Context

The Library exists in an environment that is characterised by rapid change in several areas. Broad national and global trends impacting the Library, outlined in the Library's Corporate Plan, include:

- Australian Government priorities, including the National Cultural Policy and whole-of-government Data and Digital Government Strategy
- audience expectations and access to the collection
- technology advancement and disruption
- intensified competition for skilled workers in a post-COVID world.

From these trends, we have identified significant drivers that have influenced this Digital Strategy.

Government priorities

The Australian Government has committed to becoming one of the top digital governments in the world by 2025 and a world-leading digital economy and society by 2030. This Digital Strategy is framed by whole-of-government digital priorities, including the missions of the Digital Technology Agency 2023 Data and Digital Government Strategy. Our enterprise architecture will comply with the Australian Government Architecture supporting principles of accessibility and inclusion. We will incorporate relevant and applicable associated

guidance, such as the Digital Service Standard, Secure Cloud, Digital Sourcing, and Protective Security Policy Framework, in the design and delivery of our digital services, promoting Government outcomes.

The Strategy also supports the National Cultural Policy, Revive, by delivering against the Library's corporate priorities.

Technology

Rapidly evolving consumer, business and enterprise technology presents an ongoing challenge.

Adaption: The Library must continue to design and maintain a contemporary technology environment, considering corporate priorities, resource constraints and risk appetite. We will adopt an adaptive strategy to enable us to capitalise on current investment and respond if investment for shared national cultural digital infrastructure is made available. Where appropriate we will collaborate with relevant communities to develop and deploy open-source technologies for Library use cases. We will be transparent as to our technology choices.

Artificial Intelligence (AI) and Machine Learning (ML): Cognitive technologies are increasingly being used to solve business problems and augment capability. Whilst commercial and commodity AI services and internally developed solutions can be applied to various Library use cases, we will always ensure technology to control the operation of AI is within the Library's control, not third parties'. The Library will make pragmatic choices to use existing language models suitable for our environment, including copyright considerations, rather than investing in bespoke, and high risk, development of our own models.

Cloud: The shift to Cloud-based technologies is accelerating. Cloud-based infrastructure, platform and software-as-a-service (SaaS) commercial options benefit the Library's core business and corporate systems, especially with innovation and agility.

Interoperability: The Library must ensure the products and services are interoperable and flexible within its ecosystem, with external Cloud providers and other partners in the research, education, and cultural sector. Legacy data and services will be shifted to interoperable Cloud-ready architectures where appropriate.

Cyber security

Robust cyber security capabilities are needed to mitigate the increasing risk of cyber attacks and to meet the Australian Government's vision to create a more secure online world for Australians. The sophistication and scale of cyber threats continues to increase, increasing the risk to our digital collection and technology operations. The cyber attack on the British Library in October 2023 and other incidents in Australia such as cyber attacks on Optus and Medibank Private have demonstrated that a cyber incident is a probable event for which all public institutions, including the Library, must prepare. The focus will be on reducing cyber security risk and preparing to recover services and the digital collection in the event of an attack, whilst maturing our internal people capability supplemented by targeted outsourcing.

Meeting citizen needs

Australia's increasingly culturally and linguistically diverse community has an appetite for accessible research and discussion about individual, community, and national identity. The community has enthusiastically adopted digital publishing platforms that both enhance and challenge the Library's ability to collect documentary heritage. Additionally, Library policies and the National Cultural Policy call for improved digital connectivity, including for First Nations communities and people in regional and remote areas, to support increased access to arts and cultural activities.

Our users' digital capability has also increased with their demand for sophisticated digital services. Library users have increasingly high expectations for engaging with Library collections and most engagement with the

Library is via digital channels. The Library has developed a significant and loyal user base through Trove and its other digital services. These services will need to be sustained and developed to remain accessible, relevant, useful, and to continue meeting the needs of Australia's diverse audiences irrespective of their geographic, economic or other circumstances.

Resourcing

The Library's reach and impact are based on its technology. Funding uplift provides the ability to balance the decommissioning of legacy systems and redundant data with stabilising and sustaining current digital infrastructure, including managing cyber security risk. However, an infrastructure strategy to address the services and hardware associated with the growing digital and digitised material in the collection, as well as the emerging need for AI computing power, may require additional funding.

Our Principles

The Library's resourcing beyond 2023 has been clarified, with ongoing, indexed funding provided for sustainability of the Library, as well as for stabilisation of Trove.

The Library will replace outdated technologies, including in the Trove ecosystem, and develop standardised, scalable and sustainable digital infrastructure and enabling capability. We will stage innovation and the responsible adoption of nascent technology to better deliver digital Library services and workflows.

The following principles will be used to support decision making in this environment.

Collecting comes first. Material of national importance must be captured for future citizens before it is lost forever, including in new and emerging digital formats.

Access is paramount. We will give citizens contemporary access to the collection, including through nascent technologies, providing accessibility to the Library's collections and services to Australia's diverse audiences without geographic, economic or other boundaries.

Balance cyber security and availability. We will mitigate critical risks, prioritising digital collection recovery and service restoration and embedding cyber security maturity.

Ensure value-for-money, sustainable operations. We will consolidate and simplify our application portfolio, finding common solutions for enterprise-wide requirements. We will develop bespoke solutions only for selected digital Library services, using commercial Cloud solutions where appropriate.

Act in the public interest in our technology choices. We will ensure ethical considerations will be foremost.

Partner with the cultural sector, governments, and industry. We will advocate and pursue shared resourcing, solutions, and infrastructure as a digital leader in the cultural sector. We will leverage technology appropriate to our needs whether that be open-source, commercial or through partnerships.

Our Strategic Priorities

The Library's vision is to connect all Australians with national collections, enriching our understanding of who we are and our place in the world. While the Library's mission has long been to collect, connect and collaborate, how we carry out that mission has changed dramatically. Since the 1990s, the Library has successfully operated digital services by digitising collections for online access, and now, it has led the nation in reaching vast areas of the Australian community.

To continue delivering the Library's vision, we aim to deliver next-generation digital capability to sustain and grow our online operations, offer high-value services to other institutions, and ensure that our technology

infrastructure and capability are responsive, reliable, sustainable, trusted, and secure. With many of the Library's major collecting, description and access platforms developed in partnership with others, we will build on our existing strengths in effective partnerships.

To achieve success across the Library's First Nations, Collect, Connect, Collaborate, and Capability pillars, a set of business capabilities—what the Library does and what it will need to do differently to operate in a rapidly changing environment—has been identified.

Business Capabilities

- **First Nations capability development.** Develop staff capability in Indigenous Cultural Intellectual Property (ICIP) protocols as a basis for system enhancements to First Nations collecting and access.
- **Streamlining workflows.** Support business capability to execute Library functions and processes efficiently and effectively, reducing low-value actions and consolidating service catalogues.
- **Digital collecting.** Use novel approaches and targeted partnerships to collect social media and new digital formats.
- **Nascent technologies.** Use AI to provide enhanced Library services more efficiently, including for transcription and search. This will improve citizen engagement by leveraging the collection's impact.
- **Investing in digital engagement.** Develop an enriching experience that elevates the Library's unique content and services.
- **Sustainable digital infrastructure.** Continue to design, develop, and support value-for-money digital services that support a growing and diverse digital collection.
- **Scalable digital infrastructure.** Implement enabling governance and architecture, leveraging new technology and utilising ongoing, indexed funding to improve services and scale.
- **Develop and operationalise cyber security maturity.** Reduce cyber security incidents, minimise the impact of these events, and recover promptly from compromise.
- **Redundant and resilient infrastructure.** Protect the digital collection, infrastructure and services from cyber security threats, physical risks and acts of nature.
- **Digital workplace digital workforce.** Deliver the tools and systems to efficiently and effectively execute Library functions and processes and grow APS maturity in digital capabilities.

A set of 10 strategic priorities, outlining the approach and initiatives to develop, create or acquire the business capabilities required to implement the Digital Strategy, follow.

First Nations

Support ICIP implementation and First Nations collecting with system enhancements

First Nations capability development

Our Approach

We will support the enterprise to implement ICIP and enhancements to First Nations collecting and access which recognises First Nations people as cultural authorities over their cultural knowledge.

Our Initiatives

We will develop staff capability in ICIP protocols. We will expand our product management operating model for a consistent and business-led approach to implementing ICIP and emerging First Nations collecting system requirements.

Collect

Streamline collection workflows for increased collecting efficiency

Streamlining workflows

Our Approach

The Library will continue to streamline our collection workflows and automate high-volume and repetitive workflow steps. While this initiative may implement AI (which is covered separately) its primary aim is to implement efficient processes and systems rather than leverage new technology.

Our Initiatives

We will enhance our next-generation library services platform Library Management System, investigating integrations for collection care and exhibition management functions.

We continue to review system integrations to further build workflow efficiency.

Improve digital collecting

Digital collecting

Our Approach

The Library will increasingly focus on collecting digital and online content. To support this, we will continue to invest in digital collecting capabilities, such as large-scale website collection, and continue to work with our national and international partners to collect social media and other digital content including via the National eDeposit platform.

Our Initiatives

We will continue to use public data sources and browser automation to improve the quality and scale of contemporary web collecting and explore alternatives to web crawling for collecting social media content.

Our renewed and contemporary web archiving infrastructure will serve as a platform for new collecting methods.

We will contribute to national and international efforts to develop tools for collecting contemporary social media content.

Use AI to augment the Library's digital collection and catalogue

Nascent technologies

Our Approach

We will identify Artificial Intelligence (AI) and Machine Learning (ML) services to integrate with our collection management processes.

Our Initiatives

Use mature commodity AI and ML for low-risk, high-value workflow steps and low-risk collections and use cases.

Improve our digital collection management system support for AI and ML processing.

Connect

Support for a digital-first engagement strategy, elevating the Library's unique content and services

Digital engagement

Our Approach

Enhance online journeys that are accessible and inclusive for diverse audiences, measuring and tracking their success in meeting Library and citizen's needs.

Our Initiatives

Enhance performance measurement reporting processes, and use enterprise analytics platform to support data-driven decision-making.

Implement a new, accessible website.

Increase access to digitised content by expanding transcriptions through enhanced Handwritten Text Recognition and improving search capability and results across the digital collection and catalogue.

Collaborate

Ensure enhancement of value for money, fit-for-purpose infrastructure, digitisation systems, National eDeposit and Trove

Sustainable digital infrastructure

Our Approach

Trove's future has been secured with funding of \$33 million over the 2023-27 Corporate Plan period and ongoing, indexed funding into the future. This will enable us to continue to provide this essential service, enrich it with new content, and stabilise and secure the platform.

Our Initiatives

Review and implement a transition roadmap for decoupling applications into loosely integrated services that can operate in the Cloud.

Replace Trove's end-of-life software elements, reducing functional duplication and decommissioning low-value applications and roll out a five-year implementation roadmap for the Trove Strategy.

Review the Library's digital storage capacity, develop and implement an ICT infrastructure strategy to secure and maintain the Library's current and future digital platform.

Prepare to scale national digital infrastructure

Scalable digital infrastructure

Our Approach

Scalability of the Library's national digital infrastructure can support a vision for collaboration, transforming Trove into a platform for the entire cultural sector.

Our Initiatives

Decompose our systems and applications into services aligned to business capability using composable architecture and other contemporary practices.

Implement APIs managed through an API management platform to further support scalability and integration.

If additional funding is provided, we will apply these approaches at scale to facilitate a secure, sustainable, and collaborative digital cultural platform.

Capability

Lift cyber security maturity

Mature cyber security risk mitigations

Our Approach

Operationalise and sustain cyber security capability by designing for security and sustainment.

Our Initiatives

Implement a risk-based approach to tackle cyber security and internal audit recommendations.

Enhance our internal cyber security capability, complementing with external skills as appropriate.

Focus on implementing and then maintaining Essential 8 maturity level 1.

Adopt architecture principles and governance to replace outdated technologies to reduce vulnerabilities and deploy redundant, secure architectures.

Operationalise digital business continuity and disaster recovery infrastructure

Redundant and resilient infrastructure

Our Approach

In the event of a Library disaster or incident impacting digital infrastructure, resume digital operations of critical systems from the disaster recovery site within the maximum allowable outage parameters.

Our Initiatives

Complete a review and implement improvements to the current disaster recovery infrastructure to improve incident response, recovery, and resilience.

Uplift digital and data capabilities, develop communities of practice, and deliver self-service data and analytics

Digital workplace, digital workforce

Our Approach

Reduce system and process friction and replace with fast, easy access to corporate data, knowledge and information and support collaborative ways of working with anytime/anywhere access.

Our Initiatives

Implement a customer relationship management system.

Implement an integrated collaboration platform and social network.

Implement a data systems product line to enhance and embed data and information management capabilities in the Library.

Continue to develop workforce digital literacy as we roll-out of contemporary, mobile, and digital workplace tools for staff.

Enabling Capabilities

This Digital Strategy lays out what the Library needs to do to continue to serve the millions of Australians that use our services regularly. The following enabling Digital initiatives will develop the capabilities to deliver direction and oversight to in the digital portfolio.

Governance

We will continue to embed and expand the product management operating model and supporting service catalogue.

We will continue ongoing alignment of enterprise and Digital priorities, adapting execution of the Strategy to ensure the right outcomes are delivered at the right time in response to changes in our operating context.

We will ensure quality in Digital delivery processes with expanded Enterprise Architecture Review and Digital Change Advisory Boards.

Digital Operating Model

We will mature the digital service delivery model, with improvements in ICT asset and procurement management, staff time-tracking and service management tool capabilities.

Enterprise Architecture

We will continue to develop and follow a Technology Roadmap aligned with this Digital Strategy and the Government's Digital Transformation Agency (DTA) guidance, prioritising whole-of-library benefits and common solutions that simplify our systems and increase sustainability.

People capabilities

We have developed a Strategic People Pathway Strategy aimed at modernising our work practices, fostering flexibility and innovation in our approach, and cultivating a culturally competent workforce. Our efforts have concentrated on harnessing the potential of our strategic initiatives by enhancing individual, team, and organisational performance.

The market for digital staff is very competitive, and the Library faces challenges offering competitive conditions and salaries against consultancies, the contractor market, and other larger organisations. We will leverage the Library's unique values proposition and track record of innovation and high performing hybrid teams to attract and retain staff.

In line with the Australian Public Service (APS) Strategic Commissioning Framework, we will develop APS staff skills in AI and ML, which will be supported by targeted procurement and cross-skilling from vendors.

We will leverage the product management model to broaden APS staff capabilities across various Business areas and systems.

We will continue data and analytics communities of practice and product teams that facilitate upskilling, and information sharing to support staff and develop skills in context.

Dependencies and Risks

The Library will increase its focus on addressing risks by strengthening systems and continuing to mature the Library's capabilities. Key risks and dependencies have been identified and will inform the Library's next Technology Roadmap and approach to building, maintaining and scaling digital services.

Engaging with emerging ways of exploring knowledge requires care to ensure our ongoing trusted role as an inclusive, trusted and innovative institution.

Streamlining workflows requires setting clear business goals, indicators of success and cultural change.

Collecting new and emerging digital content requires continuous improvement, iterative development and risk tolerance for nascent technologies.

Sustaining and scaling requires repeatable Digital processes, an agreed enterprise architecture, overcoming technical debt/complexity with common solutions, clear corporate priorities and a Library infrastructure implementation roadmap.

Collaboration with the cultural sector, members of National and State Libraries Australasia (NSLA) and organisations nationally requires national leadership, shared infrastructure, and significant ongoing investment.

Protecting the digital collection and digital services requires continued investment in cyber security and infrastructure resilience, and clear goals for business continuity and recovery of the digital collection.

Digital workplace and data capability requires investment in tools and staff retention/upskilling.

Enabling changes within Digital Branch such as in governance, operating model and enterprise architecture require new ways of working and adjusting roles and responsibilities across multiple business functions.

Glossary

Application Programming Interface (API) – An API is a set of rules that enables software applications to communicate with each other to exchange data, features, and functionality. APIs simplify and accelerate application and software development.

Artificial Intelligence - Artificial intelligence is intelligence demonstrated by machines, as opposed to the natural intelligence displayed by animals including humans.

Cloud - Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power, without direct active management by the user.

Digital Library - A digital library, also called an online library, an internet library, a digital repository, or a digital collection is an online database of digital objects that can include text, still images, audio, video, digital documents, or other digital media formats or a library accessible through the internet.

Essential Eight (8) – The Australian Cyber Security Centre within the Australian Signals Directorate recommends organisations implement eight essential mitigation strategies from the Strategies to Mitigate Cyber Security Incidents as a baseline. This baseline, known as the Essential Eight, makes it much harder for adversaries to compromise systems.

Interoperability – Is the ability of computer systems or software to exchange and make use of information.

Language Model - Language models are a key component of natural language processing, a field of artificial intelligence focused on enabling computers to understand and generate human language.

Library Management System – A library management system is an enterprise resource planning system for a library, used to track items owned, orders made, bills paid, and patrons who have borrowed.

Machine Learning – Machine learning is a field of inquiry devoted to understanding and building methods that 'learn', that is, methods that leverage data to improve performance on some set of tasks. It is seen as a part of artificial intelligence.

Trove – Trove is an Australian online library database aggregator and service which includes full text documents, digital images, bibliographic and holdings data of items which are not available digitally, and a free faceted-search engine as a discovery tool.

National Library of Australia

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