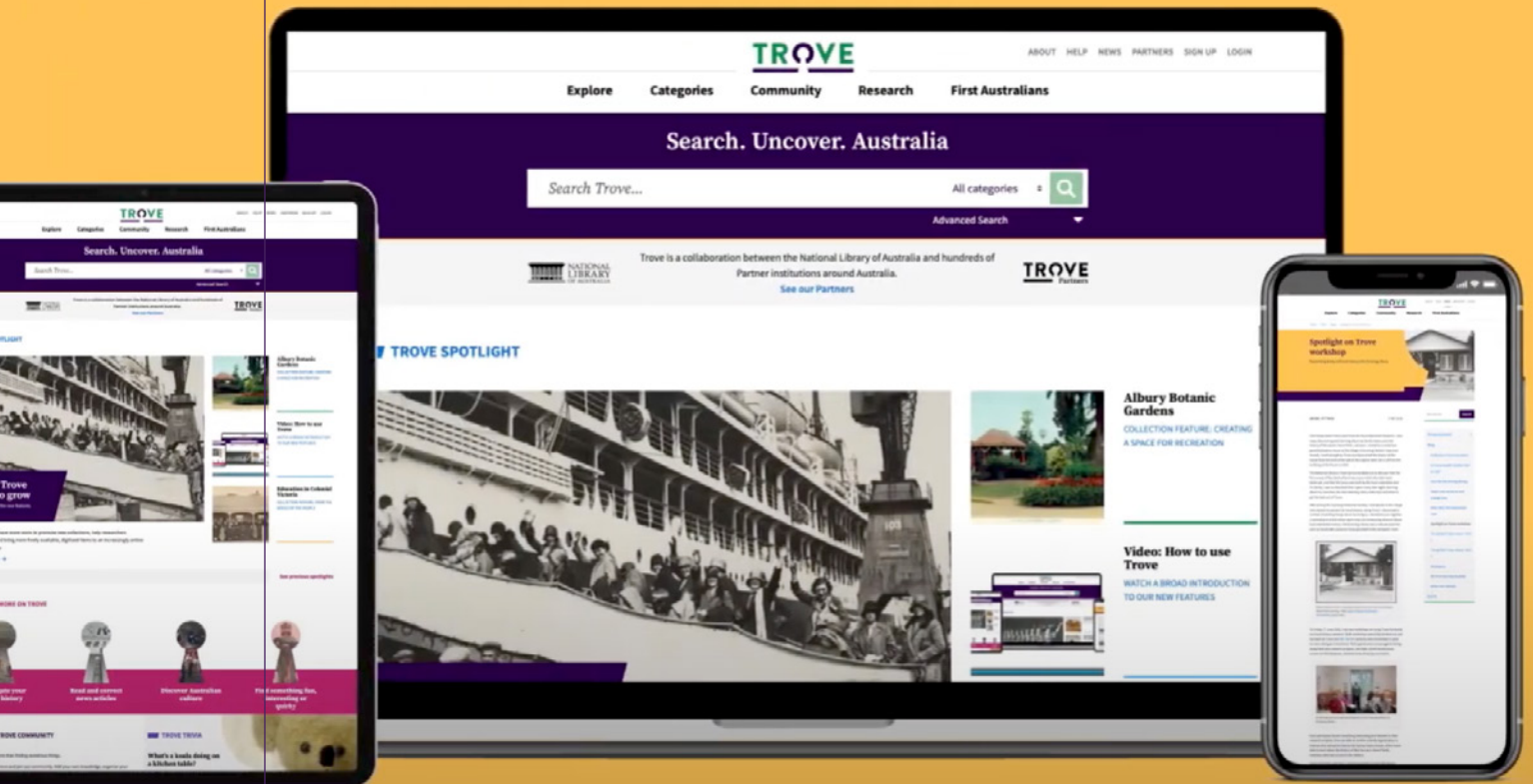


Trove Strategy



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

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Our Vision

Australia's cultural collections are a national treasure: reflecting the diversity, strength, and growth of our nation. They provide context to our history and enable us to envision new futures. They belong to all Australians.

Through Trove, the National Library of Australia and its partners have been able to reveal new stories, histories, futures, and culture to millions of Australians each year. In coming years, new technologies will enable many, many more.

However, the Trove service is built on ageing technology and old user patterns. Building upon the globally significant success of the Trove service, an expanded national cultural infrastructure would digitally secure our national collections and open them to the world.

Our vision encompasses the following outcomes:

There is a single and secure access point to Australia's cultural and intellectual heritage

Trove has established itself as an online portal into documentary heritage. Through this strategy, cultural heritage from Australia's rich diversity of collecting institutions would be engaged with seamlessly and harmoniously, enabling each Australian to curate their own story.

Australians have our culture at their fingertips – now and decades into the future

Centralised, secure, and sophisticated management of Australian collections – from heritage newspapers through websites to modern and ancient art – enables Australians to be informed, to create and to belong.

Services are delivered digitally to reach the national population and complement our iconic cultural buildings

Australians can consume, search, explore and engage with collections online: creating new knowledge, sharing their stories, and playing games. Whether the experience of a revelatory exhibition, the purchase of an image of a loved one or simply reading a local history, all these services will be as available in living rooms as in a gallery, library, archive, or museum.

The community collaborates to share practices, tackle challenges, and adapt to maintain relevance

A central platform facilitates a community of practice among cultural stewards, enabling the rapid adoption of best practice across the sector. The platform enables access to advanced technologies for customised experiences. Effective governance enables our cultural icons to quickly invest in relevant futures.

A central, national infrastructure is bespoke to the needs of Australia's digital collections

Centralised infrastructure ensures secure preservation of Australia's national collections, enables ongoing humanities and social science innovation, and provides for transparency in government services. The platform achieves efficiencies of scale and ensures strong value from a single investment.

End-to-end management of cultural collections occurs in a secure digital environment, controlled by our diverse collecting institutions

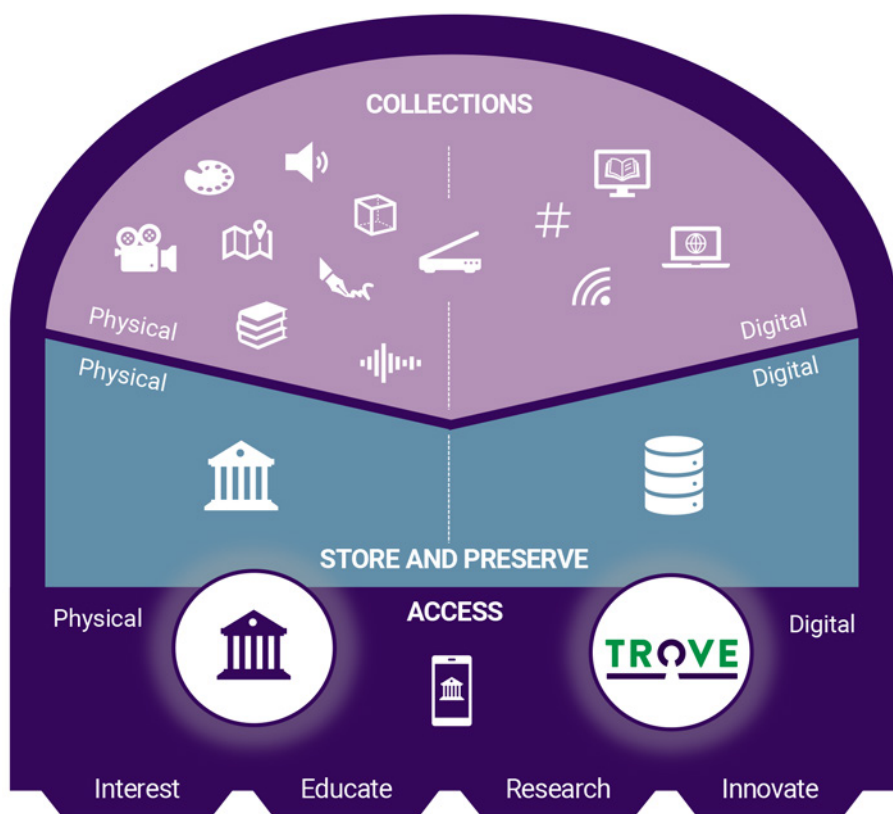
The platform ensures that collections can be managed, preserved, and enjoyed by the communities for which they have most relevance. From major international leaders to small community archives, collection stewards have access to secure facilities and full control over their collections.

Trove: Australia's National Treasure

The role of Trove

Trove is a digital platform that provides access to over 6 billion cultural heritage items from around 900 Australian collecting institutions. Trove offers collecting institutions a digital presence alongside their physical footprint. For Australians, it is a digital public service that offers a single access point to a vast amount of data and information related to Australia's cultural and intellectual heritage.

Figure 1: Trove's role within the context of a collecting institution



Cultural institutions develop their **collections** based on their collecting remit and collection development policies. The collections they hold cover a range of formats, topics, and time horizons.

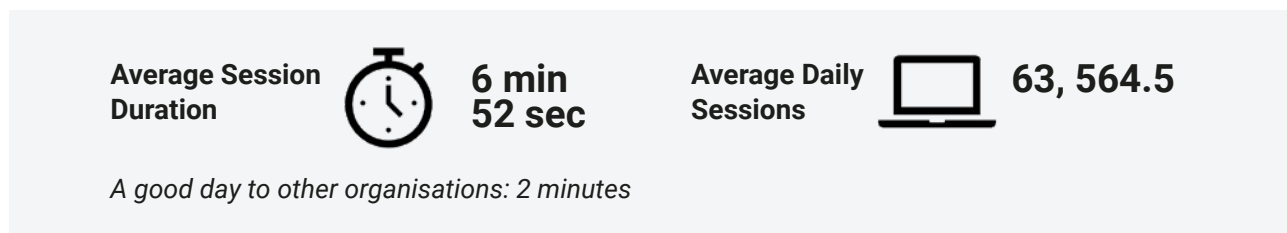
Collections are **stored** in dedicated locations with controlled conditions and dedicated programs to **preserve** the items over time.

Collections are **accessed** by patrons with diverse needs and interests.

Trove's success to date

Trove attracts a strong and loyal user base who visit frequently and spend a long time viewing the items related to their diverse needs. Today, Trove end-users spend more time viewing an item and its content than simply search, cite, or borrow.

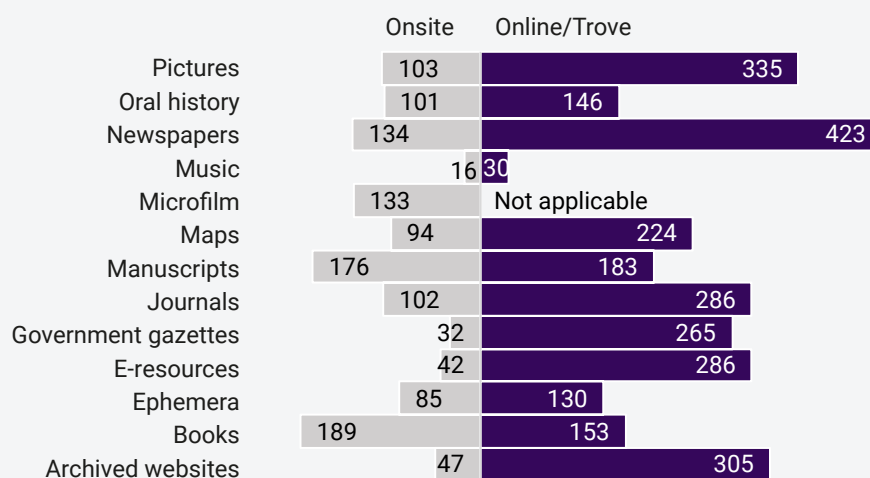
Figure 2: Trove end-user engagement performance



Trove’s cultural heritage collection covers a vast range of topics and formats made possible through partnership arrangements with Australian galleries, libraries, archives, museums, research, and community organisations. These are referred to as Trove Partners. Trove Partners also have access to services to support their back-end operations delivered under Trove Collaborative Services (TCS).

My National Library Anywhere. Trove was created by the Library to provide online access to its collections and has become the primary way for the Library to serve its national audience. In 2021 the Library conducted a survey of Australian historical researchers and identified that 92% of researchers used Trove to conduct their work with the majority of those outside of the Australian Capital Territory. A total of 85% strongly agreed that Trove enhanced their research. For the Library, Trove offers a healthy level of engagement in comparison to onsite engagement despite less than 10% of the collection being digitised.

Figure 3: Historian engagement with the National Library’s collection onsite and online



Trove is built on decades of shared data collaboration between Australian libraries. This tradition has enabled Trove to provide access to the collections of 900 TCS partners, most of them libraries. However, the growth opportunity is in appetite for digital services; the utility of long-standing metadata services – which underpin these - is in decline. This Strategy lays a path to investment in the growth opportunity of meeting user demand for digital content, rather than legacy services. This issue is discussed in more depth in Appendix 1: Trove and Partner Services.

Trove is a source of trusted data and information for interest, education, research, or profit. Humanities education and research plays a fundamental role in understanding how our society and economy can adapt to complex challenges. Access to large data sets and sophisticated digital tools facilitates an understanding of human, cultural and societal processes, trends, and interactions over time. It encourages big picture thinking and interrelationships across a range of factors.

Trove and Research. Trove has underpinned modern Australian humanities and social science research for a decade. An essential infrastructure for historians, Trove has also been used for innovations in understanding Australian literature, environmental change, and many, many others. Significant research projects dependent on Trove include the The Prosecution Project, the University of Newcastle Massacre Mapping Project and the Australian Literature Database project.

A Future for Trove

The Library has sufficient resources to maintain Trove until June 2023. The future of Trove beyond July 2023 will be dependent upon available funds. To achieve the full strategic vision will require substantial investment. More modest investment sustained over a longer term would enable achievement of the strategy at a measured pace. In a limited funding environment, Trove may reduce to a service focused on the National Library of Australia's collections. Without any additional funds, the Library will need to cease offering the Trove service entirely.

Trove's evolution reflects the opportunities of technological developments as well as demand from its users. Trove has benefited from deliberate investment in building digital capability and collaborative partnerships with other collecting institutions. These developments have attracted new audiences fuelling further demand for more digital capabilities and digital content.

Trove has received substantial support from both Government and the cultural sector. Recognising the increasing costs of digital services and other pressures upon Library budgets, the Australian Government has allocated additional funds to support Trove since 2016-17. This has enabled ongoing maintenance of the service, a new user interface, bug fixes and an expansion of Trove content. In 2022-23, the Library will receive \$5.2 million to maintain the service and deal with pressing cyber-security risks. This funding, while welcome, is not sufficient to modernise the service, or advance the Library's vision.

Trove Partners also contribute to the operating costs of the service. Their contributions support 44% of the running costs. However, this revenue is expected to decline as a result of fiscal pressure on the partner community and Trove's currently limited collaboration features, which do not include management of digital objects.

The cultural sector continues to embrace digital mediums and technology and expand into new digital services such as full-text retrieval, all of which increases online resources and records. Institutions that have not embraced digital capabilities are predicted to become obsolete over time and their collections at risk of loss. The magnitude of investment in digital capabilities that the cultural sector requires to support this shift is beyond the financial capacity of any individual collecting institution.

Trove has the basis to step into this gap. However, competing pressures – needs for digital advancement and need to lower service cost – present a paradox that cannot be resolved without additional investment. Trove's capacity to do so is now exhausted.

Strategic Vision for Trove

Trove's Purpose

Trove's purpose is to enable cultural content to be managed, explored, and engaged with digitally.

Trove's vision is that all Australians engage with cultural collections without barriers and over generations for a strong connection with Australia's cultural history.

Trove's mission is making high quality cultural content freely accessible to power a sense of Australian identity, foster an inclusive society, grow the economy through education and innovation and positively impact societal wellbeing.

Trove's trusted collections must continue to reflect the breadth and depth of Australia's cultural heritage and foster a sense of who we are and what we can be.

Trove's user groups

Trove has three user groups distinguished by their unique needs along the collection management lifecycle. Their definition along with an understanding of their needs allows services to be developed and delivered accordingly. Individuals and organisations may be affiliated with one or more user groups.

Content Stewards

Content Stewards collect items related to Australia's culture on behalf of Australians of all generations. They include galleries, libraries, archives, museums, and local historical societies that may be large or small, funded or volunteer-run. They share a common goal to have their collections preserved and accessed now and over time.

Content Stewards seek and secure funding for their programs and services, and grow their collections based on their remit and collection policies.

Content Stewards participating in Trove are referred to as Trove Partners and use Trove's shared digital infrastructure to store, preserve and manage these collections. They are responsible for identifying, acquiring, managing, and preserving their digital collections for the purpose of providing patron access to them. This includes decisions on which physical items to digitise, administering digitisation programs, and providing their digital collections to Trove to build a national, combined collection.

Content Stewards use their own workflows and technology systems to interface with Trove's backend systems. They retain ownership and responsibility for the management of their collections – cataloguing, description, discovery aides and access permissions. Trove acknowledges them as the owner of the items for Content Consumers and Creators to see.

Content Stewards use Trove as a channel to deliver engagement programs that connect content Consumers and Creators to their collections and related collections from other Trove Partners.

Trove's value proposition: Content Stewards will experience lower barriers to managing digital collections and have access to digital infrastructure and ready-made services without a high capital funding outlay.

Content Consumers

Content Consumers are individuals or organisations who view and interact with the content in Trove and may obtain copies of content where rights and permissions exist. The reasons for their search vary from interest, education, research, or profit. This group includes the public, students, educators, researchers, businesses, and vendors in the cultural heritage sector.

Content Consumers can explore, engage, and extract copies of content in the collection to inform themselves or their work. They may enhance discovery of the records they are accessing through text correction, transcription, linkages, tagging and indexing and creating lists.

Content Consumers engage with content on cultural topics of their choosing and may request additional content be digitised. Trove's functions and their development are informed by how these users engage with Trove's content. Whilst on Trove, they may note the owning Content Steward, but this is not the focus of their experience.

Trove's value proposition: Content Consumers will be able to engage with and explore Australia's trusted source of cultural collections online from any location.

Content Creators

Content Creators are individuals or organisations that create appealing, new, and engaging content based on their rigorous interrogation of data on different topics. The content they create can be educational or entertaining. Their creations are stored in Trove and often attracts others to engage and explore these topics further.

Examples of Content Creators include broadcasters, publishers, researchers, innovators, creatives, exhibition creators and developers. They enrich the whole collection, fostering a community of exchange, innovation, and better knowledge outcomes.

Trove's value proposition: Content Creators will be able to create and exchange with Australia's trusted source of cultural collections online from any location for research, reference, and reuse.

Trove's Digital Infrastructure

Trove aims to be a secure, modern, digital platform with three distinct components. It has a single access point to the combined collections from Content Stewards; its digital infrastructure is used for hosting digital content and is specific to the needs of these cultural collections; and it is a platform that provides the foundations for developing and delivering collection management services.

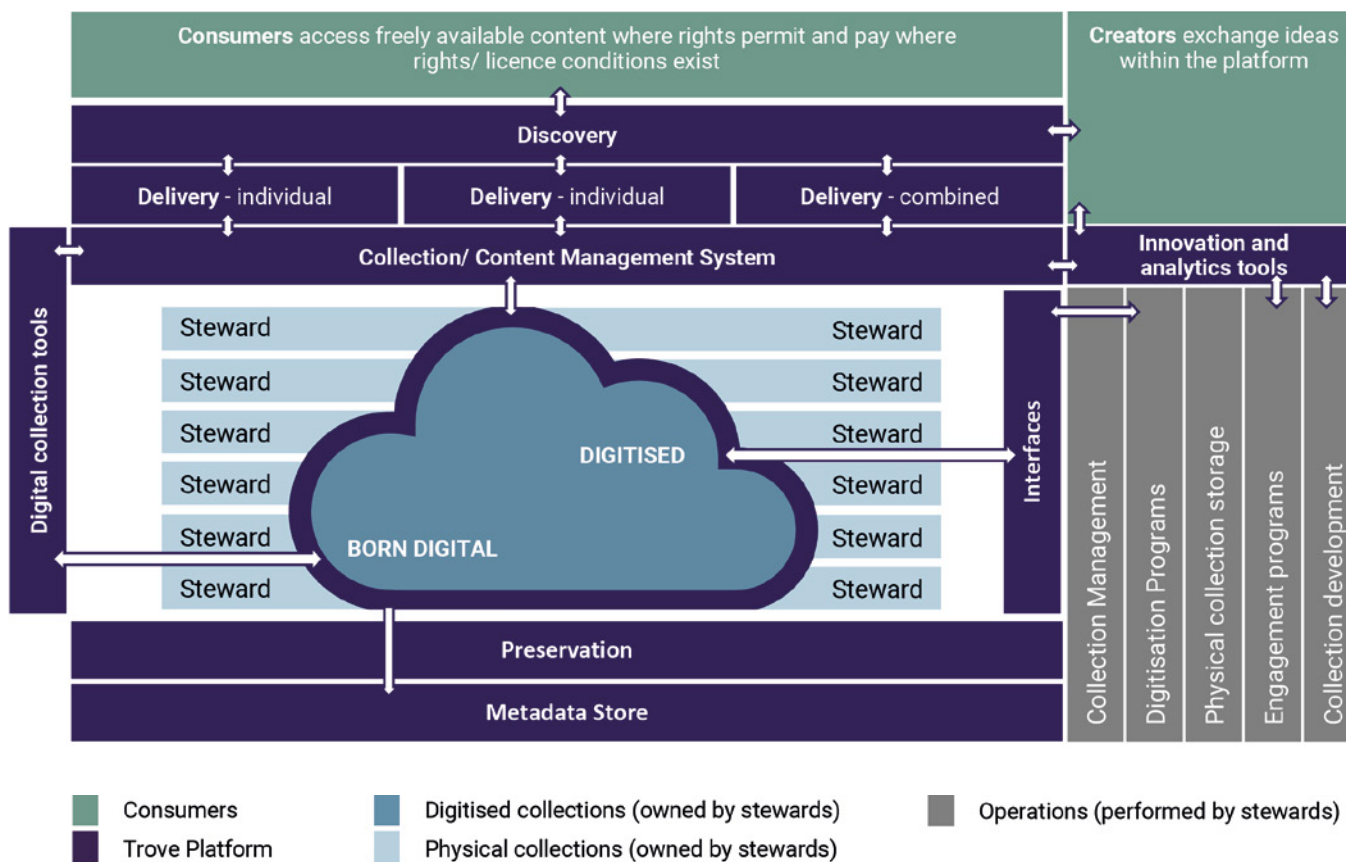
The intrinsic value of these combined collections for research and education, for our understanding of our history and our national story, is significant. Yet the realisation of this intrinsic value requires the collections to be preserved and connected to those who use them. Trove makes Australian cultural heritage content easier to find, share and use.

Its strength will be measured by its ability to cater for the expected growth of national digital collections and the expectations of those that seek to use Trove's collections. Such digital infrastructure is rapidly changing and requires substantial financial investment, which individual cultural institutions are unable to realise alone.

Sharing Trove's digital infrastructure and its associated capabilities enables the efficient storage and preservation of digital collections. Collective hosting of digital collections enables technology – machine learning and artificial intelligence – to be applied to the combined collection for the purpose of enriching its discovery.

Trove does not seek to unify Content Stewards, but rather to embed digital capabilities into these organisations to amplify the value of Australia’s cultural collections. As these are different, they can personalise the services to their unique circumstances offering them ‘choice and control’.

Figure 4: Trove’s digital infrastructure components



Trove’s single access point to Australia’s cultural heritage

Trove’s discovery layer acts as a single access point for Content Consumers and Content Creators to search, view, read, cite, and purchase copies of content where rights or licence conditions apply. The single platform can incorporate other access related products such as streaming platforms.

The discovery layer is serviced by multiple delivery platforms that act as a network. They link the digital collections of all participating Content Stewards to the search results from Content Consumers and Content Creators for a seamless experience. Content Stewards can choose to use the delivery system as part of the platform (combined), or they can elect to use their own delivery component (individual) and synchronise their collection records from their individual Collection Management System.

Trove’s Content Management System contains information on all individual collection items, for example, rights, viewing permissions, licence conditions and discovery attributes. This layer aggregates the attributes based on what the Content Consumers and Content Creators are searching for and are eligible to access, before providing them through the discovery layer.

Trove's digital infrastructure

Cloud-enabled technology will be used to securely store and preserve digital content. Trove's digital infrastructure will interface with the technology systems of Content Stewards through Application Programming Interfaces (APIs) and schemas configured to the Content Stewards' technology environments. This allows Content Stewards to retain their workflow practices, collection standards, and the Collection Management Systems they maintain. Trove's digital infrastructure is flexible and tailored to their technical environment allowing them choice and control.

Storage of digital collections in a cloud-based solution allows the items to be accessed by Trove's platform and the Content Steward's technical environment. Trove tags the owning Content Steward to the item to know who owns what at any time. Trove also uses technologies such as machine learning and artificial intelligence, to be utilised to enhance discovery of the digital collections held in Trove.

Digital preservation of quality copies and metadata in original form from the owning Content Steward provides security and longevity of the items, so that digital information remains accessible and usable into the future. The metadata store will allow discovery and reuse of research data collections. Part of this is ensuring that the metadata for these collections is properly managed so that it can be harvested and exposed to search engines.

Trove's platform for delivering services

Shared applications enable Content Stewards to access and tailor ready-made collection management services to incorporate into their workflows.

A suite of digital collection tools will allow born digital content to be deposited directly into the digital storage solution. Content Stewards will have some discretion over how this occurs based on their unique organisational needs and item-specific parameters. The tools could include webforms, a holding area for items needing to be reviewed before adding to the collection, automated deposit, APIs, and synchronisation with the digital infrastructure.

A suite of innovation tools will be available for authorised Content Creators to create content from the information source of Trove's collection. This could be digital experiences (for example history immersion, games and augmented and virtual reality) using inbuilt or third-party tools, or the interrogation of data for research and new knowledge.

Analytics will allow Content Stewards to understand the performance and use of their digital collections in the context of the national collection and enable decision-making around their digital collections.

Trove's Functionality

Trove enables functionality for all user groups across the collection management lifecycle. It is a platform to exchange ideas, innovate and develop better outcomes on cultural topics over time. Each user group experiences pain points in Trove's current state, and they will interact with Trove in different ways as it develops toward its strategic vision.

Figure 5 Trove's collection management lifecycle



Digitise

Trove supports the digitisation of cultural collections of any format, size, and location and is connected to the workflows of these programs.

Current state pain points	<ul style="list-style-type: none"> • Digitising the diversity and volume of cultural collections is ad hoc causing some material to be at greater risk of loss than others. • Few Content Stewards have the capacity, resources and/or funding to meet the digitisation needs of their collections. • Items may be digitised but not always accessible easily or through self-service functions. • Items are not always digitised to standards that maximise their utility.
Trove's offering	<ul style="list-style-type: none"> • Support Content Stewards to identify digitisation pathways based on their funding capacity and material type and connect them with service providers based on these needs. • Identify collections as candidates for future digitisation and publish them on Trove for Consumers and Creators to pledge financial support for unfunded candidates. • Define the technical requirements for items to be 'Trove-ready' for all digitisation service providers to use where the material is suitable for Trove. • Connect to Trove's digital infrastructure to the workflows of digitisation service providers.

Collect

Trove supports the collection and preservation of current and emerging content formats to build Australia's cultural collection over time horizons. It offers multiple pathways for collecting items based on organisation and content needs.

Current state pain points	<ul style="list-style-type: none"> • A single collection method is not effective to cater for the diversity of digital formats or their source. • Items that should be collected are not always collected.
Trove's offering	<ul style="list-style-type: none"> • Multiple and automatic pathways to deposit items of various formats, origin, or volume. • Ability to develop new pathways to cater for evolving formats.

Manage

Trove enables Content Stewards to manage and maintain records to create a national database. Trove then structures and links this data for Content Consumers and Content Creators to explore and engage with in different ways.

Current state pain points	<ul style="list-style-type: none">• Collection management methods differ among Content Stewards with items containing different information fields and depth for discovery.• Management of items changes over time and the record needs to reflect these changes in real-time.• Content Stewards have the same or related items and manually complete processes to complete and link records.
Trove's offering	<ul style="list-style-type: none">• Content Stewards add, edit, or delete an item record in real time on the national database or within their institutional systems.• Content Creators enhance, correct, and enrich items to add further knowledge to the service through online features that are fed back to the owning Content Stewards.

Store

Trove's shared digital infrastructure will securely and centrally store and preserve digital items for the long-term.

Current state pain points	<ul style="list-style-type: none">• Few Content Stewards have digital storage capabilities or sufficient capacity if they do.• Few Content Stewards can keep their digital collections and collection systems safe in a challenging cyber security environment.• Digital storage media can decay over time, may become obsolete or unsupported or even corrupt, rendering files inaccessible and threatening the longevity of the digital item.
Trove's offering	<ul style="list-style-type: none">• Securely store and preserve digital items and their metadata records for the long-term.• Apply technologies that automatically enrich records to provide a high level of fidelity for discovery and links to other stored items for meaning.• Connect and link items from different collections to each other to enrich their discovery.

Access

Trove provides access to Australia's cultural collections. These collections are a trusted source of data and information for Content Consumers and Content Creators to engage with and explore for multiple uses in ways they cannot do today. Trove's single, user centric and stable platform means they access to cultural content can happen from anywhere at any time.

Current state pain points	<ul style="list-style-type: none">• Content Consumers and Content Creators access and engage cultural collections from multiple digital and/or physical locations.• Content Stewards want to understand how their collection is being used but cannot always do so in context of other collections.• Digital cultural collection engagement programs are administered by individual Content Stewards in their own digital environment, which lessen their potential impact.• Sophisticated interrogation can only occur on a narrow subset of Trove's current collection because they are digital objects. The remaining collection items are metadata records that do not enable the same level of interrogation.
Trove's offering	<ul style="list-style-type: none">• Content Stewards develop engagement programs in a digital environment as an institution or in collaboration with other Content Stewards.• Receive/answer enquires about items from all user groups.• Content Stewards have access to monetised services such as digital copies and access platforms.• Access to trusted data source anywhere, anytime, from one location.• Create new knowledge, develop digital experiences in an authorised environment within the Trove platform.

Support and governance

Trove's functionality is supported through dedicated delivery teams for service and technical support, governance, and innovation programs. This enables collaboration among Content Stewards to share methods, create rich curatorial content, and administer programs for constant innovation to cater for evolving technology and practices. Content Consumers and Content Creators are supported with their enquiries through the same teams and contribute to the development of Trove's functionality.

Current state pain points	<ul style="list-style-type: none">• Content Stewards lack the resources, (finances, skills, and assets) to progress their digital journey.• Trove does not meet all needs of Content Consumers and Content Creators with the current arrangements.
Trove's offering	<ul style="list-style-type: none">• Onboard all user groups into the Trove digital infrastructure and service arrangements, for example, Content Steward interfaces, Content Creator authorised areas.• Build skills and capability around end-to-end digital collection management.• Perform analytics and reporting functionality for Content Stewards to understand how collections are being engaged with in context of others.• Deliver service and technical support through dedicated and experienced teams to respond to enquiries from all user groups.• Administer programs that address shared challenges relating to digital collection management to continue the relevance of cultural collections.

A summary of how each user group engages with Trove is shown in Appendix 2: Journey Map for each user group.

Strategic Priorities

The strategic vision for Trove will be realised through four strategic priorities with distinct objectives.

PRIORITY ONE

Grow the collections in Trove over multiple formats, topics, and time periods to establish it as Australia's sovereign cultural resource.

Current State	Currently, Trove collections are dominated by libraries and are predominantly text-based formats.
Future State	Cultural collections in Trove will grow to reflect Australia's cultural diversity.

Objective 1.1 | Diversify the partner community across cultural heritage

Organisations with rich cultural heritage collections representative of Australia's sense of identity are approached to join the Trove partner community. Their involvement will both complement and extend the collections in Trove across formats, topics, and time horizons.

Objective 1.2 | Multiple pathways to Trove

Trove is connected to digital collections through multiple pathways. These pathways form a hub and spoke model that connect to Trove seamlessly and at the source. Their aim is to have 'no gaps' between digital collections and Trove to provide flexibility to the needs of organisations and recognise differing capability and capacity in the digitisation market.

Objective 1.3 | Quality of Trove's content is maintained through clear standards and requirements

Trove offers a large and trusted source of information related to Australia's cultural heritage. It is governed by clear scope and priorities for what it collects and specifies the technical attributes to be compatible with the digital infrastructure. This clarity ensures content is 'Trove ready' at the source of collection.

PRIORITY TWO

Establish, maintain, and develop robust digital infrastructure for the storage, preservation, management of, and access to cultural collections.

Current State	Collections are aggregated through the metadata about them with shared services based on this asset.
Future State	Digital collections are hosted in a shared platform that enables them to be managed end-to-end in a digital environment.

Objective 2.1 | Contemporary infrastructure for content storage, preservation, and management

The digital ecosystem is developed in a contemporary and cloud-based environment that has been architected to the needs of cultural content storage, preservation and management and efficient delivery of the services around it.

Objective 2.2 | Secure long-term funding

Funding of the operations, maintenance and development of the Trove digital infrastructure is secured on a long-term basis. The funding source is clear, and the amount known for current and future years to enable long-term planning for optimal delivery of the service and technical components.

Objective 2.3 | Digital assets are managed on a product development lifecycle

Digital infrastructure assets are managed through a product lifecycle road map (for example, requirements, acquisition, operation/ maintenance, and disposal). The enterprise architecture underpinning Trove enables it to meet service needs for user groups, manage existing digital assets and emerging technologies.

PRIORITY THREE

Leverage high quality data management practices that enhance access to the collection in ways that are informative and entertaining.

Current State	Much effort is spent on performing lengthy, manual data corrections. Data in Trove can be out of date.
Future State	Human- and machine-created metadata are combined to enrich content and make it easier to discover, explore and engage with.

Objective 3.1 | Develop and maintain high quality data practices

Content Stewards will create rich descriptions that allow them to build, manage and reuse collections according to better practices. This will ensure that trusted, high-quality data powers Trove's consumer experience. Human effort is confined to tasks not able to be automated, increasing efficiency of the service. Metadata is fit-for-purpose and sharable between Content Stewards, ensuring Trove Partners can leverage efficiencies and increased discoverability. Efficient data-exchange ensures currency of data.

Objective 3.2 | Make it easier to explore and engage with the content

Deep access to content is enabled through a growing set of digital tools and digital experiences. Content is not only found but contextualised for deep and rich understanding of its meaning and connection to the national story. The possibility of collaborative programs and tools is vast and an ongoing development area for Trove.

Objective 3.3 | Deepen access to content

Technologies are used to automate and enrich the data from the hosted content to refined levels that enhances its discovery. This effort is complimented by a community who 'clean' data used for discovery (for example, correct text, transcribe, index and link data).

PRIORITY FOUR

Services delivered are connected to Trove and are relevant, optimised and innovated through a dedicated continuous improvement program.

Current State	Trove's data sharing services to Trove Partners are declining in value. Partners are confused about what services are offered and potential partners do not understand why or how Trove helps their organisation.
Future State	Trove's services are clearly articulated. Defined, understood, relevant digital service offerings around cultural collections for key user groups.

Objective 4.1 | Build capability in managing digital collections

Services are defined and delivered along each function of the digital collection lifecycle to build capability and capacity across the sector. Services are developed with the community, for the community. All services leverage expertise and better practices with the sector to navigate challenges in the digital era as one.

Objective 4.2 | Deliver optimal and relevant services to user groups

The service offerings and delivery timeframes are clearly defined and available for partners to understand. There is a skilled and dedicated team to deliver the services and support partners in their use. There is a continuous improvement program to ensure they are efficient, easy to use and relevant over the long-term.

Measuring impact

The strategic vision for Trove will be accountable to its six outcomes by the indicators that drive them.

- Outcome 1: There is a single and secure access point to the Australia’s cultural and intellectual heritage.
- Outcome 2: Australians have our culture at their fingertips – now and decades into the future.
- Outcome 3: Services are delivered digitally to reach the national population and complement our iconic cultural buildings.
- Outcome 4: The community collaborates to share practices, tackle challenges, and adapt to maintain relevance.
- Outcome 5: A central, national infrastructure is bespoke to the needs of Australia’s digital collections.
- Outcome 6: End-to-end management of cultural collections occurs in a secure digital environment, controlled by our diverse collecting institutions.

Measurements	Outcome					
	1	2	3	4	5	6
Collaboration among Content Stewards						
All national cultural and related knowledge institutions contribute their collections to the shared digital infrastructure	◆	◆	◆	◆	◆	◆
All formats have at least one pathway to the shared digital infrastructure		◆		◆		◆
Increase the number of collaborative-based opportunities for online engagement on cultural topics		◆	◆	◆		
Shared digital infrastructure and its impact						
National digital cultural collections stored, preserved, and accessed in one location and their discovery collectively enhanced	◆	◆	◆		◆	
Increase the percentage of consumers and creators who report an awareness of the national combined digital collection	◆	◆	◆			
Increase the percentage of items/records available for access via self-service	◆				◆	◆
Increase in the percentage of digital items/ records stored in a digital environment	◆				◆	◆
Increase the security rating for the shared digital infrastructure for cultural collections	◆					◆
Security of financial funding for the shared digital infrastructure	◆	◆	◆		◆	◆

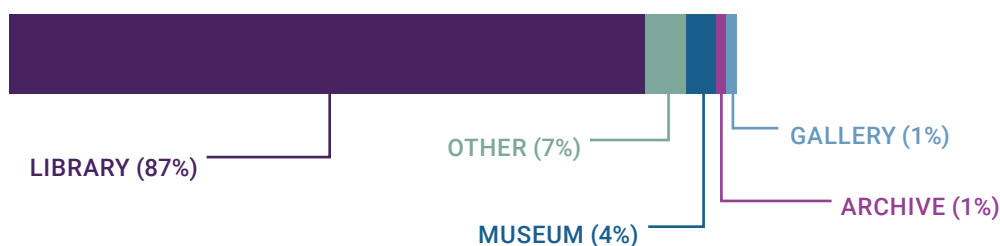
Appendix 1: Trove and Partner Services

Trove's strength is in collaboration

Australia's cultural heritage is greater than the collection of a single institution. Trove's role to provide access to cultural collections necessitates a national focus and collaboration with others who share a common goal.

The current partner base is predominantly libraries, reflecting the history of the service. Broadening the partnership base to all collecting stewards is critical to ensuring the content reflects the diversity of Australia's culture heritage and intellectual property.

Figure 6 Percentage of the current Trove Partner community by sector



Trove end-users are interested in a diverse range of materials held by Australia's cultural institutions large and small and across the full spectrum of cultural institutions. The information accessed through Trove is determined by those who partner with the service and the level of access granted to their collections.

"Trove is invaluable – a game change if you will. It is an enormous benefit to my work"

"While Trove is excellent, it would benefit from the addition material to cover gaps. There must be audio, visual and others"

"Trove is great but... would like to see merging or collaboration with other national institutions"

Shared value creation among Trove Partners

The Library's largest cost-recovery collaboration is Trove Collaborative Services (TCS) and is delivered to Trove Partners. TCS is the latest iteration of a suite of services originally named the Australian Bibliographic Network (ABN). ABN was developed in the 1980s to facilitate efficient creation of library catalogues and to allow for interlibrary loans in Australia. Its heart is a shared database held at the National Library which includes structured metadata relating to items held in all Australian libraries.

This shared dataset has provided the basis for both workflow efficiencies – libraries can download relevant data to their own catalogues - and increased public access – through interlibrary loan and resource sharing systems run at the Library. The centralised database provided a strong foundation for Trove, which leverages this datastore to provide information on which libraries hold books and other items which are not available digitally and provide access pathways to this content. This aspect of Trove – that it provides access pathways for non-digital items – is unique among international comparators and delivers a holistic view of what materials are available to support a broad range of research.

The commitment that Trove Partners have shown over decades arises from the efficiencies the services have provided to all partners, but these specific utilities do not extend to other parts of the cultural institution sector.

Shifts in the collections of libraries

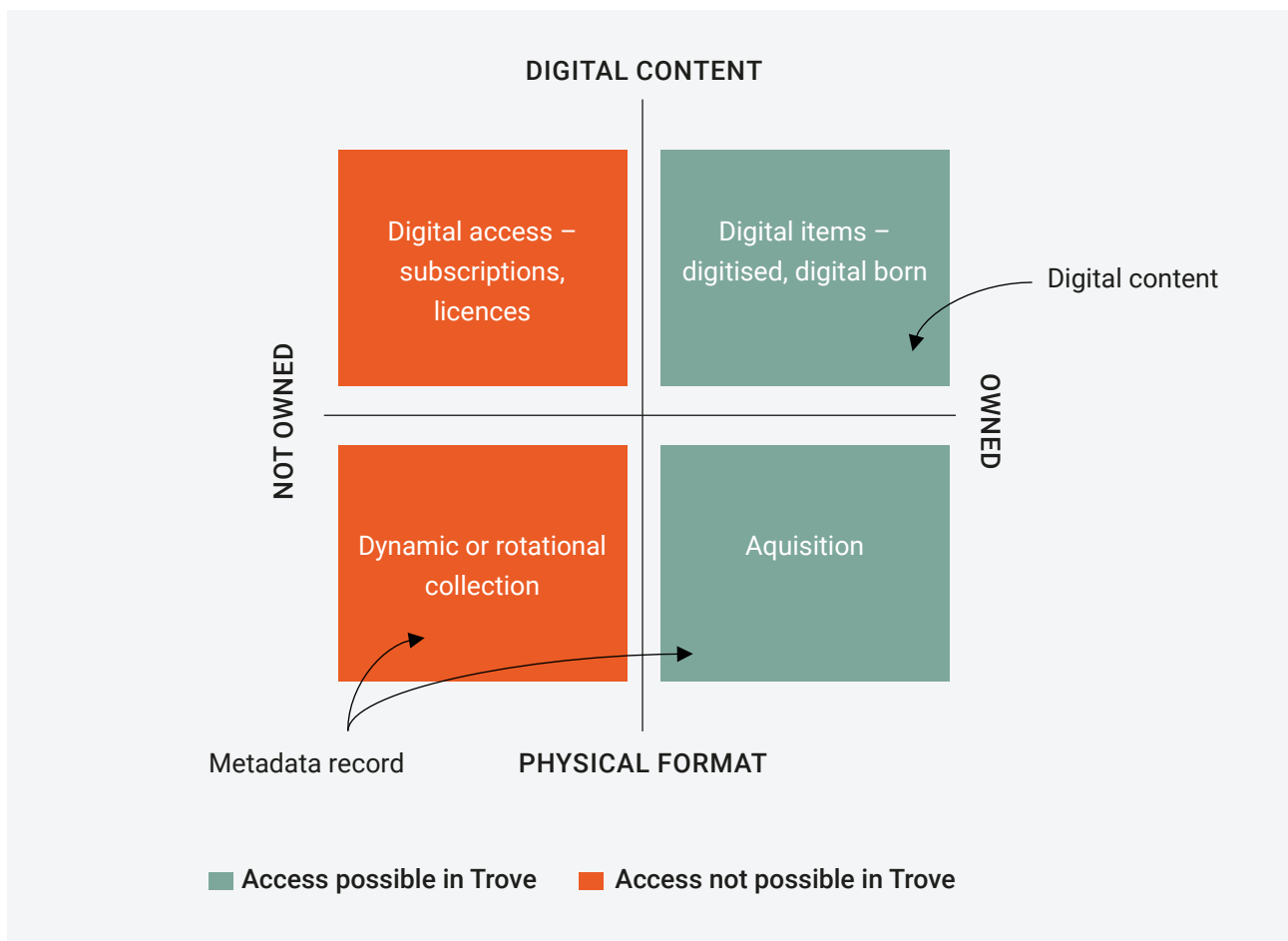
The emphasis on physical collection items has declined across libraries and archives in recent decades, with institutions making decisions about their collections as a result. This has impacted how libraries, the current predominant partner base, manage their collections. Some institutions have responded with dynamic or rotational collections while others preference electronic resource subscriptions as the dominant acquisition source.

At the same time, digital transformation of the publishing industry and global market trends has changed how publications are shared. Digital documents are licensed rather than purchased and past sharing arrangements are often not appropriate for Trove.

In the past the sharing and reuse of high-quality metadata enabled shared cataloguing and interlibrary loan activity. The commitment that Trove Partners have shown to metadata records over decades arises from the efficiencies the services derived through the backend-services offered. It relieved pressure on library acquisition budgets by enabling members to meet less common user requests without altering their collection development policy.

But now, whether they are ebooks or electronic subscription resources, digital publications rarely require the creation of metadata by the hosting library and these records are not able to be reflected in Trove.

Figure 7 Breakdown of library collections and accessibility in Trove



Access in the digital era

Trove provides access to information in two ways; firstly, as a library metadata record from the shared national database created by Trove Partners. Metadata records allow a citizen to seek out the physical location of where the item is held. They may visit the location if they can or request an interlibrary loan. Secondly, access is provided via a digital item stored directly in Trove or as a link to the owning Trove Partner's digital storage location. Digital items allow a citizen to view, read and search online. They may be a digitised copy of the physical item or the item may be digital-born with no physical counterpart.

Collecting institutions and their funders – almost exclusively Commonwealth, State/ Territory, and local governments - are choosing to invest in digitisation of their collections for their preservation and for access by a wider audience.

This investment activity is broad and covers:

- digitisation of collections,
- purchase of assets and equipment to build digitisation capacity, and
- establishment of 'centres of excellence' to build sector-wide capability.

Only a small portion of Australia's cultural content has been digitised, despite year-on-year investment from private and public sources. This focus is expected to remain across the cultural heritage sector over the short term. In addition, digital-born material is growing at an exponential rate and giving rise to new format types with a need for different collecting methods.

Collectively, this results in a large amount of digital material to store, preserve and access. This requires modern infrastructure, sophisticated cybersecurity arrangements, digital storage volume and the ability to keep pace with technology changes.

However, the magnitude of digitisation investment programs in the cultural sector and the rise of new digital formats requires resourcing and infrastructure that is largely beyond the financial capacity of many collecting institutions. Trove's current digital infrastructure is not flexible enough to meet these needs.

Appendix 2: Journey Map for each user group

Journey Map: Content Steward

● Steward pathway 1 ● Steward pathway 2 ● Trove's Service ● Trove's Digital Infrastructure

Digitise

Content Stewards decide items to digitise, source the funding and administer their digitisation program. They digitise items themselves, engage a Trove digitisation partner or other market provider. They use the published guidelines to ensure their items are compatible with Trove.

● The Content Steward engages Trove's service delivery team to develop a digitisation pathway specific to their collection and organisational needs. The Content Steward elects to use a Trove digitisation partner near them. It gives them access to the Trove Partner rate and a workflow connected directly to Trove.

● The Content Steward administers their digitisation program using a center of excellence they are associated with. They make sure the items meet Trove's specifications and collecting priorities.

Front house

Back house

● Quality requirements are defined and published to ensure digitised items are compatible and ready for discovery. Trove also has collecting priorities to ensure the diversity of Australia cultural heritage is represented.

● Digitisation providers form a national network. They digitise to Trove's specifications and connect their workflows direct to the digital infrastructure.

Collect

Digital cultural collections are collected through a suite of collecting tools that cater for different format types. Each pathway has repeatable patterns that aid automation and support the expected volume of content.

● The Content Steward receives access credentials to access their recently digitised collection in Trove. They use the 'combined' delivery platform as they do not have their own system for this function.

● Trove's technical team configure an interface with the Content Steward's Collection Management System. Once established, items flow through to Trove automatically.

● Trove offers a suite of collecting tools for digital content to be deposited. They are developed in collaboration with participating Content Stewards as part of the innovation program.

Manage

Content Stewards are tagged as the owner of their items. They manage the record in Trove directly or through their system that synchronises with Trove. Trove knows what fields need to be asked for based on the format type.

● The Content Steward access their collection in Trove. They follow a simple form to create or edit the record, add to its description and note any access rights.

● The Content Steward manages the record on their collection management system. It synchronises with Trove regularly to ensure the latest information is reflected.

● Trove has multiple ways for Content Stewards to manage an item. Ultimately, Trove cares about making the process efficient for all.

● Trove's technical team monitor for errors or discrepancies. They engage with the owning Content Steward where an error is identified, or a change has been made by a Content Consumer.

Store

Trove offers a secure and robust digital storage cultural collections and is designed to their specific needs. Trove is cloud-based and applies technologies like machine learning over the combined collections to enhance its discovery.

● Trove stores and preserves the items and its associated metadata. Each Content Steward has a piece of the shared infrastructure, much like an apartment in an apartment complex. Trove applies technologies over the combined collections to enrich their discovery.

Access

Cultural content is available through one discovery platform that allows all Content Stewards to collaborate around access to their collections.

● Content Stewards collaborate with each other to develop engagement programs and promotion of their collections. The programs are branded to the institutions involved.

● Content Stewards provide a copy of a digital item from their collection to a Content Consumer in exchange for a fee.

● Trove tags the owning Content Steward to all items that it stores.

Support and Govern

Trove has a dedicated delivery team to support Content Stewards with all aspects of the service. There is also a dedicated team to administer programs for innovation.

● Trove delivers programs with Content Stewards around all aspects of collection management.

● Trove provides analytics to Content Stewards for an understanding on how their collections are being engaged with.

● Content Stewards can elect to participate in the structured governance program around collections management, access and user needs. The governance is about continuous improvement to ensure services remain relevant and the sector innovates together.

Journey Map: Content Consumer

● Consumer pathway 1 ● Consumer pathway 2 ● Trove's Service ● Trove's Digital Infrastructure

Digitise

Content Consumers view upcoming digitisation programs that will be accessible through Trove and the corresponding Content Steward administering them. Content Consumers 'vote' or pledge funding for unfunded programs listed. They can also make suggestions of content they would like to see in Trove.

A Content Consumer notes the upcoming digitisation programs that will be available through Trove. They use an online form to suggest topics they would like to see in Trove.

A Content Consumer contributes financial resources for a nominated yet unfunded digitisation program allowing it to be digitised.

Front house

Back house

Trove's digitisation priorities identified with Content Stewards are published on the website. Trove also lists the digitisation programs that it will provide access to once they are completed.

Trove has specific apps, aligned to its collection quality standards, that enable citizens to contribute to the national story.

Collect

Content Consumers read about the different pathways used to source items. They can also see which Content Stewards participate in Trove.

Consumers read about the different collection pathways and the Content Stewards that participate in Trove.

Trove attributes individual items to the owning Content Steward. Content Consumers see that alongside the item details and description.

Manage

Content Consumers enhance, correct and enrich items to add knowledge to the service through user-centric feature. This is fed back to Content Stewards to review.

Whilst searching, Content Consumers enhance items (e.g., text correct, transcribe audio, enhance item descriptions and link items to a particular topic). Their enhancement efforts make connections between items and help others in their searching effort.

Trove offers multiple features to enhance, correct and enrich records through crowdsourced effort.

Trove notifies the owning Content Steward of any changes to an item's record through an automatic workflow. This prompts them to review the changes and either accept or reject them.

Store

Content Consumers know that Trove hosts Australia's cultural heritage content. It has the largest collection and is trusted.

Trove stores and preserves Australia's cultural collections over time. Trove uses technologies - machine learning and artificial intelligence - to aid discovery of the collection.

Access

Content Consumers explore and engage with Trove's content based on topics, curated themes and interactive features. It is free to access and intuitive to use. Content may be taken at a price that rewards the owning steward and funds development of Trove. There may be other platforms and apps that use the same content.

Content Consumers access cultural collections to explore and engage with. Trove has user-centric features for the collections to be interacted with for multiple purposes.

Content Consumers request access to copies of items in Trove's collection. They follow a workflow, connected to the owning Content Steward, that checks access permissions, confirms delivery method and enables payment.

Content Stewards collaborate to curate an online exhibition using relevant items from their collections. Trove's technical team set up the online exhibition for Content Consumers to explore.

Support and Govern

Content Consumers contact the dedicated support team for specific enquiries. They can participate in the development of Trove through suggestions, user research and testing.

Trove is enhanced through insights gathered from Content Consumer behaviour in the platform. These insights are used to identify, prioritise and inform development initiatives.

Content Consumers contact Trove for reference services. Trove refers to the owning Content Steward using defined protocols.

Journey Map: Content Creator

● Creator pathway 1
 ● Creator pathway 2
 ● Trove's Service
 ● Trove's Digital Infrastructure

Digitise

Content Creators view upcoming digitisation programs that will be accessible through Trove and the corresponding Content Steward administering them. Content Creators 'vote' or pledge funding for unfunded programs listed. They can also make suggestions of content they would like to see in Trove.

- A Content Creator notes the upcoming digitisation programs that will be available through Trove. They use an online form to suggest topics they would like to see in Trove.
- A Content Creator is awarded a grant for new research and uses part of the funds to digitise a collection for the research piece. The request is quoted, authorised and scheduled as part of the national digitisation network.

Front house Back house

Trove's digitisation priorities identified with Content Stewards are published on the website. Trove also lists the digitisation programs that it will provide access to once they are completed.

Collect

Content Creators read about the different pathways used to source items. They select the appropriate pathway for their creation to be fed back to Trove.

All Content Creators read about the different collection pathways and the Content Stewards that participate in Trove. The information assists them to identify the appropriate pathways for them to return their creation to Trove. It could be a digital item, software application or digital experience.

Trove accepts the creative item from the Content Consumer via the elected pathway.

Trove attributes individual items to the Content Steward that provides it, making it easy for a Content Creator to cite when they use it.

Manage

Content Creators enhance, correct and enrich items to add knowledge to the service through user-centric feature. This is fed back to Content Stewards to review.

Whilst creating, Content Creators enhance items (e.g., text correct, transcribe audio, enhance item descriptions and link items to a particular topic). Their enhancement efforts make connections between items and help others in their searching effort.

Trove offers multiple features to enhance, correct and enrich records through crowdsourced effort.

Trove notifies the owning Content Steward of any changes to an item's record through an automatic workflow. This prompts them to review the changes and either accept or reject them.

Store

Content Creators know that Trove hosts Australia's cultural heritage content. It has the largest collection and is trusted.

Trove stores and preserves Australia's cultural collections over time. Trove uses technologies - machine learning and artificial intelligence - to aid discovery of the collection.

Access

Content Creators use a suite of tools that search, process and display large data sets. They use a dedicated and authorised space for their creation. They use Trove's vast and trusted collection to create new knowledge or engaging experiences for others. They can see their creations in Trove, alongside the content itself. They cite the records they use along the way.

Content Creators search, interrogate and extract data from Trove in an authorised and dedicated space. The output of their effort is returned to Trove, nested alongside the content itself to give it rich meaning.

Support and Govern

Content Creators contact the dedicated support team for specific enquiries and access to innovative digital tools and programs.

Content Creators access dedicated programs that support them create new knowledge or develop enriching experiences with Trove's collections.

Trove's innovative tools are created, developed and tested with Content Creators to ensure their relevance. This engagement occurs through user-research or partnership arrangements.

Content Creators contact the dedicated service delivery team for support on sourcing data, access and use of the innovative digital tools and collection pathways.