



CASE STUDY

**NATIONAL LIBRARY
OF NEW ZEALAND
TE PUNA MĀTAURANGA
O AOTEAROA**

The National Library of New Zealand, or, in Maori, Te Puna Mātauranga o Aotearoa, was established in 1965 with the unification of the Alexander Turnbull Library, the General Assembly Library, and the National Library Service. The purpose of the National Library is to enrich the cultural and economic life of New Zealand by collecting, preserving, and protecting documents, particularly those relating to New Zealand, and, in a manner consistent with their status as documentary heritage and taonga (a treasure), making these documents accessible to all the people of New Zealand.

Challenges

With the explosion in the volume of digital assets over the past several decades, libraries and other memory institutions have become increasingly aware of the need to preserve such assets. The National Library of New Zealand identified digital preservation—a solution for (cont'd)

Preserving Digital Heritage at the National Library of New Zealand

In the last two decades, digital technology has enabled us to create, use, and be enriched by information in ways that were unthinkable a generation ago. The growth in the number of digital items in today's library collections—items that have undergone digitization and items that were “born” digital—has led to an understanding that new actions must be taken to preserve these digital assets and make them available to future generations.

While many organizations have systems in place for storing and managing digital objects, these systems are not always designed with preservation in mind. Digital preservation is about guaranteeing the continued access to and the usability of digital content well into the future. Digital asset management systems and digital repositories focus on facilitating the day-to-day use of digital content. A digital preservation system, on the other hand, offers discovery and access options, and provides workflows for the intake of materials and ongoing risk analysis. It offers tools for maintaining the integrity of stored items such as JHove and Droid, as well as the ability to integrate tools for migration of 'at risk' items.

A Trailblazer in Digital Preservation

The National Library of New Zealand commenced its research into digital preservation in 2000, when many institutions had not yet even begun to explore this new frontier. Reams of CDs, cassettes, and online materials in the National Library's care urgently required a long-term solution to ensure their accessibility to future generations.

Because the library had no professional catalogers dedicated to digital materials when its preservation metadata schema was published in 2002 (and republished as an XML schema in 2003), library staff created a tool that would automatically extract cataloging information from digital materials. This makeshift approach changed dramatically in 2003 when new legislation gave the National Library the mandate to collect digital materials and “preserve the nation's digital heritage in perpetuity” (National Library of New Zealand [Te Puna Mātauranga o Aotearoa] Act 2003).

As a result, the library began the painstaking process of developing requirements for a system that would be able to support these new responsibilities. For the National Library, this venture was philosophical as much as technological. Staff members became engaged in a dialog about the objectives for collecting digital heritage items and



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storing, preserving, and providing access to the ever-growing digital heritage collection under the library's guardianship—as an important part of its mission and one that required immediate action. To this end, the National Library of New Zealand initiated the National Digital Heritage Archive (NDHA) program.

Solution

The library took a leadership role in developing a digital archive and preservation management system in partnership with commercial vendors and in consultation with preservation experts from peer organizations around the globe. The solution developed by this partnership would be the first-ever commercially viable system of its kind for organizations wishing to preserve valuable digital collections and provide perpetual access to them.

Results

The National Library of New Zealand went live with the Ex Libris Rosetta preservation system for digital libraries in February 2009. The library uses Rosetta to collect a range of digital material types from a wide variety of sources; to review, validate, and organize such materials; and to make them available to the public in accordance (cont'd)

operational questions such as whether such a system would be embedded in the library's normal business systems or would constitute a separate project that only select staff members would have access to.

From Vision to Reality

A successful business case put to the government earned the library 24 million New Zealand dollars for developing a digital preservation solution. The first—and crucial—stage in developing the solution consisted of defining the National Library's requirements. According to Steve Knight, associate director of the National Digital Library, "this was the first attempt by a library to draw up the exact requirements for a digital preservation system. It was important to us to express our requirements boldly before starting work on the solution."

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Having spent 18 months on the preparation of a thorough, meticulous statement of requirements, the National Library's staff came to the conclusion that no existing open-source solution or digital repository from a library automation vendor would meet the library's needs. Thus, the idea emerged of forming a development partnership for the creation of a first-of-its-kind solution, one that would ensure both flexibility and interoperability while focusing on the defined needs of the National Library. The library's determination to help set the preservation technology agenda, rather than be constrained by another body's requirements, led to the decision to seek an active partnership role with a vendor.

The National Library began working with Endeavor Information Systems, which Ex Libris acquired in 2006, to develop a commercial system that would benefit not just a single institution but the entire digital preservation community.

An international peer review group (PRG) made up of recognized thought leaders and innovators from library and academic communities served as an independent resource for the NDHA Program, consulting on the scope and design of the initiative and its compliance with emerging industry standards. Consultation with the PRG ensured that the ensuing system would conform to general access and archiving trends so that it could be broadly applied.

Ex Libris Rosetta—an Adventure in Authenticity

In November 2008, Ex Libris Rosetta, the result of this long partnership, went live internally at the National Library of New Zealand. While supporting the acquisition, validation, ingest, storage, management, preservation, and dissemination of different types of digital objects, Rosetta also serves to enforce institutional policies, which can vary from one institution to another.

Users from within or outside of the institution can contribute objects, which are loaded to a depository. After the object's validity and origin are verified, the institution records when, how, and by whom the object was created. The object is then enriched to ensure



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with user access rights.

Utilizing the Ex Libris Open Platform Strategy, a built-in software development kit and a suite of APIs facilitate the integration of the system with other NLNZ applications. Conversion and risk analysis tools that will enable the system to provide meaningful access to the digital objects over time are being added in 2009 as part of the Rosetta version 2 development.

that the institution has all the descriptive and technical metadata needed for long-term preservation. Finally, the digital resource is saved in a sustainable format, which is continually evaluated to guarantee ongoing usability.

Based on the Open Archival Information System (OAIS) model and conforming to Trustworthy Repositories Audit and Certification (TRAC) criteria, this end-to-end solution offers full security, auditing, and integrity checks that maintain the safety of collections over time.

A set of Rosetta tools, which include application programming interfaces (APIs), and deep linking through persistent identifiers help institutions make their collections even more easily accessible to users. Maintaining the fine balance between openness and adherence to a library's requirements, the solution enables institutions to customize elements to their unique requirements. "The software development kit, providing open systems for resource discovery and ingest, was a shared objective for the National Library and Ex Libris," says Knight.

Steve Knight is convinced that Rosetta will enable future generations to engage with the original document. With its mandate to preserve documentary heritage, the National Library faces an ongoing challenge regarding format obsolescence and changes in technology. "Authenticity is the primary goal of any preservation system," he says. "Creating an end-to-end system delivers unprecedented confidence in the authenticity of our materials."

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Expectations from the digital preservation activity are creating a huge impact on the collection policy of the National Library. With Rosetta enabling the National Digital Heritage Archive to collect and preserve any kind of digital asset, the library estimates that in less than a decade, digital assets will represent the largest group of items collected. "Digital preservation is the most important challenge facing collecting institutions such as libraries, archives, and museums," notes Knight.

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Collaborating for Digital Preservation

Fundamental to the success of the NDHA program is the close relationship between the National Library and Ex Libris, expressed most tangibly by the presence of an Ex Libris project manager in New Zealand throughout the two years of development. The relationship was characterized at every stage by intellectual rigor and a shared understanding of the significance of the work. "The quality of the partnership was crucial," observes Knight. "Ex Libris respected the primacy of the National Library's exacting requirements, and both partners shared a genuine drive for the importance of digital preservation. Above all, the relationship demanded openness and responsiveness—qualities which the National Library found in abundance at Ex Libris—sustained by the partners' "mutual eye on the long term."



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In March 2009, the National Library of New Zealand went on to select the Ex Libris Primo® discovery and delivery solution. Key to the library’s choice of Primo was its interoperability with the library’s existing systems, together with the product’s open interfaces, which enable institutions to develop unique extensions to meet their specific needs.

“We engaged in an extensive requirements process to determine the best solution for enabling our users to easily find the digital and physical resources of the National Library and the Alexander Turnbull Library,” explains Knight. “We also needed to address the issues surrounding the delivery of those resources. The Primo solution met our identified requirements. We expect the Ex Libris open-platform strategy to enable us to extend Primo to create services that we need now and will need in the future. The APIs provided by Ex Libris, as part of the Open Platform Strategy, will help us be more responsive to the needs of our customers.”

“Finally,” adds Knight, “Primo is a natural fit for our environment, as we currently use several other Ex Libris systems, including the Voyager® integrated library system. Implementing Primo as a cornerstone of our Discover-Deliver-Interact platform will find us in familiar territory.”

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