Ireland

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A. Users and content

Digitisation of Cultural Heritage Material

In museums, libraries, and archives, the main materials being digitised are those of national and local studies content, which include documents, photographs, maps, drawings and audio and video content.

Libraries
The National Library is continuing its programme to digitise its photographic collections.
Local libraries are digitising local studies material, including documents, photographs, maps, drawings and audio and video content, both on a nationally co-ordinated level and at local level.

Museums and Galleries
The National Museum continued its programme of work on the digitisation of its Art and Industry and Irish Antiquities collections registers. During 2006, there was also a continuation of the project collaboration between the National Museum, Mitsubishi Electric Research Laboratories (MERL), and Dublin City University (DCU). The overall goal of this research co-operation is to develop a low-cost practical approach to capturing digital representations of National Museum artefacts for a variety of public access and curatorial purposes. The Local Authority Curators Group Computerisation Project (LACG) continued its work programme on the digitisation of their collection backlogs in the local authority museum collections.
The National Gallery of Ireland digitisation projects currently focus on two distinct areas, the digitisation of the painting collection and the digitisation of the archives. Digitisation of the painting collection is intended to concentrate on a portion of the collection with a view to providing online access. Digitisation of the archive material includes a collection of original photographs as well as document material.

Archives
The National Archives has recently completed the digitisation of a collection of late 18th and early 19th century political correspondence documents. Work is ongoing on the digitisation of microfilm versions of census return documents from the early 20th century. Work continued with the National Inventory of Architecture and the collaboration with the TERMINALFOUR organisation to bring the architectural heritage of Ireland online. The content management system provides a comprehensive digital archive of every significant structure type in Ireland including castles, cathedrals, thatched houses, boathouses, and gardens. Sixteen of the twenty-six counties are currently catalogued on the website.

At national institution level, some digitised content is made available freely over the Internet.
Local libraries make their content available through the `<http://www.askaboutireland.ie>` national portal and online resource. In addition, many local libraries provide access to local content on their own websites.
The `<http://www.askaboutireland.ie>` website, through its Student Zone, provides an elearning resource to support the primary school curriculum. The primary students' content has been developed initially in history and geography subjects and across all age groups within primary schools.
It has been created in consultation with the National Council for Curriculum and Assessment, the National Centre for Technology in Education and the Primary Curriculum Support Programme. The original content has been prepared by teams of primary school teachers and local studies librarians. Each class group has its own section for each subject and all content units are accompanied by teachers' notes to provide teachers with guidelines for making the best use of the content and for expanding on the topic.
There is also a general 'Looking at Places' section

which incorporates content from all parts of the country. The primary students' section of the Student Zone is designed to be as interactive as possible, to encourage the students to think, to develop their own research skills and to learn about their local place today and over time. There are lots of original photographs, maps, drawings, pictures and audio, together with a wide range of educational games. This material is not just confined to the individual class group sections either - students can search the website mediabank to locate materials from among the 10,000 plus items on the website. The resource has recently been incorporated into elements of the primary teachers' in-service training programme and is integrated into `<http://www.scoilnet.ie>`, the official education portal of the Department of Education and Science.

B. Technologies for digitisation

Digitisation projects in Ireland in the cultural heritage sector are currently focusing on:

- the digitisation of artifacts and images, including maps and manuscript pages of historical documents
- the digitisation and OCR of historical documents in printed form
- a small amount of 3D digitisation of historic objects.

The standards used apply to the following elements of the overall digitisation cycle:

- selection of articles to be digitised: No formal standards apply here; however common guidelines are followed on a project-by-project basis in order to ensure that digitisation fits the requirements of the project
- preparation for digitisation: the guidelines outlined in the MINERVA best practice handbook are applied
- scanning: TIF files are generated at the highest available resolution. These are then subsequently converted to jpeg, png and other formats for Web delivery, to PDF for print delivery, and to other formats as required.
- OCR: no particular standard is applied here. Depending on the project, OCR may be carried out in-house using software such as AABBY FineReader. For large projects, external OCR bureaus are preferred. Where microfilming is required, this is carried out at the highest available resolution.
- Meta-data: Dublin Core is the meta-data standard applied at the item level. RSLP and variants thereof tend to be used at the collection level, though the number of such repositories is small.
- Delivery: Web delivery uses HTTP. For large items which are to be manipulated (zooming, panning, etc.) the zoomify software and associated open source tools are applied; the underlying technology is Flash.
- 3D scanning uses proprietary technologies which vary from project to project.

The technologies and tools used in digitisation projects are typically:

- flat-bed A4 scanners, linked to modern PCs with fast (1.5GHz+) processors and large RAM and hard disk storage
- for large items, third party bureaus with drum scanners and flat-bed scanners to A0 size are used
- microfilm is scanned by third party bureaus, using dedicated microfilm scanners
- digitisation projects typically present much of their content online, using standard Web technologies. These are enhanced where necessary by server-side image processing tools (jmagick, imagemagick, GD) and by end-user tools such as zoomify and Flash. PDF is also used as a presentation technology
- meta-data is typically stored in open source databases such as MySQL, as part of the digitisation process websites.

Interoperability is driven by:

- common use of meta-data standards (Dublin core, primarily)
- common use of image formats (jpg, png, tiff)
- exposure of search and retrieval tools via Web services (though there are few of these active at this stage)
- application of search engines such as Yahoo! and Google search APIs to enable digitisation websites to be cross-searched.

While the potential value of cross-search technologies such as Z39.50 has been investigated in the past,

its utility has been found to be limited in relation
to the cost of implementation. A model which uses Web
services or which screen-scrapes Web-bases search
and retrieval tools has been found to be more viable.

Open source/FLOSS

There has been a significant endorsement of the use
of open source/FLOSS software in digitisation projects.
This may reflect the fact that national digitisation
projects tend to be carried out by public bodies,
with restricted budgets. Research into ongoing work
in this area within the Open Source community
is required, in order that projects are fully informed
of the facilities available to them.

SOAP and UDDI

The use of Web services based on SOAP and UDDI
is seen as a potential next major advance
for digitisation projects, particularly with regard
to interoperability. Research and development
in this area could yield dividends for projects in Ireland,
particularly with regard to networking of disparate
digital repositories.

3D Imagery

Further research is required on developing
an integrated, low cost, user friendly system to meet
a range of 2D and 3D imaging objectives
from the perspective of the National Museum
and museums in general.

B. Sustainability of content

The most common models of funding used in Ireland
are start-up project funding and ongoing development
and maintenance funding, provided from central
government. Digitisation is now embedded in national
strategy programmes such as *Branching Out*
for the public library sector. Project funding is managed
centrally and projects must comply with agreed
national programmes and guidelines.
There is a growing number of established digitisation
centres in national and public libraries in Ireland.
Examples include The Library Council, The National
Library of Ireland, University of Dublin, Dublin City
Public Libraries and Clare County Library.