

# Finland

Pirjo Hamari  
Vesa Hongisto  
National Board of Antiquities

Digitisation of cultural heritage in Finland has been the activity of libraries, archives and museums already for years, but the amount of digitised materials has yet to reach a considerable part of all national collections. Goals that were set in a national policy paper in 2003 have not been reached because funding has not been available to a degree that would have enabled the digitisation efforts needed. The need for digitisation is however seen as necessary by the memory institutions, to provide better and wider access to cultural heritage for the widest possible audience. Digitisation is seen as a preservation and research measure, a possibility to attract wider and new target groups as well as a tool for the dissemination of knowledge. Co-ordination of digitisation within the field of cultural heritage falls under the mandate of the Ministry of Education, but the practical co-operation efforts are driven forwards by the eKAM consortium (Electronic libraries, archives and museums). The eKAM group was established in 2003 to develop the collaboration of the memory institutions on a voluntary basis, following previous successful co-operation groups of the memory institutions. eKAM consists of a general meeting of the involved institutions and a regular meeting of the directors from all major memory institutions in Finland. eKAM also supports co-ordination sub-groups which plan and accomplish tasks allocated to them by the directors and the general meetings, such as cataloguing, technology and communication. The eKAM consortium is co-ordinated by the Centre for Microfilming and Conservation at the National Library of Finland. Digitisation efforts continued in institutions in 2006, as an integral part of the daily work or within small separately funded projects. One of the projects worth noting under way in 2006 is a cross-institutional co-operation project for digitisation of Russian military documents of 1809-1917, bringing together documents from both the National Archives of Finland

and the National Board of Antiquities, whose collection of maps of the period was digitised by the project. Finland held the EU Presidency during the latter half of the year 2006. This brought also digitisation questions to the front of the political agenda due to the swift development of the i2010: Digital Libraries initiative, the Commission Recommendation on the digitisation and online accessibility of cultural content and digital preservation. Finland led the preparation work for drawing up of the Council Conclusions on the Digitisation and Online Accessibility of Cultural Material and Digital Preservation prepared as the Member States' response to the Recommendation. A major conference, called "Why digitise? Who benefits? Impact assessment on digital cultural heritage content and services" was arranged in Helsinki in October, with 150 participants from all EU countries and beyond. The conference explored for the first time cultural, social and economic impacts of the digitised cultural heritage and brought forth a common need to see more research in this emerging area. This report has been compiled by the National Board of Antiquities, which is monitoring national digitisation policies and co-ordination of digitisation of the museum sector in Finland, in co-operation with the National Library of Finland, the National Archives of Finland and the national broadcasting company YLE.

## A. Users and content

Digitisation of cultural heritage in Finland started with making the analogous catalogues and registries available electronically. Only in the last ten years has digitisation proceeded to genuine electronic representation of the analogue original items. Libraries have always been more advanced than the other memory institutions in providing access to catalogues, and are today those that can provide their metadata records to the public almost complete. Archives

and museums have been slower to catalogue their collections in electronic form, and this work is still very much under way. Digitisation in all types of memory institutions still covers only a fraction of the collections.

Priorisation plans for digitisation have been formulated for museums, taking the form of shared themes, and for libraries (Digitisation Programme for the Libraries, National Library of Finland). A new, cross-institutional priority theme has been formulated by the eKAM group in 2006, called "Arki ja Juhla – Finland in the 19<sup>th</sup> century", accessing material from all memory institutions.

### **What are the main materials/categories of objects being digitised?**

#### *Museums*

Up to today, ca. 39% of all museum objects in Finland have been electronically catalogued. Of photographs, the amount is even lower, ca. 15%, partly due to the vast amount of material. In art museums, as well as in museums of natural history, the collections are mostly already catalogued. The amount of digitised material is smaller, ca. 17% for objects and 11% for photographs in all the professional museums in Finland (321 museums) by 2006.

Culture-historical collections are catalogued as they grow and retrospective cataloguing is done, but in a small degree only. The national archaeological collections are catalogued under the same accession number as a larger group, but item level cataloguing is still only preliminarily planned and happens only in isolated cases, for example when objects are transferred or loaned out of the collections.

Photographs and drawings are being digitised both as they arrive and retrospectively but the work is only at the beginning due to the large amount of the material. The largest collection of photographs is at the Finnish Museum of Photography [http://www.fmp.fi/fmp\\_fi/muvieras/english/index.htm](http://www.fmp.fi/fmp_fi/muvieras/english/index.htm), which holds a collection of 3 400 000 items, out of which 500 000 have been digitised thanks to its lively digitisation activity. Other large collections are to be found at regional museums and at the National Board of Antiquities.

Works of art from art museums are catalogued to a much larger degree than objects from museums

of cultural history. Virtually all major collections are catalogued and considerable amounts of the works are also digitised.

#### *Libraries*

The main category of digitised materials in libraries is newspapers, which are digitised from microfilms. Libraries also digitise journals, books and ephemera. Electronic catalogues exist for almost all the materials, for example the National Library of Finland has catalogued all of its 3 100 000 item collections except for a small portion of 19<sup>th</sup> century materials, which are under retrospective cataloguing.

#### *Archives*

The main body of digitised archival materials consists of textual documents, maps and related documents, photographs, and recordings. These collections are held by the National Archives, regional archives and different independent and private archives.

The degree of digitisation in these archives varies. Only six major document archives have reported major digitisation activities in 2006 (National Archives, National Land Survey archives, the Finnish Literary Society, Society of Swedish Literature in Finland, The Central Archives for Finnish Business Records and The Finnish Labour Archives).

The Finnish Broadcasting Company has its own archives of audiovisual materials produced by the company. All in all the television archives hold 76 000 films and 391 000 videotapes out of which 159 000 in born-digital form. Audio archives hold 600 000 records, 200 000 analogous tapes and 48 000 digital DAT tapes. In addition the archives hold 1 050 500 photographs. Out of these, films have not been digitised at all. Some clip samples have been digitised as well as audio material (430 000 files)

and photographs (ca. 20%). Of the digitised material, 2 300 video files and 2 600 audio files are in public web distribution. A general digitisation plan is under preparation.

Four major archives for scientific audiovisual material in Finland in addition to YLE are the Department of Music Anthropology at the University of Tampere, The Research Institute for the Languages of Finland, The Finnish Literary Society and the Finnish Jazz & Pop Archive (JAPA). Their percentage from all audiovisual archive materials in Finland outside YLE is almost 45%

(over 57 000 recordings). A national digitisation project funded by the Ministry of Education has aimed at ensuring their preservation and accessibility through digitisation <<http://www.uta.fi/laitokset/mustut/digiprojekti/frames.htm>>.

#### *Sites and monuments*

Archaeological sites and built heritage are being catalogued in electronic form in the Information System for Cultural Environment (ISCE) at the National Board of Antiquities. The database holds ca. 20 000 sites or complexes which are either protected by the Antiquities Act (295/63) or by different laws, statutes or agreements concerning the nationally important built heritage. The coverage is complete and national for all other sites except archaeological sites from the historical period, of which ca. 30% is already catalogued. The database holds textual information of the sites as well as photos of some sites. For archaeological finds and museum objects, see above for discussion.

#### **How is the digitised CH content being distributed?**

A national portal for all memory institutions is missing but the MICHAEL project is working on building such a portal. The portal will provide a common access point to holdings from the institutions on collection level.

#### *Museums*

Museums are distributing their digitised content through a common portal, Finnish Museums on-line (Suomen museot on-line, <<http://www.suomenmuseotonline.fi/>>). The system has an interface through which museums can share their content from different collection management systems. In 2006, the number of museums who had joined the portal was 17. During the year, the interface was translated from Finnish to Swedish and English, although content is still in Finnish. A part of the digitised collections of the National Museum can be accessed at the Collection browser <<http://kokoelmaselain.nba.fi/>>. Several museums have their own web interfaces for distributing content. One of the largest examples is the service for the forestry museums, Kantapuu, which contains collection from seven museums <<http://www.kantapuu.fi/index.php>>, with 40 000 images and 4 000 objects.

The Automobile and Road Museum Mobilia <<http://www.mobilia.fi/englanti.htm>> has its own eCollections for its 700 objects and 20 000 pictures, where users can also leave comments on the items in the collection. Tampere museums has its Siiri web database with 20 000 pictures and 10 000 digitised objects <<http://siiri.tampere.fi/VALOKUVA/web/index.do>>. Art museums have a continuing difficulty in affording the presentation of their collections on the web because of the current situation in IPR legislation. However, Rovaniemi art museum has made a pilot agreement with copyright authorities allowing the presentation of works of art on the web pages.

#### *Libraries*

Libraries have an almost complete coverage of their collections in electronic catalogues. The Finnish National Library has several on-line catalogue services, including the main catalogue of the library, HELKA service <<https://helka.linneanet.fi/cgi-bin/Pwebrecon.cgi?LANGUAGE=English&DB=local&PAGE=First>>. Digitised material is available from HELMI database of samples from the Collections of the National Library of Finland. The National Library digitizes all newspapers published in Finland 1771-1890 in the Historical Newspapers Library. In 2007 the Newspaper Library will contain 165 titles and approximately 900 000 pages. Other digitised material includes journals (532 bindings, 82228 pages in total) and ephemera (9733 bindings, 129465 pages in total) <<http://digi.lib.helsinki.fi/index.html?language=en>>. Raita is a catalogue of recordings that are available as digital copies at the Music library of the National Library. When copyright regulations allow, the music is also available online. At present, there is information about 5 000 pieces of music in Raita, copied from Finnish 78 rpm shellac records (9 000 in total). 302 of them are available online. A common access point, Doria, contains digital collections of Finnish universities and polytechnics: <<http://www.doria.fi/>>.

#### *Archives*

The Finnish Archival Database is a joint database of collections maintained by the National Archives Service and the Provincial Archives in Finland.

<<http://www.narc.fi:8080/VakkaWWW/EtuSivu.action>>. The digitised material, in 2006 500 000 documents and maps, can be accessed through the Digital Archives service <[http://digi.narc.fi/digi/index.ka?lang=en\\_US](http://digi.narc.fi/digi/index.ka?lang=en_US)>. The National Archive also maintains a national reference database for private archives holdings <<http://www.narc.fi/Arkistolaitos/yarek/>>. The archives of YLE, the Finnish Broadcasting Company, were opened to the public in September 2006. Elävä arkisto (The Living Archive) is a free Internet service which presents the visitor with a library containing hundreds of samples of television programmes and thousands of samples of radio programmes in both Finnish and Swedish. The Finnish Broadcasting Company was founded in 1926. However, the oldest material in the archives is almost a hundred years old. The digital archives consist of over 150 hours of clips of old television programmes, 550 hours of radio clips and 2 500 pictures. There are also 2 200 (Finnish-language) background articles on old favourites. More material is constantly being added. The service is mainly focused on Finnish history and culture but the archives also include plenty of international material. The archive also functions as a web-radio, and transmits a stream of old radio programmes 24 hours a day <<http://www.yle.fi/elavaarkisto/?s=t&n=archive>>. Audiovisual archives have been catalogued to VIOLA, the Finnish national discography and national bibliography of sheet music. It also contains references to foreign materials in 13 Finnish music library collections. VIOLA contains references to Finnish sheet music since 1977, and to sound recordings since 1901, <<https://viola.linneanet.fi/>>. No distribution for digital material?

#### *Sites and monuments*

Information System for Cultural Environment (ISCE) at the National Board of Antiquities has been available on extranet to regional museums and other authorities since 2005 through the Museoverkko (MuseumNet) service. The distribution will be extended to the Internet in 2007/2008.

#### **Are there any eLearning or creative industry uses for the digitised CH material?**

This is work in progress. Examples are not numerous but some interesting pilots exist. Uses exist mostly within eLearning sector and no proper creative industry application exist in Finland as yet.

Digitised content is distributed in mobile applications, like the Louhisaari manor application, where a mobile application guides visitors through the garden of the manor. The application was a pilot in a Nordic project, launched in 2005 and still in use at the manor museum, <<http://www.nordichandscape.net/finland/index-e.htm>>.

Suomen Tammi (The Oak of Finland) is a network of cooperation for cultural heritage education, formed by the National Board of Antiquities, the Finnish National Board of Education, the Ministry of the Environment, and Finland's environmental administration. The network is open for schools, museums, environmental centres and NGOs providing World Heritage education. The operations started as a project in 1998-2004 and now continue as a network. Electronic resources are available for education on its web pages, <<http://www.edu.fi/page.asp?path=498,24009,24538,60241,60264>>. The Town and Again website introduces town and urban culture from the point of view of visual art. The website was produced as part of the national digitisation and content production programme (2002-2005) by the Finnish National Gallery and funded by the Ministry of Education Information Society Programme, <[http://www.montakertaakaupunkiin.fi/wandora/flash/index\\_en.html](http://www.montakertaakaupunkiin.fi/wandora/flash/index_en.html)>.

Several museums have made use of their digitised materials in eLearning packets available on their web pages. One such use is the TaideSampo (ArtSampo) project, where works of art from different art museums are used in digital form for art education, <<http://www.taidesampo.net/>>.

#### **Are there any special issues that deal with the general accessibility of the digitised cultural content?**

In the world of art museums, IPR questions have limited the possibilities for distributing content on the Internet. Improvements in legislation in the form of a general rights agreement for museum and educational

purposes with copyright management associations will facilitate content creation in the future, but this agreement is not expected before 2007. Another IPR connected obstacle in content distribution is the right to use digital map materials in web-based services. These IPR rights reside with the National Land Survey and the use of material is under prohibitively costly license agreements. This has slowed down the development of map-based web services at least in the cultural sector. However, new web interfaces have facilitated and lowered the costs of these services in the last couple of years.

In 2006 the National Board of Antiquities joined as a member in the national Design for All network, a member of the European Design for All e-Accessibility Network EDeAN. <http://www.edean.org/>.

The objective of the Finnish DfA Network is to support the development of the information society, according to objectives defined at European and at national level, and is to transfer DfA related knowledge to both public and private sector.

In connection with eAccessibility, a DVD guide *Open Doors - Making Cultural Heritage Sites and Exhibitions Accessible* has been produced in 2006 by the Art Museum Development Department of the Finnish National Gallery in collaboration with the MediaLab from the University of Art and Design Helsinki.

The guide is an inspiring and illustrative tool to improve the accessibility and user friendliness of cultural heritage sites. It is produced as a part of a wider international cultural heritage project ACCU - Access to Cultural Heritage: Policies of Presentation and Use 2004-2007 project, which is led by the National Board of Antiquities. The project is supported by the Culture 2000 Programme of the European Union, <http://accessculture.org/>.

## B. Technologies for digitisation

### What common standards are most commonly used in digitisation?

Most systems follow international standards, for example Dublin Core, CIDOC standards or Z39.50 for libraries as well as suitable ISO standards, but no general national agreements or strategies have been made for the use of standards.

### What technologies and tools are most commonly used in digitisation?

Most commonly used technologies and tools are listed in the table below:

#### Standards and Technology by categories of material

	Technologies	Standards
Objects / buildings	Dig. images, 3D scanning	TIFF 300 dpi
Text documents	Image and microfilm scanning, OCR and XML mark up	TIFF, JPG
Images	Image scanning	TIFF 300 dpi colour JPG
Audio	44.1 kHz Tandberg SLR-tapes	.WAV
Moving images	DigiBeta digital tapes; DV25 codec	.MOV

### How is interoperability ensured?

In the museums, libraries and archives sector, the eKAM working group is also addressing questions of interoperability and disseminating knowledge to memory institutions.

Interoperability issues are also tackled in the FinnONTO project (Finnish National Semantic Web Ontology), a large joint project co-ordinated by the The Semantic Computing Research Group at the University

of Helsinki, which is developing a national ontology service framework in Finland, <http://www.seco.tkk.fi/projects/finnonto/>

### Have any research needs emerged?

Best practise examples are still needed for handling and preparing archival material for digitisation. Thesauri and ontologies need more attention to make searches more effective. In libraries, main themes

in this connection are new developments of OCR, automatic image processing and developing historic text processing.

Long-term preservation is a challenge that all memory institutions are facing, and solid research and practical solutions as well as co-ordination is needed to ensure the preservation of materials.

Audiovisual archives are in greatest danger of being destroyed. More research is needed in ensuring their long-term preservation.

### C. Sustainability of content

#### What funding models and funding sources are most commonly used in digitisation?

Most of the digitisation is made as a part of the daily activities in the institutions. A number of digitisation projects are driven with grants from the Ministry of Education. These are mostly small, short projects, which call for that half of the expenses for the project are covered by the institutions. There has been a general consensus that digitisation funding has not been available to a degree that would ensure the digitisation of cultural heritage to a satisfactory degree and comparisons to European levels show that funding, either public or private, has been smaller than average. Some private donations have been drawn in, for example in the "Save a book" campaign of the National Library, for restoring and digitisation of fragile and precious materials in the collections. These works are distributed on the Internet, <http://www.rahasto.kansalliskirjasto.fi/pelastakirja/index.html>.

#### Have you any examples of cost-reduction?

The Centre for Microfilming and Conservation at The National Library of Finland has been able to reduce costs by large-scale digitisation activities and automation of the digitisation process for certain kinds of digitised materials, for example books and newspapers as well as microfilms. In 2006 a cross-institutional co-operation project for digitisation of Russian military documents of 1809-1917 was launched, bringing together documents from both the National Archives of Finland

and the National Board of Antiquities, whose collection of maps of the period was digitised by the project. Co-operation has resulted in much lower costs of digitisation for the institutions involved.

#### Have you any examples of national competence centres in digitisation of cultural content?

The Centre for Microfilming and Conservation at The National Library of Finland – National Library of Finland is responsible for the high-quality long-term preservation of the National Library of Finland's resources. Preservation consists of digitisation, microfilming and conservation.

An emerging trend is the strengthening cross-sector co-operation in digitisation between memory institutions.

### D. Digital preservation

#### Are there national policies for digital preservation?

There are no national policies for digital preservation. A working group will be established in 2007 under the Ministry of Education, led by the National Archives, whose task is to create a national strategy by the end of 2007.

A regulation from the National Archives Service, effective from January 2006, states the requirements of the National Archives Service for the preservation of permanent records in case management systems exclusively in electronic form and on the delivery files used in transferring the records to the National Archives Service.

#### Can you give examples of tools or technologies used for digital preservation of CH content?

Digital preservation is only emerging need in memory institutions. Not much attention has been paid to it until very recently and clear research needs are focused in this area. LTO format is reported in use in some archives.

The National Archives Service is developing a system for a repository for archiving public sector material in born-digital form, based on the requirements set in the regulation.



## E. Monitoring progress

### Input/output indicators

Input	MEUR / Posts	Comment
Funding allocated to support digitisation - government	270 000 (museums)	2006
	200 000 (National Library)	2007
Funding allocated from within existing institutional budgets*	540 000 (museums)	2006
	420 000 (National Library)	2007
	1 750 000 (National Archives + other archives)	2006; includes metadata cataloguing to databases
Size of work-force (full-time equivalent posts)	20 (National Board of Antiquities)	2006
	16 (National Library)	2007
	36,6 (National Archives + other archives)	2006; includes metadata cataloguing to VAKKA database

\*Combined total, including personnel costs.

Output	Number of collections / items	Comment
Number of digitised collections		
- museums	-	No catalogues of collections exist nationally.
- libraries	6	
- archives	21	Comprises repositories having answered the questionnaire; of these only 6 have a digitisation activity of greater extent. On the other side a much greater number of repositories than the 21 repositories have metadata databases for their archival materials that are accessible via their websites.
Number of digitised collections recorded in a national inventory		
- museums	17	Suomen Museot on-line
- libraries	3	National Library
- archives	24	VAKKA database
Number of digitised items per collection type		
- object entries (m/i)	1.7 m (M)/ 0.7 m (I)*	*Museums; total by 2006
- text documents (m/i)	1 560 000	Pages (600 000 accessible), National Library, total by 2006.
	1 700/30 000	National Archives in 2006; From the 1700 analogous catalogues (archival inventories), metadata of 170 000 archival units were entered in the archival database of the National Archives Service.
		Only exceptionally the Finnish archival institutions register the digitised units (files or corresponding entities). The main digitisation unit for textual records is the digitised frame.

Output	Number of collections / items	Comment
- images (m/i)	3 M (M) / 2 M (I)*	Estimate from professional museums.
	5 000	National Library, total by 2006
	1 700/4 000/61 000	National Archives in 2006; see above.
- audio (m/i)	9 000	Tracks; National Library
	1 700/4 000	National Archives in 2006; see above
	550 hours	Finnish National Broadcasting Company
- moving images (m/i)	1 700/1 500	National Archives in 2006, 270 hours; see above
	150 hours	Finnish National Broadcasting Company

The National Archives Service has pointed out that the unit by which digitisation is monitored and which clearest defines the amount of digitised material is a "frame", a digital image, and not an object, which usually is a book or a folder. These are not recorded as

units in digitisation, especially when digitisation is mostly done from microfilms. The principal quantity to be followed would then be a frame. The National Archives digitised its materials in 2006 by 247 000 takes, of which over half was done from microfilms.

#### Use indicators

Use	Amount	Comment
Use of websites distributing digitised heritage content		
- user sessions	6 500	Finnish Museums on-line
	124 000	Digital Archives of the National Archives Service
- average duration of user sessions	15 sec	Finnish Museums on-line
- average page impressions per user session	3,5 pages	Finnish Museums on-line
	15 pages	Digital Archives of the National Archives Service
Purchase or distribution of CDs / DVDs	-	
Audiences for streaming, video-casting or broadcasting	-	

No user-need surveys have been made on digital heritage content services.