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The National Digital Library of Finland



Finland
Minna
Karvonen

Background, objectives and priorities

Digitalisation and the development of the information society have a large-scale impact on culture, science and education. The digital information resources of libraries, archives and museums are becoming increasingly important for individuals and various players of society as a source of creative action, education and research and as a support mechanism for general access to information.

The development of the management, dissemination and preservation of these resources as an administrative sector-level initiative is one of the strategic policy guidelines of the Ministry of Education and Culture of Finland.

The National Digital Library project (the NDL) is unique in many respects: it brings together the key organisations to build a customer-orientated solution that makes easily accessible the digital materials and services of libraries, archives and museums and secures the preservation of these materials for future generations.

It also contributes to the European Union's objectives concerning the digitisation of cultural materials and scientific information and their digital availability and long-term preservation. The NDL is Finland's national response to the European Union's Digital Agenda flagship project and its objectives concerning the digitisation of cultural heritage as well as to the Europeana, which is expected to become the focal point of the European online cultural heritage.

The priorities of the NDL project between 2008 and 2013 are:

- The creation of a joint public interface for the materials and services of libraries, archives and museums;

- The digitisation of key materials of libraries, archives and museums, making them available through the public interface and Europeana;
- The development of a long-term preservation (LTP) solution for digital cultural heritage materials;
- Competence and interoperability development.

Interoperability

The National Digital Library is an extensive complex of systems, some of which already exist in the operations and systems of the organisations while others are being planned or under construction. A tool that helped outline the overall picture and define which direction to take was the Finnish Government's enterprise architecture design method.

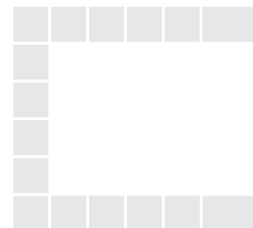
During the planning of the enterprise architecture, a conclusion was reached on how the different systems of the NDL shall operate together. To enable the management of the entire complex, a certain degree of uniformity is required from the public interface and the LTP system. The enterprise architecture does not concern the internal operation of the system, but defines the standards and protocols required for interoperability. A key feature of this definition is the standard portfolio, a part of the enterprise architecture, which defines the use of metadata formats and identifiers, the usable file formats and the protocols for information retrieval and data transfer.

Digitized and born-digital cultural materials

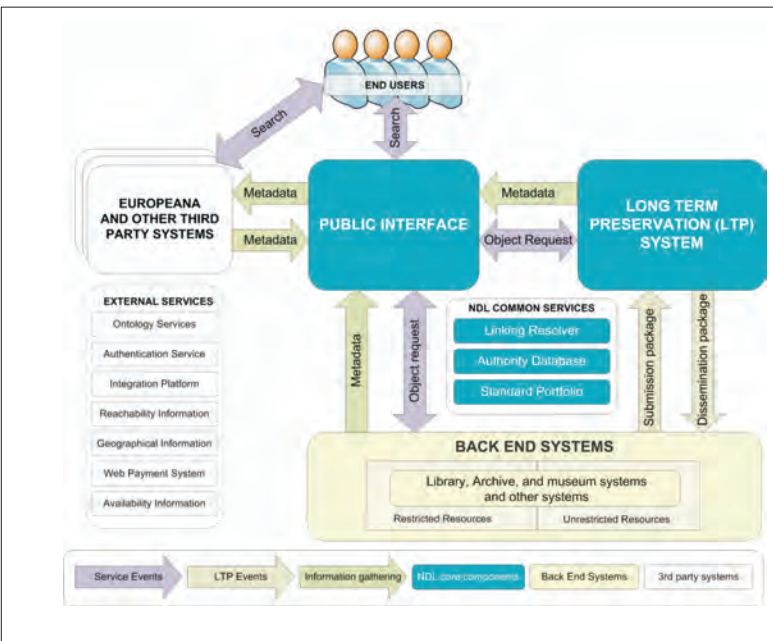
There is a cumulative increase in the volume of digital information resources everywhere in society. This is also reflected in the library, archive and museum sectors tasked with feeding into the compilation, management, availability and preservation of the digital information



Uncommon
Culture



During the first decade of the twenty-first century people have awakened to the fact that, without sustainable solutions for long-term digital preservation our collective memory will gradually fade over the coming years and decades.



seum materials has been rapid. At the end of 2008, libraries, museums and archives had 3.9 million digital objects in total. In 2011, the number of objects had increased to 19.5 million. As a result of active digitisation efforts, the collections of libraries, archives and museums including historical photographs and maps, old newspapers, church records, war diaries, works of art, artists' sketch books, museum artefacts and herbarium specimens are being turned into digital materials.

The public interface

The public interface of the NDL is a one-stop service through which users can access the required data irrespective of the organisation that provided the data. Materials from archives, libraries and museums make up a diverse source of information for the purposes of research, education and other information acquisition activities.

and semantic capital that is essential for the functioning of the information society.

Digital materials owned and administered by libraries, archives and museums make up a very heterogeneous whole. Materials that were originally in physical form are being digitised, and an increasing share of material is born digital. In Finland, a major share of digitised materials consists of documents, newspapers and photographs. The volume of born-digital materials is expanding quickly as public administration is gradually taking up electronic storage of documents and as the scope of statutory archiving of materials has been extended to comprise digital materials disseminated as recordings, materials available to the public via information networks, and radio and TV broadcasts.

During the NDL project, the progress made with the digitisation of library, archive and mu-

Through the public interface, users can search for information, retrieve materials and access digital services. There are pictures, texts, documents, sound recordings, videos, e-publications and other materials available at the public interface. With the services integrated into the system, the user can, among other things, renew loans, buy pictures and order materials.

With respect to its operating principle, the public interface is something new in Finland: it is based on a centralised advance indexing of the information resources, allowing quick and versatile searches. The user interface can be integrated in e-learning environments and Social Web services. Its key design principles are usability and the utilisation of the user's social network.

The user interface is maintained and developed centrally at the National Library of Finland in cooperation with participating orga-



The Picture of a butterfly and a drawing (architecture):
Background image, drawing, The National Archives Service
of Finland. Suomen perhoset paraiden lähteiden mukaan.
Helsinki University Library.Record, the National Archives
Service of Finland.

nisations. In most cases, libraries, archives and museums no longer need their individual user interfaces, as they can remodel the features of the common user interface so that it best answers the needs of their user groups and supports their own service profile.

The NDL project is involved in the development of a format converter for the transmission of metadata. The service maintained by the National Library allows the Finnish libraries, archives and museums to make their materials available through Europeana.

The public interface will be introduced in phases, beginning in 2011.

Long-term preservation of digital cultural heritage

Memory organizations have a duty to preserve the core content of the information society, the permanently retained digital cultural heritage, in an accessible format for hundreds of years. Finding a solution for the long-term preservation of digital cultural material has become a hot national and international topic. During the first decade of the twenty-first century people have awakened to the fact that, without sustainable solutions for long-term digital preservation our collective memory will gradually fade over the coming years and decades.

The long-term preservation (LTP) system will safeguard the accessibility of both digitised and born-digital cultural heritage content data objects for future generations. The joint infrastructures and services bring the practices of museums, libraries and archives closer together, reducing costs while increasing system integration and strengthening co-operation.

The LTP system is a system of services through which the organisations that preserve cultural heritage will transfer the materials in-

tended for long-term or permanent preservation.

The main task of the LTP system is to keep digital information understandable. Each organisation still has the ownership of its own materials and makes independent decisions on how they are handled, but the systems specially designed for preservation purposes and the associated expert services on preservation issues will be implemented centrally.

Reception, preservation and user services are included in the LTP system according to the OAIS reference model. The metadata of the materials to be transferred to the LTP system must meet the respective metadata requirements. A preservation service for materials means measures associated with long-term preservation, such as the intactness monitoring of materials and their conversion from one file format to another, if necessary. User services include the delivery of Dissemination Information Packets (DIPs) to the back-end systems of the organisations that use the system, to the NDL public interface and other external interfaces.





The picture of two birds, and the DNA:
Background image: Veikko Somerpuro
DNA structure: Rodeo.fi
Ferdinand von Wright, "The Fighting Capercaillies",
detail. Finnish National Gallery. Central Art Archives.
Picture by Jouko Könönen



During the first phase of the NDL project (2008-2011) a joint model for an LTP solution was developed for the digital materials of archives, libraries and museums. The technical expert group of the NDL project was responsible for defining technical and administrative metadata associated with long-term preservation.

A prerequisite for the use of the LTP service is that the user organisations must implement prescribed and predefined operating principles and practices of production, processes, administration and utilisation of digital materials. These will be defined more precisely during the LTP follow-up project (2011-2013) led by the CSC IT Center for Science.

The aim is to have the LTP system in use by 2016.

Benefits

The NDL is the most extensive cooperation project between libraries, archives and muse-

ums so far in Finland. As system services are developed jointly, it provides better justification for finding joint solutions even to other challenges in the operating environment.

During the project, cooperation both between and within the library, archive and museum sectors has increased and intensified. Competence enhancement has taken place through training events and update meetings that have attracted thousands of participants in total.

The NDL helps to decrease overlapping costs, converge the participating organisations' everyday practices and release organisational resources to core tasks. The ultimate goal is to enable a full-fledged utilisation of the electronic materials of libraries, archives and museums for the benefit of both individuals and the community.

For more information

The National Digital Library Website (in Finnish, Swedish and English): www.kdk.fi

The National Digital Library - collaborating and interoperating (report):

www.minedu.fi/export/sites/default/OPM/Julkaisut/2011/liitteet/OKM26.pdf?lang=en

The National Digital Library - Enterprise Architecture:

www.kdk.fi/images/stories/tiedostot/NationalDigitalLibrary-EnterpriseArchitecture.pdf

The National Digital Library / Long-term preservation project (report):

www.kdk.fi/images/stories/LTP_Final_Report_v_1_1.pdf