Lithuanian Cultural Heritage Digitization,
Access Strategy Prospects
and Current Projects

Regina VARNIENĖ
Martynas Mažvydas National Library of Lithuania, Gedimino ave. 51, LT-01504 Vilnius, Lithuania
Tel: +370 5 2398646, Fax: +370 5 2496055, Email: r.varniene@lnb.lt

Abstract: The aim of this paper is to demonstrate the creation of co-operation
mechanisms between the memory institutions of Lithuania using the Integrated Virtual
Library. During the period of 2003-2004 the National Library of Lithuania carried out
some planning activities on digitization of cultural heritage, integration of memory
institutions and striving to pay the attention of state institutions to the demand for the
integration into the medium of European electronic content. As a result of the planning
activities the Draft of the Concept of Digitization of Cultural Heritage and the project
documentation of the Integrated Virtual Library Information System were prepared in
accordance with the Lund Principles, the Lund Action Plan, recommendations of
Minerva, Minerva Plus, Calimera, DigiCult, etc. and experience of other European
countries. The main beneficiary is M. Mažvydas National Library of Lithuania.

1. Introduction

Cultural heritage is included into the implementation processes of strategies formulated by the
Lisbon Council in 2000. The strategies picture the vision of the most competitive and dynamic
European economy based on human resources and information technologies.

The implementation mechanisms and methods have been reflected in the strategic plans of
electronic Europe – e-Europe 2002 and e-Europe 2005, where the capabilities of information
technologies and the global network have been used at the maximum. These documents
promote the interest in certain aspects related to cultural heritage, such as politics, management
and technologies.

The Lithuanian Long-term Development Strategy of the State (2002) [1], indicating the
guidelines of economic, social, environmental and other policies until 2015 approved by the
also state that the long-term strategy of Lithuanian culture is the preservation and actualization
of the Lithuanian cultural identity that combines the inherited and common values of the
European culture as well as the security of its prolongation, open access and competitiveness in
the modern context of Lithuania, the European Union and the rest of the world.

Although the most important legal documents and acts of the Republic of Lithuania define
the long-term preservation, actualization and access of Lithuanian cultural heritage using ICT,
the national strategy of digitization and access has not been formulated yet.

During the period of 2003-2004 the National Library of Lithuania carried out some
planning activities on digitization of cultural heritage, integration of memory institutions and
striving to pay the attention of state institutions to the demand for the integration into the medium of European electronic content.

At the beginning of 2005 13.3 million Litas (about 4 million Euros) from the EU Structural Funds were received for the creation of the Integrated Virtual System combining the efforts of three types of memory institutions to digitize our cultural heritage. The implementation of the project will be launched in 2005-2007. The main beneficiary of the project is M. Mažvydas National Library of Lithuania; the Lithuanian Art Museum and the Lithuanian Archives Department are the partners of the project.

The aim of this presentation is to demonstrate the creation of co-operation mechanisms between the memory institutions of Lithuania on the basis of the Integrated Virtual Library Information System. Some references to accomplishments in the fields of sociology, culturology and communication theory and recommendations of European projects (Minerva, Minerva Plus, Calimera, DigiCult, etc.) regarding co-operation between memory institutions have been made taking into account the interdisciplinary nature of the presentation object.

2. Development of National Cultural Heritage Digitisation Program

The birth of digital technologies, in general, has changed the processes of storage, preservation, control and distribution of cultural heritage. In parallel, the role of memory institutions – libraries, museums and archives, has altered as well.

Cultural heritage, in general, is divided into tangible and intangible cultural properties, while the intangible cultural heritage consists of spiritual and verbal cultural values. The tangible cultural values include movable and immovable cultural properties.

According to the Law on the Protection of the Movable Cultural Properties of the Republic of Lithuania [3], movable cultural values are defined as movable material production of society and human activity created 50 years ago or earlier and representing a huge cultural value.

Author’s literary works, songs, fairy-tales, sagas, customs, traditions and spectacles are defined as the intangible or spiritual cultural heritage. According to the data presented by N. Kligiene [4] nearly 70 Internet sites from Lithuania contain the examples of cultural heritage. The digitized exhibits are presented in the sites of museums providing a greater possibility and easier access for remote users to get acquainted with the objects of cultural heritage available in various museums of the country.

The site of the Lithuanian Archives Department, (www.archyvai.lt), also contains a virtual library where the Digest of Lithuanian Archive Funds is currently under reconstruction but the document search system is operating. Examples of digitized published documents may be found in the sites of the libraries of Lithuanian Academy of Sciences, www.mab.lt, Vilnius University, www.mb.vu.lt, and M. Mažvydas National Library of Lithuania, www.lnb.lt.

Although, a number of memory institutions – libraries, museums, archives, have been currently implementing different activities of cultural heritage digitization and presentation in Internet, their actions have not been co-ordinated yet in the country, therefore, they are mostly accidental and dependant on various subjective reasons and opportunities.

The National Library of Lithuania had considered the above mentioned motives and prepared the Draft of the Concept of Digitization of Cultural Heritage in 2004 in accordance with the Lund Principles [5] and the Lund Action Plan [6] in order to secure:

- The creation of the common digital information environment of the Lithuanian cultural heritage by the memory institutions and other bodies responsible for the cultural heritage;
• The digitization and distribution of the Lithuanian cultural heritage on the basis of the Integrated Virtual Library Information System;
• The formation of an efficient infrastructure of the digitization of the Lithuanian cultural heritage to warrant the fulfilment of obligation of memory institutions – libraries, museums, archives and others bodies responsible for the preservation of cultural heritage, to pursue the constant long-term digitization of cultural heritage.

The following tendencies have become the basis of the Concept of Digitization and Access of the Lithuanian Cultural Heritage. The programmes created on the basis of this concept will become very important normative acts for memory institutions in digitization and access of cultural heritage. The Concept of Digitization and Access of the Lithuanian Cultural Heritage is a very significant document that changes the viewpoint of memory institutions regarding their co-operation in order to allow the optimal possibilities for the long-term preservation and distribution of the national cultural heritage.

3. Creation of Lithuanian Integrated Virtual Library Information System

3.1 Methodology

M. Mažvydas National Library of Lithuania carried out some planning activities in 2003-2004 in order to establish further perspective of the LIBIS development and ensure the implementation of library’s main functions as a memory institution.

In parallel with the Concept of Digitization and Access of the Lithuanian Cultural Heritage, the experts of the National Library of Lithuania (NLL) have been preparing the project of the “Creation of Virtual Environment of Lithuanian Integrated Library Information System” (2004) covering the digitization of old and rare documents as well as providing access to them. The project results were used during the preparation of the feasibility study for “Creation of Integrated Virtual Library Information System” (2004) by the Italian company “A.R.S. Progetti S.r.l.” who choose the Lithuanian experts. The project documentation was also prepared. EU Structural Funds for the implementation of the project was received in 2005, in accordance with the 3rd priority’s 3rd measure, “The Development of Information Services and Infrastructure” of the Single Programming Document approved by the Government of the Republic of Lithuania in 2004 (Lietuvos zinios, 2004, No. 123-4486) [7].

The project “Creation of Integrated Virtual Library Information System” aims at forming a solid network of libraries, museums and archives in digitizing cultural heritage and making it available through the public and free access interfaces to all users in Lithuania and world-wide.

The basis for the creation of the Integrated Virtual Library is the Lithuanian Integrated Library Information System (LIBIS) which consists of the Local Automated Information Systems (LAN) of 75 Lithuanian research and public libraries and local subsystems. The main local subsystems operating within the LIBIS are the Union Catalogue, the National Bibliographic Databank and the Archive of Electronic Resources.

The Integrated Virtual Library Information System (IVLIS) will be created according to the same principles the other LIBIS subsystems and modules have been created in order to:
• Avoid redundancy of functions. For performance of IVLIS functions existing LIBIS modules and subsystems performing analogous functions will be used as much as possible;
• Guarantee onetime creation of bibliographic records (BR) and authority records (AR) as well as multifunctional usage of such records, with the help of all information products of digitized objects subsystem in other LIBIS structural subdivisions;
• Fulfil the tasks of collecting & cataloguing digitized objects and providing access to them.
The concept of IVLIS is used to indicate a digital information depository that performs the traditional functions of storage, preservation of information and providing access to it. It also functions as a shared system distributing any available information as well as positively promoting and maintaining the creation of such information. ISO 14721: 2003 Space Data and Information Transfer System – Open Archival Information System – Reference Model (OAIS) standard was taken as the foundation of the IVLIS methodology.

Considering the fact that the bibliographic data of the Lithuanian Integrated Library Information System is stored in relational data bases, the Digital Management System (DAM) will be applied as it helps to manage all the unstructured information or content. This information exists in many digital forms: text documents, engineering drawings, XML, still images, audio and video files, etc. DAM enables to create content with common desktop applications and easy-to-use content authoring templates. It can also capture and incorporate existing content from a variety of sources. Digital Asset Management provides a digital archive, which stored valuable information and helps prevent obsolescence or duplication and offers searching and browsing tools to authorized users to locate and retrieve the information.

3.2 Goals and Objectives of Integrated Virtual Library Information System

The mission of the Integrated Virtual Library Information System was formulated as following: to promote the co-operation between the memory institutions and other bodies responsible for the cultural heritage in the processes of digitization of cultural heritage objects and their integration into the European electronic information space.

Two goals that will be reached in pursuance of the mission are:

- To guarantee the digitization, long-term preservation and access of the Lithuanian cultural heritage on the basis of the Integrated Virtual Library Information System (1);
- To establish efficient management of Lithuanian cultural heritage digitization (2).

In pursuance of the Level 1 goal – to guarantee the digitization, long-term preservation and access of the Lithuanian cultural heritage on the basis of the Integrated Virtual Library Information System (1)(see Scheme 1), the following objectives will be fulfilled:

- To create selection criteria of cultural heritage objects to be digitized (1.1);  
- To compile the lists of objects and collections intended to be digitized (1.2);  
- To guarantee a non-stop digitization of the cultural heritage objects by establishing the digitization centres within the memory institutions (1.3);  
- To guarantee an efficient access to the digitized objects of cultural heritage (1.4).

The main criteria of the published cultural heritage selection for digitization based on the recommendations of Minerva and Minerva Plus programs and the traditions of Lithuanian press history are the following:

- the historical period any document was published or compiled;  
- the language of a document;  
- the rarity and uniqueness of a document (the number of extant copies);  
- the content and scientific value of a document;  
- the physical state of a document.

The similar criteria were applied for the selection of objects in museums and archives.
The second objective of the Level 1 goal is to compile the lists of objects and collections intended to be digitized (1.2). The objects selected for digitization include a number of books dated 1547-1863; the documents of the Press Ban period (1864-1904); the Lithuanian books in Latin of XVI – XVII c.; the Lithuanian books in Polish of XVII-XVIII c.; Lithuanian foreign press released until 1940s; and legal acts and other formal documents of the Republic of Lithuania of the inter-war period (1918-1940). The total number of pages the NLL has intended to digitize is 3,327,654.

According to the value of the objects stored in the archives and their importance to the society the church registers of birth, marriage and death of the Roman Catholic Church dated 1599-1930, 36 document collections compiled of 1,382 files stored in the State Historical Archives of Lithuania were selected for digitization on the basis of the formulated criteria. Apart from this amount manuscripts and archival documents reflecting the identity of the Lithuanian social layers and communities, i.e. parchments, documents from Synod Collection of Lithuanian Evangelical Lutherans (1413-1438), the collection of historical acts of the Lithuania Minor, etc., will be digitized as well. The total number of pages is 180,000.

In accordance with the importance and physical state of the objects stored in museums the works of graphics, watercolours and folk graphics, photo negatives, positives, and slides displaying the exhibits of historical and artistic photography will be digitized. A number of maps, paintings, drawings, objects of bionistics and sfragistics, textile items and pictorial works will be digitized as well. The total number of pages and objects to be digitized by museums is 98,000. The overall number of pages and objects to be digitized during the project implementation period (30 months) is 3,605,654.

The third objective of the Level 1 goal is to guarantee ongoing digitization of cultural heritage objects by establishing the digitization centres within the memory institutions (1.3):

- The IVBIS Maintenance and Development Group will be created;
• The digitization subdivisions will be established.
  According to the order passed by Directors of all member institutions the Digitization subdivisions will be established in the Lithuanian National Library (22 employees).
  In 2005 some additional funding was allocated for the NLL from the State Budget for the salary fund of 22 employees. The Working Group in the Lithuanian Archives Department will include 11 persons funded from the Lithuanian State Archival System. 7 persons will be appointed from the present staff to work in the project (3 from the Lithuanian State Historical Archive and 4 from the Lithuanian Central State Archive).

  The Working Group of Digitizing Centre in the Art Museum will include 20 employees. Some additional funding has been requested from the budget for the establishment of 5 new positions. Only the managers of the project will be funded from the EU money.

  Fulfilling the fourth objective – to guarantee an efficient access to the digitized objects of cultural heritage (1.4), more specific points will be gained related to:
  • transferring digitized objects to the main server from local servers as well;
  • operating and maintenance of digitization technology;
  • submitting proposals regarding the updating of technologies and software;
  • combining IVLIS with Authority Records, National Bibliographic Databank (NBDB);
  • combining IVLIS with the Union Catalogue (UC);
  • combining IVLIS with the modules of Cataloguing, Acquisition, etc.

  The main server containing digital cultural heritage will have a link to the LIBIS catalogue, www.libis.lt, which is widely used at the moment, allowing the users to get the full-text of a digitized object via bibliographic record. The documents digitized by the Lithuanian Archives will have a link to the Digest of Lithuanian Archival Fund, www.archyvai.lt. The images digitized by the Lithuanian Art Museum will have a link to the Integrated Information System of the Museums called LIMIS.

  The IVBIS architecture was built in accordance with the benefits of NCSTRL (Network Computer Science Technical Reference Library) model. IVBIS is created as a shared system that controls its central and local information in local servers of museums and archives.

  The “Creation of Integrated Virtual Library Information System” project has raised government awareness of the long-term digital preservation of national cultural heritage, and the demand to form the national viewpoint regarding the management of cultural heritage. The project has also supported the importance to strengthen the co-operation between libraries, museums and archives both in the framework of specific projects and national scale.

  Therefore, the next very significant goal of Level 2 regarding the IVLIS project is to establish the efficient management infrastructure of the Lithuanian cultural heritage digitization (2)(see Scheme 1). The following objectives will be fulfilled:
  • To influence the creation of national policy on the digitization of cultural heritage (2.1);
  • To prepare projects on the further development of IVLIS and search for sponsorship (2.2.);
  • To control the employment of legal norms and standards in the memory institutions (2.3).

3.3 Project Benefits

1. The creation of Integrated Virtual Library Information System will allow developing the relationship between the national memory institutions on the grounds of the common goals and objectives, work flows, information databases and standardization.
2. The project will allow rendering new e-services and preparing requirements for the unified form for presentation and exchange of information via Internet.
3. After implementation the accessibility and continuation of cultural heritage will be secured:
   - The cultural heritage objects digitized by libraries, archives & museums will be deposited into the Databank of digitized objects available to users from Lithuania & abroad;
   - Currently public sector electronic services for the majority of Lithuanian residents will be updated and upgraded, and the quality of public sector electronic services will be improved;
   - open and free of charge access to the Integrated Virtual Library Information System will provide equal possibilities for all users regardless their sex, age or place of residence;
4. The abundance and variety of digital objects will be guaranteed:
   - Not only libraries but museums and archives as well will be involved into the creation of Integrated Virtual Library Information System.
   - over 3 million 605 thousand pages of original manuscripts, newspapers, old books, metrics, chronicles and other valuable and historically important documents will be digitized;
5. Lithuanian cultural heritage will be preserved for future generations. Residents will not have to go to museums, archives and libraries because they will be accessible online.

4. Conclusions

The NLL project – “Creation of Integrated Virtual Library Information System” has brought to the state’s attention the problems of long-term digital preservation of national cultural heritage, the demand to form the national viewpoint regarding the management of cultural heritage and the benefits of memory institutions integration into the space of European electronic content.

The received sponsorship has encouraged the Ministry of Culture and other institutions to initiate the validation of the Concept of Digitization of Cultural Heritage and creation of the strategy. This project has become a very important foundation for the further preparation of cultural heritage strategies and promotion of co-operation between the memory institutions guaranteeing the long-term preservation of the cultural heritage by digitization and integration of the digitized cultural heritage into eEuropean information space.

References

2. Lietuvos kultūros politikos nuostatos: patvirtinta Lietuvos Respublikos Vyriausybės 2001 m. gegužės 14 d. nutarimu Nr. 542. [www.lrkm.lt/EasyAdmin/sys/files/KPN.doc]
5. The Lund principles. [www.cordis.lu/ist/directorate_e/digicult/lund_p_browse.htm](www.cordis.lu/ist/directorate_e/digicult/lund_p_browse.htm)
Cultural heritage is included into the implementation processes of strategies formulated by Lisbon Council in 2000. The strategy implementation vehicles are reflected in the strategic plans on electronic Europe - eEurope 2002 and eEurope 2005, which cover the following: - organisation of co-operation between the memory institutions and their integration into the information and culture policy; - preparation of projects on digitization of cultural heritage and their implementation by. As a result, 13.3 million litas were received from EU Structural funds for the digitization and access of cultural heritage, and the draft of the concept of cultural heritage digitization and access was prepared. The main beneficiary of the project is Martynas Mazvydas National Library of Lithuania. Digitisation is now common practice in Cultural Heritage institutions such as museums. Photographs are a common element of most digitisation strategies, and the advent of digital photography and advanced computer graphics have given rise more. Digitisation is now common practice in Cultural Heritage institutions such as museums. Photographs are a common element of most digitisation strategies, and the advent of digital photography and advanced computer graphics have given rise to an easy-to-use three-dimensional modelling technique – "Structure from Motion" (SfM) photogrammetry. This thesis evaluates current practice in the implementation of SfM in Cultural Heritage institutions. Lithuanian Cultural Heritage Digitization, Digital Content Preservation and Access Strategy was approved by Lithuanian Government on 20 May 2009. In the Strategic Framework for Implementation of the Strategy allocation for the cultural heritage digitization is budgeted. 3 Lithuanian Museums' Centre for Information, Digitization and LIMIS The Center was founded on 30 June 2009, according to the recommendations of the Museum board of the Ministry of Culture of the Republic of Lithuania (April 2009) and the implementation plan of the Lithuanian Cultural Heritage Digitization, Digital Content.