Janne Andresoo and Riin Olonen,
Using a Shared Cataloging System: The Estonian Approach

from / *aus*:

Union Catalogs at the Crossroad
Edited by
Andrew Lass and Richard E. Quandt
pp. / *S*. 341-358

Erstellt am 31. März 2005

Impressum

Bibliographic information published by Die Deutsche Bibliothek

Die Deutsche Bibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.ddb.de.

Bibliografische Information Der Deutschen Bibliothek

Die Deutsche Bibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.ddb.de abrufbar.

This publication is also openly accessible at the publisher's website. Die Deutsche Bibliothek has archived the electronic publication, which is now permanently available on the archive server of Die Deutsche Bibliothek.

Diese Publikation ist auf der Verlagswebsite ebenfalls open access *verfügbar. Die Deutsche Bibliothek hat die Netzpublikation archiviert. Diese ist dauerhaft auf dem Archivserver Der Deutschen Bibliothek verfügbar.*

Available open access / *open acess* verfügbar:

Hamburg University Press / Hamburg University Press
http://hup.rrz.uni-hamburg.de
Die Deutsche Bibliothek archive server / Archivserver Der Deutschen Bibliothek
http://deposit.ddb.de/

ISBN 3-937816-08-9 (print)

Table of Contents

Part 6 South African Union Catalogs

Chapter 18
Using a Shared Cataloging System: The Estonian Approach

Janne Andresoo[1] and Riin Olonen[2]

1 Introduction

In this paper, we shall focus on the various aspects of designing and implementing a shared cataloging system in the ELNET Consortium's member libraries. We shall try to highlight the joys and sorrows we have faced, and to answer the question whether there is anything we would like to do differently if we could start all over again.

As we both have work experience in the National Library, most of the examples in this paper will be drawn from it.

2 Implementation of the System

Background

The Estonian Libraries Network Consortium was established on April 4, 1996, and on June 9, 1997, a contract was signed by the ELNET Consortium and Innovative Interfaces, Inc. (III, a U.S. vendor) to implement the

[1] Coordinator of Bibliographic Activities, National Library of Estonia; also Team Leader of Cataloging Working Group, ELNET Consortium, janne@nlib.ee.

[2] Library System Manager, National Library of Estonia; also Executive Manager, ELNET Consortium, riin@nlib.ee.

integrated library system INNOPAC in Estonia. The integrated library system INNOPAC was officially presented at the 7th congress of Estonian librarians on October 22, 1998, and the shared system went live on January 1, 1999 (after one and a half years of testing, adapting and intensive user training). Currently, the libraries of the ELNET Consortium are moving to the new Web-based system Millennium.

The implementation of the new library system inevitably brings many changes in people's everyday work—new tasks and different responsibilities for staff, changes in work routines and because of that, reorganization of the library's workflow. And the larger the library, the larger the number of possible changes and the larger the staff that will inevitably have to adapt to those changes.

IT-specific training

The time period during which the library system was implemented also brought many changes to the National Library of Estonia. The use of information technology in general has become broader (even in those workplaces which had not previously been automated until now). To provide the entire library staff with a basic knowledge of computers, several in-house training sessions and outside courses were arranged. To extend and improve training services, a computer class was organized in the National Library, later serving as a training base for all member libraries of the ELNET Consortium, which equipped it in part.

New Rules for Data Input

New rules were applied to the data input—paper-based bibliographic descriptions or those in older databases were totally different from the data input in INNOPAC, which uses the MARC21 format for handling and saving data. Since the open system INNOPAC makes new demands for the unification of the data input, the acceptance of unified standards has become vitally important. Besides following international standards, it has become very important for librarians to agree and compromise on the national level. The importance of data quality and standards was also pointed out by Bohdana Stoklasová of the National Library of the Czech

Republic at the conference "National Bibliography in a Changing Information Environment," organized by the National Library of Estonia in 2000.

Despite the fact that the library staff was not familiar with MARC21, the principles of machine-readable cataloging were not completely new to them. In 1993, the National Library purchased a Finnish integrated library system KIRI. For data input and storage, KIRI used the FINMARC format (the Finnish version of the MARC format). During the implementation period it was hoped that this system could be developed and adapted to meet the Estonian research libraries' needs. Unfortunately KIRI did not satisfy these expectations. Still, the attempts to put KIRI into operation were not a complete waste of time, for the staff had a chance to become acquainted with the rules of machine-readable cataloging, to perceive the principles of an integrated library system and its impact on everyday work, and to get enough information to be able to evaluate library systems better next time.

In addition to the MARC21 format, Anglo-American cataloguing rules (AACR2) and the principles of authority control were applied in the cataloguing process (ISBDs were already in use in Estonia). In addition, the principles of copy cataloging were also new to us. Our specialists had to learn first themselves and demonstrate later to the rest of the personnel how the Z39.50 protocol worked. Subject indexing was another challenge for us. The staff had no problems with classification (Estonian libraries use the UDC), but they were not so familiar with subject indexing, for we had not used it earlier to any great extent (the Estonian Universal Thesaurus was not published until January 1999).

The unification of data input has also become very important for us, since we share our database with other member libraries of the ELNET Consortium. To improve cooperation, we formed several special working groups (for instance, for cataloging, serials processing, authority control, system management questions, etc). The mandate of these working groups is to establish and revise professional rules, standards and detailed operating regulations, organize training activities and draw up the criteria for quality evaluation, etc. In these working groups, specialists from different libraries discuss their problems in order to find common solutions.

Changes in organization

In addition to the changes mentioned above, it was necessary to optimize and adapt working routines to the demands of the new system, and because of that there was a need to reassess the entire library's workflow. The reassessment of the library's working routines was the task of an implementation group that included all directors and key specialists. This reassessment changed the overall work organization of the National Library: some existing departments had to be integrated, and some new ones had to be established. For instance, three new structural units were established: the Authority Control Department, the Retrospective Conversion Department and the Re-Cataloging Department.

Training courses

First, catalogers received training. In the spring of 1997, the National Library invited colleagues from the Helsinki University Library to introduce the MARC format and to provide basic training for representatives of all ELNET Consortium's member libraries. This training was supported by the NORDINFO. At the end of the same year, we had the opportunity to meet Sherry K. Little from Texas, USA, who shared with us her knowledge and experience of USMARC and authority control.

Training for using the new system began gradually at the end of 1997. First, specialists who were (and are) responsible for the further training of the staff had their training sessions. During the year and a half ending in January, 1999, when the system was launched, four training sessions were arranged in Tallinn and Tartu by a representative of Innovative Interfaces, Inc., and countless other training sessions were organized by our own specialists. This was a very intensive period of time for these key persons, since they had to be prepared to start training others immediately upon completion of their own training. By now, some additional support persons (specialists) have been trained in the main modules of INNOPAC in almost every library.

The cataloging staff was the most active group in the testing and training phase, and it was the best-prepared to start working with the new system. The most averse to the system was the acquisition staff, first,

because its training started somewhat later, which meant that there was less time to practice and get familiar with the system, but probably for the main reason that the acquisition staff had to change its work procedures more than others.

Tour de INNOPAC

Planned rearrangements had to be tested against the reality. To be absolutely confident about the decisions we made, to discover all possible mistakes and contradictions within the newly planned work routines, to test the results of training and to identify deficiencies in that area, and to make people understand what it meant to be working with the new system, an expert group organized a simulation of real work, or Tour de INNOPAC as we also called it. It meant that we actually recreated all work procedures, ranging from placing an order to placing a received and processed item on the shelf, and we simulated that process separately for books, serials, printed music, etc. The actual library staff was involved in its real work environment, and we actually accompanied the items through all these procedures (through acquisition, cataloging, subject indexing, authority control, etc) and through all the departments which were involved.

Further plans

Although the system has been in operation since January 1999, the training process is not yet complete. We still need advanced training courses, with training associated with the changes in the automated library system (for instance, right now we are moving to the new Web-based version of our library system, Millennium). Likewise, we still need to train new staff (not only at the libraries themselves, but also at the Department of Information Studies of the Tallinn Pedagogical University and the Viljandi College of Culture).

In dealing with training and the introduction of a new library system, one should not forget the users. There will always be a great need for training library visitors. One may argue that it is not necessary to train users, because INNOPAC is so easy to use. While that is true, it is also the case that we have entered some very important agreements in the ELNET

Consortium that also (directly or indirectly) affect searching in our electronic catalog. It is clearly very important for our patrons to know the relevant details.

3 Structure of the Shared Catalog(ing) System

The attribute that most accurately characterises the Estonian common cataloging system is 'multifunctionality.' The main functions are:

1. Union catalog (including retrospective conversion);
2. National bibliography database;
3. Database of CIP records;
4. Database of articles.

Union Catalog

The idea of union catalogs in Estonia has been related, above all, to providing information about foreign acquisitions (books and serials) in research libraries. Starting as a card catalog (books since late 1950s and serials since early 1960s), the union catalogs were also published in book format until 1997/1998. There were many reasons for concentrating on foreign material; because it was hardly possible to purchase foreign literature during the Soviet period, the union catalogs served as a basis for coordination of foreign acquisitions. Over 30 libraries were involved in this cooperation.

Discussions about a national union catalog, which could provide information about all holdings, at least in larger libraries in Estonia, started in the 1990s. There was a plan to establish a common information system which would be based on (preferably) one integrated library system and, in the beginning, involve 10 research libraries acting as cataloging centers, and 2 main regional public libraries. One can see a realisation of this plan in the Estonian Libraries Network (ELNET) Consortium, which was established in 1996 by seven research libraries and by now includes 13 libraries (also 2 main public libraries).

In an electronic environment, a union catalog could be organized in three ways:

1. As a centralized system with a central database;
2. As a clustered system in which a group of regional libraries support a single database;
3. As a decentralized system in which each library maintains its own database, but a union catalog is shared by all libraries.

The first plan of the ELNET Consortium was to implement the first model, a centralized system with just one database for all its member libraries. Even a name was chosen for the database—ESTER, which is a combination of MARC codes for the Estonian language (EST) and country (ER). Besides that, the word is just a beautiful female name. For a number of reasons,[3] we chose the second model, a clustered system with two regional databases, one in Tallinn (http://helios.nlib.ee) and one in Tartu (http://merihobu.utlib.ee). Even though we have two separate databases, we emphasize that we still have only one system based on common principles. We gave both databases the same name, ESTER, supplemented by the name of the city—Tallinn or Tartu.

Górny and Nikisch have pointed out the benefits and deficiencies of different types of organizational and technological structures in creating a union catalog.[4] These arguments are correct in a situation where each participating library maintains its own database, and the objective is to create a separate database—a union catalog. Then, indeed, establishing a centralized catalog implies higher costs for the construction and maintenance of a catalog, and a virtual union catalog may be cheaper to build and maintain. In our situation, where all participating libraries had to

---

[3] Asko Tamme, "A Shared Catalog in Estonia: Do We Need a Union Catalog?" Paper presented at The Andrew W. Mellon Foundation Conference on Union Catalogs, Tallinn, October 17–19, 2002. http://www.nlib.ee/inglise/docs/mellon/melprog.html.

[4] M. Górny and A. Nikisch, "Evolution of Union Catalogs—the Union Catalog in the Digital Age." Paper presented at the Union Catalog Conference in Tallinn, October 17–19, 2002; also at http://www.nlib.ee/inglise/docs/mellon/melprog.html.

purchase and implement an integrated library system first, the shared catalog environment was more rational. Instead of purchasing server and library system for each individual library and implementing systems separately, we chose to have just two servers, two installations, and hence two catalogs.

Starting-Point

In 1999, we did not start with empty catalogs. We had several important databases that could be folded into the new environment. In Tallinn, where four libraries (National Library of Estonia, Estonian Academic Library, Tallinn Pedagogical University Library and Tallinn Technical University Library) shared the same catalog, it was mainly the databases from the National Library that formed the starting-point for the new electronic catalog. They were two national bibliography databases: books published in 1991–1998 (approx. 21,500 titles) and serials published in 1994–1998 (approx. 1,350 titles), and two main databases of foreign materials: the union catalog of foreign books—books received by larger research libraries in 1993–1998 (approx. 53,000 titles, supplemented with approx. 39,500 additional titles from the database of foreign acquisitions), and the union catalog of foreign serials—serials received by larger research libraries in 1993–1998 (approx. 12,500 titles). In addition to these, the circulation database was also converted (approx. 51,000 additional titles, 117,500 patrons and 75,000 check-outs). In Tartu, where three libraries (Tartu University Library, Estonian Agricultural University Library and Archival Library of the Literary Museum) shared the catalog, the starting-point was the previous electronic catalog of the Tartu University Library, INGRID (approx. 40,000 titles).

Since 1999, during the years that we have been using INNOPAC, we have converted some additional databases from different environments (for instance, Estonian serials published in 1766–1940, Estonian maps published in 1988-1998, etc.). Other libraries that joined the ELNET Consortium (two university libraries: the library of the Academy of Arts and the library of the Academy of Music, both in Tallinn; and two main public libraries: the Tallinn Public Library and the Tartu Public Library) came with their previous electronic catalogs. On the one hand, the

conversion to ESTER was very useful for the new member libraries, but on the other hand, each conversion created minor chaos in the database. Every possible method of identifying duplicates was applied before conversion, but it still created problems.

Retrospective Conversion

The implementation of INNOPAC led to a number of development projects, in particular retrospective conversion projects. In 1998, the ELNET Consortium received two grants, one from The Andrew W. Mellon Foundation ($165,000) and one from the Open Estonia Foundation (through the library program of the Open Society Institute, $100,000). At the beginning of 1999, the third grant was obtained from the Cultural Endowment of Estonia (78,000 EEK). Following the corresponding experience of other countries, Estonian libraries started the retroconversion of national bibliography data. The plan was to manually enter the data from the card catalogs or the published national bibliography and other bibliographies into the database. The main criteria for selecting a method of retrospective conversion were cost and quality; or actually, the best compromise between cost and quality. We had to take into account that there have been several changes in cataloging rules in Estonia, and our catalogs also included many old and handwritten cards. It was also not possible to copy records of Estonian publications on the national bibliography level. The decision was to key records manually, involving professional catalogers and also trained non-professionals in the process.

The coordinators of these projects were from the National Library of Estonia and the Estonian Academic Library, since these two libraries have been sharing the responsibility for compiling the national bibliography according to the Estonian retrospective national bibliography program launched in 1978, which covered Estonian books from 1525 to 1945 and serials from 1675 to 1945. The National Library is responsible for the period from 1945 to the present, and the Estonian Academic Library for the period before 1945. In the retroconversion projects, the bibliographic descriptions were provided by the coordinating libraries, to which each library added information about its holdings.

In 1999, three retroconversion projects were launched (coordinated by the National Library of Estonia):

1. Retrospective conversion of Estonian books published in 1945–1991. This project is almost completed by now; approximately 107,000 titles and 800,000 items have been entered and besides books also approx. 4,400 titles and 12,800 items of printed music have been entered in the database. Currently there are only some tests to be done to check the completeness and quality of data.
2. Re-cataloging of books in Estonian published in 1918–1940 (approximately 24,000 titles, almost 80% of the total, and 92,500 items have been entered.
3. Re-cataloging of Estonian periodicals published in 1945–1993 (approximately 2,600 titles, more than 80% of total, and 125,400 annual sets have been entered).

In 2002, one additional retroconversion project was launched (coordinated by the Estonian Academic Library):

4. Re-cataloging of books in Estonian published before 1917 (approximately 12,250 titles, almost 70% of the total, have been entered).

The Estonian Academic Library was also responsible for the retroconversion of Estonian serials (excl. serials in Russian) and Estica (books and serials in Estonian published abroad). Both are almost completed by now.

Although the priority of retroconversion was the national bibliography, the libraries have been doing a huge job in the retroconversion of foreign material. Depending on the time and place of publication, libraries are trying to find sources for copy cataloging, but there is still sometimes a need for original cataloging. During the last two years, the ELNET Consortium has found some resources to also support the retroconversion of foreign material. With this small level of support, approx. 147,500 titles and 162,700 items have been entered in the database.

The major deficiency in retroconversion projects is the lack of subject indexing. A decision was taken not to have subject indexing together with descriptive cataloging, because the catalogs and bibliographies did not have subject headings earlier and the retroconversion was not carried out de visu. The second reason was that subject indexing could have slowed down the

whole process considerably; furthermore, we did not have enough skilled staff for that extra job.

The Current Situation

Currently, 13 libraries (nine in Tallinn and four in Tartu) are participating in supplementing the catalog ESTER. The last two that joined were the Deposit Library of Estonia and the Medical Library of Estonia, both in Tallinn. All member libraries use the same database for their everyday work (or actually, the libraries in Tartu use one database and the libraries in Tallinn use the other one). This means that each title is cataloged (or copied from another catalog) only once, by the library that receives it first, and every additional library simply attaches its holdings to the title. Where Estonian publications are concerned, the libraries (other than the National Library) may enter only mandatory data about the title, as the National Library is responsible for cataloging Estonian publications at a national bibliography level. All other materials need to be fully cataloged by the first receiving library.

The catalog ESTER Tallinn contains approx. 650,000 titles of multi-language materials owned by seven libraries in Tallinn (the data from the Deposit Library of Estonia and the Medical Library of Estonia are not converted yet) and the catalog ESTER Tartu contains approx. 500,000 titles of multi-language materials owned by four libraries in Tartu. The titles identify books (approx. 80% of the entire database), serials, periodicals, maps, printed music, videos, sound recordings, offline and online documents, etc., owned by these libraries. Approximately 20% of these titles can be found in more than one library. At present, due to the intensive retroconversion of Estonian publications, the major part of records is in Estonian (approx. 30%) followed by records in Russian, English, and other languages. Approximately 38% of titles are published in Estonia. Since the retroconversion projects are going to be completed very soon, and in view of the fact that it is mostly research libraries that participate in the creation of the union catalog, it is safe to predict that the percentage of records describing foreign material will increase rapidly.

In addition to the titles, the catalog also lists each copy of these titles (approx. 2,100,000 in Tallinn and 1,350,000 in Tartu; but this amounts to

only approximately 26% of all holdings actually owned by participating libraries). And since we have a shared catalog, with all data in one catalog and no separate union catalog, it also tells the user right away how many copies we have and in which library, whether the copy is in the library and available for checkout or whether it is already checked out, or just ordered for the library.

The library user can search either in the whole database (separately in Tallinn or Tartu) or just in one virtual part (scope) of the database. It was decided to provide scopes by the level of description (monographs, serials, analytical records) and by the individual libraries. If users cannot find the required information in one (Tallinn or Tartu) database, they can direct their search to the other system very easily, as these systems work as partners. Even though this redirection is very easy to do, with just one keystroke, many users complain about it. Because of this and for other reasons, there have been serious discussions during the past years about integrating these two catalogs. Lately, more support has been given to the idea of not joining databases, but leaving them separate and providing a common search interface for the users. And since these catalogs incorporate the same principles and the same indexes, with the same indexing rules, we will not face the problems arising from broadcast search for our two regional union catalogs, which were described by K.Coyle in her paper on the MELVYL union catalog.[5]

Even though all member libraries use the same system and the same database, they do not offer all the same services to their users. For instance, only the National Library, the Estonian Academic Library and the Tartu University Library offer their users the ability to put a hold on items they require. The only library still maintaining its own local electronic catalog (based on entries from the shared catalog) is the Tallinn Technical University Library.[6] On the whole, a great deal remains to be done in the libraries.

Two more serious problems that the ELNET Consortium is facing in providing services to users are sorting the search results in the keyword

---

[5] Karen Coyle, "The Virtual Union Catalog," in this volume.

[6] Jüri Järs, "An Interface Between Union Catalog and Local Catalog: Why and How?" Paper presented at The Andrew W. Mellon Foundation Conference on Union Catalogs, Tallinn, October 17-19, 2002. http://www.nlib.ee/inglise/docs/mellon/melprog.html.

index (search results are not displayed in the correct alphabetical order), and the display of Cyrillic characters (at present users cannot see records in Cyrillic in the Web catalog). Lack of user manuals, guidelines or simple instructions form another source of problems.

Notable achievements include some special software compiled by the ELNET Consortium for the public libraries in Estonia. Today, most public libraries in Estonia are using a Finnish integrated library system, Kirjasto3000, which uses FINMARC format and does not support the Z39.50 protocol. Because of that, the libraries cannot copy records from ESTER very easily. To provide a better service for public libraries, the ELNET Consortium has created a special converter, US-FIN, for them.

National Bibliography Database

In addition to the shared electronic catalog, ESTER also functions as the national bibliography database. Out of the total number of Estonian publications, comprising books published since 1525 and serials since 1675 (Estonian-language serials since 1766), approximately 80% are already included in ESTER.

Currently, the national bibliography database is an integral part of the union catalog and is not even scoped separately. It is also a problem that in a shared system environment, the national bibliography records are not adequately protected from accidental updating (the agreements in place only stipulate that certain data will not be changed in these records after certain libraries have declared them definitive). Therefore the National Library has been developing a separate database environment for the national bibliography database.

Since the beginning of 2002, the legal basis for compiling the national bibliography has also changed. In March 2002, the amended National Library of Estonia Act became effective, and under this Act the national bibliography database has acquired the status of a state database. This new regulation gives a new legal meaning to the database, increasing the responsibility of the authorized processor of the database and stipulating stricter requirements for data protection.

Since the data input in the ESTER database follows all important international standards and national agreements, the future national

bibliography database will be based on records entered in the ESTER database. This will also guarantee the uniformity of data in both databases.

Besides having a separate database, the possibilities of combining the national bibliography database with other databases will represent added value for the users. For instance, the use of the database of statistics for Estonian print output and the databases of national ISBN and ISSN centers would provide more information about Estonian publishers and printing houses, together with their publications.

Database of CIP Records

Beside the shared union catalog and national bibliography data, the ESTER Tallinn database also contains CIP records (cataloging-in-publication). Currently, there are approximately 700 CIP records in the database.

The implementation of INNOPAC created a new basis for cooperation with publishers and booksellers. One form of cooperation between publishers and libraries is the national cataloging-in-publication (CIP) program, which enables publishers to inform the national bibliography agency about books that are going to be published. The ISBN and ISSN Centers operating in the National Library of Estonia started CIP cataloging at the beginning of 2000. By granting an ISBN to a monograph or an ISSN to a series, the Centers obtain comprehensive information on the given publication from the publisher that is entered in the electronic catalog of the ELNET Consortium. CIP records serve as a basis for a definitive record at national bibliography level. A record is excluded from the database of CIP records (by changing the status of the record) after the publication arrives in the library. For libraries, CIP records help to monitor the supply of legal deposit copies, and for publishers they act as advertisements because this information reaches all interested parties through the electronic catalog.

Database of Articles

Last but not least, ESTER also functions as a basis for joint efforts to create a database of articles from Estonian serials (excluding newspapers).

Numerous discussions among Estonian research and public libraries led to a decision in 1998 to discontinue the publication of the bibliography of

articles from Estonian periodicals in printed form. Instead, libraries decided to cooperate in creating analytical bibliographies, and to include records of articles in the ESTER database. The database of Estonian articles contains approximately 50,000 records from 180 titles of serials, and grows by about 14,000 records annually. The database of articles is the only part of ESTER that is mirrored in both systems. New records are copied from one system to another twice a month. This cooperation involves six member libraries of the ELNET Consortium. Titles are divided among participants by subject according to the libraries' profiles.

Last year, some libraries had problems in living up to previous agreements, in particular regarding the speed of updates, and because of that there have been serious discussions about the future prospects of this cooperation.

Further Plans for Cooperation; Development Projects

The implementation of INNOPAC provided an opportunity to start a number of development projects, mostly related to online publications and digital library programs. This paper describes only those projects that are related to the union catalog.

From the mid-1990s, everybody could observe a tremendous increase in publishing on the Web. To help library users to orient themselves in this world, several libraries started to collect information about valuable Web-resources into subject gateways. It has also become clear that in the Web environment, publications have a tendency to disappear from the Internet. So the National Library, being responsible for preserving the national cultural heritage, launched the project ERICA (Estonian Resources on the Internet: Cataloguing and Archiving) in March 2000. The aim of the project is to work out methods and means for collecting, registering and making available Estonian online publications. The elaboration of the selection criteria for online publications was started on the basis of their registration in the national bibliography. A positive decision about a given online publication results in the addition of a MARC record to ESTER, and then also to the national bibliography database. By May 1, 2002, the National Library had identified, collected and systematized in thematic lists approximately 500 Estonian online monographs and 400 periodicals (with

the domain .ee). Only a small number of these (periodicals with ISSN) have been entered in the ESTER database. Due to the fact that collecting, cataloging and preserving online publications requires considerable additional resources, i.e. extra time, money and staff, the Consortium's member libraries initiated discussions about cooperating in the creation of an Estonian virtual library (the leader of this project is from the Pedagogical University Library).

Along with the project ERICA, the National Library has gained valuable experience in collecting and preserving electronic publications in the course of the pilot project ARES (Electronic System of Articles). The purpose of the project was to work out the technology and principles of how to collect, preserve, and then provide access to, full texts directly from the electronic catalog ESTER (via the corresponding fields in MARC records). The project covered materials protected by copyright, and thus required corresponding agreements with publishers and authors. Due to the lack of sufficient resources, the project was stopped.

4 Conclusions

What conclusions can we draw from the previous years?

> The attitudes of the people towards the implementation of the system must never be underestimated, because it can make the difference between success and failure.

People are naturally averse to change, especially when the changes involve new technology. To minimize the negative side effects of innovation, to help staff to accept forthcoming changes and not to oppose them, it is very important to involve them from the very start, to keep everyone informed of progress at regular intervals (and what is important, not to cover up mistakes), to introduce further plans, to maintain a positive attitude, and to reassure individuals about their importance in the implementation of the library system. And this not only during the implementation period, but also later, when the system is used routinely.

Flexible and collegial management of cooperation was one key to the success in Estonia.

The implementation of the new library system in Estonia has been extremely successful, particularly the first years. We achieved a lot within just a couple of years: a new organization, the Estonian Libraries Network Consortium, was established, a new system chosen and implemented, several important retrospective conversion projects started and carried out, etc. All participating libraries could take part in decision-making, and beside formal, recorded meetings there have been many informal meetings. Instead of fighting with bureaucracy, experts were dealing with substantive questions. Now that the number of member libraries has increased, the number of tasks in the consortium has also increased (besides a shared system and a union catalog, there are new topics such as the licensing of electronic publications and digitization). Therefore the role of administrative management has become more important, and we need more written contracts and agreements than before. Especially now that the initial funding for implementation and retroconversion is running out, and we have to carry on with our own resources.

The importance of documentation cannot be underestimated.

The most serious drawback that we are facing now, as a result of the rapid development during the first few years, is deficient documentation. There have been so many decisions to make and problems to solve that there was not enough time to write it all down. To some extent this applies even today.

The implementation of a shared system represents the only possibility for us to have a good library system that is highly valued worldwide. But the decision to put all information into one database does not seem to have been the best decision.

Estonia is a small country with limited resources, and cooperation has been the only way to obtain good software. The decision to put different types of data into a single database was mostly motivated by the desire to save on resources. The idea was to allow users to make just one search to find different types of information. Libraries do not need to maintain different databases and environments, each record has to be keyed only once, and

with limited resources and overlapping subjects it is important to know what other libraries already have. And users do not need to remember different addresses and search interfaces. On the other hand, it seems that amalgamating everything has made the general overview less precise and has confused some users. The only reasonable answer seems to be training, user guides and instruction.

And finally, at the beginning of this paper we promised to answer the question whether we would like to do anything differently if we could start all over again. The answer is: not very much. We personally feel that we should have paid more attention to documentation and hurried less with the development.