

Collaboration on Creation and Reuse of Metadata in Iceland

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Abstract:

In Iceland the path that has been followed is to operate selected cataloguing and management systems and related metadata databases on a national level. This has been done successfully in the field of libraries and cultural heritage institutions have also used this arrangement. It is maintained in the article that this arrangement has been of great benefit for the Icelandic society, which currently has about 330,000 inhabitants. The article discusses the ways in which cataloguing of metadata in libraries, museums and alike has been conducted, and also the reuse thereof, especially in connection with establishments in Iceland but also in other countries, with particular emphasis on the Nordic countries. The benefit from reusing metadata largely depends on the accessibility thereof and the quality of the cataloguing. Standardized and coordinated cataloguing is a key factor when it comes to the ability to provide the best possible access to data in an integrated search portal. Combining metadata across different institutions in the search portal leads to certain challenges as there are different cataloguing rules in place in each separate sector. The article touches on the societal benefit that may result from establishing authority databases on a national level containing Icelandic names, placenames and even subject headings which Icelandic institutions could share.

Keywords: Metadata, reuse, Gegnir, society, NNG

1. Introduction

Since 2001 libraries in Iceland have cooperated on a nationwide basis through the Consortium of Icelandic Libraries (*Landskerfi bókasafna hf.*) The company is owned by the Icelandic state and the municipalities in Iceland. The Consortium of Icelandic Libraries was instituted to operate a shared national library system called Gegnir, and to provide professional services to the libraries. The purpose of the company is to operate information and cataloguing systems for libraries and, as may be needed, museums and other cultural memory institutions in Iceland and provide them with related expert services.

Today the Consortium of Icelandic Libraries operates the following systems and databases for libraries and cultural memory institutions in Iceland:

- **Gegnir** is a shared nationwide library management system with a shared database for both cataloguing and lending. Gegnir stores catalog entries or metadata for all published Icelandic books and also for newspapers, periodicals, visual images, sheet music, audio

recordings and other material that exists in the libraries in Iceland. It was launched in 2003 and is based on the Aleph software from Ex Libris.

- **Leitir.is** is a national search and discovery portal for libraries, museums and other cultural memory institutions. It provides integrated access to a broad range of library collections ranging from scientific and cultural materials to recreational reading, as well as other collections such as museums, art galleries and photography collections. The metadata comes from Gegnir, Sarpur, Rafbókasafnið, Hvar.is and many other databases. Leitir.is was launched in 2011 and is based on the Primo software from Ex Libris.
- **Sarpur** is a national cultural heritage collection management system and database. Sarpur preserves metadata on artifacts, photographs, art works, historic sites, archaeological material, buildings, ethnography, and placename descriptions, along with other material. In recent years, the approximately fifty museums and institutions which are members of Sarpur have registered over one million accessioned objects into Sarpur, which was initiated around the turn of the century. The majority of the entries are since year 2013 accessible through the website **sarpur.is**, which is open to the public.
- **Rafbókasafnið** is a platform (rafbokasafnid.is) for lending e-books and audio books in the public libraries in Iceland. It is based on software from Overdrive Inc. and was launched earlier this year.

This article serves as a use case on metadata sharing and reuse between organizations, cross-domain and internationally. It can also be viewed as a use case on national cooperation.

2. Gegnir - National cooperation in Iceland on use of metadata between libraries

In 1998 the Icelandic Ministry of Education appointed a committee for the purpose of submitting proposals for the selection of a new library system suitable for all libraries in Iceland, including the National and University Library of Iceland, public libraries, school libraries and research libraries. At the time there were several library systems in use in Iceland. Of these, two were used the most widely, one was in use in the National and University Library of Iceland and the other was used by the Reykjavík Public Library and a multitude of other public, school and research libraries. Both these systems were past their prime and were in need of upgrading.

The committee's main aim was to streamline the operation of libraries by eradicating the duplication of work in the registration of bibliographic and user information and to avoid the operation and maintenance of multiple library systems with the attendant costs. In addition, the goal was to ensure equality among Icelanders by making the collection of each library, or all the libraries in the country, accessible as a whole on the Internet. The committee proposed that one library system and one database serving as a union catalogue should ideally serve all the libraries in Iceland, which led to the idea of merging all libraries in Iceland into a single national library system. An invitation to tender for a library system for Iceland in the year 2000 resulted in the purchase of the Aleph library system from Ex Libris the following year. The system was given the name Gegnir.

Practically every library in Iceland is a member of the Gegnir library system, which makes it a national partnership of libraries. The libraries that make up the consortium are the National and University Library of Iceland, Reykjavík City Library and about 80 other public libraries in Iceland as well as the 7 university libraries in the country plus about 20 secondary school libraries, more than 100 elementary school libraries, specialist and other libraries, a total of about 270 libraries. The function and operation of these different types of libraries in Gegnir

varies greatly and therefore they have different needs. Gegnir has everything, from the biggest libraries in Iceland to the smallest ones and everything in between. They are distributed all over the country. Some of the libraries only have part-time staff while the largest ones employ dozens of people. The requirements of the borrowers also vary greatly, they include children, adolescents, adults, students and staff from elementary schools and universities, scientists and many others. Providing service for this diverse group is a challenge but collaboration on a national level also offers many opportunities and this has proved of some value to the community.

Interoperation of a library system and cataloguing into its centralized database requires a great deal of efficient cooperation between the parties concerned as well as strong quality control for data entry. This applies not least to the cataloguing of metadata and there are many contributors in various parts of the country cataloguing into Gegnir. In order to ensure the best possible quality of data some very clear rules were established regarding cataloguing and monitoring thereof, and conditions were also defined which employees must meet in order to be allowed to catalogue data into Gegnir. They must be qualified librarians or information scientists and attend a three day course at the Consortium of Icelandic Libraries on the subject of cataloguing into Gegnir. The National and University Library maintains a cataloger's handbook for contributors: <https://hask.landsbokasafn.is/>. There are regular educational seminars for catalogers where cooperation is encouraged and information about innovations is disseminated.

Two councils, the Gegnir Cataloguing Council and a Subject Heading Council oversee the cataloguing into Gegnir. They are composed of experts appointed by the libraries. The role of the Cataloguing Council is to regulate all registration of bibliographic records in Gegnir. Gegnir's Subject Heading Council is a forum for controlled subject headings. Emphasis is on clear rules that ensure the quality and consistency of bibliographic records. The cataloging format in Gegnir is MARC21. The current number of bibliographic records in Gegnir is around 1.2 million and the number of items is close to 6 million. The annual circulation number in 2016 was around 3 million.

Last year the RDA (Resource Description and Access) cataloging standard was introduced in Iceland. The implementation was carried out under the guidance of the National and University Library of Iceland but in very close cooperation with the Gegnir libraries and the Consortium, which was responsible for all system work such as changes to data structures etc.

Maintenance and development of Gegnir also calls for broad consultation with the member libraries. In fact, good collaboration with libraries and introduction of innovations in cooperation with them has been a fundamental factor in the operations of the Consortium since the beginning. This has proven successful, mostly due to a mutual desire for cooperation and progress. The Consortium has initiated a large number of innovation projects, but this can also originate from the libraries themselves. An example of a recent project is the introduction of Rafbókasafnið, a platform for lending of e-books and audio books in public libraries affiliated with Gegnir. This project was led by the Consortium and the biggest public library in the country, Reykjavík City Library. Project management was carried out by the Consortium as well as system work but content related issues were under the direction of and carried out by Reykjavík City Library.

3. Use of cross-domain metadata in Iceland

Concomitantly with the establishment of Gegnir, many institutional repositories were created to store digitally reconstructed Icelandic material as well as material that was only published

in electronic form. These were stored in different places and usually each of them had its own web page. Among them were repositories for digitized newspapers and periodicals (timarit.is), various academic and research documents (skemman.is and hirsla.lsh.is) and nationwide open access to foreign subscribed academic journals, databases such as Ebscohost Premier, ProQuest Central, Elsevier Science Direct and much more (hvar.is), to name a few. A large part of these electronic data collections was not cataloged in Gegnir but rather directly registered into the relevant institutional repository. Therefore the data collections of libraries were widely dispersed over various websites to the inconvenience of the end user. This was an unfortunate development and the Consortium took the initiative to gather this material and make it accessible in one place through a powerful search engine. Thus the idea of an integrated search portal for material from libraries, history- and art museums, photography collections and alike in Iceland came into being. It became reality on leitir.is where metadata from these different repositories and databases was gathered on a Dublin Core XML format and indexed. The integrated search portal of leitir.is offers the option of searching in many data records simultaneously, which ensures the quality of search results and furthermore offers searching across different databases. The objective of leitir.is is to enable the user to find in one place quality material which is kept or owned by Icelandic libraries and cultural memory institutions and access it online if available.

There were different opinions regarding what metadata should be published in search results and how it should be displayed. Employees of the libraries at times expressed opinions that differed from those that were considered to serve the interests of general users. The conclusion was that it should be emphasized that leitir.is was intended for the public rather than library employees. The displaying of search results on leitir.is nonetheless remains a daunting task. Members of the public have different needs as users come from various walks of life and attach importance to different things. When service is provided on a national level it is never possible to meet the needs of everybody but a middle way must be found and an effort made to meet the needs of the majority of Icelanders. Usability testing is carried out on a regular basis in order to try to ensure the best result possible.

However, the difficulties with displaying search results in the integrated search portal of leitir.is are not least due to the fact that cataloguing of material in the databases that are searched takes place in different ways. The same standards or cataloguing criteria are not employed everywhere. Therefore the metadata that finds its way into leitir.is is of very uneven quality and substandard registration in one database will have a damaging effect on the display in an integrated search portal.

In case of articles from foreign databases the display of authorship is different than from the Icelandic databases. The search portal thus displays as author both Kari Stefansson and Stefansson, Kari, Stefansson K or possibly even K. Stefánsson, to name an example. It will therefore be difficult to gather all material authored by this individual. Vocabulary, selection of subject headings and the manner in which they are written can vary depending on where the data comes from. It is a well-known fact that the British and the Americans have different conventions when it comes to the English language. The problem is not least due to the widely different origins of the data that is searchable on leitir.is and the accompanying metadata is sometimes not very detailed and not always in compliance with standards.

In some cases it was decided to interconnect the Icelandic institutional repositories to the union catalogue Gegnir in a more efficient manner. Sometimes it was sufficient to add links into Gegnir entries which then referred to the relevant repository. The advantage of this approach is especially that the strict quality management which is employed in the cataloguing of

material into Gegnir is then also subsumed into the other databases. In other instances a procedure was adopted whereby basic cataloguing of the material was made into Gegnir and then allowed to flow into the repositories rather than having basic registration of the material take place there. It was clear that this made for higher quality of the metadata. However, this procedure was not desirable nor practical in every instance. For example the Primo Central Index can be mentioned, which provides access to sponsored articles from foreign periodicals and other material. This database is operated by Ex Libris and the user has little say about the displaying of the metadata.

In late 2012 it was requested that the Consortium would undertake the operation of the cultural heritage system named Sarpur, which is owned by the National Museum of Iceland and other memory institutions in Iceland and is in fact their union catalogue and management system, and this was accepted a few months later. Sarpur uses its own cataloguing format and cataloguing is not subject to rules as strict as those that apply to cataloguing in Gegnir. The treatment of names and subject headings is also different. Metadata from the open web of the database, sarpur.is was obtained and made accessible in leitir.is. This made for more colorful material in the search portal than before and once again the challenge of ensuring proper coordination of the material, i.e. to manage display for the end user, had to be overcome. Subsequently databases of photography collections were added to leitir.is and this came with the same problem as before, that registration was not standardized.

In light of the aforesaid it seems desirable in a country with as small a population as Iceland to endeavor to promote further standardization of cataloguing across databases, among other things by creating an authority database of Icelandic names on a national level which all libraries and cultural memory institutions could use. In fact, the first steps towards this end have been taken as the National and University Library of Iceland has made a data package of Icelandic names from Gegnir accessible on the website opingogn.is, which stores open data from public entities in Iceland. The file is open and accessible there.

4. International use cases on sharing and reuse of metadata

Early on, bibliographic agencies in the Nordic countries established rules for sharing and reuse of metadata amongst themselves free of charge. The **Scandinavian Virtual Union Catalogue (SVUC)** came about at the turn of the century as an initiative aimed at making the physical union catalogues in the Nordic area available as a virtual union catalogue. The Consortium of Icelandic Libraries joined SVUC in 2006. The SVUC partners included national consortia and/or national libraries in charge of the union catalogues in each country. The SVUC collaboration was based on an agreement on mutual access to the Nordic Union Bibliographical Catalogues for information retrieval and copying of catalogue records free of charge for both the guardians of the union catalogues as well as the libraries belonging to the union catalogue consortia. The predominating open standard protocols used for searching or copy cataloguing of MARC21 records were Z39.50 or SRU. SVUC is a fine example of how metadata created in individual countries can be shared internationally and reused in a very cost-effective manner to the mutual benefit of participants.

In 2016 the SVUC partners decided it was no longer necessary to maintain the formal SVUC collaboration as mutual access to their bibliographical union catalogues for information retrieval and copying of catalogue records free of charge had been established and was working. Simultaneously, it was concluded that there was a need for an informal information exchange on current trends in libraries in the Nordic countries. During a meeting which took place in Reykjavík in November 2016 the former SVUC partners established a group to focus

on bibliographic and infrastructure topics of common interest, the **Nordic Networking Group on bibliographic and infrastructure topics (NNG)**. The NNG meets once a year and shares information on topics like sharing of metadata, data models, open linked data and the like. Current members are: Dansk BiblioteksCenter (DBC), The Royal Library in Denmark, The National Library of Finland, the Consortium of Icelandic Libraries, the National- and University Library of Iceland, the National Library of Norway, the BIBSYS and the National Library of Sweden. During its first meeting in 2016, the NNG discussed various BIBFRAME initiatives in the Nordic countries and within Europe and considered how to coordinate activities with the aim of BIBFRAME becoming the global solution for a linked data format for European libraries. NNG set up an organizer group that is currently planning a European Workshop on BIBFRAME in the fall of 2017.

The Consortium of Icelandic Libraries and the National and University Library of Iceland signed an agreement with OCLC in 2017 on participation in the Virtual International Authority File (VIAF). Through this initiative Icelandic authority records will be made available for reuse internationally. Copy cataloguing of records from WorldCat into Gagnir has been going on for a long time, however, the Gagnir catalogue has not been shared with WorldCat.

It may be mentioned that the National and University Library of Iceland and the Consortium of Icelandic Libraries have been members of TEL and EUROPEANA and have contributed metadata to them. Individual heritage and art museums in Sarpur have done the same.

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