

How to evaluate library collections: a case study of collection mapping

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How to evaluate library collections: a case study of collection mapping

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Abstract

Purpose - This article aims to illustrate a technique to map, evaluate and describe subject-based collections. The method was designed in collaboration among Finnish university libraries. The case study describes the application of this method in a multidisciplinary university library.

Design/methodology/approach - This case study presents the collection mapping method and its application in Tampere University Library and shows how to gather data on subject-based collections and their usage.

Findings - The case study shows that the method can provide useful information on a library's subject-based collections. Using this information the library can describe and develop its collections and also present the results on the subject-based collections to the faculties concerned.

Originality/value – The article describes Tampere University Library's application of the method which makes it possible to map, evaluate and describe the library's collections.

Keywords - Collections management, Case studies, Academic libraries, Finland

Paper type - Case study

1. Introduction to collection mapping

The initial purpose of the Finnish Collection Map was to present the subject-based collections of the Finnish academic libraries, arranged by completeness, through one portal. In Finland there is a strong tradition of collaboration between academic libraries. For example, the Council for Finnish University Libraries (2007) was established in 1996 to co-ordinate and develop co-operation within the network of Finnish university libraries. In 2003 the Council initiated the Collection Map Project for Finnish University Libraries, which is connected to the strategic aim to enhance the accessibility and the comprehensiveness of the materials (Council for Finnish University Libraries, 2007). The Council pointed out in its strategy 2003-2007 that each university library acquires information resources and produces services according to the strategic aims and profile of its own university (Council for Finnish University Libraries, 2002). As a network the libraries ensure the optimal availability in Finland of scientific subject-based collections, both print and electronic.

The Finnish Collection Map Consortium was founded to continue the project in 2008-2009 on the basis of a participation fee. The Consortium consisted of 20 libraries including the National Repository Library, the National Library, 14 university libraries, two polytechnic libraries and two special libraries. Tampere University Library was also a member of the Consortium. The purpose of the Consortium was to develop and coordinate the evaluation and the description of the collections in the member libraries by giving recommendations and directions.

Library collections can be evaluated using collection-based or user-based methods. However, it is very useful to combine old and new collection evaluation models by adopting “the best of the older criteria based evaluation methods for print resources combined with the newer usage based statistics for electronic resources” (Borin and Yi, 2008). The collection mapping technique used in the Finnish Collection Map Consortium involves features from both collection-centered and user-centered methods. The method focuses on field collection, its usage and the position of the discipline in the university. Collection mapping is a technique to examine the state of information resources, both quantitatively and qualitatively, in a certain subject area. It is also a process to identify the strengths and weaknesses of a certain field collection with a view to its further development.

Some criteria-based methods, for example, the Conspectus method and its applications utilise international classification systems like the Library of Congress Classification (LCC), the Dewey Decimal Classification (DDC) or the Universal Decimal Classification (UDC) as search keys to subject-based collections. None of the above-mentioned classification systems is used in all Finnish academic libraries; instead the libraries have been able to classify their information resources according to the international, national or classification systems of their choice. For example, Tampere University Library has used its own DDC-based classification schedule.

Because the subject-based print collections in the member libraries of the Finnish Collection Map Consortium have not been established using the same classification

system, it is not feasible to evaluate subject-based collections through a common classification system. However, in the Consortium there was a consensus of the subject areas according to which collections are described. The subject areas (see www.varastokirjasto.fi/kokoelmakartta/opasteet/Aihealueet_eng_040505.pdf) are based on the subject groups of the Finnish General Thesaurus. In practice, every library decides how to find out the number of titles on a certain subject area in the library's print and electronic collections, or by which subject areas to describe a certain collection.

To achieve consistency in collection evaluation in the member libraries the Consortium decided on certain issues. The Consortium libraries agreed on document types and document forms to be included and excluded when evaluating subject-based collections in the libraries. The consensus moreover was concerned with the way to describe collection data: for example, which primary units to use to describe the volume of the collection or which periods to choose to describe the age of the print collection.

The agreement also concerned the Finnish Conspectus application (see www.varastokirjasto.fi/kokoelmakartta/opasteet/Conspectus_tasot231109.pdf), which indicates the completeness of a field collection. Completeness is expressed by levels from 0 to 5. For example, level 0 indicates that the library does not collect intentionally and level 5 indicates a comprehensive collection (Bushing, 2006). An aim of the Consortium was to encourage member libraries to define the present level and the desired level of each field collection described, but so far only a few libraries have been able to accomplish this.

The Consortium libraries mapped and evaluated their subject-based collections according to the jointly agreed guidelines. After mapping the libraries were expected to write a collection level description of each field collection and to save the description in the Finnish Collection Map, situated at the national Doria service (see <https://oa.doria.fi/handle/10024/20>), where collection descriptions are available to the public. The Doria service, which contains digital collections of Finnish universities and polytechnics, is housed in the National Library of Finland.

2. Tampere University Library: need for collections mapping and description

The University of Tampere is a multidisciplinary university with six faculties. The library has several branches: the Main Library, Department of Humanities and Education, and Department of Health Sciences. In 2008 the collection of the Library contained 500,000 print books, 7,200 print serials, 24,000 e-journals and 328,000 e-books. The collections in the social sciences, business and administrative sciences are held in the Main Library, those in humanities and education sciences in the Department of Humanities and Education and those in health sciences in Department of Health Sciences.

The history of the University is reflected extensively in its library's collection. The institution which subsequently became the University of Tampere, started in Helsinki in 1926. It was transferred to Tampere in 1960. Initially, the teaching and research of the newly created University of Tampere emphasised the social sciences. The Library has changed its location many times; for example the Main Library has moved twice since 1960. Because of the moves the collections have been weeded. In connection with the 2006 move more than 60,000 books were weeded. Occasionally the collections have been appraised, organised and weeded.

Continuous growth was typical of the university library collections for decades. In some ways, the growth could be considered uncontrolled. During the 1970s and 1980s one important criterion and orientation in collection policy was the size of the collection. Enlargement of collections was feasible because of the allocations from state budgets, including the libraries' budgets, were increasing annually (University of Tampere, 1979-1990). The libraries maintained many hundreds of exchange agreements with other libraries and research units in Finland and abroad. Exchange publications could be sent very advantageously because state institutions were exempt from postal charges. It was also an obvious measure to build up serials collections so that no issues were missing, regardless of their content.

The economic depression of the 1990s in Finland meant that libraries had to cut acquisitions by discontinuing subscriptions to serials and reducing book orders. The amount of electronic resources increased rapidly at the end of the 1990s. In 1997 Tampere University Library acquired its 175 e-journals. In 2002, more than 5,000 journals were subscribed to and in 2008 the number of e-journals was 24,000. The acquisition of e-books started slightly later: in 2002 there were 15 e-books in the collection, in 2008 the number exceeded 328,000. (Tampere University Library, 1991-2008). The pricing policy of publishers and vendors, the so called “Big Deal”, caused electronic collections to increase without selecting resources title by title. (Frazier, 2001; Peters, 2001). In fact, electronic collections also started to grow uncontrollably just as the print collections had done some 20 years earlier.

A review of the library budgets also reveals that the proportion of electronic resources increased more and more. In 2002 a total of €209,581 was spent on electronic resources while in 2008 the sum was €1,001,382. Electronic resources and workstations meant new challenges for library space. At the beginning of the 2000s it was axiomatic that librarians met new challenges: tighter budgets, more tasks. It was essential to purchase expensive electronic resources and get more space for workstations together with the print collections. Under these circumstances the librarians needed new perspectives on collections. It was not only a matter of enlargement but also a better understanding of the collections’ significance and importance for users. This also meant further reducing print collections to make room for those using electronic resources in the library:

While monographic collections are more stable, many libraries are aggressively weeding their collections or sending them to storage. The effects of this change can be seen in new library construction where the percentage of space devoted to warehousing materials is decreasing while study areas and public spaces increase (Ross and Sennyey, 2008).

It was very important to be clear on what the essential part of collections was, which books were no longer borrowed and what subject areas might be available elsewhere in Finland. The libraries in Finland were also concerned with the gaps in collections possibly caused by the austerity of the 1990s. Tampere University Library and other academic libraries in Finland had the same reasons for the Collection Map collaboration

at the beginning of the 2000s: to get an overview of the strengths and weaknesses of the libraries' collections:

Prior to the evolution of this tool, libraries typically described their collections in quantifiable and statistical measures only. This type of information intended to imply that the more items in the library, the better the library. Working with libraries of all types, it became clear to me early in my career that this culture of "bigger is better" often led to poor collection management practices and collections that did not fit the needs of their clients (Bushing, 2006a).

3. Methodology of collection mapping in Tampere University Library

Tampere University Library joined in the Collection Map Project for Finnish University Libraries in 2003 and collection mapping started in 2005. The collection analyses in the library have focused on the teaching and research fields offered at the University of Tampere. The collection mapping process in the library has proceeded one subject area at a time, except for the Department Library of Health Sciences, where all subject areas were mapped and evaluated at the same time as a project. So far ten field collection analyses have been completed in the library and the completion of a further six is imminent.

The Library's subject-based collections have been evaluated using both collection-based and user-based methods. Both the quantity and the quality of each field collection have been analysed. Statistical data has been gathered on the subject-based collections of the library and on the usage of the collections. The data has been analysed and a description of each field collection has been written. The results have been presented to the representatives of the respective faculties and discussed.

Statistical data has been gathered on both the subject-based print collection and the electronic collection. Data are gathered separately on books and journals and likewise separately on e-books, e-journals and reference databases. Data are gathered on both the volume and the usage of print resources and electronic resources. The directions given by the Finnish Collection Map Consortium are quite general, so Tampere University Library has been very creative in collecting data on its collections. In point of fact, the Library

has developed its own detailed techniques to gather statistical data on print collections, electronic collections and their usage.

3.1. Collecting and analysing data of print book collection

The mapping of the print books focuses on the general loan collection, the reference collection and the closed stacks collection of the field. The text book collection, the thesis collection, the dissertation collection and the special collections like the European Union collection are excluded from the mapping. The small reference collections in the department libraries are also excluded and the Main Library is responsible for the main collection of the field.

The library tries to find out the whole picture of the collection of a certain field and also the usage of the collection. All bibliographic records which meet the selection criteria, are included when searching in the Tampere University Library's own online catalogue, which is a Voyager database. The number of titles, the age distribution and the language distribution of the field collection are counted. The age and the language distributions of the checkouts are likewise counted, also the age and the language distributions of the titles in circulation on a given day. The focal areas in the field collection are also worked out.

The directions of the Consortium left the libraries the option to consider the method of data gathering regarding the print collections. A library is also allowed to take samples if its holdings consist of un-catalogued or card-catalogued collections. In Tampere University Library all searches have been executed as Access queries in the library's Voyager database, which is an SQL-based database and understood by the Access database program. To carry out Access queries a subject-based search plan is needed. A librarian writes the search plan based on the classification systems and thesaurus used in the library now or earlier. To be able to write the search plan the librarian has to know the indexing methods and practices of her own library and also changes made in these. In Tampere University Library the subject-based search plans concerning print collections are principally based on the library's shelf classifications, so multidisciplinary books are

taken into account only once. In most cases, in the Main Library, the shelf classification is too rough to find focal areas in the field collection. In these cases the librarian has had to write a separate search plan based on the old Tampere University Library Classification Schedule to get old books, and on the Finnish General Thesaurus, to get new books, combined with free text search.

Table I is an example of a part of search plan showing, which class numbers and which subject descriptors to use in searching for titles of set theory (group 2) or titles of geometry and trigonometry (group 5) in signums of the mathematics collection in Tampere University Library.

Table I Part of the search plan for focal areas in the mathematics collection of Tampere University Library

Focal areas in mathematics	Searching by class numbers	Searching by (Finnish) subject descriptors	Signums (mathematics)
Group 2. Set theory	511.2 511.4	joukko-oppi algoritmit	51 P Varasto 51 P Vanhat kirjat 51 P Ref 015.51 P Ref 51
Group 5. Geometry, trigonometry	514 (begins with)	geometria projektiivinen geometria differentiaaligeometria analyttinen geometria euklidinen geometria	51 P Varasto 51 P Vanhat kirjat 51 P Ref 015.51 P Ref 51

The Voyager database manager executes all Access queries. Librarians obtain the results of the Access queries from the library's Voyager database as Excel tables, where the numbers of titles are sorted by year of publication and language. The years of publication are grouped mainly by decade according to the recommendations of the Finnish Collection Map Consortium. The Excel tables provide information on the main language of the collection and the distribution of different languages. The Excel tables also include information on which decade of publication is the most typical in the collection, that is to say when most of the titles were published. To develop the collection it is also relevant to know what the proportion of twenty-first century titles is, likewise titles from the 1990s.

Table II is an example of search results in an Excel table. The main language of the business administration collection in Tampere University Library is English (5,270 titles). The second largest language group is Finnish, with a further 11 minor language groups in the collection.

Table II Age and language distribution of the business administration collection in Tampere University Library (2009)

Year of publication	Number of titles in business administration collection													Total
	eng	fin	swe	ger	fre	mul	nor	dan	rus	ita	est	spa	por	
0000-1899	0	2	2	0	0	0	0	0	0	0	0	0	0	4
1900-1949	13	64	17	4	0	1	0	0	0	0	0	0	0	99
1950-1959	44	29	11	3	0	1	0	0	0	0	0	0	0	88
1960-1969	123	43	25	7	0	0	0	1	0	0	0	0	0	199
1970-1979	287	259	35	20	0	1	0	0	1	0	0	0	0	603
1980-1989	1,392	962	131	112	17	9	6	6	4	4	0	0	1	2,644
1990-1999	1,876	1,398	150	113	12	5	6	1	3	0	2	0	0	3,566
2000-2009	1,535	1,144	55	17	0	2	1	0	0	0	0	1	0	2,755
Total	5,270	3,901	426	276	29	19	13	8	8	4	2	1	1	9,958

Librarians obtain the statistical data on usage as Excel tables, where the checkouts and the items in circulation (on a certain day) are sorted by year of publication and language. Combining the Excel tables yields information on the overall situation, on the usage of titles of different ages. A common experience is that the proportion of twenty-first century titles of all checkouts and all items circulating (on a certain day) is greater than the proportion of twenty-first century titles of all titles. The same concerns titles published in the 1990s.

Table III is an example of comparing total numbers of titles, checkouts and items in circulation (on a certain day). The most typical decade of publication in the business administration collection is the 1990s, when 35.8 per cent of all titles were published. The most typical decade of publication in items checked out since 2001 is the twenty-first

century, when 41.2 per cent of all items checked out were published. Conversely the most typical decade of publication in items circulating on 27 March 2009 is the twenty-first century, when 52.1 per cent of all items circulating were published. The proportion of the twenty-first century titles of all titles is only 27.7 per cent.

Table III Number of titles, checkouts and titles circulating on 27 March 2009 in the business administration collection of Tampere University Library by year of publication

Year of publication	Titles		Checkouts (not renewals)		In circulation (27 March 2009)	
	<i>n</i>	Percentage	<i>n</i>	Percentage	<i>n</i>	Percentage
0000-1899	4	0.0	5	0.0	0	
1900-1949	99	1.0	102	0.2	0	
1950-1959	88	0.9	113	0.2	1	0.0
1960-1969	199	2.0	427	0.8	25	1.2
1970-1979	603	6.1	1,739	3.1	74	3.4
1980-1989	2,644	26.6	7,881	14.0	297	13.7
1990-1999	3,566	35.8	22,698	40.5	643	29.6
2000-2009	2,755	27.7	23,128	41.2	1,131	52.1
<i>Total</i>	9,958	100.0	56,093	100.0	2,171	100.0

By analysing the original search results, information of the usage of fairly old books is available because the circulation statistics, i.e. checkouts, go from 2001. The original Excel tables of the absolute numbers offer interesting details. For example, the business administration collection of the Tampere University Library holds four books, two Finnish and two in Swedish, published in the nineteenth century that have been checked out five times since 2001. However, it is important to be extremely careful and avoid making generalisations when interpreting proportions of very small absolute numbers. For further information, it is also possible to obtain a list of the most circulated titles as well as a list of titles that have not circulated at all. This information is helpful in developing the collection.

3.1.1. Evaluating the collection by shelf-scanning

Shelf-scanning is a qualitative method to evaluate collections. It was launched in Finnish academic libraries by Mary Bushing (2006b). This method includes the main idea of a librarian going to the bookshelves to scan the book collection. The assumption of shelf-scanning is that the newest and perhaps the best books are circulating, and thus the librarian observes the books available on the bookshelves. Is the collection scientific or does it include, for example, popular literature? After gaining a general impression of the collection the librarian draws conclusions about the target users of the collection. Shelf-scanning also focuses on how up-to-date the collection is. Are there out-of-date books? For instance, are there many books from the 1970s and 1980s which are no longer borrowed? Or because of earlier functions are there some books intended for secondary school? Does the collection hold several earlier editions besides more recent revised editions or unnecessary duplicate copies of the same book? Some themes may once have been very popular and many copies may have been bought, but nowadays they may have become superfluous. Also, before the internet many kinds of almanacs, address books, catalogs of universities, etc. were accepted as a part of the collection. The condition of the books is also considered because it indicates whether books have been used or not. If possible the aim is also to ascertain whether there are principal works and classics in the collection or whether these are missing. Finally, the librarian writes a few sentences describing the collection.

Shelf-scanning has several advantages. On the one hand, it can be accomplished quickly and yields immediate results, on the other hand, a possible disadvantage is that the results are subjective and depend partly on the expertise of the librarian (Australian Libraries Gateway, 2004). For that reason it is extremely useful if some representatives of the faculty, teachers and researchers of the discipline, are able to scan the collection together with the librarians. For instance, the Professor of Mathematics suggested in connection with shelf-scanning that two mathematical series were out of date. Specialists in the information studies also showed librarians books which were reference material rather than the part of the loan collection.

3.2. Collecting and analysing data of electronic collection

A subject-based collection description includes the electronic material of the subject areas: e-journals, reference databases, e-books and e-reference works. Usage statistics are also compiled for the e-journals and the ten most used e-journals in each subject area are listed according to full-text article requests.

In Tampere University Library we define our library's electronic collection as electronic material that can be found through our Nelli portal, which offers access to electronic material in the University of Tampere. Besides licenced electronic material our collection includes selected open access e-journal packages and also some other open access material.

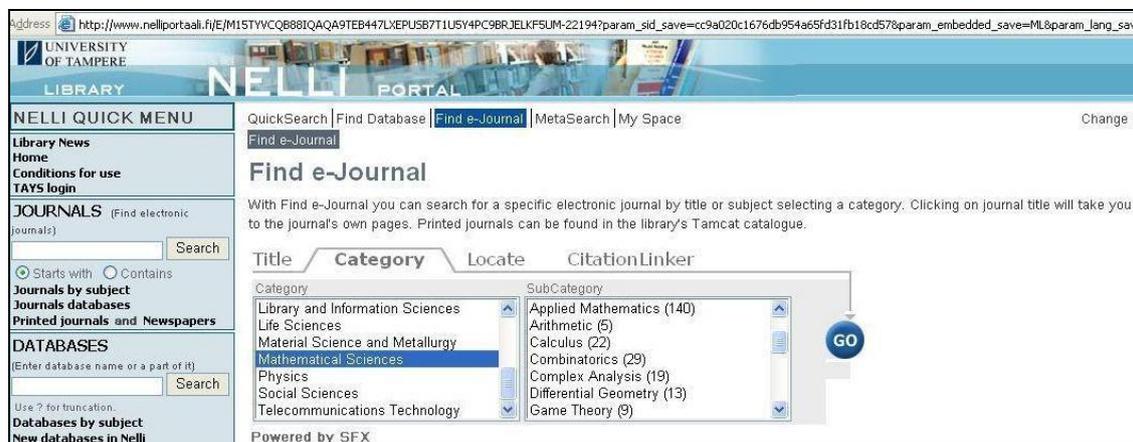
The Nelli portal has been built onto the MetaLib gateway and metasearch system maintained by the Ex Libris Group. Electronic subject collections are gathered from Nelli's categories and subcategories for description. Categorising databases by subject was done in the Tampere University Library. Subject categorising shows what e-journal packages, databases, e-book collections and e-reference works the University of Tampere has in a given discipline.

The categorising of e-journals was ready-made in the SFX link server of Ex Libris and cannot be changed in the library. Individual e-journals for the Nelli portal are activated in the SFX link server. The categorisation of e-journals closely follows an American field tradition, which differs from the European grouping of disciplines. Thus, for example, the grouping of social sciences differs what is taken to constitute social sciences at the University of Tampere. In the university world multidisciplinary and interdisciplinary are central concepts in studying and research, and hence delimiting disciplines is also therefore difficult in both electronic and print material.

In the collection description e-journals of each field are reported as number of titles. A list of e-journals in the subject area will be found under journal category and subcategory in the Nelli portal. To obtain the list of e-journals in a certain subject area to work with a

librarian has to copy all e-journals from the SFX server link to an Excel table where the result will be processed by selecting the desired category and subcategories of the subject area - for example, mathematical sciences (category) and more specific subjects (sub category) such as algebra, algorithms, etc. (see Figure 1). Not all e-journals in SFX have been categorised (in Tampere University Library nearly a fifth of the e-journals). Uncategorized e-journals can be searched with keywords in a title search.

Figure 1 Journals by subject category and subcategory in Tampere University Library's Nelli portal



The Excel table of the e-journals is sorted manually. The problem is that only those e-journals from the SFX server that are described by certain category and subcategories are selected to the Excel table. The list of ten most used e-journals presented to the Department of Information Studies revealed that the e-journal belonging to the most used e-journals of the department had been pre-categorized in the SFX server link as computer science and thus was not selected to the Excel table of library and information sciences.

The Excel table may include the same journal several times because journals may appear in more than one e-journal package. The journal is still counted only once, not according to packages. Information about the same journal in different journal packages is useful, however, so that usage statistics can be checked later in each supplier's usage statistics.

After the relevant e-journals are included in the Excel table, extracting usage statistics starts. The final Excel table can be organised by e-journal packages. The librarian goes through the usage statistics of the e-journal in a supplier's homepage according to full-text article requests. Depending on the subject area and on the use of e-journals the librarian can mark in the table only those e-journals whose articles have been requested, for example, at least 100 times. The same e-journal may have been used through many e-journal packages, and in that case the usage statistics for the e-journal will increase.

It is noteworthy that in Tampere University Library over one third of e-journals are open access journals. This is emphasised in some disciplines, for example, in information studies there are 350 e-journals in the field, of which are 210 open access journals, while in business studies there are a total of 691 e-journals, of which 106 are open access.

Usage statistics of open access journals or e-journals outside the library's licenced packages have not been collected or have not been obtained. Depending on the subject area this may affect the usage results, because there may be many open access journals in some subject areas which are used, but we have no statistical proof of this.

What does the e-journal list from a certain subject area tell us? It tells us of course which journals are used in the e-journal packages and whether it is worthwhile to purchase that package. It also reveals whether there are e-journals which have been used only a few times or not at all during the year. This of course is because libraries have to buy ready tailored e-journal databases of which only certain journals are relevant to the disciplines of the university.

Number of journals is no longer an adequate indication of collection quality. Collection size may have been indicative of quality in the past, when each journal was individually selected by the subject specialists and faculty. Today, however, big e-journals package deals include large fixed sets of added titles that are bundled in ways that do not reflect local interest. Faculty have access to more titles than they need or want (Price, 2007).

3.3. Mapping print journals, e-books and databases

Viewing the volume of book titles, print journal titles, e-book titles, e-journal titles and database titles in the same table, gives an idea of how many electronic materials a certain field collection has. From the e-book collections only the number of e-books in the subject area in question is collected for collection description. Databases containing the subject field in question are also listed in a collection description.

Only subscriptions to print journals in the library are included, the journals to which subscription is no longer valid are excluded. The journal titles are counted manually to get the exact number, fortunately this is not very laborious because there are no longer many journal subscriptions. Information on the most used print journals is gathered every year in Tampere University Library by organising journal usage follow-up.

Table IV is an example of the volumes of different document types in the information studies collection in Tampere University Library. The majority of the books in this collection are still in print form, only 3 per cent of books are electronic. Instead, the majority of the journals in the information studies collection are in electronic form only, while 10 per cent of the journals subscribed to are in print form.

Table IV Volume of the information studies collection in Tampere University Library (2009)

Document types	Number of titles
Print books (2008)	4,517
E-books	128
Print journals	15
E-journals	350
Of which open access journals	210
Databases	5

Discussion and conclusions

The Finnish Collection Map Consortium has not yet fully achieved its purpose to present the subject-based collections of the Finnish academic libraries, arranged by completeness, through one portal. The Collection Mapping technique, however, has proved to be an excellent way to describe and analyze both print and electronic collections; it gives the library personnel very important and useful information:

In the current reality it is important to watch the ratios and relationships between print and electronic collections to predict future trends and to ensure that print and electronic collections complement one another in support of library and organizational goals (Borin and Yi, 2008).

The description tells about the history of the specific subject and what has been researched and acquired for the library's collections over the decades. Due to the results, the library has a very good tool to show the faculty representatives the current depth and quality of the library's collection and its strengths and weaknesses. Researchers and teachers are the experts to tell the library what can be weeded and what conserved. Obviously, the collection mapping process comprising shelf-scanning gives a good basis for weeding and the acquisition decisions. Naturally, when presenting the descriptions to the faculties the library also markets its collection services.

Because of the packages, the libraries have bought thousands of resources, e-journals and e-books, which have not been selected title by title. This means, obviously, that the electronic collections include journals and books which are not needed, wanted or used. Will the collection mapping technique be useful in the future for weeding e-resources?

We are aware of that the collection mapping technique we have used is more simplified than perfect, but, according to Mary Bushing (2006b) perfect is unlikely and not even necessary, it is more important to get it done and use it.

References

Australian Libraries Gateway (ALG) (2004), "A guide to the collection assessment process", available at: www.nla.gov.au/libraries/help/guide.html#scan (accessed 4 January 2010).

- Borin, J. and Yi, H. (2008), "Indicators for collection evaluation: a new dimensional framework", *Collection Building*, Vol. 27 No. 4, pp. 136-143.
- Bushing, M. (2006a), "Collection mapping – an evolving tool for better resources and better access", *Signum*, Vol. 39 No. 3, pp. 9-19.
- Bushing, M. (2006b), "Collection mapping and Conspectus", available at: www.varastokirjasto.fi/kokoelmakartta/julkaisut/esitelmat/Mary_Bushing_Conspectus.pdf (accessed 4 January 2010).
- Council for Finnish University Libraries (2002), "Yliopistokirjastojen verkoston strategia vuosiksi 2003-2007", available at: www.kansalliskirjasto.fi/kirjastoala/neuvosto/strategia/aiemmatstrategiat/Files/liitetiedosto2/yliopistokirjastostrategia_2003-2007%5B1.pdf (accessed 4 January 2010).
- Council for Finnish University Libraries (2007), "Collection map", available at: www.nationallibrary.fi/libraries/council/mainprojects/collectionmapping.html (accessed 4 January 2010).
- Frazier, K. (2001), "The librarians' dilemma - contemplating the costs of the "Big Deal"", *D-Lib Magazine*, Vol. 7 No. 3, available at: www.dlib.org/dlib/march01/frazier/03frazier.html (accessed 4 January 2010)
- Peters, T.A. (2001), "What's the Big Deal?", *Journal of Academic Librarianship*, Vol. 27 No. 4, pp. 302-4.
- Price, J.S. (2007), "How many journals do we have? An alternative approach to journal collection evaluation through local cited article analysis", *Serials: The Journal for the Serials Community*, Vol. 20 No. 2, pp. 134-40, available at: <http://uksg.metapress.com/media/p62kvjmwk54cxnxuq7p/contributions/9/7/y/x/97yxjcxau78h52n.pdf> (accessed 4 January 2010).
- Ross, L. and Sennyey, P. (2008), "The library is dead, long live the library! The practice of academic librarianship and the digital revolution", *Journal of Academic Librarianship*, Vol. 34 No. 2, pp. 145-52.
- Tampere University Library (1991-2008), *Tampereen yliopiston kirjaston toimintakertomus*, Tampere University Library, Tampere
- University of Tampere (1979-1990), *Tampereen yliopiston toimintakertomus*, University of Tampere, Tampere