



‘As We May Digitize’ — Institutions and Documents Reconfigured

Mats Dahlström

Swedish School of Library and Information Science,
University of Borås, Sweden,
mats.dahlstrom@hb.se

Joacim Hansson

Department of Library and Information Science, School of Cultural
Sciences, Linnaeus University, Växjö, Sweden,
joacim.hansson@lnu.se

Ulrika Kjellman

Department of ALM, Uppsala University, Sweden,
ulrika.kjellman@abm.uu.se

Abstract

This article frames digitization as a knowledge organization practice in libraries and museums. The primarily discriminatory practices of museums are compared with the non-discriminatory practices of libraries when managing their respective cultural heritage collections. Digitization of cultural heritage brings new practices, tools and arenas that reconfigure and reinterpret not only the collections, but the memory institutions themselves as well as the roles they respectively play on a societal level. The development of digitization promises to bridge some gaps between libraries and museums, either by redefining their respective identity, or by forming new ground where the interests of the respective institutions naturally meet or even converge, or by neglecting particular tasks and roles that do not seem to find a natural home in the new territory. Two poles along a digitization strategy scale, mass digitization and critical digitization, are distinguished in the article. As memory institutions are redefined in their development of digitized document collections, e.g., by increasingly emphasizing a common

trans-national rather than national cultural heritage, mass digitization and critical digitization represent alternative avenues. Museums, libraries and archives (MLA) endeavour aiming for joint tools and practices in digitizing cultural heritage collections need a thorough understanding of such mechanisms. The article re-contextualizes current digitization discourse: a) historically, by suggesting that digitization brings ancient practices back to life rather than invents entirely new ones from scratch; b) conceptually, by presenting a new label (critical digitization) for a digitization strategy that has hitherto been downplayed in digitization discourse; and c) theoretically, by exploring the relations between the values of different digitization strategies, the reconfiguration of collections as they are digitized, and the redefinition of MLA institutions through those processes. The arguments in the article are drawn from examples of digitization in different library contexts on both a national (Swedish) level and a European level.

Key Words: knowledge organization; mass digitization; critical digitization; research libraries; national libraries; museums; cultural heritage

Introduction

Libraries and other memory institutions throughout history have developed a range of methods and tools for transmitting full-text documents between different media. In this sense, library digitization belongs to the same tradition as 20th-century microfilming and the ancient transcribing of manuscripts. The Gutenberg era marked a sharp decline in this full-text transmitting business, and libraries devoted their time to producing bibliographical records for documents rather than reproducing full documents. With digital reproduction technologies, however, libraries have drawn a historic circle. They are yet again dedicating much energy and attention to the full-text transmission they largely abandoned at the dawn of the printed age. In so doing, they take on a much more explicit role of producing and shaping the cultural heritage in addition to its accustomed role of preserving it and making it available. In this paper, we will discuss this new role, i.e., the practices of digitization within the library institutional setting, and, in particular, the national library setting.

Digitization as a Mediating Practice

When looking at digitization as a practice used by libraries and other cultural institutions to enhance access to their collections, it is easy to perceive the

digitization process as a neutral and mechanical process that simply transfers the document or artefact from one type of media to another, i.e., from an analogue to a digital environment. In this article, however, we will follow Dahlström & Hansson and Kjellman and consider library digitization as a knowledge organization practice — comparable to, e.g., descriptive cataloguing — and therefore a *signifying* practice rather than a neutral, unconditional and mechanical one (Dahlström and Hansson, 2008; Kjellman, 2008).

In line with this, we ask to what extent digitization can be expected to embody, mediate, and *document* particular discourses and identities within various library and archival institutions. This is in line with recent research in knowledge organization acknowledging how tools and practices that manage and organize documents and artefacts in institutional settings, also carry social meaning. Such research picks up bibliographical tools and discusses them as documents, or texts, each with a particular story to tell, and considers them as biased instruments that potentially embody and mediate particular discourses and institutional identities (Andersen and Skouvig, 2006; Bowker and Star, 1999; Dahlström, 2006; Frohmann, 2004; Hansson, 2006; Hanson, 2010; Hjørland, 2000; Kjellman, 2006; Olson, 2002). This means conceiving of cultural heritage digitization as a remediating practice, affecting the library in several ways. We will here put focus on two aspects:

1. How digitization — when looked upon as *a practice* related to knowledge organization — contributes to how the collected and organized objects can be understood and in what way they signify meaning in relation to the kind of institutions of which they are parts. In this aspect, digitization is a practice that shapes and reshapes our cultural heritage.
2. How digitization not only transforms cultural heritage itself but also the social character and role of the library. Memory institutions such as libraries develop and change their *identities* and roles as a result of the development of new and modified professional tools.

By combining research within the three fields of knowledge organization, digitization, and institutional identity, this article points to a way of addressing issues in all of these fields: in knowledge organization and digitization research by using a framework of institutional theory to enhance an understanding of the creation of meaning through these practices, and in

institutional theory by pointing out how specific tools and practices help forming identity and value for an institution such as a national library.

Digitization and the Library

Digitization of library collections entails much more than just technically capturing the texts and images of analogue documents. It is rather a complex chain of events (Deegan and Tanner 2002, p. 34f.). In principle, every link in such a chain affects and delimits the nature and quality of the final digital product (Dahlström, 2009a, p. 173f.). How the different links are being implemented and cooperate is in turn dependent on the overall strategy for the digitization project and the general transmission policy of the digitizing institution. These implementations, policies and strategies tangibly affect the extent to which the digitized documents are made publicly and richly available, malleable, and reusable for new research or digitization endeavours (Dahlström, 2009b). They also create a framework for the way the digitized resources may be interpreted. This framework itself, we argue, affects the creation of meaning in a social perspective for the digitizing institution.

In what follows we will first look at the digitizing issue in relation to the library's institutional practice, and how that practice affects the way documents are managed and presented to the user. In the last section the focus will be on how the new digitizing practice affects institutional identity in, primarily, libraries and museums as memory institutions.

From Local in-House Initiatives to International Standards — Libraries and Museums

Digitization projects have been a part of library activities for some decades now. With a tentative start in the 1980's, digitizing activities have increasingly turned into an established practice at almost every national library in the western world. Not only books but also journals, posters, photographs, postcards, letters, microfilms and manuscripts, indeed all kinds of cultural heritage materials collected by the library, have been subjected to digitizing projects of different kinds and converted into ones and zeros. The steps taken have been motivated by a desire to make the items available to a wide range

of users on the World Wide Web. As we will see later in this text, however, other purposes have been on the agenda as well.

If we look retrospectively, a general trend has been that cultural heritage digitization started with local in-house initiatives and solutions, developed into experimental phases, and is now increasingly attempting to achieve and adhere to international standardization solutions. Such a development has much in common with the way that digital libraries in general have evolved during the last twenty years, and it has affected technical solutions as well as new and enhanced knowledge organization tools (Besser, 2002). One example is the current development of Web-Dewey, which is becoming increasingly standardized on an international level through its rapid implementation, not least in Europe.¹ Another is the shift of focus that the introduction of FRBR² has brought to descriptive cataloguing, from individual documents to the concept of ‘work’ as the formal basis of analysis.

Initially, digitization projects were aimed at developing local tools to facilitate in-house management of the collections. When the web increasingly emerged in the mid-nineties as a tool to be reckoned with, digitization projects began addressing the issue of giving users access to cultural heritage materials and documents online. Many projects investigated how to develop best practices and how to share solutions with other actors. On a European level, for instance, *Minerva* has been such a joint effort to formulate agreed upon standards and recommendations for both technical formats and work practices, across the institutional borders of archives, libraries, and museums.³

This development is not unique to libraries. Since digitization creates opportunities for a more global and general access to our cultural heritage, it brings with it ambitions to adjust local tools and practices to more standardized ones that can be shared by different actors and domains. This has of course been justified for rational and economical reasons — but not only. Shared and standardized knowledge organization tools also enhance opportunities for sharing information between and among different areas and domains (Bowker and Star, 1999; Kjellman, 2008). Using the same kind of metadata and vocabularies in different domains would, in the long run, give the users opportunity to simultaneously co-search different heritage collections on the Internet (Besser, 2002; Hollinka *et al.*, 2004, 601).

This aim accords with the library's traditional practices. Libraries have a long tradition of collecting and describing their collections in a standardized and levelling way. The library's mission has been to bring together and present the collective knowledge in a neutral way, and not to emphasize particular views or items at the expense of others (Broome, 1988). In the case of collecting, the library ambition has been to harvest almost all printed knowledge. The legal deposit system, in Sweden dating back to 1661, has also contributed to this ambition. In the case of descriptive cataloguing, the ambition has been the same: all objects in a collection should be managed in the same way, using the same kind of tools, and with equivalent effort.

Looking at the institutional practice of museums, we see a rather different tradition from that of the library sector. When museums collect documents, they also *select* — much more explicitly and decidedly so than libraries. As museums present their objects in exhibitions and catalogues, there is always a critical assortment of what to show and how. Furthermore, museums (and archives) mainly manage unique objects, and their digitization in consequence regularly concerns single document artefacts rather than the text as a presumed commonality in, e.g., a multiple-book edition. Library collections, on the other hand, are largely made up of printed documents that are mass produced to begin with. Given that the many copies of a published book are normally thought of as identical,⁴ digitization projects in libraries are usually more or less indifferent as to whether the one copy or the other is picked (rather than selected) as source document, i.e., as 'ideal copy'.

Museums and libraries also differ as to where they put their emphasis when selecting, digitizing, and presenting their collection objects. Maroevic identified three central importance criteria for cultural heritage objects within memory institutions: significance, materiality, and form (Maroevic, 1998). He suggested that the balance between these is quite different in libraries and museums. For instance, whereas libraries tend to downplay materiality and form, museums reversely prioritize those criteria. As a result, museums and libraries prioritize differently between these criteria when digitizing their documents. When digitizing a book, for instance, libraries might easily ignore its materiality, spatiality and possibly even form, displaying it primarily as sequences of linguistic *text* (as the core 'meaning' of a work deemed to be significant). A museum, on the other hand, that would be digitizing a spatial artefact such as a sculpture by seeking to reduce it to its bare meaning, significance and perhaps 'information' (or whatever is considered to be equivalent

to the text of a written object) while ignoring its materiality and form, would be quite unimaginable.

In the text above we have identified two distinguished institutional practices towards the material collected; that of the library and that of the museum. Both practices are historically stable and contribute significantly to shaping the roles of the respective institutions. Digitization changes this to a certain degree. Perhaps this change is most tangible in libraries where the strategies for transmitting, organizing and displaying documents at times approach the more selective practice of museums. However, when libraries digitize their material they show a differentiation in this practice, in particular in their role as cultural heritage institutions. Meeting the possibilities of digitization, libraries are starting to develop views on both developmental and organizational aspects of their collections which turn them into being much more critical and selective in choosing which documents to prioritize as specifically significant from a cultural heritage point of view, and how to exhibit them on the web. At the same time, traditional non-selective practices resurface in the ambition to digitize 'everything' in the collections, treating each document in the same way — as has been the aim of bibliographic description for centuries. The differentiation is an important aspect of a distinction between critical digitization and mass digitization.

Mass Digitization and Critical Digitization

We will in this part of the paper make a distinction between *mass* digitization and *critical* digitization and see to what extent each of them is instrumental to the library's institutional roles and goals.⁵ In doing this, we will consider the ideological dimension of digitization and the rationales for digitization particularly within national libraries. We argue for considering digitization both as a document representation practice (i.e., as a bibliographical knowledge organization activity producing document surrogates and similes) and as a mediating documentation practice (of collections as well as institutional identities) that goes beyond the mere technologies of digitization.

The current trend within national libraries and large research libraries is, no doubt, mass digitization, where huge amounts of documents are digitized by automated means during a relatively short period of time (Coyle, 2006). A much talked-of example is the *Google Book Search* (GBS) project. It operates

on an industrial scale and with as many digitization chain links as possible fully automated. Mass digitization systematically digitizes whole collections with no particular means of discrimination — the idea is to digitize 'everything' within the collection. The process by necessity has to avoid manual and labour-intensive work and leaves out intellectual, interpretative and qualitative aspects such as expert commentaries, context descriptions and analyses, descriptive text encoding, or manual proof reading. It cannot afford to produce new metadata and other bibliographic information about the source document. Digitization is flattened out into a linear streamlined affair. Mass digitization gains momentum and value in scale, not in depth. And, as has been pointed out by Deegan & Sutherland, projects such as GBS combine on the one hand commercial agents who are strong in financial resources but in need of content, with, on the other hand, public libraries who are reversely strong in content but in need of financial resources (Deegan and Sutherland, 2009). A marriage made in heaven, it would seem. The result is a gigantic, growing bank of digital texts that can be used as a localizing tool, be free-text searched, and — perhaps more importantly — form the technical base for many kinds of future enhancement using, e.g., data mining or software development. This is an important feature of mass digitization efforts such as GBS: they pour the digitized documents into large silos, pile them up on a flat scale, and treat them as equal items in a large database. GBS is not being modelled on the hierarchical library but on the heterarchical index of the web. This also has a modularizing effect: the items in GBS are discrete and *de-contextualized*, because the digitizing process has stripped away much of the bibliographical and contextual information about the objects and also because GBS aims for items to be able to be shuffled around, used and re-used in new contexts.

Only a limited number of libraries, however, have the interest, competence and resources to implement mass digitization. Some objects and collections, furthermore, are in need of considerable resource-consuming and manual labour during the digitization process. Such digitization cannot reasonably be referred to as 'mass', but is arguably better designated as 'critical' digitization.⁶ Critical digitization implements several of the links in the long digitization chain in a manual, intellectual, and critical way. At every step one can make choices, select, leave out, and interpret. Mass digitization turns a blind eye to most of these choices, whereas critical digitization acknowledges and makes active use of them. A critical digitization project might, e.g., devote its resources to a single document, or may need to deliberately and strategically select one document from a set of source document candidates. The document

text may prove difficult to decipher, or it may need to be considerably edited or commented upon by experts in order to make sense in its new digitized context. And, obviously, it may be out of the question to destroy the source document during the digitization process (as mass digitization sometimes does), but on the contrary it may be crucial to subject the source document to careful preservation or conservation measures. The project may wish to produce a representation that is as faithful and exhaustive as possible in relation to the graphical and material original artefact, providing the representation with rich metadata, indexing, descriptive text encoding, expert paratexts, and full bibliographical and contextual information. In such instances, scholarly research is embedded in the objects themselves.

Therefore, critical digitization is qualitative in the sense that it concentrates on what is unique and contingent in the documents, whereas mass digitization is quantitative in its design to capture what are common, regular, foreseeable traits in large amounts of documents and data. In consequence, then, critical digitization normally has to develop project-specific practices and tools, tailoring them to the qualities of the documents in the particular collection. In mass digitization, the single documents in the digitized collection are, on the contrary, subordinated (tailored, if you will) to more generally, perhaps even universally, standardized practices and tools of knowledge organization.

We can briefly compare the two approaches using a table:

Table 1: Critical digitization vs. mass digitization. Based on (Dahlström, 2010).

Critical digitization	Mass digitization
Primarily manual	Primarily automated
Critically recognizes the distortion digitization brings about	In effect treats digitization as a cloning process
Undertakes a well informed selective analysis of source copies	Normally picks whatever source copy that praxis or chance happen to present
Maximizes interpretation and metadata	Minimizes interpretation and metadata
Qualitative in its concentration on what makes a document (or set of documents) unique	Quantitative in its concentration on common, regular, foreseeable traits in large numbers of documents
Treats documents as graphical, spatial and material artefacts	Focuses on the linguistic texts of documents
Discrimination: selections/exhibitions	Exhaustiveness: complete holdings
Depth	Scale

Critical digitization is in other words a more exclusive strategy (in more sense than one), and thus comes closer to the digitization ideal and strategies of a museum. If mass digitization is immediately being embraced by libraries as a pragmatic ideal in harmony with the library's traditional tasks and ideals, critical digitization might represent a middle ground between libraries and museums. It is furthermore retrospective in the sense that it ties a historical bond to older bibliographical and knowledge organization traditions of libraries, while also looking forward to new possible institutional roles of selecting, choosing, exhibiting, and deliberately *re-contextualizing* the digitized documents.

One should incidentally note that mass digitization and critical digitization both risk falling for classical bibliographical fallacies of exhaustiveness, each in their own way. Mass digitization calls forth the image of the all-encompassing portal or the universal library, a ghost that has been haunting library bibliographical activities since antiquity. Critical digitization on the other hand might convey the idea that if we only digitize with the highest standards of resolution and textual and graphical accuracy, and if we only inscribe enough large and enough deep meta-information in the digitized representations of the source documents, we will no longer need any further digitization of the source documents, since all necessary aspects already exist in the digital representation we have created. We would in other words be facing a 'definitive' digital representation, once and for all. Again, this idea of a definitive representation is an ancient spectre of critical text transmission, of which critical digitization in libraries is an example. And mass digitization might on the contrary be thought of as more advantageous precisely because it chooses *not* to select, intervene, embed, encode and interpret, but rather aims for reservoirs of source documents that scholars ideally can use, reuse and enrich the way it suits them best — a classic ideal within the library community.⁷

Both strategies — mass and critical digitization — have their advantages and disadvantages with respect to different producers, purposes and user communities. Whether a national library primarily embraces critical or mass digitization, however, plays a crucial role for

- the kind of digital material being produced,
- the metadata and contextual information (if any) being added to the digitized documents,

- the possible uses and reuses that the material can serve, and
- the various user communities to which the digitized material might or might not prove to be of interest.

Furthermore, it is not far-fetched to think of digitization strategies as being culturally constitutive and perhaps canonizing to varying degrees. In that sense, the overall digitization strategy chosen by a library institution embraces certain kinds, views, and levels of material at the expense of others, and favours certain user communities over others — a kind of symbolic power.

All in all, the library community in general is increasingly favouring the ideals of mass digitization and its pragmatic notion of transmission as a relatively simple, linear, content-capturing affair. The critical digitization activity is much smaller and is in many cases currently threatened with extinction as an ineffective, over-costly luxury undertaking.

De-Contextualization and re-Contextualisation

The library that digitizes selections of its collections not only makes existing cultural heritage accessible, but also actively shapes, re-shapes and creates such a heritage. The user who enters a digitized library collection faces material that is, to varying degrees, already encoded and interpreted. Depending on how the material was selected and rejected, how it was transmitted and formed, how it was contextualized and made available, the digitized collection tells a particular story, as it were, at the expense of others, and it might mediate and embody particular ideological concerns at the expense of others.

Apart from this re-contextualisation of the digitized documents, the transformation of metadata — one of the central knowledge organization tools of the digitizing process — is an event that considerably affects the outcome of the digitization. When digitizing cultural objects within a cultural institutional setting, catalogue data and metadata are almost always converted and adjusted to a new digital environment. As mentioned above, this digital environment has become increasingly global, whereas local in-house tools and practices are turning obsolete and are being replaced by more international and standardized solutions. This represents a kind of re-contextualization of the documents, where items or collections are subsumed into larger, virtual

supercollections. The Google Book Search project was previously mentioned as a case in point, deliberately designed to allow for individual items to be modular and moveable between views and contexts, a tangible case of de-contextualization and re-contextualization. Such a design is based on the assumption that documents and document fragments can indeed be sufficiently modularized without loss of meaning or significance, which is, at its heart, either a pragmatic or an idealistic assumption. It also carries with it the notion that the documents are reusable by other actors and within other contexts, precisely because the documents are not considered to be dependent on their original context.

Consequently, when digitizing an object there is both a *de-contextualisation* of the object, e.g., by losing its original knowledge organizational place of residence or provenance, and a *re-contextualisation*, e.g., by being situated and re-presented in a new environment of practices. In this environment new meanings will be conveyed to the objects; changing the tools organizing the objects in a collection also involves changing the meanings of the objects themselves.

A consequence of this development is not just that the objects acquire new meanings, but also that they lose old ones. Knowledge organization tools that operate within our cultural heritage institutions must be seen as knowledge investments acquired by former employees. Older catalogues often hold extensive information about the items in the collections and thus constitute sources of knowledge that are difficult to replace. If we dispense with the old tools, we will also lose the knowledge that they constitute, and we put at risk a major loss of information. That scenario further repeats itself when digitized texts and images are constantly reinterpreted, re-contextualised, and indeed reconstructed with each new generation of mark-up and image editing format and other forms of technology applied to them.

Yet another consequence is a loss of perspectives. We mentioned above that museums generally focus on the material and formal aspects of an artefact (they record metadata describing material, style, period, technique) while the library generally describes content, i.e., what the artefact signifies or is 'about'. If we agree that different institutional settings, with different knowledge organization tools and practices, mediate our cultural heritage in different ways, we might also recognize this as something that ensures a variety of perspectives and views on our common cultural heritage in a wider

perspective. Accordingly, using the same technical and metadata solutions — triggered by, e.g., increased standardization efforts or a more global uniform digitization strategy approach (whether of the critical or the mass kind) — we simultaneously jeopardize the diversity of perspectives on our common cultural heritage.

Libraries, Digitization, and Institutional Identity

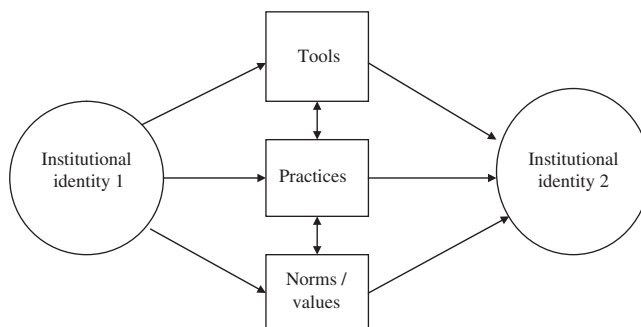
Different tools and practices in the digitization process not only define cultural heritage itself, but just as much the different institutions which display it.

For libraries, practices of bibliographic knowledge organization such as descriptive cataloguing and classification, and tools such as metadata schemes and thesauri, have been at the centre of attention in shaping standards for institutional identity and a firm role in society since at least the mid-19th century. With Frohmann, we may here speak of ‘documentary practices’ which have an impact on the identity of the very institution in which they work (Frohmann, 2004, p. 140). The development of institutional identities through the emergence of new technologies and/or knowledge organizational tools and practices, such as different forms of digitization, can be seen as part of a movement which may well contribute to the development of norms and values which affect the library (or the museum) in many different ways. A general model of this movement is shown in Figure 1.

Memory institutions such as national libraries create meaning in the relation between the various documents within the collection and may furthermore use the tools of digitization to promote a brand or rather an identity which is unique to the individual library. The formation of identity through new tools and practices not only develops the individual institution or type of institution. It also contributes to the re-evaluation of relationships between traditional institutions within the whole MLA (museums, libraries, archives) area. Discussions that have previously been confined to separate sectors thus need to open up and seek solutions in environments that are much more complex and challenging — on both a technical and an ideological level.

Digitization as a knowledge organization practice brings the different institutions within the MLA area closer to each other. It also creates a foundation

Fig. 1: General model of factors influencing change in institutional identity.



for a wider understanding of libraries and museums as ‘memory institutions’ or ‘cultural heritage institutions’. For instance, enabling users to gain new forms of cross-sectorial access to documents and collections previously confined only to selected researchers provides the opportunity to create in-depth pictures of historical events and continuities through visualizations of the actual documents bearing witness of persons or occurrences in a way not possible before. From an institutional point of view this creates opportunities to reshape the relation between the different traditional practices of the MLA institutions. It is clear that the most visible shift in this respect is seen in libraries, most notably perhaps, on a national library level.

Historically, an ideal of objectivity has prevailed in the national library community, hiding the discriminating mechanisms of the institution. An effect of this has been that individual libraries have not prioritized developing a distinct identity beside that which comes from standards within the profession of librarianship (Hansson, 2010, p. 85 ff). Institutional identity has been defined in relation to the development of knowledge organization standards rather than in relation to the content of individual library collections. Instead of exhibiting a particular set of documents as something which defines, e.g., national cultural heritage, libraries have had a tendency to treat all documents as equal. Although certain documents obviously have more symbolic significance than others, libraries have not allowed those to form the basis for a defined institutional identity other than just being parts of the generally defined collection. Obviously, these documents might have been physically exhibited in various ways as rare curiosities. On such occasions, however, the documents themselves and their individual history have been in focus — not

their 'document practice', i.e., how they function in an institutionally defining sense. Examples of this have been the digitization projects of the *Codex Gigas* and the *Suecia Antiqua et Hodierna*, both at the National Library of Sweden,⁸ and of the *St. Laurentius Digital Archive* in Lund University Library.⁹

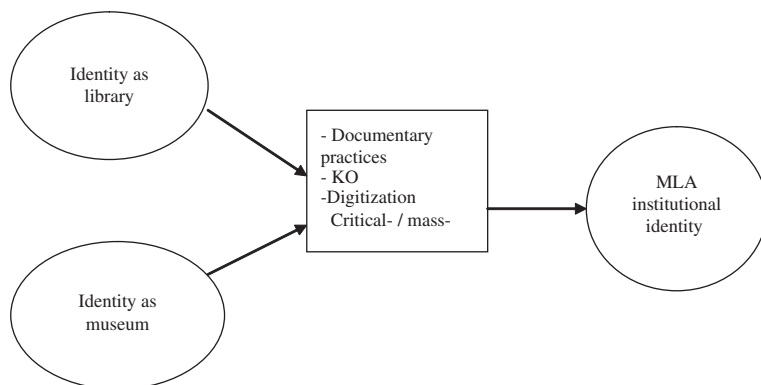
These cultural heritage documents have been digitized using elaborate critical digitization efforts, and their symbolic significance is of such a dignity that it exceeds the individual documents and creates a meaning and develops an identity for the institution holding them. When digitizing these documents, the symbolic significance (already quite high) will increase — and that goes for both the documents and the institution. Therefore, although critical digitization of these items might be costly and labour-intensive it will in the end create added values and identities for the institution digitizing them.

The choice of these particular documents does not surprise. As a document which has for more than two hundred years been at the centre of the national identity of Sweden, *Suecia Antiqua et Hodierna* is strongly anchored in national identity — something which can be expected to be promoted by a national library. An element of what we may call a common European cultural heritage is made available through the *Codex Gigas*.¹⁰ And of course the ongoing work in the European Digital Library, presented through the *Europeana* portal, is explicitly announced as an effort by the EU to present a digital commons of works of cultural significance.

Returning to the general model in Figure 1, we may now use the practices discussed to formulate a model which takes into consideration the discussed practices in the development of institutional identity in the MLA sector (Figure 2).

As the relation between libraries and museums changes, so does the possibility to develop tools which are in line with the new and more diverse roles in contemporary society which these institutions uphold. With the practice of digitization, the common ground for this has been altered. Libraries face a development which in some cases seems to head towards a situation that we see in museums. The obvious risk of loss of perspective is compensated by the new roles of the institutions in the digitization of cultural heritage artefacts, where libraries display one kind of aspect and museums or archives another. For this complementary development to take place,

Fig. 2: *Documentary practices in the development of MLA institutions.*



however, dialogue is required — as well as tangible co-operation — to find a way of working which provides both artefacts and institutions with new roles in society.

In the digitizing process, the library also becomes defined as a cultural heritage institution with a unique brand of its own. Knowledge organization practices, such as descriptive cataloguing, encoding, and indexing, are significant in library work. As such, they help define the idea and sets of values that form the core of every institution. For a national library, inherently aiming at strengthening a national identity through its particular display of collections, these practices are of significant interest. By prioritizing individual documents or document collections, the practice of digitization also re-contextualizes the national identity as a part of a larger whole, such as a European identity of which the national library defines itself as a part. In that way a common cultural heritage is defined through the display — and integration — of 'national' or 'international' collection development. New ways of displaying and organizing cultural heritage artefacts help MLA institutions take forms that previously, by tradition, have established them in different sectors of society — libraries and museums become parts of the same institutional construct, defined by practices of digitization. As we approach an increasingly digital presence of representations of our cultural heritage, these boundaries will be drawn differently. On the one hand: with the development of sound standards for organizing digital cultural heritage documents, it is possible to de-contextualize documents and

collections and meet the requirements of communities that care differently — or less — about traditional institutional settings and that are able to create cultural value and meaning when interacting directly with the document and artefact representations offered. On the other hand, libraries and museums are such stable institutions that there is no risk of them dissolving all together. Rather, their new roles and developing identities will prove to be complementary, as they emphasize and re-contextualize different aspects of cultural heritage artefacts. They do this because of their different practices, tasks and traditions, and because they each have historically invested and embedded different kinds of knowledge in the documents and collections. This will help enrich and broaden our understanding of cultural heritage as a whole, whether conceived of as national or international.

References

- Andersen, J. and Skouvig, L. (2006): 'Knowledge Organization: A Sociohistorical Analysis and Critique'. *Library Quarterly*, vol. 76 (3), 300–322.
- Besser, H. (2002): 'The Next Stage: Moving from Isolated Digital Collections to Interoperable Digital Libraries'. *First Monday*, vol. 7(6). URL: <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/958/879>.
- Bowker, G. F. and Leigh Star, S. (1999): *Sorting Things out: Classification and Its Consequences*. Cambridge, Mass.: MIT Press.
- Broome, A. (pseudonym for M. B. Line) (1988): 'The Search for the Ideal.' In: L. J. Anthony (ed.), *Lines of Thought: The Selected Papers of Maurice B. Line*. London: Bingley.
- CIDOC Conceptual Reference Model. URL: <http://cidoc.ics.forth.gr/>.
- Coyle, K. (2006): 'Mass Digitization of Books.' *Journal of Academic Librarianship*, vol. 32(6), 641–645.
- Dahlström, M. (2006): *Under utgivning: den vetenskapliga utgivningens bibliografiska funktion*. Valfrid: Borås (*The editor's text: bibliographic functions in scholarly editing*).
- Dahlström, M. (2009a): 'Kritisk digitalisering.' In: N. Lund *et al.* (eds.), *Digital formidling af kulturarv: fra samling til sampling*. Copenhagen: Multivers, 171–191.
- Dahlström, M. (2009b): 'The Compleat Edition.' In: M. Deegan and K. Sutherland (eds.), *Text Editing, Print, and the Digital World*. Aldershot: Ashgate. 27–44.
- Dahlström, M. (2010): 'Critical Editing and Critical Digitization.' In: E. Thoutenhoofd, A. van der Weel and W. Th. van Peursen (eds.), *Text Comparison and Digital Creativity*, Amsterdam: Brill, 79–97.

Dahlström, M. (2011): 'Editing Libraries.' In: C. Fritze *et al.* (Hrsgg.), *Bibliothek und Wissenschaft*. Vol. 44: *Digitale Edition und Forschungsbibliothek*, 91–106.

Dahlström, M. and Hansson, J. (2008): 'On the relation between qualitative digitization and library institutional identity.' In: C. Arsenault & J. T. Tennis (eds.), *Culture and identity in knowledge organization: proceedings of the tenth International ISKO conference*. (Advances in Knowledge Organization, No. 11). Würzburg: Ergon, 112–118.

Deegan, M. and Sutherland, K. (2009): *Transferred Illusions: Digital Technology and the Forms of Print*. Aldershot: Ashgate.

Deegan, M. and Tanner, S. (2002): *Digital Futures: Strategies for the Information Age*. (Digital Futures Series). London: Library Association Publishing.

Frohmann, B. (2004): *Deflating Information: from Science Studies to Documentation*. Toronto: Univ. of Toronto Press.

Functional Requirements for Bibliographic Records: final report (1998). URL: <http://www.ifla.org/VII/s13/frbr/frbr1.htm>.

Hansson, J. (2006): 'Knowledge Organization from an Institutional Point of View: Implications for Theoretical and Practical Development.' *Progressive Librarian*, No. 27 (summer 2006), 31–43.

Hansson, J. (2010): *Libraries and identity: the role of institutional self image and identity in the emergence of new types of libraries*. Oxford: Chandos Publishing.

Hjørland, B. (2000): 'Documents, Memory Institutions, and Information Science.' *Journal of Documentation*, vol. 56(1), 27–41.

Hollinka, L., Schreiber, A., Wieling, B.J., and Woorring, M. (2004): 'Classification of User Image Descriptions.' *International Journal of Human-Computer Studies*, vol. 61, 601–626.

Kjellman, U. (2006): *Från kungaporträtt till läsetikett: en domänanalytisk studie över Kungl. bibliotekets bildsamling med särskild inriktning mot katalogiserings- och indexeringsfrågor*. Uppsala: Uppsala University (From bookplate to royal portrait: a domain analytical study of the National Library of Sweden's picture collections with particular reference to cataloguing and indexing issues).

Kjellman, U. (2008): 'Visual Knowledge Organization: Towards an International Standard or Local Institutional Practice.' In: C. Arsenault and J. T. Tennis (eds.), *Culture and identity in knowledge organization: proceedings of the tenth International ISKO conference*. (Advances in Knowledge Organization, No. 11). Würzburg: Ergon, 289–294.

Maroevic, I. (1998): 'The Phenomenon of Cultural Heritage and the Definition of a Unit of Material'. *Nordisk museologi*, 2, 135–142.

McKitterick, D. (2003): *Print, Manuscript and the Search for Order, 1450–1830*. Cambridge: Cambridge Univ. Press.

Olson, H. (2002): *The Power to Name: Locating the Limits of Subject Representation in Libraries*. Dordrecht: Kluwer.

Notes

¹ One country where this is particularly visible is Sweden, where the international DDC is now being implemented as standard classification system, replacing the former, national SAB system.

² With the equivalent for museum collections, FRBRoo (Functional Requirements for Bibliographic Records, Object Oriented), which is a result of a joint development of FRBR and the CIDOC-CRM conceptual reference model.

³ Minerva Europe: <http://www.minervaeurope.org/>.

⁴ This is of course an illusion, on both a material and textual level. Although the illusion works pragmatically for modern printed books, it becomes increasingly awkward for books from the hand-press period and backwards. McKitterick describes the early printed book as 'definable as much by its variations as by its similarities' (2003, p. 109). Not only does the bibliographical study of, e.g., states teach us of variations between copies within editions, but indeed, '(v)ariant copies were the norm', McKitterick states (*ib.*, p. 123).

⁵ This distinction has been presented and further explained in Dahlström 2009a, 2010 and 2011. The following paragraphs also elaborate several ideas presented in Dahlström 2011.

⁶ The subsequent discussion on critical digitization is partly based on Dahlström (2009a).

⁷ Needless to say, perhaps, the products of mass digitization can as well be thought of as dependent on interpretations and selections. In effect, however, these are ignored and silenced in mass digitization projects, leaving the end-user in the hands of the unknown choices that praxis forced upon the mass digitizing institution.

⁸ The digitized *Codex Gigas* can be viewed at <http://www.kb.se/codex-gigas/eng/>, *Suecia Antiqua et Hodierna* at <http://www.kb.se/samlingarna/digitala/suecia/>.

⁹ The *St. Laurentius Digital Archive* can be viewed at <http://laurentius.ub.lu.se>.

¹⁰ The *Codex Gigas* was taken by the Swedish Army as a war trophy in Prague during the Thirty Years' War, which engaged all of Europe between 1618 and 1648.

During the last decade, claims were made by the Czech Republic to have the codex returned to Prague, a type of claim that has potentially difficult administrative and cultural ramifications. As a compromise, the National Library of Sweden decided to digitize the whole manuscript book in minute detail and provided its Czech counterpart with the resulting digital files.