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Beyond Technology: Power and Culture in the Establishment of National Union Catalogs

from / *aus*:

Union Catalogs at the Crossroad

Edited by

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pp. */ S.* 123-137

Erstellt am 31. März 2005

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Beyond Technology: Power and Culture in the Establishment of National Union Catalogs

Nadia Caidi

The purpose of national union catalogs (NUCs) is to facilitate access to the holdings of libraries in a nation, and to ensure that these resources are identified and easily located by a variety of users (scholars, students, general public, foreigners, etc.). National union catalogs are also useful in that they usually include the national bibliography of a country (i.e. grouping and recording of the publications of a country or about the country), although they go beyond the national bibliography to include holdings of other libraries and sometimes even records from large bibliographic utilities (OCLC, RLIN, etc.).

Union catalogs have developed in response to the need for library cooperation and resource sharing. By banding together and joining efforts to create a shared cataloging system, libraries in a given country (or across countries) create a foundation for resource sharing that reduces duplication of resources and cuts costs thanks to economies of scale.

Union catalogs' architecture can take various forms: physical, virtual, distributed, centralized, etc. (Husby 1999, Coyle 2000). The decision about which model of union catalog is more appropriate for a country's libraries is one that has to be made collectively by those engaged in the process. A range of players are usually involved in developing a union catalog; this includes the various libraries that contribute their records and the list of their holdings, but also other players such as system vendors, state agencies in charge of the various types of libraries, university administrations, funding sources, users and so on, all of whom may have their own agendas.

The NUC emerges as a result of the interaction between these different players; it becomes an artefact that is socially constructed by people who have a stake in its development.

As is often the case in any human activity that involves interpersonal relationships and negotiation, the process of developing a national union catalog is not devoid of tensions. The composition of—and the dynamics between—the various players in a country has a direct effect on the final outcome (i.e. the union catalog), and is key to understanding the choices made about the union catalog's design, architecture or functionalities. Much can be learnt from the negotiation process about the players involved and the power relationships between them, as well as the set of beliefs, values and practices that inform their decisions. The aim of this chapter is to raise awareness about the broader societal contexts that shape the establishment of union catalogs, with special emphasis on issues of power and culture.

1   The Social Shaping of NUCs

In an attempt to explore the social shaping of the NUCs and the negotiations around this artifact, a comparative study of the development of national union catalogs was undertaken in seven countries: Czech Republic, Slovakia, Hungary, Poland, Estonia, Latvia and South Africa (see Caidi 2002, forthcoming). The national union catalogs investigated were:

- NUKat, the Polish National Union Catalog;
- MOKKA, the Hungarian Shared Catalog;
- CASLIN, Union Catalog of the Czech Republic;
- the Slovak Union Catalogs of Periodicals and of Monographs;
- the Latvian Union Catalog;
- ESTER, the Estonian union catalog;
- SACat, the South African union database.

A mixture of face-to-face and structured telephone interviews (with follow-up by email) was undertaken with two rounds of data collected in 1999 and 2002. In-depth interviews were conducted with library directors, deputy

directors, heads of consortia, and project managers from the major academic and research libraries (including national libraries, academic libraries, state special libraries, central university libraries and other specialized research libraries). Although the library community encompasses a wide range of library types and sizes, the focus of this study was on the major university and research libraries because these libraries have been the most active in implementing library automation and information policies in their countries. Their involvement and collaboration was key to the success of the national union catalog projects. Interviews of those people who contributed their vision to and participated in the decision-making process allowed for a rich, complex and realistic picture of the social shaping of a NUC. A survey was also sent to union catalog coordinators and/or managers in each of the seven countries, in order to collect data on the architecture, functionalities and organizational aspects of the NUCs.

At the heart of the study is the idea that the development of these seven NUCs followed different trajectories based on the nature of the relationships between individual libraries in the country. The main question investigated was how much of the development of national union catalogs was influenced by differing visions and cultural practices, by the varying social contexts of the libraries, and by any personal tensions that may have contributed to the negotiation process over the union catalog (Caidi, 2002, forthcoming).

2   NUC Development in the Countries Studied

The seven countries studied all started their union catalogs in the mid- to late 1990s (in the case of South Africa, the union catalog was initiated in 1983 but was substantially revamped in 1997) and while the NUCs are at various stages of development, they are all operational, thanks to funding and support from The Andrew W. Mellon foundation, state agencies and other sources that made these nationwide initiatives possible (e.g. Soros' Open Society Institute, European Union funding, etc.).

These countries are obviously different, but they also have many elements in common. All have undertaken major socio-political transitions

(from the socialist regimes in Eastern Europe and the Baltic countries; and from apartheid in South Africa). Libraries, like all other institutions, were impacted by the changes and the resulting turmoil and uncertainties. These countries also received help and funding from foreign agencies, including western library-oriented philanthropic foundations, which provided them with much-needed funding and expertise in various areas, particularly as it relates to library development and automation (Borgman 2000; Lass and Quandt 2000; Quandt 2002).

Libraries in Central and Eastern Europe and the Baltic region—all governed under a socialist regime—have traditionally depended on different ministries, and were governed under a system that had aspects of both centralization and decentralization (Borgman 1996, 1997, 2000; Lass and Quandt 2000). The National Library (along with the network of public libraries) has traditionally been governed by the Ministries of Culture in the countries studied. Major university and research libraries were under the purview of the Ministries of Education, while other ministries (e.g. Agriculture, Science and Technology, etc.) were responsible for the various special libraries. State agencies and other institutions in charge of the various types of libraries, which are still very present in the governance of libraries, made it very difficult for libraries to undertake meaningful changes in their working styles.

In South Africa, the situation of libraries today reflects their apartheid legacy. Under apartheid, governance at all levels was based on racial lines, including the educational systems and library services. This situation led to vast inequalities between the relatively privileged white institutions and the much less privileged black, colored, or Indian institutions. After the transition, there were calls for major reforms of the higher education system, and in particular for a merger of these various institutions in an attempt to reduce duplication of resources and of the curriculum, cut costs, and allow for a more egalitarian educational system. In practice, however, the transformations have been slow and difficult to achieve. These changes have implications for the major university and research libraries. Cooperation had been taking place between libraries before the socio-political changes, although consortia tended (and still do) to form along local or provincial lines (e.g. the Cape province, Gauteng, etc.). The situation of South Africa is also different from the six other countries in

that SACat, the national union database, is run and managed by SABINET, a not-for-profit arm of Sabinet, Inc. (see chapters by Man and Erasmus and by Malan in this book).

Cooperation always existed in one form or another in the seven countries studied, but became the focus of library restructuring since the socio-political changes, partly because of the budget cuts to the cultural sector, and partly because funding sources favored projects that would benefit many libraries in the country rather than a few individual ones. The result has been an increase in inter-organizational linkages, attempts to adopt common standards and formats, the establishment of consortia and alliances, and the creation of shared cataloging systems.

Union catalogs are inscribed in this trend; they developed either as a result of a consortium of libraries that chose to use a common integrated library system (e.g. VTLS, Dynix, Aleph etc.), or that banded together because of close geographical proximity (e.g. GAELIC, FRELICO, CALICO etc. in South Africa). It was only a matter of time before libraries in the countries studied deemed it necessary to create a national union catalog and sought funding to develop it (more accounts of the origins and initiation of the different NUC projects can be found elsewhere in this book. See also Caidi 2003, forthcoming; Quandt 2002).

Table 1. NUC Projects' Initiation

Union Catalog	Project Dates
CASLIN UC (Czech Republic)	Start of Project: 1999–2000; Operational: 2002
Union Catalog of Slovakia	Start of Project: 1999–2000; Operational: 2002
MOKKA (Hungary)	Start of Project: 1997; Operational: 2002
NUKat (Poland)	Start of Project: 1997; Operational: June 2002
Union Catalog of Latvia	Start of Project: 1997 ; Operational: March 2000
ESTER (Estonia)	Start of Project: 1995 ; Operational: January 1999
SACAT (South Africa)	Start of Project: 1983–84; Revamped: 1997

With the help of funding agencies eager to see libraries work together to develop shared cataloging systems and make their holdings records available online for all to access, national union catalog projects took off (see Table 1).

3   Beyond Technology: Power and Culture

Technological artifacts can be viewed as socio-technical systems in that they involve more than just the solving of technical or design problems, but also include the overall dynamics that contribute (or do not contribute) to their development. Agreeing on the terms of the collaborative endeavor is a complex process that includes elements of power and culture. These two elements are essential in understanding the dynamics at work in negotiating the different stages of the development of NUCs.

Power Issues

The Merriam-Webster dictionary defines power as "possession of control, authority, or influence over others" or the "ability to act or produce an effect." Power usually stems from interacting with others. Through interpersonal relationships, various attempts—conscious or not—are made by an individual or a group to impose their views or will over others. Methods of doing so include persuasive arguments (moral or financial), emotions, reason, etc. At the heart of power is control or influence over the outcome or the process. A clear delineation of the goals and objectives and how to reach them (sharing of responsibilities and delegation of power) is, therefore, critical in any cooperative endeavor. Communication and trust are key to negotiating the power balance.

When asked to reflect on the lessons learnt from establishing their NUC, three factors were deemed essential by respondents in most countries and can be summarized as follows: the technological aspects; the organizational aspects and the vision or 'philosophy' about what the NUC should be.[1]

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[1] For a more extensive discussion of these findings, see Caidi 2002 and Caidi, forthcoming.

Technological aspects concern the choices made about the overall architecture of the union catalog, including the library system, the standards and protocols adopted, the cataloging procedures, the content and functionalities of the union catalog. The philosophical aspects—a term used during the interviews by a few respondents—relate to the visions (shared or not by the various libraries) about what the union catalog should accomplish and how it fits within the overall information infrastructure of the country. Finally, the organizational aspects address such issues as who will build, operate, maintain and finance the union catalog (Coyle 2000; Husby 1999; Lynch 1997).

At various stages of their development, the national union catalogs studied have had to deal with issues of power. At the planning stage, issues of power translated into numerous questions: Which formats should be used? Who makes the decisions? Whose interests are taken into account? What is the influence of the type of technology? What are the characteristics of the players and their network? and so on. A national union catalog is a product of the decisions made by the collective group: decisions about what to centralize and what to decentralize have impacts on the sharing of labor and the sharing of responsibilities, and contribute to defining or shifting the power balance. In all the countries studied, there was an interest in achieving a balance between centralization and decentralization. However, in practise the existence of interest groups, 'fan clubs' of various integrated systems, and alliances of various natures made for a far more complex picture and led to various tensions. Because union catalogs emerge as a result of the 'work' of many types of actors, the variety of coalitions influences the development of the artifact and leads to different visions or 'philosophies' of what the artifact should be and how it should be designed and used. When a socio-technical system involves the cooperation between various groups, each with its own understanding and conception, there is room for miscommunication or conflicts.

The issues of power also arise at the development and maintenance stages of the NUC. The organizational communication and management literature refers to this stage as the 'commitments' stage (Ring and Van de Ven 1994), or what Kanter (1994) in his marriage analogy divided into the "getting engaged," "setting up housekeeping," and "learning to collaborate" stages. Indeed, much like a marriage, without maintenance a technological

system becomes a ruin. The questions that are raised at this stage therefore include: Whose interests prevail? Those of the designers of the system, the end-users, the funding sources, the IT people, the library staff, etc.? What are the incentive mechanisms? How do conflicts get solved? Who plays what role (e.g. change champions, mediators, agitators, etc.)? How is trust achieved? How open and transparent is the process? A classic problem in cooperative work is the trade-off between individual and collective goals. Hofstede (1980) uses this dichotomy in his study of cultural variability; according to him, certain cultures place the emphasis on collective socio-economic interests over those of the individual. On the contrary, individualistic trends in other cultures override any collective attempts (i.e. everyone is expected to look after themselves and their own needs). Such a dichotomy was observed in the study and was present in various degrees across the seven countries. The implications for the establishment of a NUC are manifested in the willingness or unwillingness to share information among members of the consortium, whether access to the data was restricted to members of an institution versus users from other institutions, and the extent to which tensions resulted from personal ambitions and interpersonal conflicts (see Caidi 2002 and Caidi, forthcoming, for examples from the seven case studies).

Cultural Issues

Culture has been defined in different ways. It usually refers to the system of beliefs, attitudes and values shared by members of a group, whether it be at nation or country level (the sense of belonging to a particular nation or ethnic group); at domain level (bonding based on expertise, areas of interest or specialization); or at the level of the organization (loyalty and mores shared by members ('insiders') of an organization). In some regard, it may be more relevant to talk about 'cultures' (or 'identities') rather than the generic term 'culture,' because one can belong or identify with various communities and at various levels. Cultural aspects are used here to refer both to the choices and values that are embedded in the design and use of information, its agencies, and its technologies; as well as to how these might translate across cultural contexts.

The findings show signs of this trade-off between globalization and localization. The countries studied are at various levels of their transition from their earlier regimes to a democratic society with a liberalized market. The data make references to the attempts to balance the need for global integration into the world economy with the preservation of the local language and cultural identity. One clear example is around the discussion over the adoption of standards. Most countries have adopted the major library standards (AACR2, MARC21, ISBD, UDC, LCSH, etc.), although some have maintained the local variant (e.g. Hungarian or South African versions of MARC, Polish standards for bibliographic description and classification, Estonian Universal Thesaurus, etc.). While the adoption of standards ultimately allows libraries to exchange data with libraries throughout the world and join the international library scene, the adoption of these standards requires adjustments or radical changes to existing practices. Some people may resist those changes, and frame the debate along cultural imperialism lines (e.g. wishing to maintain one's cultural uniqueness).

Most respondents in the countries studied viewed the union catalog as a means to open up a window on the world and disseminate their country's rich literary heritage. Others, however, were cautious, pointing out that it was essential that their language and cultural identity were preserved and adequately protected. Hungary, for instance, is an island amidst the Slavic countries, with a distinct culture and language that it ferociously seeks to preserve. Similarly, Slovakia, which became an independent nation in 1993 for the first time in its history, is busy creating its national identity and preserving its language and cultural heritage. It is only recently that South Africa has been considering converting to MARC21 (formerly USMARC). Until then, the South African version (SAMARC) was the most prevalent among libraries.

The development of a NUC therefore presumes a few key assumptions:

1. Technology and its use are part of a culture;

2. Biases are often embedded in tools themselves (system architecture, modules and functionalities; templates, icons, organization, computing metaphors, etc.); and

3. Linguistic issues go beyond the translation of the commands in the local language to include organization of the knowledge, cultural constructs, representation, metaphors, etc.

In summary, the findings point out that no country fared better than any other. Rather, issues were strikingly similar across countries and differences in the outcome usually had more to do with the group size and group boundaries, the dynamics between members of the group, the incentive system, and the support received (or not) at different levels. The study of the NUC across these seven countries also points out the increased awareness of the dynamics and mechanics of cooperation, the pivotal role of communication; as well as the importance of good leadership and accumulation of local knowledge.

4   What is Next for NUCs?

Beyond the design and development stages is a critical test for the technological artifact: that of its usability and usefulness for all relevant users. Questions that arise include: How easy is it is to figure out and learn? How efficient is it (e.g. requiring as few steps as possible to retrieve desired information)? How easily can steps be remembered? How can one make sure that the NUC is used? How can one assess its usability and usefulness?

These questions are essential to determine who will use the NUC, and how. The concept of usability is predicated on establishing criteria for effective, efficient and satisfying use, and it is certain that cultural variability plays an important role in determining such criteria. As yet, usability practitioners have rarely articulated this issue. Previous research on the use of online public access catalogs (Duncker 2002) and Internet search tools (Iivonen and White 2001) have shown differences in how users from different cultural groups search for information.

Culture, as Hofstede (1980) puts it, is a collective mental programming. Like any socio-technical system, a union catalog embodies the values, beliefs and practices of its producers, along with their broader social and cultural contexts. A user with different sets of beliefs and assumptions about the organization of the content, the categories assigned or the user interface design may find it hard to interact with the system. Lessons

learned from cross-cultural usability and international user interface design are thus important for the design of usable NUCs (Caidi and Komlodi 2003).

What is increasingly needed is more research on information-seeking behavior of users in transitional societies (or in general of user studies outside North America and Western Europe).[2] Some of the countries studied have had a long history of central planning and an information culture that promoted a particular form of interaction with knowledge, as well as learning styles that emphasized memorization over critical thinking and independent research. The implications for libraries were that the priority was on building collections rather than providing services to users. As a result, very little attention was paid to end-users' needs and their seeking behavior (e.g. explicit behaviors (search strategies used, evaluation of particular resources, problem-solving, etc.) as well as implicit cognitive models, categories and metaphors). The aim should be to enable the design of systems that cater to individual differences and various cognitive models. From a cross-cultural usability perspective, there is also a line of research that could look at the operationalization of culture for the purpose of enhancing usability as a means to assess whether culture is a significant variable in usability design (Caidi and Komlodi 2003). Research on the internationalization of industrial products, software or websites exists, along with an increasing interest in research on interface design for multi-cultural environments. However, relatively little research exists on these issues in the literature on library information systems.

5   Concluding Remarks

While technologies may be global in nature, their use, content provision and design have remained local. The study briefly outlined in this chapter,

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[2] Exceptions include a study of information-seeking behavior of Mongolia's urban residents (Johnson, 2003) and a conference on "Information Behavior in Digital Libraries" held in Bratislava, Slovakia, on May 21–23, 2003.

as well as the discussion above, point to the question of appropriation or acculturation of the union catalog and its subsequent use by various groups.

In order to investigate the 'acculturation' process in the context of the library scene, one needs to examine the ways in which a technological artifact is appropriated in various cultural milieux. In other words, how does a technological artifact become 'localized' and used by various groups who may be the intended audience but who were not the designers and/or developers of the technological artifact? The findings are particularly interesting in the context of the situation of libraries in transitional societies, where transfer of technology was made possible through various organizations (e.g. philanthropic foundations, non-governmental associations, etc.). There are both exogenous and endogenous forces that contribute to adoption and use of information technologies, and the extent to which foreign agencies and philanthropic foundations shape the development of information infrastructure in a given country is a critical issue (Caidi 2003).

There is no question that philanthropic foundations, state agencies and other funding agencies have vastly contributed to these nations' information infrastructure by providing them with the funding and technology needed to improve their libraries and automating their internal and external processes. However, beyond the technology transfer, various forms of knowledge transfer also took place which will allow the libraries in the country to build or rebuild their social capital, to provide training in the form of seminars and workshops on cooperation and resource sharing, and to allow local knowledge to accumulate. It is time for information scientists to address these important questions and raise awareness about the need for research in the area of usability of union catalogs (and digital libraries in a broader sense) and user studies. The goal is to identify new tools, techniques and methodologies for cross-cultural study of user behavior in digital libraries and international user interface design, and to provide a forum for generating new research directions and cross-disciplinary collaboration.

Libraries as social and cultural institutions have much to contribute to the development of their country's information infrastructure. After having integrated library systems and developed their online public access catalogs, libraries are coming together to solve common issues, to serve the needs of their users and contribute to the development of NUCs and digital

libraries at national level. The question that remains unaddressed for the NUC is how to make it a part of the broader national information policy? Indeed, how to ensure that libraries and librarians play a key role in the policy arena in their country? The free flow of information in a society is as critical as the political and economic reforms or technological advances. It is essential that the library communities organize themselves and use the lessons learnt from developing a national union catalog to form new collaborative alliances that will enable them to remain actively involved in the development of a national and increasingly global information infrastructure.

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