The Social Shaping of National Union Catalogs: Lessons from Central and Eastern Europe

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ABSTRACT

Technology does not develop independently of its social context. Rather, it is constituted through the linking of people, practices and places. This paper draws from the current work within the social shaping of technology literature to examine the concepts of boundaries and negotiation inherent in the construction of any socio-technical systems. A case study of the social shaping of the national union catalog (NUC) in four countries of Central and Eastern Europe illustrate this process, and the "games" that various actors engage in.

RÉSUMÉ

La technologie ne se dévéloppe pas de façon indépendante de son contexte social. Plus exactement, elle s'est constituée à travers le lien entre les gens, les pratiques et les lieux. Cette étude se détache du travail actuel à l'intérieur de la formation sociale de la littérature informatique pour examiner les concepts des frontières et de la négotiation inhérente dans la construction de n'importe quel système socio-technique. Une étude de cas de la formation sociale du *(NUC – national union catalog)* dans quatre pays de l'Europe de l'Est et Centrale illustre ce processus, et les « jeux » dans lesquels se lancent les acteurs divers.

INTRODUCTION

The development of national union catalogs is essentially a collaborative activity in which various actors (e.g., libraries, system vendors, granting agencies) are devising solutions to create a shared cataloging system, and make their country's bibliographic records available online. The creation of national union catalogs and shared cataloging systems is an example of boundary setting and negotiations between participating libraries. Indeed, after having integrated library systems and developed their OPACs, these libraries are coming together to solve common issues and serve the needs of their users (shared goal). However, the strategies envisioned to reach this goal of establishing a national union catalog may vary.

This paper builds on prior work on libraries in the Central and Eastern Europe region (Borgman 2000; Lass Quandt 2000), and constitutes a preliminary report of a large research project on the development of information infrastructures and digital libraries in four CEE countries (Czech Republic, Slovakia, Hungary and Poland) (Caidi 2001). Here, we report results from a series of interviews conducted in these four countries with key players in the development of NUC projects. The outcomes of these projects show mixed results primarily because of the different approaches being used and the various assumptions embedded in the designs of

these systems. Our study shows that beyond the technical and design issues, there are socio-cognitive and socio-political dynamics that contribute to (or hamper) the development of an NUC.

METHOD

The term "Central and Eastern Europe" is used here to refer to the region of Europe that was under Soviet control until 1989. Specifically, the emphasis is on Czech Republic, Hungary, and Poland. These countries were selected because they have similar levels of economic development (e.g., they are among the strongest economies of the former Soviet Bloc); they are at an advanced stage of socio-economic and political reforms, and they are implementing technological change at a rapid pace. There are obviously many differences among these three countries (as well as between these and other countries in the region), however they also have many technology and policy issues in common so I address them as a group. Some additional data was collected in Slovakia, because of its historical relationship with Czech Republic, and because Slovakia was active in the CASLIN project.

The focus of the study was primarily on the major academic and research libraries (including the national libraries, and the libraries of national academies). These libraries have shown leadership and experience in adopting information technologies and deep concern with information access. As such, they play important roles in policy decisions regarding library services in their countries.

Most of the data collected were in the form of in-depth interviews, in which a broad agenda of research questions were explored in a fairly open-ended way. Face-to-face interviews were conducted with 49 library leaders and policy-makers, in 37 institutions (10 in Czech republic, 10 in Hungary, 13 in Poland and 4 in Slovakia). A dozen more informal discussions with other respondents, library vendors, project managers were also undertaken.

FINDINGS

With the fall of socialism, paradoxes and flaws in the organization and functioning of libraries in CEE countries began to appear in terms of the structure of the library system; the complex relationships between libraries and the organizations which fund them; and relationships among libraries. In the last decade, Western library-oriented philanthropic foundations have invested time, effort and money in helping various infrastructures of the economy to be rebuilt. Higher Education institutions and their libraries have benefited to various degrees from these initiatives (expertise, training, integrated library systems, etc.) although much remains to be done.

The socio-political and economic transition also involves the building of new institutions and the creation of new linkages between organizations, which is an

eminently political process. The data collected showed evidence both of the presence of common frames (e.g., a set of shared assumptions and beliefs) and of power struggles between various social actors (e.g., between types of libraries; between libraries and state agencies; between libraries and the private sector). Power struggles usually arise between actors with conflicting interests and agendas. This power is expressed in the ways in which meanings and definitions are assigned to a technological artifact, such as a national union catalog, and may replicate the current power structure in society.

CEE Libraries in Transition

In most of the CEE countries studied, library automation started in the last decade, and union catalogs did not figure as a priority for most libraries which focus, instead, was on introducing the library system in their libraries, and "filling the databases with information (current cataloging and retroconversion) in order to make the catalogs suitable for public access." (Feret 2000, 247). Automation also caused many libraries to rethink issues of standards; to undertake retrospective conversion; or to introduce subject headings and authority control (Koltay 2000; Stoklasova 2000). Much fundamental work has been undertaken by some libraries in the countries studied, in an attempt to eliminate duplicate effort by pooling catalog records; to improve coordination between libraries and sharing of resources, but much remains to be done.

After having integrated library systems and developed their OPACs, the CEE libraries studied are coming together to solve common issues and serve the needs of their users. Establishing a climate of cooperation appeared throughout the data as a prerequisite for any further attempts at developing NUCs. Means to enable cooperation include shared cataloging cooperatives (e.g., networks, consortia) and the adoption of common standards in order to make their systems portable, and be able to share resources.

The earlier initiatives at establishing consortia were mostly fostered by the academic and research library communities. After decades of centralization that led to 'artificial' library networks organized by subject areas and/or types of libraries (and imposed on libraries by the ministries), respondents expressed more interest in experimenting, in a grass-root manner, as evidenced by the variety of consortia created. Respondents in Czech Republic, Hungary and Poland favored a mixture of centralization and decentralization: tight or loose alliances (CASLIN, CASLIN+), resource-sharing consortia (e.g., HUSLONET), highly distributed model (VTLS Group). In Slovakia, there was a marked interest for a centralized body that would coordinate actions.

The development of a national union catalog (e.g., NUKAT (Poland); CASLIN (Czech Republic and Slovakia), and MOKKA (Hungary)) was also subject to debates and negotiations with regard to the most appropriate model and

strategies.

Differing Visions of a National Union Catalog

In their accounts, many respondents, across the four countries, emphasized that libraries have different visions (also referred to as different "philosophies") of a national union catalog: should it be a centralized database of distributed resources, maintained in a single location? should it be a virtual union catalog, created in real time by searching each local campus or affiliate library's catalog? The repercussions are important, not only from a technical perspective, but also for pragmatic reasons. Some libraries may want to keep their local system, and do the cataloging in their local systems rather than opt for a centralized union catalog, which may require them to purchase a new system, learn to use it, adopt new rules or standards, etc. Others may favor a more homogeneous central database solution that offers consolidated search results and permits many resource-sharing functions (ILL, cataloging, etc.). These differing perspectives lead to heated debates. Respondents mentioned the lengthy discussions that were undertaken about the most suitable model of union catalog to adopt. According to some respondents, these discussions significantly halted any "real" progress of the common project ("too much time was wasted").

In reality, the technical aspects are often much easier to solve than the political aspects. For instance, a virtual union catalog makes sense in an environment where every library has its own database and retrieval interface: such a distributed database eliminates the redundancy of record storage as well as the expense of loading and maintaining access to the central catalog. However, the requirements for establishing a virtual union catalog makes it difficult for libraries in the countries studied to successfully implement such a model at this stage of their development. Coyle (2000) suggests that four requirements should be met for any virtual union catalog to become a reasonable service alternative. These are: 1/ database consistency and search accuracy (e.g., creating compatible local catalogs with a uniform set of indexes and search functions); 2/ system availability (e.g., local system downtime should be minimal); 3/ capacity planning for campus OPACs (e.g., each search is broadcast to all of the library catalogs rather than one centralized catalog, hence the implications of this increased traffic for the local system search capacity and network load); and finally 4/ the network sorting, merging and duplicate removal (e.g., broadcast searches return a set of records without merging or sorting them).

Technical considerations limit the possibilities of opting for a virtual model of union catalog in the CEE countries studied, because of the difference in the level of automation of various libraries, the inadequate networking infrastructure, the institutional arrangements of libraries, and the lack of agreement on common standards.

Beyond the technical or design problems, there are other factors that contribute to the development of a NUC. In particular, the debates around the national union catalog (which were characterized as "a waste of time" by respondents) are essential in that they enable various players to share their opinions and voice their interests. Deuten (1999) contrasts between "socio-cognitive" dynamics and "socio-political" dynamics in his study of the standardization process. Socio-cognitive dynamics are associated with the phase of "extraction of standards from accumulated findings and knowledge"; whereas socio-political dynamics arise from the negotiating and fighting over standards (e.g., the "consolidation" phase). This distinction is an interesting one, in that it sheds light on the interaction between local and global issues, and between technical and social issues.

National union catalogs emerge as a result of the "work" of many types of actors (system vendors, library technical experts, catalogers, users or more specialized actors (consultants, professional societies, grant donors, etc.)). This variety of coalitions may influence the development of a national union catalog in various ways:

1- Governments or funding agencies that may create incentives for cooperation (through grants, or by encouraging libraries to purchase a common system), and/or impose their conceptions or solutions hierarchically. In Hungary, for instance, the Library Act specified that funding for the 'Telematics' project would be organized as an open competition: libraries were asked to write a development plan for the future, and were strongly encouraged to collaborate ("for practical and philosophical reasons") and participate in the shared cataloging system, MOKKA. In Poland, monetary incentives from foreign foundations were conditional to the selection of one common system by participating libraries.

2- Market-led solutions: different library systems may "work best" with certain models of union catalogs rather than others.

3- Voluntary, consensus-based solutions: usually developed in committees dedicated to the elaboration of joint solutions and standards (e.g., the CASLIN Working Groups).

At the heart of the building of national union catalogs are therefore a set of strategies based on which formats to use; who makes the decisions; whose interests are taken into account; the influence of the type of technology; the characteristics of the players and their network, etc. The debates around standards and standardization, for instance, were heated: while some standards were adopted uniformly by libraries, such as ISBD, and one official national standard for description of data was adopted in the four countries; in other cases, tensions arose. In Hungary, for instance, some respondents were vehement about keeping HUNMARC (a MARC format customized for Hungarian language) rather than

moving toward USMARC or UNIMARC, which were better supported by the foreign systems. The rationale for keeping HUNMARC was best expressed by this respondent: "it is good that the country maintains its distinctiveness."

The National Union Catalog as a Boundary Object

National union catalogs are shared by multiple communities, and therefore are the object of constant negotiation. As such, they can be viewed as platforms that enable the sharing of responsibilities among libraries, and the decentralization of power. In their landmark study of a zoological museum, Star and Griesemer (1989) coined the term "boundary object" to designate an artifact that links diverse interests and relates various groups. They define boundary objects as "...both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual site-use. Like a blackboard, a boundary object 'sits in the middle' of a group of actors with divergent viewpoints" (p. 46).

Their analysis of the ordering and classification of animals in the museum is one example of a boundary object. Based on their definition, a national union catalog also can be viewed as a boundary object, in that it becomes a common repository for records from various local sites (e.g., libraries); and has the potential for reconciling individual achievement with the collective goal. As some respondents mentioned, "everyone wants to emphasize their real strength" (individual achievement); "[My library] is part of the MOKKA initiative although [we have] not much benefits from MOKKA, but we are proud to cooperate with them and provide other libraries with our records" (collective benefit).

Harvey & Chrisman (1998) compare boundary objects with geographic boundaries, with the key difference between them being the dynamics: "Whereas geographic boundaries seem over time to become relatively solid anchors for social relationships between groups, technological boundary objects remain subject to change" (p.1686). In other words, while there needs to be sufficient incentives for libraries to participate in the development of an NUC (e.g., common points of reference), a NUC - like all boundary objects- does not provide a common understanding or consensus between participants. Constant negotiations between players take place. This is what scholars of Science and Technology Studies (STS) refer to as the concept of 'translation.' Translations are essential to the definition and distribution of roles, and allow for the reconciliation of the tensions that arise from negotiations over a technological artifact (Callon 1986, 1992).

In the CEE countries studied, the data show that not only did respondents hold different visions of what a national union catalog should be (virtual or distributed vs.

centralized), but they experienced difficulty communicating across their position to one another, and reaching an understanding. One respondent referred to the idea of "speaking different dialects" to describe this situation. Simultaneous and parallel discourses were held around the NUC: some favored a "policymaking" view and held a discourse on the structure of the union catalog, intellectual property issues, etc. Others adopt a "technical" discourse (emphasizing compatibility and standards, consolidation of records, or character sets) or a "social" discourse (e.g., focus on users, access, etc.). Similarly, when asked to reflect on the whole process, respondents viewed the construction of a NUC in very different manners: some framed the difficulties to develop a shared cataloging system as an "implementation" problem; others characterized it as a "design" or a "political" problem.

What becomes clear is that, because a national union catalog crosses so many boundaries (e.g., different players, worldviews, interests, communities, etc.), it becomes very difficult to "fix" its form. Many respondents expressed their frustration with regard to the "invisibility" of MOKKA, CASLIN or NUKAT (e.g., "CASLIN still does not exist: there is no association, no body" or "all the discussions have revolved around the possibilities of forming a consortium or an association, or of defining contractors and subcontractors"). In all four countries studied, the players seem to be at this stage of trying to fix the nature of the agreement between libraries (e.g., MOKKA opted for an associative form).

IMPLICATIONS

The shaping of a national union catalog is dependent on a heterogeneous network of social and technical elements. Technological artifacts, such as NUCs, can stabilize or destabilize relationships between institutions, in particular the delicate balance between centralization and decentralization that is at the heart of the interaction of technology and institutions (Agre 1999). Indeed, centralized power facilitates the establishment of compatible solutions (e.g., standards and decision-making). In turn, proper compatibility paves the way for power to be decentralized and shared among participants. A national union catalog attempt can fail with an overly centralized concentration of power (e.g., in the hands of a National Library, or a dominant library consortium); but the success of a union catalog also can be jeopardized by an insufficient consensus around its establishment (as is the case for NUKAT, in Poland, where a strong culture of self-reliance at the local level resulted in the creation of many loud voices with strong interests and made it hard to reach a consensus). The NUCs in the countries studied are still at the formative stages, but one thing is clear: as Orlikowski (1996) relates in her example of the introduction of Lotus Notes in one corporation, the software has to fit with the culture. The model opted for a NUC has to fit with the culture. The challenge seems to lie in reconciling the tension between individual and collective rationality.

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