

THE IMPLICATIONS OF LSP FOR LOCAL SYSTEMS

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My assignment today is to talk about LSP from the point of view of a local library, or more specifically a local research library network. In this case, that is the Triangle Research Libraries Network in North Carolina, or TRLN. TRLN consists of the University of North Carolina at Chapel Hill, Duke University, and North Carolina State University and has been involved in several linking projects, some of these are related to LSP, some are not. Taken together, they give the TRLN libraries a basis of experience from which we have derived a perspective on LSP and its implications for local libraries. I will share a part of that perspective with you today.

My discussion of LSP will be non-technical. I will talk instead about the web of relationships that most research libraries are a party to today (some might even prefer the term "entangled in") and how the technology of computer-to-computer linking will be a tool to expedite and sustain these relationships. Any given technology derives its significance from an organizational and political context, and I think that the current networking context among research libraries invests great value in the effort to develop linked systems protocols. From our point of view, this is a very timely technology, as timely in the 1980s as the development of the bibliographic utilities was in the 1970s, and it is driven in part by the realization that the development of a single, monolithic national bibliographic network is

neither feasible nor desirable. The fact that there will probably not be such a network means that our networking relationships will be more varied, more complex, and will require more flexibility - all of which are characteristics underscoring the need for standards for computer-to-computer linkages.

Let me now describe this networking context from the perspective of a state university library. At North Carolina, we happen to be part of a local research library network (TRLN), a member of a 16 campus state university system, a participant in a state-wide multitype library network, a member of a regional network (SOLINET), and a bibliographic utility (OCLC). We also have specialized networking and cooperative relationships in areas such as Law, Health Sciences, machine readable data file collections, and so on. At the same time, we hope to take part in National projects of cooperative cataloging, retrospective conversion, collection development, and preservation which go beyond this existing multitude of affiliations. This project often requires technical support for ad hoc and temporary arrangements. It is a complex and sometimes confusing landscape, but probably rather typical of most research libraries. In fact, I know of other university libraries with far more complicated overlays of network relationships than our own.

Our most intense collaborative activity takes place with our partner libraries in TRLN. TRLN is based on long-standing cooperative collection

development and resource sharing arrangements that go back to the 1930s when Duke and North Carolina agreed to coordinate the development of Latin American collections. Over the years we have extended our area studies agreements to include Slavic, East Asian, Africa and the Commonwealth Nations. For example, Duke collects Polish and North Carolina collects Czech; Duke collects Japanese and North Carolina Chinese; Duke concentrates on Canadiana and North Carolina on Australian materials.

The area studies programs are supplemented by agreements covering domestic and foreign newspapers, and federal, state, international, and foreign documents. We take into account the holdings of the other TRLN libraries when considering whether to subscribe to or to cancel journals. We redirect gift collections to the libraries where they are most appropriate. Over the years we have made a number of joint purchases, particularly of expensive microform sets. There is also an overarching understanding that we will not duplicate expensive, infrequently used research materials, regardless of whether they fall within the scope of an established agreement.

In short, we are probably coordinating the development of our collections as closely as any similar group of independent research libraries in the country, perhaps more closely even than some large research libraries within their own systems of departmental libraries and special collections. In doing so, we have greatly extended the range of research materials available in the local area to our faculties, students, and our many unaffiliated users in the Research Triangle Park. We view the three libraries collections as a single, unified resource, and encourage our users to do the same.

These cooperative collection development plans are supported by a number of special service arrangements such as delivery services, interinstitutional borrowing privileges, and special interlibrary loan and photocopy services. We're beginning to experiment with telefacsimile. Bibliographic access, of course, has always been a central focus of our cooperative activity, and TRLN operates locally developed online catalogs configured as a distributed network. New subsystems are being developed and software is maintained by a systems organization jointly funded by the three institutions under a Memorandum of Understanding signed by the Chancellors.

TRLN is based on the principles of autonomy and interdependence, both of which are very important to us. In part because the membership consists of private and state supported universities, in part for simplicity in budget accountability and a desire to avoid setting up a separate organization with its own bureaucratic superstructure, we have decided not to operate a centralized computing facility. Instead, we cooperate and jointly fund the development of software for our systems and operate our online catalogs separately, depending on computer-to-computer linking as the basis for the network.

Each TRLN library operates its own Tandem-based online catalog and the network consists of three separate sites - one at Duke, one at North Carolina State University, and one at Chapel Hill - each using similar hardware configurations and identical operating systems and applications software. All terminals on each system, as well as any dial-in user of any system, has access to the other catalogs through computer-to-computer links. We call this the multi-institutional search function which allows users to choose to

search a single catalog, any combination of two catalogs, or all three catalogs simultaneously. Retrieval sets are merged so that it is transparent to the user that three separate databases are being consulted, rather than a union catalog. This kind of capability allows users to exploit the collections of their home institutions to their fullest while easily making the transition to the combined resources of the network. This approach allows us the independence we need as institutions, while providing the high level of interactivity we need to support our cooperative activities. These somewhat conflicting needs may exist in other local networking situations, and host-to-host links would appear to be a promising approach to meeting them.

The TRLN link does not require the use of LSP because it links homogeneous systems. On the other hand, this link does demonstrate the functionality that can be made available through links among heterogeneous systems using LSP. With LSP, it will be possible to establish links equivalent to those among the TRLN systems, but without the requirement that each participant have the same system. This will be especially important in local networks in which participants have already gone their own way in selecting systems or which are not in the position, as we are in TRLN, to support a jointly funded systems organization for the development and maintenance of software. Our present link is relevant to LSP, we think, because observation of the use of the TRLN link may give some clues to the conditions under which the establishment of computer-to-computer links among heterogeneous local systems will be worth the expense. Systematic observation and analysis of the traffic among the TRLN systems links are planned to provide this kind of information.

The other major linking activity of TRLN is with OCLC, and it is here that we have a direct interest in LSP. We began negotiating with OCLC on the matter of host-to-host links with TRLN systems in 1980. This work began slowly as OCLC tried to sort out our proposal from several similar ones they had received from other libraries and networks, and to study the implications of this type of link on pricing, on the regional networks, and on OCLC's computing resources. We began serious work on the link around 1983, by which time OCLC was satisfied that a computer-to-computer link with local systems would not be a threat to its income and that it represented a legitimate future direction for OCLC.

I do not have time today to go into either the functional or technical specifications of the TRLN/OCLC link, although a good deal of work has gone into position papers and draft documents in both areas. Rather, I will give you a general idea of some of the capabilities that such a link would provide:

1. It will be possible to search OCLC through any terminal connected to the TRLN systems, thus greatly expanding access to the OCLC database. The fact that terminals dedicated to a local system can be used to access a linked database is one of the more important benefits of computer-to-computer linking for local libraries. At North Carolina, with only 14 OCLC terminals, our access to OCLC is quite limited for the large number of staff who need to use it. With linking, the many dedicated local terminals can become points of access to OCLC.

2. Catalogers will be able to search OCLC, transfer bibliographic and authority records to the local system, and edit the record and add local holdings information through the facilities of the TRLN system. Status information regarding records used for cataloging will be transferred back to OCLC through the link. Processing staff will not have to be trained in both the OCLC and the TRLN editing systems and processing workflows can be more fully integrated.

3. New records will be input into the TRLN system and batch transmitted at regular intervals to OCLC.

Such capabilities would allow the TRLN libraries to use the OCLC database primarily as a resource for bibliographic and authority records. We would not be dependent on the OCLC system for record manipulation. We view this arrangement as a much more integrated and efficient way of working with a bibliographic utility than through archive tape loads or the transfer of edited records through terminal port devices. It also represents a more logical division of function between the local system and the bibliographic utility that serves as its source of records.

From OCLC's point of view, this project will result in a generic link so that the same software developed by OCLC to support TRLN will support other local library systems. Software which would allow a local system to use such a generic link would be the responsibility of the local library or network. Our analysis of the requirements of this project so far indicate that the software development for the local system will not be trivial. I have not even begun to hint at the technical complexity of this project that has been

16^a

revealed by our planning, but at TRLN we are convinced that the potential payoffs will be, in the long run, worth the time and effort.

Our work with OCLC in planning for the link began at about the same time as the Linked Systems Project and it took both TRLN and OCLC some time to realize the full implications of LSP to our own work. For some time now we have realized that it would serve no useful purpose to develop a link with OCLC which is not LSP compatible. So, at the moment, our work with OCLC on the link is on hold until the LSP standard is ready for more general application.

At this point, however, we are not certain that TRLN will be the most appropriate organization to work with OCLC to develop the link with a local system. We may not have the resources to pioneer in this effort. On the other hand, groundwork has been laid in conceptualizing the functionality of a host-to-host link between a bibliographic utility and a local system, and we hope that this will be useful in OCLC's work to establish such links, no matter what form that effort may take.

Let me mention briefly some of our other networking involvements and how they may eventually be affected by LSP. As I mentioned earlier, the University of North Carolina and North Carolina State University are part of a 16 campus state university system. The library collections of the two research universities are considered system-wide resources. The other 14 campuses have acquired and are in the process of installing either OCLC LS2000 or VLS systems. These campuses now have terminal-to-host access to TRLN online catalogs through LINCNET, a network operated by the North

no

Carolina Educational Computing Service, which is a unit of the university system. Eventually LSP based links may be desirable between some or all of these LS2000 and VTLS systems and the TRLN systems in the research universities.

In this connection, however, I must express a certain degree of caution. Our experience with linking in TRLN, both in developing our own multi-institutional search functions and in our planning for the OCLC link, has demonstrated three points: first, the development of application software for linking can involve a rather substantial development activity; second, the ongoing maintenance of application software for the host-to-host links could be substantial when it involves two or more systems in a constant state of change and development; and finally, the operation of computer-to-computer links may require significant systems resource, depending on the complexity of the application. The last issue may be especially a problem for local systems because of the larger proportionate share of systems capacity that may be required to operate such links.

I make these points to emphasize that while LSP will be extremely useful to TRLN and local systems generally, it will not be a tool to be used indiscriminately. The selection of an appropriate application will depend on the programs to be supported and the type and volume of expected use. In North Carolina, for example, we are not yet convinced that host-to-host links between TRLN and the LS2000 systems on the other campuses of the university system will be appropriate, but this is a possibility that we will continue to investigate.

The final type of LSP application, which may in the long run turn out to be the most important to us of all, will be the links that OCLC establishes with other databases, particularly RLIN and the Library of Congress. Our present access to RLIN as a "search only" user is limited and awkward. OCLC's link to other networks will be important to us not only for the sharing of records, but for the support of internetwork programs of various types. For example, the University of North Carolina is now involved with a small group of ARL libraries from both RLIN and OCLC which is developing a proposal for cooperative retrospective conversion of records for Latin American collections.

There are few, if any, programs of this type that make sense as the exclusive domain of the libraries of either utility. Collection strengths and cataloging expertise are divided among the utilities, and each cooperative program or project must follow natural groupings of libraries, regardless of their network affiliations. LSP-type links among the utilities and other databases may solve the technical problems of internetwork access, with the result that the programmatic aspects of networking can become more fully integrated at the national level. This is an extremely important consideration to the University of North Carolina and the other TRLN libraries. We need such internetwork access not only to serve the needs of our users for access to information, but also because we hope that the contributions we can make towards preserving and recording the cultural record generally will have the broadest possible impact.

17/2

At TRLN, we have acquired, through our experience in developing certain computer-to-computer links and planning others, a perspective which I will describe as hopeful but realistic. In closing, let me briefly summarize that perspective.

On the optimistic side, we see computer-to-computer linking as a new option for providing fuller and less fragmented access to information of various types which is needed by our users. LSP-based links may be necessary to fully implement the concept of the "scholars' workstation" which interests us a great deal at Carolina. Linking will also serve as an option for the delivery of information to others outside our institutions, such as the students and faculties of the university system, who need more efficient access to our collections. Linking will provide greater flexibility in organizing and operating cooperative programs at all levels and permit more effective participation on the part of more libraries in the collective mission of all research libraries.

On the realistic side, computer-to-computer linking will simply be a new option. It is not a technology to be applied universally to all problems of information access and intergration. Terminal-to-host access, tape loading into local files, and CD ROM may be more appropriate approaches to any given application. We have a great deal yet to learn about the overhead costs of linking and about the types and volume of use that would justify that cost. Scores of technical and policy questions may surround any given project to establish host-to-host links. Clearly, LSP will not be a panacea, but it will be a very promising technology for well chosen applications in appropriate settings.

I mentioned the great number and variety of network relationships among research libraries. Host-to-host linking, using standard communications protocols, will simply serve to increase the variety of technical options to match the variety and complexity of interlibrary and network relationships.

I believe we know enough about computer-to-computer linking to say that it will be a very powerful option when used appropriately and that we are fortunate to have this new tool in our array of options. Speaking for TRLN, and perhaps for many others in local libraries that find themselves in similar situations and facing similar challenges, I would like to express my gratitude to those who foresaw this need and acted to meet it.

Thank you.