Reference Services and the Networks: Some Reflections on Integration

Reference uses of the "bibliographic utilities," as the networks were most commonly referred to in the early years, were recognized by reference librarians almost from the moment these services went online. Richard Blood (1977) published a pioneering article that explored the reference potential of OCLC.

In rapid succession, other works appeared in the literature describing the usefulness of WLN as a reference tool and praising RLIN's value as well. All of these writings enthusiastically endorsed the use of the utilities in reference (Farmer, 1982; Woods, 1979). In fact, this body of writing might best be characterized as being nearly evangelical in nature: "Spread the word that RLIN (or OCLC) works well at the reference desk; look at what we have done and what you can do; join the revolution" (Bennett, 1986, p. 476). Of course, the literature did offer some genuinely informative and helpful searching advice which enabled novice searchers to build confidence in using these tools. However, very little evaluation was offered or assistance provided in determining how these new tools could be or should be integrated into the reference process.

Today we seem to take for granted the two largest networks—OCLC and RLIN are adequately integrated into reference services. It seems to be assumed, since reference librarians are aware of the services of the networks and have ready access to their databases, that the integration process is complete. It may be useful to examine this assumption in a broader context.

Initially, evaluation of the networks by reference librarians for reference purposes was not viewed as being particularly necessary since the decision to implement a particular bibliographic utility was based on technical service considerations. For many the evaluation question did not
arise because by the time reference became involved, a system had already been adopted and was in place. Why spend time evaluating a tool that you knew was going to be yours anyway? Reference librarians adopted a "Let's make the best of it" attitude. And "the best of it" was surely going to be better than capabilities offered by existing manual systems. With the arrival of the technical service system of preference, the evaluation question appeared to be a moot point. In reality it was not and has yet to be resolved.

How do the networks fit into the reference setting? For that matter, what is it about any of the numerous new technologies that makes them good or useful resources for reference work? Integrating a new resource into services appears to be a simple and straightforward procedure—it is done constantly. The physical activity of integration is easily understood. However, the mental, almost subconscious evaluation performed when using a new tool is less easily described and yet extremely important. Evaluation, both formal and informal, is important because it ultimately determines service choices. The fact that reference was not involved at the selection stage with the utilities does not take away a responsibility for reference to carry out both formal and informal evaluations of how and where the utilities can be used effectively in service design and delivery.

In this discussion, a framework will be presented for the integration of the network databases into the reference setting. In addition, while particular events associated with the networks will be highlighted, the framework itself may easily be applied to assess how any form of new information technology is integrated into the reference setting. The general principles involved in assessing the integration process transcend the particulars of specific tools and include: identifying the value of a resource; assessing its unique and useful properties; establishing its level of availability; learning; diffusion of knowledge among reference staff; and policy decisions. The final step is a formal evaluation and a reassessment with a formalized policy decision informing the public.

In order to place this framework within a historical context, the discussion will begin by briefly tracing the evolution of the networks' focus on reference concerns. As reference use of the networks has increased, the focus of support services offered by networks has broadened. Just as the network perspective on support services to libraries has expanded, so too should reference librarians rethink their views of how to integrate the networks into the public service environment. The almost obligatory summary of why the networks are useful in reference will not be offered for this is readily available in the literature.

THE EVOLUTION OF FOCUS

In 1980, North America had four bibliographic utilities—all not-for-profit—and about two dozen regional library networks specializing in
providing access to information for libraries through the use of information technologies. In all of these, the initial focus was on shared cataloging followed later by interlibrary lending, serials check-in, and acquisitions. Identification of these systems as having reference value occurred almost simultaneously with their invention. However, attention was focused on stabilizing telecommunications equipment and software to support a growing interstate database and its users. The systems were busy responding to searching questions, technical questions about cataloging, and the mechanics of using online files for cataloging. Loading LC authority tapes was an issue as was index regeneration. The mechanisms for user governance and input were also being shaped at the time. RLIN and OCLC both were concerned about internal operations and administrative structure; a formidable task considering that there were no guidelines upon which to model their structures (Martin, 1987).

Establishing regular system availability was of prime concern. In the case of OCLC, it was not that corporate author searching only after 4 pm was seen as acceptable; this type of search required such a vast amount of CPU time that already tenuous system response time was endangered. Public service issues were not being neglected on purpose, they just were not seen as crucial to the operations of the systems. Also, when public service questions were being addressed at all, it was indirectly to assist users in refining searches to make efficient use of the systems. A casual look at issues of RLIN Operations Updates between 1981-83 confirms this focus of attention by its numerous examples of searches done in a variety of ways emphasizing those that were inefficient and thus costly. Systems development focused on efficiency and reliability first before a move could be made to provide more flexible searching options.

**THE PICTURE TODAY**

In 1988, the profiles of the networks can no longer be described in similar terms. OCLC and RLIN have begun to take on a role influenced to an extent by the profit motive, in order to support more sophisticated development needs reflected by their user communities. As stated by Sara How (personal communication, March 1987), Program Officer of Research Libraries Group (RLG), virtually all of the early feedback RLG received regarding command language, search options, interface issues, and response time came from public service staff—users for whom the systems were not initially intended. As the systems grew in size and diversity, so also did their reference value and usefulness. Now that the systems have been in place for nearly two decades with early programs well established, strong memberships, and financial stability, they are expanding the
scope of their operations beyond the basic cataloging and interlibrary lending functions for libraries to a role that is increasingly multifaceted.

Rowland Brown (1987), president of OCLC, in a report entitled *The Nationwide Network: A Vision and a Role*, summarizes OCLC's shift in perspective:

What I see as the major change in OCLC's fundamental structure is a role in networking. As others have noted, bibliographic control on a national scale was one of the earliest goals of OCLC and its membership. Academic administrators, public library trustees, and particularly library users, however, are interested in network operations that focus on access, economics and other issues in addition to bibliographic control. In recognition of this broadening of interests, OCLC will move beyond (not away from) bibliographic control. (p. 4)

The utilities have evolved from systems with very distinct functions into communication networks with more diverse functions. Within the past several years, as networks have moved beyond bibliographic control, they have increased the overlap between their primary functions (cataloging and interlibrary loan) and new directions to support more public service needs. Visible evidence of this broadening of interest can be seen in OCLC's cooperative work with BRS to provide subject access to a cross-disciplinary database of OCLC records available using BRS's searching software. Other OCLC products that address reference needs include subject-oriented subsets of the OCLC database on CD-ROM, gateway searching access to BRS databases from the OCLC terminal, and improved dial-access capability (Online Computer Library Center, 1986-1987).

Similarly, within the Research Libraries Group, initiatives have been taken to improve reference use of RLIN. A public service committee, specifically charged to provide the RLG president with advice on projects relevant to the public service functions in member institutions, has been in place for a number of years. Other reference services include recent development of a gateway link that enables users to access DIALOG through a direct RLIN connection. A reference librarians network has been established which uses RLG electronic mail to allow reference colleagues around the country to communicate with one another. Several special subject databases are also available through RLIN and include SCIPIO, ESTC, and the AVERY Index. Most recently an RLIN Clearinghouse of user produced publications has been created to facilitate the sharing of documentation and user aids (RLG, 1987).

With this increasing overlap, it is natural for reference librarians to play an important and growing role in shaping the future of systems which can no longer be seen simply as "utilities."

**CONVERGENCE OF REFERENCE CONCERNS AND NETWORKS' FOCUS**

From this brief summary, it is clear that considerable efforts are now being directed toward a reference and public service market. Since the
evolution of the utilities into networks did not happen in isolation, the concurrent path being paved by reference librarians to bring these systems into their service programs will now be traced. As mentioned earlier, the first step in any integration process is an identification of the value of a new resource. The literature referred to in the opening comments of this discussion served as the first step on the path. It pointed out areas of reference where the networks might be used, described why the tools might succeed where printed tools might fail, offered moral support for thinking about using the tools, and suggested concrete searching guidelines which in many cases exceeded those offered by the systems themselves. Most importantly, the early literature helped public service librarians articulate initial notions of what it was about the networks that had potential for reference and ultimately facilitated the learning and building of the knowledge process.

As these initial notions were borne out, the networks quickly became useful components in reference service. However, by which criteria were they being assessed? Generally, they were assessed as reference tools in much the same way as traditional reference tools are assessed. These techniques include outlining the possible questions a tool might be expected to answer, and then experimenting with the tool to see how effectively it responds to the questions. As James Rettig (1987) has written, a new reference tool is tested by "relating its strengths and weaknesses to the situations that arise day in, day out, in dealing with the information needs posed by the individual library's clientele" (p. 470).

This stage of evaluation is where much of the interest that is reflected in the literature ended. The assessment of the networks that was taking place at this time involved the same criteria used for traditional or printed reference sources. These criteria addressed some of the core reasons for using the networks in the reference setting. However, as noted earlier, the networks offered services which began to move beyond the scope of traditional reference tools. At that point reference librarians may not have recognized the need to update assessment criteria so that they would also encompass new and innovative uses of the utilities. Many were dazzled by the quick retrieval of information normally sought in disparate locations. However, efforts to test new roles for the utility databases or to evaluate how the networks contribute to traditional reference roles have not been forthcoming. Some individuals were exploring innovative uses of the utilities, but it took some time for these to be shared within institutions and on a broader scope in the literature (Froessler & Rhodes, 1983).

Overall, the depth of these initial assessments was limited because they only described the technical possibilities of a system. There was little attempt to determine how these technical possibilities would translate into reference effectiveness in the real world of the reference librarian. This
failure to examine the service effectiveness of network systems limited the value of the assessments; they stopped at description and thus did little to inform the policy-making aspects of integration.

**LEVEL OF AVAILABILITY**

The physical setting for any reference tool will certainly affect its patterns of use; only in unusual circumstances will a librarian return to a tool that is inconvenient to access. Thus a third and most influential step along this path of integration is examining the level of availability of the new tool for reference purposes.

Although the value of the utility was widely recognized, many reference librarians had, at best, inconvenient access to the system which likely limited its full integration into the reference setting. To explore the availability issue, a colleague and this author initiated a study of the availability of OCLC as a reference tool in sixty-three Association of Research Libraries (ARL) libraries. The survey was conducted by telephone interviews with the head of the reference department in each of these libraries.

Several levels of OCLC availability were identified. Of the sixty-three departments surveyed, over half relied on availability through technical service terminals for their OCLC access. A smaller percentage shared an OCLC terminal with the interlibrary loan department. Twelve departments were also equipped with their own dedicated terminal for searching OCLC. Only three departments reported that OCLC was not used for reference purposes.

Those twenty-four departments relying on technical service access were then queried about their knowledge and use of dial access as a means of interacting with OCLC. It was anticipated that those librarians with less convenient access to dedicated terminals—those going through technical service units—would be more likely to supplement this access with dial access. In 1981, OCLC was not publicizing the dial access option because of its probable negative impact on OCLC’s dedicated line users in technical processing. This lack of emphasis probably contributed to the low level of dial access use in the reference setting, an area where there was normally low use of dedicated lines. Most of the twenty-four units had the necessary hardware for online searching, but only four were using the dial access option for the utilities. The unsolicited but overwhelmingly positive comments about OCLC from many participants in the study reinforced the value of the system for reference. However, as one librarian noted, “the difficulty in batching OCLC searches so as not to inconvenience cataloging staff prevented it from reaching its true potential” (Baker & Kluegel, 1982, p. 382).
Today there is high use reported of RLIN as a reference tool. In March 1987, this author contacted thirty reference departments in RLIN institutions via electronic mail to determine their type of access to RLIN. Of the thirty contacted, fourteen responded; all but two had direct access to an RLIN terminal. A few libraries were also using the dial access option to supplement this use. While the degree of physical access to a system may influence how often it is used, it is only one aspect of the overall process of integration.

**INTELLECTUAL INTEGRATION**

Integration involves much more than description and physical access. Intellectual integration also occurs, which involves learning and diffusion of knowledge. This is an abstract concept that is difficult to define. One can think of intellectual integration as a qualitative index of the range and authority of a tool, logistical ease of use, combined with the individual's perception of its effectiveness and the inclination or incentive toward using it. Tools that are relatively easy to use, comprehensive, up-to-date, and authoritative, such as The Statistical Abstract of the U.S., achieve a very high level of intellectual integration. Tools that are less easy to use, less authoritative, which cover only a limited topic or number of sources, or with which reference librarians are less comfortable or confident, achieve a lower level of intellectual integration. Frequency of use, physical distance, logistics, and level of individual skill all interact to determine the intellectual integration of a particular tool (Baker & Kluegel, 1985). In the process of assessing the intellectual integration of bibliographic utilities, physical distance from the terminals, logistical difficulties in dial access, and a lack of confidence about the content of the files represent primary obstacles.

**PERSONAL ATTITUDES AND INTEGRATION**

Closely related to personal attitude is the initiative that is needed by the individual librarian first to learn a new system and then to keep current with changes. Perhaps the most important process in integrating any reference tool involves the intellectual assimilation of the content of the new tool by the individual reference librarian. In regard to the utilities, it seems that many reference librarians have delegated this responsibility to the online search coordinator. In many libraries the online search coordinator becomes, by default, the coordinator for all database and electronic services. Including the utilities under the technology umbrella is a logical
extension of the online coordinators' role. While no one would argue against the need for a coordinated approach to handling passwords, logon procedures, news updates, and other hardware and software issues, such technical concerns do not overshadow the importance of individual learning of the content of all reference sources regardless of their format. However, in the case of utilities, it seems that this abdicating of responsibility is due to more than simply the electronic nature of the tool. It is a combination of the hardware and software obstacles that are encountered when attempting to use the networks that separates the utilities from the mainstream of reference sources. While the utilities are online databases, they differ from those available from BRS or DIALOG in that their content is not of a “known” nature. For example, reference librarians know the intellectual content and merely learn new data access and data manipulation techniques in such databases as ERIC, SSCI, etc. The content of the utility databases is less clear since it involves such a vast and diverse body of information.

Relying on one's colleague to know a subset of the reference collection represents a fundamental shift in the reference librarian's role. James Rettig's (1987) analogy between the process of what goes on every day as reference librarians respond to information requests across a reference desk and the process a reference book reviewer engages in when reviewing a new reference work indicates that a long-standing assumption concerning reference responsibilities is the ability to use informed and critical thinking in matching an information need with an information source (p. 467). Reference librarians who do not have this sort of knowledge either run the risk of providing incomplete service or becoming prescriptive in their delivery of service (Sandore & Baker, 1986). Further, the reference department as a whole provides inconsistent service when arbitrary decisions are made about which reference department personnel are privy to certain categories of knowledge. The possibility of limited service is especially true with respect to the networks since they are more used in a ready-reference service style. By establishing two classes of librarians, the computer literate and those without computers, we are also communicating an administrative or policy message that online reference tools are not a permanent part of the reference collection. Reference librarians are expected to be able to evaluate and use virtually any printed reference tool. Why should online sources be different if we have a commitment to integration?

The public policy aspects of integration are also critical. For example, use of the database is sometimes perceived as a workload shift from the user to the librarian. This is most often the case in those instances where a public terminal is not available, and the search of the utility becomes a search of last resort for the user. Unresolved issues about the function of the databases also come into play. Are RLIN and OCLC searches conducted
for the general public or only for those associated with the university? In a public institution this may not be an issue, but in a private setting, where levels of clientele are more clearly delineated, it can be a divisive issue.

THE LINK BETWEEN EVALUATION AND INTEGRATION

In order to take the final step along the path of integration, reference librarians must become critical and evaluative in their thinking about the systems. Such critical thinking involves knowing the strengths and weaknesses of the databases. Critical evaluation allows one to clearly define the reasons for using a tool; the rationale behind using a tool should be clear to the librarian in order to establish its place in the reference process. This does not imply that the reference process is a linear one, but rather that critical thinking simply allows one to use information in planning a search strategy, and that the role of various tools within the process is understood.

The process of evaluation assumes, however, that one has defined what it is that is to be measured or assessed. Not all evaluation projects need be undertaken with the objective of gathering data to measure an activity. Some projects that measure the frequency of systems use are helpful because they describe what is actually operational in the field. However, it is not difficult to go one step beyond measurement to evaluation of the services and resources in place. Truly useful research combines measurement with qualitative evaluation in order to determine how less tangible factors such as attitudes, policies, and current practice affect the choice, use, and ultimate integration of resources. Of course a key component in evaluating reference effectiveness of the bibliographic networks is a shared agreement by reference librarians on what constitutes effectiveness.

MEASURING THE EFFECTIVENESS OF SYSTEMS

Research projects carry with them different motives and the results differ in value. For example, in the published literature there is considerable variation in the reported success rates of the network databases. It has been found that success rate depends on the nature of the material being searched. Elizabeth Groot (1981) examined the effectiveness of many bibliographic tools in verifying recently published monographs. She found that OCLC had a 97.5 percent success rate and that its closest competitor, Micrographic Catalog Retrieval System (MCRS), had a 95.5 percent success rate. In the matter of time spent trying to verify an item, OCLC required an average of 1.15 minutes per item. MCRS averaged 1.31 minutes
per verification. In comparison, the *National Union Catalog* averaged 2.94 minutes per search.

In using speed as a measure of a tool’s effectiveness, OCLC certainly seems to perform best. This study, as with most comparative studies done among the three bibliographic utilities, was done in a technical service setting based on technical service factors. However, evaluation of bibliographic networks for reference effectiveness cannot be extrapolated from studies done for technical service capabilities. The technical service studies drew upon bibliographic data which were complete, accurate, and recorded. A study which is based on a shelflist, for example, is clearly working from a population of items which is known to exist and for which the information available to the searcher is complete and accurate. A study which is based on books in hand is again working from known data—i.e., the item exists—it has a title which is known, persons associated with the item are identified, corporate bodies associated with the item are identified, and so on.

In all of these respects it is readily apparent that technical services staff work with a different world of information from that most commonly encountered by reference librarians. As we are all aware, bibliographic information supplied by a user is often incorrect or incomplete. A patron may be fairly certain that a work exists but is unsure of the publication format, the persons associated with the work, the title, language, and publication date. A reference librarian, when faced with the task of verifying these citations, relies very heavily on bibliographic reference tools.

The weaknesses of a particular tool are readily identified in the heavy demands a reference librarian places on that tool. The ability of a bibliographic utility to use effectively user-supplied bibliographic data as retrieval keys is the real test of a system’s reference effectiveness. That is to say, any system available can probably find an item when the LC card number is known and is therefore effective at using that piece of bibliographic information. A more reasonable test of the reference effectiveness of a system is if it can find “That book by Johnson and Jones on system design.” It is “that book” that reference librarians are trying to find. In the early 1980s, Kathleen Kluegel and this author investigated how successful WLN and OCLC were at finding “that book,” and the factors affecting the searching process. We had hoped to include RLIN searching as well, but system difficulties at the time made it impossible.

Briefly, the following is a description and discussion of the methodological considerations in this project. In evaluating bibliographic utility services as reference tools, two sets of criteria were seen to be important. The first set of criteria were those factors used to evaluate more conventional reference tools such as size, scope, reliability of information, and comprehensiveness of bibliographic coverage. Evaluating the quality of
the indexing, the clarity of the entries, and ease of use is likewise part of such an assessment process. An effective reference tool must provide multiple access points. Included in the definition of multiple access points is the concept of cross-references. Therefore, a subject catalog or index must provide either multiple subject headings or multiple cross-references to be an effective reference tool. The effective reference tool must be organized in comprehensible, systematic ways. A catalog in which entries are arranged by size of volume, for example, would not meet this test of effectiveness, although such a catalog might overcome its organizational oddity through multiple access points.

An effective reference tool links inquiry to answer with a minimum of intervening steps. A reference tool which requires two steps is a more effective tool than one which requires four. An effective reference tool displays the information in a readily identifiable and usable format. A tool in which the entries are over-abbreviated is less effective than one which has entries with fuller information. In this respect it might be said that the Handbuch der Organischen Chemie is less effective than Chemical Abstracts. An effective reference tool must have reliable information. A tool which provides an answer which is not believable is not an effective reference tool. An effective reference tool is timely and current. Obviously an abstracting service which is regularly three years out of date is not as effective as one which is more current. In some fields, or for some bodies of information, timeliness is less of a factor. An effective reference tool is comprehensive within its stated boundaries. In using a tool, a critical factor is knowing that it covers the desired topic completely. Such criteria applied to the networks provide one measure of their effectiveness.

Other criteria were used involving factors associated with online interactive systems such as size and composition of the database, the displayed record format, the ease of use, the response speed, the overall reference retrieval rate, the costs, the differential retrieval rate for different categories of materials, and record completeness. In comparing the effectiveness of reference tools, no one factor outweighs another. The size of one tool may be counterbalanced by the difficulty of use. Another tool, more modest in scope, may be extremely effective because of its organization, design, and access points. In this study, it was expected that similar patterns would emerge with one system’s design compensating for a smaller database size.

Method

In brief, over 500 requests that had been submitted to the University of Illinois Interlibrary Loan Department were searched on OCLC and WLN. This sampling universe was selected in preference to other sources of
bibliographical citations because it was generated by patrons and felt to more closely approximate the bibliographic queries handled at a reference desk. (At the time of this study, the Interlibrary Loan Department of the University of Illinois Library accepted uncited, unverified requests so most of the information represented patrons' beliefs rather than exact citations.) If the bibliographic information provided permitted searching in more than one way, then it was searched in as many ways as possible. However, an absolute number of search combinations for the study was established. For example, an item may have joint authors. This item would be searched in all systems under both authors and under both author-title combinations. The number of operator steps required and the amount of time per search were also counted to determine how simple or complex it was to retrieve each item from each database.

This methodology allowed a two-stage analysis of the reference capabilities of these systems to be conducted. The first stage showed overall effectiveness for each system—i.e., the success rate or retrieval rate based on the entire sample. The second stage analysis provided a measure of the differential effectiveness of these systems for different categories of bibliographic materials. This two-stage analysis was preferred given the likelihood that the first stage analysis might indicate similar overall reference effectiveness across both systems. The second stage analysis might then reveal systematic gaps in one system's retrieval pattern. These gaps, whether in database composition or in system retrieval features, can be significant in evaluating the reference capabilities of that system.

**Findings**

Briefly stated, the findings of the study indicated that utilities are of benefit in helping locate information for which a patron may or may not have a full and accurate citation. In 1982, when this research was completed, well over half of the 500 requests (63 percent) were located in OCLC. WLN, on the other hand, had a lower retrieval rate of 35 percent. Understandably, it was the size of each database which played an important role in retrieval success. A repetition of this study today would probably result in higher percentages for both systems. In addition, the findings suggest that the utilities may be efficient to use for verification purposes because most of the searches were short and required very few commands to retrieve the desired information. Of the items found on OCLC, 84 percent required three or fewer commands. For WLN, 89 percent of the successful searches were found with three or fewer commands. It is important to consider how efficient and successful these systems were for verification purposes given the very rudimentary command structure available especially in the OCLC database. Clearly the factors examined here point to the
fact that the networks should be a logical choice for verification needs. However, taken in a broader perspective, it is clear that other factors, less easy to quantify, can influence decisions to use the networks.

What is the value of this research today? Why did we scrutinize the online files using measures by which we normally do not evaluate printed files? Would we make choices about the utilities based on the findings presented here? This research confirmed some early notions by showing that the networks indeed perform well as verification tools. A further analysis of the data might reveal categories of materials for which each network displays a particular strength. Although the specific percentages of retrieval are no longer accurate representations of the content of the databases, the method developed is as useful now as it was five years ago. Printed sources have always been an accepted basis for everyday reference service—there is no difficulty reviewing their function. With networks, as with other online sources, there is still the tendency to focus on the tool as an electronic (as opposed to print) source, and, as a result, we have not fully integrated their function into reference services. The knowledge that OCLC or RLIN are available for use is meaningless unless it is examined as to what makes them attractive for our purposes. Also the primary way of judging value is to determine effectiveness. When measuring effectiveness, or assessing effectiveness less formally, it is done with the aim of identifying the points in the reference process where this tool is most appropriately used. No one tool is appropriate for all reference inquiries. The key to reference effectiveness is to select the best tool for the question at the right point in the reference process. Based on the inquirer's information, we must determine the best tool available at that time and then use it competently. Errors on the part of the inquirer about the nature of the item and incorrect assumptions on our part can lead very quickly down the wrong branch of the reference process. With the results of reference effectiveness in mind, the likelihood of correct tool selection and appropriate reference searching can be maximized.

The criteria for examining effectiveness are useful today as we evaluate other technological tools for selection. However, as new tools emerge, it is important that the criteria for judging them are continually assessed. The intended uses of tools vary; one set of criteria will not serve all purposes. Perhaps it was this increasing awareness of the diversity in formats of reference tools that caused Eugene Sheehy to omit the long-standing preface on "Reference Work and Reference Books" from the 10th edition of the Guide to Reference Books, which outlined how to evaluate a reference book (Mudge, 1982, pp. xiii-xv).

This is not to suggest that we wait until a tool has been thoroughly evaluated in the literature before considering it. After all, different institutions have different needs. Rather, it is suggested that we actively evaluate
the uses of a tool instead of passively awaiting the results of someone else's work. The first step in this process involves articulating how and where it might be used. Final judgment is withheld until its value and place among the other resources in reference collections is considered.

STRATEGIES FOR OVERCOMING BARRIERS

Which strategies might be used to make decisions about how effectively network databases are used in a reference setting? The evaluation study mentioned here is only one means of determining the relative value of a tool within a reference setting. A key element in evaluating resources is one's approach to evaluation—i.e., passive or active. Earlier in this discussion, it was noted that perhaps public service librarians began as, and have continued to be, rather complacent users of utilities. For a number of years reference and public service librarians considered themselves nonprimary users of networks. Therefore, they did not actively pursue improvements that might make networks more useful in this setting. Granted, the decision about which utility is adopted by a library is often made without consulting reference librarians. Should the lack of involvement at the selection level preclude an active role in evaluating a potentially rich information source for reference use? Consider the change in perspective regarding access to the network databases now compared to five years ago. One can now obtain dial access to search any of the network databases without significant technical processing investment. In this respect, reference librarians are not entirely limited as to choices; they may opt for search-only accounts to more than one network. As we now operate in a different relationship to the networks—i.e., not nearly so reliant on the choice of the technical services department, the importance of evaluation should increase. This author's proposal is that an active role be assumed in evaluation to assure effective integration of networks into mainstream reference service. It is now clear that a number of factors may influence one's decision to use network databases. The individual perspective of reference librarians plays an important role in how actively a tool is used. To facilitate informed perspectives and a further diffusion of knowledge, it is important to return to the obstacles mentioned earlier in using these files and focus on removing such obstacles from the work setting. In order to do this, a number of strategies can be employed.

First, examine physical and logistical access to the systems. If the department has a dedicated terminal, is it conveniently situated for quick access? If not, what is the possibility of obtaining dial access? Consider the use of script files available within one's telecommunication software to increase easy access to databases by all reference librarians. Is there adequate training and support channeled to enable librarians to become
proficient in using the systems? Or is the decision to search based on individual initiative?

Second, take advantage of current communication mechanisms. Both OCLC and RLIN publish regular updates and newsletters that encourage user input, questions, and suggestions about their systems. Make a point of routinely reading and actively incorporating these as vital information into departmental routines. Since there is a tendency to become lost in a sea of paper, one librarian reported that she provides a regular newsletter of newsletter updates summarizing particular points of concern for her colleagues (D. Cheney, personal communication, September 1987). Both OCLC and RLIN have established mechanisms for regional training workshops which offer invaluable periodic refreshers for long-time users.

Third, consider the overlapping relationship that is developing between user education coordinating functions and database coordinating functions within a library. User education efforts now focus increasingly on database applications as a teaching vehicle. The technical and conceptual information that these two positions can share will be useful not only for staff training but also for user awareness.

CLOSING REMARKS

This discussion has focused on the value of looking at integration as a multidimensional process. This process of integration has a time dimension, a personal dimension, and a professional development dimension. There are practical, space, equipment, and economic dimensions as well. Each reference service finds itself at a unique and ever changing point in this integration process.

After two decades of experience in using the networks, it is not surprising that they are taken for granted; it is easy to take for granted that which is familiar. It is also human nature to become enamored with other newer technologies such as microcomputers and CD-ROM products that enter the library and promise to make specific reference tasks more productive and interesting. The newer tools often provide information better tailored to reference needs than was the information provided by the utilities. It appears that the momentum in public services has moved on to other technological products and issues. Is it that we are complacent about the networks because we have already used these tools and there are so many new tools to learn? Are we complacent because we may possess a thumbnail sketch of their value and likely potential but have not truly integrated them? Or are we complacent for a combination of these reasons?

Every new development requires substantial attention and financial support and may necessitate making choices. Older tools, the utilities, are
no longer new and exciting, so they are taken for granted. However, this complacency toward the networks by reference librarians is occurring prematurely. Their value has not been examined systematically. There has been little analysis of the integration process or answers to questions about the effectiveness and efficiency of the tools for reference, and little resolution of the many public service policy issues associated with integrating technology. In this environment of rapidly proliferating information sources, public service librarians are currently being inundated with new products. Consequently, it is becoming increasingly difficult to match an information need with a potential product's name and function let alone arrive at a point which allows for formal evaluation or assessment for reference use. This is not to suggest that an in-depth evaluation of every potential product is required. It is suggested that reference librarians should assume a personal responsibility, both individually and institutionally, for integrating new tools into service patterns.

Concurrently, the networks are taking steps to change their image. Significant changes are being made in the search options, services, and files being offered by the systems. Networks themselves have recently begun to reach out to reference users and have been making strides to accommodate this use. The crucial question is, however, are reference librarians still there to be reached?

We are at a window of opportunity. As discussed here, there is the potential of a convergence of two paths. One is the evolution of the networks to more full service library systems. Major networks are at a point now where they have begun to address a broader scope of library use including the traditional functions of interlibrary lending (ILL) and cataloging as well as working to meet the information-seeking needs of reference librarians. Are reference librarians receptive to these overtures and are they also making steady progress on the path so that they can provide meaningful input into the use of the networks? If so, they will be able to serve as a positive change agent in the development of reference tools that better meet their individual needs as well as addressing broader professional interests. Reference librarians can contribute a different perspective of the networks, one that is based on their own use and evaluation as opposed to incidental or secondary use after cataloging or ILL.

Within any industry, windows change. It is a fundamental human belief that if we do not change, the future will not change. However, if we do not accept the role afforded us now, the future will simply move on without us, and we will forfeit an opportunity for taking a leadership role not only in the public service development of the networks but also in the general area of information system design.

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REFERENCES