The electronic library: New roles for librarians

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The Electronic Library: New Roles for Librarians

by Brendan A. Rapple

Scholarly communication has changed dramatically in recent years. Electronic mail between professors and students has introduced distinct pedagogical benefits; electronic bulletin boards and discussion lists are increasingly in use as a forum for scholarly discussion; electronic journals are facilitating the more timely exchange of theory and research among scholars; and videoconferencing promises to improve distance learning through its interactive capabilities. New media not only add value to interactive communications, but also provide powerful new means of accessing information to support teaching, learning, and research.

It is not surprising that the academic library has witnessed more technological change over the past decade than perhaps any other campus area. Innovations in hardware, software, and the very infrastructure of the institution have constituted only part of that change. An even greater revolution has occurred in the library culture; few on campus have seen their day-to-day work and general job responsibilities change more dramatically than librarians.

Regardless of the promise of the "virtual library," the commitment to providing optimal customer service still remains the primary goal of libraries. More specifically, librarians still seek to further students' ability to conduct research and to improve their critical thinking and evaluative competencies and writing skills; to support faculty research and teaching; and to continually evaluate, augment, and generally enhance the libraries' collections, which are increasingly diverse in both subject matter and format.

With the ever-growing electronic availability of information on both national and global networks, many libraries have turned their attention to providing access rather than building local collections. In seeking to enable patrons to locate material (increasingly full-text) where they require it most—in dormitories, in offices, in classrooms, or at home—librarians are stressing the need to provide resources to faculty and students at locations other than the library building. As Hauptman and Anderson point out, what users desire is "a 'seamless' system [that] will integrate all types of information, whether accessible on site or deliverable from some distant location …. Users just want to retrieve the information."[1] With the advance of the technological revolution, librarians will play a major role in meeting this expectation, continuing to be in the forefront of helping faculty, students, and others gain access to the vast multitudes of information—whether digitized, print, or multimedia— "at a time when intellectual capital is encroaching on physical capital as the driving force in the world economy and order."[2]

For at least the next decade or so, the library as a building with four walls will continue to exist. A complete technological transformation resulting in a true virtual library where no human librarians or information specialists come into contact with the public is not yet nigh for most institutions. Flesh-and-blood librarians will undoubtedly continue to fulfill a very useful role for years to come. In particular, they will continue to refine their client-centered function as intermediaries and facilitators.[3] Indeed, with the proliferation of new technologies on campus, there

> *"A complete technological transformation resulting in a true virtual library where no human librarians or information specialists come into contact with the public is not yet nigh for most institutions."*

[1] Robert Hauptman and Carol L. Anderson, "The People Speak: The Dispersion and Impact of Technology in American Libraries," *Information Technology and Libraries* 13 (December 1994): 255.

[2] William H. Graves, Carol G. Jenkins, and Anne S. Parker, "Development of an Electronic Information Policy Framework," *CAUSE/EFFECT,* Summer 1995, 17.

[3] Maxine Brodie and Neil McLean, "Process Reengineering in Academic Libraries: Shifting to Client-centered Resource Provision," *CAUSE/EFFECT,* Summer 1995, 46.

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[4] Oscar Handlin, "Libraries and Learning," *American Scholar* 56 (Spring 1987): 218.

[5] Donald N. Langenberg, "Information Technology and the University: Integration Strategies for the 21st Century," *Journal of the American Society for Information Science* 45 (June 1994): 324.

[6] CAUSE Current Issues Committee, "Current Issues in Higher Education Information Technology," *CAUSE/EFFECT,* Spring 1994, 6.

will probably be a greater need to have many intermediaries deal with the public. It will be more and more critical that libraries consistently keep the user at the forefront of their mission. In the technological library, there should no longer be any justification for the criticism that librarians too often treat users as "adversaries rather than as allies."[4]

While librarians will continue to serve some of their current roles, what are some of the new or changing roles they will play in an increasingly networked information environment?

Fostering partnerships

To effectively build this technological library—this electronic community—college and university librarians must collaborate more with personnel from other departments of the institution. In today's networked information environment, any library action must be part of a wider campus infrastructure committed to furthering new educational approaches. Higher education communities will inevitably follow the lead of such institutions as the University of Washington, where UWired, an initiative on teaching and technology, is creating an electronic community where teaching, learning, communication, and library and information provision all support each other technologically and form an integral educational whole. The collaboration of librarians, faculty, information technologists, computer and media technologists, and other campus professionals, as well as students, will expand as innovative networked pedagogical and information systems are developed. As Langenberg has observed, "… increasingly, new and unanticipated alliances will emerge all across campuses as reliance on information technology builds. These alliances, aided by open, campuswide dialogue on the role of information technology, will greatly advance the integration process."[5] Moreover, not only will this collaboration be institution-wide, it will in some cases also be inter-institutional.

Above all there must be strong communication and an effective partnership between the institution's library and its computing service. A major challenge here is that the two entities are quite distinct on many campuses, sometimes even characterized by an atmosphere of mutual jealousy. As a result there is often a duplication of effort and a waste of resources. This is poor management of resources and budget, and is also grossly inefficient. Both services need the other in order to attain the same ends for their institution. Librarians need technologists' systems, computing, network, and other technical expertise, while information technologists can learn much from the library's knowledge of users' needs. As the CAUSE Current Issues Committee concluded at their meeting at CAUSE93 in San Diego:

> What is obvious is that the roles of the two professions now overlap significantly as higher education migrates ever more steadily toward a networked information environment …. Opportunities for collaboration exist in many areas, including providing help desk services, information retrieval interface design, development of campuswide information systems, user training, Internet use, and faculty and student support.[6]

Recognizing insularity as a weakness

While it might be appropriate in certain cases for the library systems department to relinquish its relative autonomy and become a part of the central information technology division, it is unlikely, for both political and pragmatic reasons, that many campuses would adopt this course simply to foster more collaboration. It is probably preferable for more library personnel, systems librarians, and others to break out of their relative isolation and become more involved in campus technology planning groups, committees, and task forces. Moreover, this involvement should include not only library administrators but also those librarians who have extensive day-to-day dealings with the community that utilizes the institution's networked technology. Certainly bibliographers or those librarians who work closely with faculty and students and who possess a good knowledge of users' information needs can provide valuable and significant input into the development of networking and other technology policy.

On the other hand, just as it is desirable for librarians to work more closely with the technology staff, it can only be beneficial if information technology personnel become more involved in library technology deliberations. For example, information technology staff members serving on the committees of the library's reference and collection development departments might learn much about the library's and library patrons' needs. Their participation could contribute greatly to the formulation of technology policy both within the library organization and in the wider institution. In addition, in many institutions communication between the information technology division and the library might be fostered and general technological development advanced if the two areas were to publish jointly a campus newsletter on networking and other technological issues, including participation by interested faculty and graduate students.

Though it is easy to call for diminishing insularity, to actually effect it will require strong political acumen from both library and campus leaders. It has been aptly stated that librarians must "become more assertive and political in their actions,"[7] perhaps serving on more non-library committees such as budget committees, curriculum committees, long-range planning committees, student committees (as ex-officio members), and so on. The main goal of librarians should be to ensure that all members of the campus community know what information resources are available to them and how the library staff can faciliate access to them, within the physical walls of the library or elsewhere. Libraries must focus at least as much, if not more, on outreach as on in-house service. W. Patrick Leonard, vice chancellor for academic service at Purdue University North Central, is adamant on this point: "… if librarians and their staffs remain in libraries, they will soon be placed on the list of endangered species …. Librarians should get out of the library and into classrooms as instructors and into offices and conference rooms as participants in the curriculum-building process."[8]

Providing outreach to students

As students are accessing more and more bibliographic and full-text databases, as well as utilizing the vast resources of the Internet from outside the library, librarians will need to reach out to them to offer the help they need. For example, librarians might provide demonstrations and other instructional sessions in dorms, especially in the evening, when the students are more likely to be doing research for their assignments. It might also be possible for librarians to institute regular office hours in dorms or in other student housing. Moreover, librarians might provide office hours in academic departments, either on their own or in cooperation with professors with whom they are working on courses.

On many campuses, part-time students—the numbers of whom are increasing quite dramatically nationally—are often somewhat neglected in bibliographic and other library instruction sessions. Many of these students attend classes in the evenings and on weekends, times when fewer librarians are available. But it is these students in particular who stand to reap great benefit from the electronic information revolution. As many of them have little time to use the physical library, the ability to access material from home or office terminals will greatly facilitate their educational experience. It is imperative that librarians find more non-traditional ways to reach these students.

Supporting academic disciplines

It is becoming increasingly important that librarians and faculty become colleagues in the research process. Technology is certainly a force for creating a needed climate of collaboration and partnership as both groups strive to attain the institution's educational mission. In many cases librarians themselves will be expected to possess the credentials of a scholar. In the technological age, a terminal degree in the particular subject will increasingly be a necessary requirement for those librarians who will work closely with faculty members in the latters' research. It might be argued that this is unrealistic. However, it seems that more and more individuals with doctoral degrees are entering librarianship as the difficulty of obtaining faculty positions shows little sign of abating. Peter G. Christensen also calls for increased hiring of librarians with subject-area doctorates, declaring that this is a reasonable strategy "in a world in which librarian supply exceeds demand and academic job turn-over is minimal."[9]

Of course, the optimal functioning of the new networked library will require many skills and knowledge areas that presuppose many diverse types of library personnel. Woodsworth et al. provide a persuasive list: "subject specialists, technicians, and professionals from other information fields—e.g., programmer/analysts, network designers and managers, marketing specialists, and experts in artificial intelligence and the cognitive sciences."[10] Clearly the Master of Library Science programs of many library schools will undergo changes in the years to come. In fact, it is likely that many of the professional personnel working in the networked library will not possess an MLS degree.

While only a minority of librarians will need to be computer "experts," most should be able to instruct the more technologically naive faculty member, at his or her own office workstation, in some basic computer skills. Librarians, "experts in the complexities of production, organization, and access to stored information," must sit down with faculty in their offices, learn their research needs, and as information experts help them identify and access the best resources.[11] Presentations on library and information issues before entire academic departments would also be beneficial. The instruction can then be far more focused and meaningful for its subject specificity.

Teaching and facilitating information access

Librarians must not only collaborate with and assist faculty in their research, they also have a central role to play in the teaching process. As college and university libraries and their con-

"Librarians must not only collaborate with and assist faculty in their research, they also have a central role to play in the teaching process."

[7] Virginia M. Tiefel, "Library User Education: Examining Its Past, Projecting Its Future," *Library Trends* 44 (Fall 1995): 329.

[8] W. Patrick Leonard, "Libraries Without Walls—Field Service Librarianship," *The Journal of Academic Librarianship* 20 (March 1994): 29.

[9] Peter G. Christensen, "Using English Department Library Liaisons in a Term Paper Clinic: Reviving the Scholar/Librarian Model," *Research Strategies* 12 (Fall 1994): 206.

[10] Anne Woodsworth, Nancy Allen, Irene Hoadley et al., "The Model Research Library: Planning for the Future," *The Journal of Academic Librarianship* 15 (July 1989): 135.

[11] Joanne R. Euster, "The Academic Library: Its Place and Role in the Institution," in *Academic Libraries: Their Rationale and Role in American Higher Education,* ed. by Gerard B. McCabe and Ruth J. Person (Westport, Conn.: Greenwood, 1995), 8.

[12] Steven W. Gilbert, "Technology and The Changing Academy: Symptoms, Questions, and Suggestions," *Change* 27 (September/October 1995): 59.

[13] Jean Fisher and Susanne Bjorner, "Enabling Online End-User Searching: An Expanding Role for Librarians," *Special Libraries* 85 (Fall 1994): 286.

[14] Elaine Cousins, "Developing Effective User Training Programs at the University of Michigan," *CAUSE/EFFECT,* Summer 1994, 55.

[15] Evan Ira Farber, "Plus Ça Change…," *Library Trends* 44 (Fall 1995): 435.

[16] Ellen D. Wagner, "The Technology Aside: Building a Strategic Plan to Strengthen Academic Programs," *CAUSE/EFFECT,* Spring 1994, 20.

[17] Richard Lipkin, "The Library That Isn't There: Digital Libraries Transform Books, Photos, and Videos into Bits and Bytes," *Science News*, 3 June 1995, 344.

"… the campus community could benefit greatly from database help screens that have been designed with input from library professionals."

comitant systems of networked information resource instruction become an intrinsic part of a pervasive electronic community, the librarian's traditional role, particularly that relating to teaching, will be even more acute. Librarians, regarded more and more as the information specialists on campus, can help faculty develop new pedagogical services. Very often faculty are not completely up to date with the multitude of resources now available in the electronic library, especially the plethora of CD-ROM and online databases. They find it difficult to advise students on the latest searching tools. Moreover, many are ill acquainted with appropriate material on the Internet, whereas subject specialist librarians are in the forefront of this area. Steven Gilbert is correct: if faculty require students to use the Internet as part of a course, then "the advice and skills of an Internet-savvy librarian become all but essential."[12]

Librarians, accordingly, should work far more closely with faculty in advising how accessing electronic information resources can enhance their teaching. They might, for example, help establish teaching models that are not teacher- and classroom-centered and that are accessible at all times of the day and night, with video, sound, pictures, and text all playing an important part. In addition, librarians can provide professional help in creating home pages for the professor and his or her courses; in designing appropriate information-resources based curricula; in placing course lectures, graphics, other media, and bibliographies on the Web, where students can access them from anywhere twenty-four hours a day; and devising assignments that can be completed electronically.

As Fisher and Bjorner have suggested, "Since information access now takes place anywhere, users expect that instruction will be available anywhere as well."[13] Thus librarians must focus increasingly on using electronic means to teach information access. Patrons will need to be able to use, from any workstation both inside and outside the library, software that will bring them step by step through the library's CD-ROM and online databases as well as guide them in effectively utilizing the vast array of Internet resources. The great advantage of such tutorials is their portability—all a person needs is access to a computer to use them.[14]

Increasingly in the networked environment, specific and general instructions will be built into automated systems. Pointing to the inevitable proliferation of information "knowbots," Farber believes there is "no question that computer-based assistance will go far beyond beginning instruction, that so-called intelligent agents will

find and assemble information for users."[15] But this day of true artificial intelligence for library information systems has not yet arrived—and it may still be years away. Moreover, this future, rather than signifying the end of the profession of librarianship, may advance the librarian to a new paradigm, one where his or her assistance to the user, though different, will be both needed and invaluable.

Certainly librarians (or information specialists or whatever they may be called, for terminology will change) should play a major role in creating these knowbots and other forms of artificial intelligence and in making them as user-friendly as possible. However, even today we must strive to make library technology transparent to the user. Wagner, speaking of university technology in general, wisely declares: "If a particular technology system is so cumbersome that it requires massive time and effort to figure out how to use it, you can be assured that people will *not* be lining up for access codes."[16]

A particularly beneficial way for librarians to break out of their insularity is to become much more closely involved in the work of software developers and other computer specialists. Librarians can help in the design of technology-based information services and share their intimate knowledge of what users want and need. As just one example, the campus community could benefit greatly from database help screens that have been designed with input from library professionals. The instructions on such screens often leave much to be desired. One reason why library users still seek the face-to-face assistance of librarians is that they understand users' needs, and the difficulties they can encounter in learning new electronic tools. Skilled librarians now have years of experience in helping patrons utilize electronic media, an experience that equips them well to work closely with information technology personnel on the design of systems interfaces, help screens, computer instructional programs, and other software that campus constituents will use. As Richard Lipkin has observed, many librarians have the "experience computer scientists want to integrate into a digital library."[17]

Conclusion

In conclusion, librarians have a strong future in the networked environment. Their function, particularly that of teaching the campus community how to use the new information technology and resources most effectively, is clearly critical as long as the physical library survives. But even when the true virtual library arrives, the experience and expertise of librarians will be invalu-

able for helping in the design of requisite software and hardware and, above all, for mediating, electronically and at a distance, between the information and the user. Their traditional role of assisting and instructing users will continue as, seeking to forestall user alienation, they endeavor to put a human face on information technology. Technology and the networked environment, an undoubted good for information seekers, are far too important to be left to technologists alone.

Commentary by Joanne R. Euster

"I thrive on change," declares Calvin, in the comic strip. "YOU?!" responds Hobbes, incredulous. "You threw a fit this morning because your mom put less jelly on your toast than yesterday!" But Calvin, wagon still hurtling downhill, gets the last word: "I thrive on making *other people* change." Understandably, librarians often feel that someone or something else is constantly making them change. It is widely understood that change is difficult for individuals and organizations, and given the dramatic changes academic librarians have experienced in the last decade, it is unfortunate that there is so little breathing space from one change to the next. Most perplexing, it often appears that so-called changes are in reality only added responsibilities.

Predicting the future is deceptively easy; predicting it correctly is a random walk. Some of the predictions will be correct, but most will be partially to completely wrong. Nevertheless, we can fairly easily see the general direction of change, although not the precise direction or the exact speed with which it will occur. Doubtful? Witness the "just around the corner-ism" of the paperless society, predicted since the mid-'70s at least. Planners and managers have the task of organizing for change while doing their best to keep options open for divergence from today's educated guesses about the directions of information technology, colleges and universities in general, and what the correspondingly dynamic academic library should be. Libraries are—for good reasons—inherently conservative organizations, and academic institutions are even more so. On the one hand, most of us believe that radical change, even beyond what has already taken place, is essential. At the same time, libraries and librarians in their traditional as well as emerging roles make unique contributions and add value to their institutions, and to lose either the opportunity or the heritage could be disastrous.

To make continuous change palatable and enable more fundamental change of the kind that Brendan Rapple urges, academic libraries need to organize so that changes quickly become a part of normal everyday life—"the way we do things here." Organizations that change successfully meet four conditions.

- They state clearly the nature of the needed behavioral change, and how it is to be measured.
- They provide appropriate tools for implementing the changes.
- They allocate adequate financial resources.
- They redesign their structures so that the change is integrated into ongoing operations.

How do these elements fit together? The critical shift Rapple describes (and with which I agree) is shifting value from the things to skills. In the information world, this means from information objects, which are static, to human capital, which is dynamic and, problematically from the planner's point of view, self-motivating. We need to invest seriously in the human capital of our organizations in ways designed to build organizational capability for the desired behaviors. Humans expect to understand not only what is needed, but why, and most importantly, because of what underlying principle. Altered behavior will most successfully be based on shared understandings of values, and built into mission statements, with corresponding job descriptions and clearly articulated performance expectations.

Knowledge and skills can be built through training, and training has to be ongoing. It is not enough to be a "generic" librarian; almost everyone needs new skill sets that were not learned in graduate school. We automatically assume that the librarian can learn technical skills and information content. But so too can s/he be trained to be a good teacher, or to be an "outreach person." It goes without saying that work tools must be provided: technology-enhanced classrooms, offices, or at least desks in academic departments away from the library; the appropriately powerful individual workstation; and software, equipment, and assistance to develop new approaches to information, such as point-of-need assistance for users, online teaching and consultation, or information-skills teaching packages.

None of this comes cheaply; it can't be done on the margin. Up-front investments and resource commitment can pay off handsomely if they are used in a planned way to jump start and carry through an activity to full implementation. It is important to move on to the final stage, where the new activity becomes part of normal operations, not simply an add-on project. This is a difficult segue, from pilot or project status to routine business. Truly new financial resources of any magnitude for new activities are seldom

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available. Rather, reallocation is necessary, and that is never easy. Setting priorities that have specific outcomes is poorly done in academia generally, although some libraries and service departments are learning to do so. In any event, reallocation won't be possible without establishing priorities. It is likely that organizational restructuring will be necessary, via new or changed departments, or new job titles, or different specialties.

Individual librarians must continue to change and adapt, balancing their traditional values and incorporating new priorities, to be sure. But it is unfair and unrealistic to expect that they will do so unaided. Those responsible for planning and organizing must create organizational conditions that facilitate and purposefully move toward new goals. The key to successful organizational change is matching vision, expectations, and resources on behalf of the task to be done.

Commentary by Susan Perry

What do I think librarians should and could be doing now to assure that our skills are honed and ready for the electronic future?

First, I think we need to begin to consider ourselves a part of a larger curriculum-support group that includes computing professionals, media resources specialists, instructional technologists, language-resource-support specialists, and writing and tutoring specialists. With our colleagues, including the faculty, we need to take a close look at the work that needs to be done now to support teaching, learning, and research, rather than defending the library of the past. We need to learn as much as we can about these other specialists and define our role within that larger group.

Then we need to teach our new colleagues as much as we can about how we access and manage information and how we teach students and faculty how to find, evaluate, and use information to further the teaching/learning enterprise. Librarian and "computarian" work are growing together, as evidenced by the growing number of organizational mergers of libraries and computing centers on campuses. (I get at least a call a week from a president or vice president wanting advice on how to go about merging the two entities.) The information professional of the future will most likely be a hybrid of librarianship and computing, media specialization, and instructional technology, and we need to start thinking about how we as librarians add value to the teaching/learning/research sup-

port services and what we need to learn from our colleagues.

Librarians should volunteer to work on projects with their colleagues in academic computing and/or instructional technology. Work on the campuswide information system (CWIS) is a natural for partnership with "computarians." Librarians have a deep understanding of how people look for and use information, both print and electronic. They are and should be strong players in the development of truly useable online information. One way of assuring that faculty and students find quality information online is to develop online information spaces to support the curricular needs of the campus. Another is to work with faculty to develop information spaces for their classes. In an age when we might not see information seekers face to face, it is especially important that we lend our good thinking to the way online networked information is organized and presented.

Librarians have excellent experience in producing subject-specific bibliographies for students and faculty. The subject-specific home page with links to relevant quality information available on the World Wide Web is very similar work. Librarians should do it.

Librarians should learn as much as they can about workflow restructuring and work analysis. Much of what we do in the arena of processing, inventorying, and circulating material could stand a good hard look. Our processes are often redundant and time consuming. If we reduce the amount of time we spend getting "things" labeled and on and off the shelves, we can put that effort into broadening our understanding of where the information revolution is taking us and into learning the new skills we need to be effective in the new workplace.

We also need, as do our colleagues, to understand change and how to manage and embrace it rather than try to ignore it. Technology is driving us all in directions we never expected, and we are in a better position than our faculty colleagues to understand how we can harness it.

Librarians of the future will seldom stand alone in their support of faculty and students, so we need to bring our skills to the table and share them with our colleagues. I think those skills include:
✓ excellent listening and problem-clarifying skills
✓ deep knowledge of what constitutes quality information
✓ a general overview of all types of information
✓ vast experience in selecting information that is appropriate for our institutions
✓ ability to teach faculty and students complex

tasks in understandable and non-threatening steps
✓ understanding how to organize information so that it can be retrieved
✓ understanding of the curriculum and of various campus constituencies from a disciplinary and interdisciplinary perspective
✓ ability to build stable and positive working relationships with faculty
✓ an understanding of how to organize groups to get work done

All of these skills are needed right now, and will be needed far into the future.

Commentary by Jim Schmidt

Assaying the changing role of academic librarians calls attention to old themes in new contexts—librarians should be less isolated, librarians need graduate subject degrees, librarians need to teach users not only usage skills but also critical thinking—as well as organizational issues such as relationships between the library and other campus organizations, especially computing. Underlying these considerations are some strategic questions with profound resource implications.

Will the library as "place" disappear? Rapple finesses this point by arguing "not soon." A more likely answer is "no." Students and other library patrons will continue to need a place to search for and use information—despite their ability, aided by technology, to gather information without barriers of space and time.

Will the journal as we know it—in print—be replaced by an electronic format? Would that it became so, but this is unlikely until (a) the current *and* the restrospective contents are accessible electronically, (b) the infrastructure inadequacies are remedied, and (c) the price for the electronic format is both liberated from and more attractive than current prices for the print subscriptions. Electronic journals may also present issues related to reward structures for faculty authors—promotion, tenure, and raises—but if the electronic journal is today's printed and refereed scholarly core journal, reward structure issues should be minimal and soluble. We cannot underestimate, nor can we predict with any confidence, the revolutionary, as opposed to evolutionary, potential of journals in electronic format to fundamentally alter patterns of scholarly communication, that is, for some scholarly journal titles in print format to become marginalized by those present and prospective in electronic format.

Lastly, from a strategic and organizational perspective, what of the roles of libraries and computing organizations (to name just two)? One can predict that they will approach merger as the electronic revolution continues; for example, the library's systems will be managed by the computing organization as is now the case in some institutions. My view is the opposite, that in fact computing organizations are more likely to shrink to the size needed to operate the "utility," and that distributed processing and the dynamic of "local control" are more likely to move applications development and user support out of the central organization and into user organizations, for example, the library's systems group, the systems group of School X, College Y or Z, or the systems group of the business office or student services area. In this scenario, coordination across unit boundaries is the paramount managerial concern.

Back to librarians and their roles. Twenty to twenty-five years ago "bibliographic instruction" was the new, hot development in academic librarianship. Teaching students, and other library users, how to use and find resources and evaluate what they found was the calling of the new missionaries. How much different is that from the current vision of teaching how to find, then evaluate and use what is found? Different tools to be sure, but different in kind?

A final point. Technology makes leaping over barriers of space and time easier—any-time, any-place information access. I would argue that this disintermediation, besides being an inescapable consequence of the technology we exploit, is in fact a necessity and desirable in order to serve a constantly growing community of users with a constant or shrinking cohort of staff, be they librarians or other. Any-time, any-place access makes it possible to serve more with fewer.

A postscript and a dilemma. How can faculty be helped to adjust to a world in which "get it at the library" is replaced by the verb "to library"—where place becomes also process—and to recognize that just as information seeking is without spatial and temporal constraints (and arguably more congruent with student lifestyles), so too must teaching become.

C/E

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