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The Public Librarian of the Last Years of the Twentieth Century

This paper addresses two major questions. First, what is the schizophrenia that is afflicting the library profession in general and public librarians in particular? Second, what knowledge and skill competencies must public librarians possess to survive in the remainder of this century, particularly in utilizing information technology? In the latter part of this paper I will suggest six competency areas that should be emphasized both for public librarians and all professional librarians.

Most public librarians have difficulty thinking of libraries as just one type of information technology. The general public thinks of public libraries primarily as a collection of books or a room or building where a collection of books, periodicals, manuscripts, or even possibly videocassettes are kept. Clearly, to meet their needs, people go to many other information resources than just the public library. Today, the emergence of videotex, teletex, autodial tape services, electronic banking services, electronic publishing, laser printing on demand, and many other technologies are expanding the information user's options.

My home copy of the *World Book Dictionary* defines librarian as: "1. a person in charge of a library or part of a library, 2. a person trained for work in a library...."[1] Compare this definition of a librarian with the definition for a physician in the same book: "1. a doctor of medicine,... 2. any practitioner of the healing art...."[2] Using the same criteria to describe librarians as were used for physicians, I arrived at the following definition; a librarian is "1. a doctor of knowledge, 2. any practitioner of the art of satisfying information quests." This should demonstrate the schizophrenia that splits our profession—public librarianship especially. The popular notion of librarians as people in charge of libraries is being challenged

by the trends of the new technology and the philosophical basis for librarianship. Physicians are not defined by their work in hospitals. They are defined by the activity or service they provide to people—i.e., healing.

Librarians should not and must not be defined by a place—i.e., a library or even by a type of media such as the book. They should not be defined by print, audiovisual materials or computers either. Librarians should *use* various technologies but not be defined by any. Technology is the means—not the end. Librarians must be defined by their service or activity for people.

In the popular and extensively quoted *Megatrends*, John Naisbitt says: "If you don't know what business you are in, conceptualize what business it would be useful for you to think you are in."[3] If the telephone company can claim to be in the knowledge business, as their ads proclaim, then surely librarians can redefine their business likewise. This is not just a case of semantics but rather a case of understanding roles and consequently the competencies and skills that librarians must possess.

Lancaster in his new book, *Libraries and Librarians In An Age Of Electronics*,[4] speaks of the new librarian as one not tied to libraries bound by walls. The technology now makes possible the remote electronic delivery of information so that patrons and librarians will not be bound by buildings as they have been. However, the notion of the librarians as caretakers of buildings and collections has been ingrained for hundreds of years, and is a cornerstone of traditional concepts of librarianship. This author, for one, would hope that the profession recognizes this split and begin to bring the parts together in a logical evolution.

There have been three major inventions or developments that have given birth to, and subsequently revolutionized, librarianship. The first was the invention of writing which enabled the recording of information leading to the storage, organization and dissemination services of the first libraries. This lasted for a few thousand years. The second invention was that of the printing press which provided rapid, inexpensive replications of original works and made possible the "popular libraries," or public libraries as we know them. The printing press has been around for only approximately 500 years. The first invention (writing) made libraries possible, and the second (the printing press) made them available to most people.

The third invention is the marriage of computers and telecommunications into videotex and information systems designed for home/office self service by the average person. Since this is such a new development, some may argue that it is premature to put it into the same category as the printing press or the invention of writing in its effects upon libraries. However, videotex information services can be made available wherever people are, whenever they want them and provide a volume of information

the world's greatest libraries cannot meet. This new development, which is only now beginning, will radically change the future of the library profession.

The electronic library, as I prefer to call it, is characterized by patrons searching for the information they need directly on computer terminals remote from the database. While the electronic library is meant to be a more independent service, the complexity of searching large numbers of databases of complete text linked together in intricate networks will require remote searching assistance. The concept of librarians providing assistance to patrons, some of whom are in a distant location, while "walking" them through a search is a promising continuation of the best part of our profession.

The new developments with information technology are viewed as an aberration by traditional librarians who believe the library is primarily a collection of books and have accepted only sparingly other documents and packages such as phonodiscs, films, videocassettes, and even computer programs. The remote electronic delivery of information is not their notion of the role of the librarian. On the other hand, there are the library technocrats who believe libraries should be shaped and administered by the computer specialists, the programmers, the telecommunication experts, indeed, all of the technologists. They believe that the book should be replaced as outmoded.

Information technology is too important to be left to technologists. The professionals who are charged with the responsibility for meeting and satisfying the information requests of the public must manage the information technology themselves or be replaced by it. Librarians must learn to manage information technology and this requires first some attitudinal changes.

A recent study completed by the large management-consulting company, Booz, Allen and Hamilton, Inc., and reviewed in *Business Week* magazine, states "about a third of all 'knowledge workers'—a catchall term that includes professionals and executives—will be wary of the computer terminal rather than receptive to it."[5] About one out of ten managers have such fear and mistrust of the new technology that they are unlikely to deal with it first hand. While age will affect the managers' attitudes, tenure with a single organization for over twenty-five years is likely to result in a resister. Ironically, educational level does not appear to be a significant factor. The study indicates that the manager's attitude toward the typewriter and skill at using it appear to predict her/his success at approaching the terminal keyboard.

I have heard it said that there are three things in life which are unavoidable, not two. These are death, taxes and change. The library profession, I believe, has more than its share of resisters whose basic

attitudes are shaped by fear and who resist change. The first basic chore of the library profession with respect to librarians and information technology is to redirect the fear—the attitudes of the resisters—so that librarians will become more productive managers and users of information technology. Furthermore, the new candidates studying to be librarians must be screened so that they possess a positive constructive attitude toward technology. This means understanding that information technology is here to stay, that it must be effectively utilized by librarians and that it cannot do everything.

This paper proposes six new competency areas for public librarians given the new information technology. All six of these involve a greater sphere of knowledge while only two involve a direct skill. Naisbitt in *Megatrends* says: "In an information economy, then, value is increased not by labor, but by knowledge...."[6]

The six new competencies are not new, nor are they exhaustive. I have deliberately avoided some important skills that are now being addressed in many graduate library programs and will soon be in others, such as searching remote machine-readable databases, search strategy, networking, and information theory. Such knowledge and skills are vitally important to librarians today, and are generally recognized as such.

This paper also deliberately avoids computer programming, science, systems analysis, mathematics, and statistics, the study of which should be prerequisites for admission into graduate library programs. They are crucial to the fundamentally broad background of the professional librarian, but should not be placed on the graduate level.

The first appointment that I made to the data processing department in our public library was a librarian. None of the others had even a bachelor's degree much less a professional library degree. The appointment of a librarian without a technical background who had been a branch head was looked upon by some inside and outside of the library as a waste of money if not an actual hindrance. The broad liberal arts background, the public service orientation, and the ability to see the bigger picture have proven invaluable. Programmers and computer operators need a strong technical background, but systems designers, planners and decision makers need a strong professional library orientation. Our data processing manager, while not a professional librarian, worked his way up the library ranks, having been both a page and a bookmoblie driver. Fortunately he is not only technically competent, but also library experienced.

The philosophy that a data processing manager of a public library must be a technically experienced data processing professional has to be weighed against the likelihood of rapid turnover and the lack of a passionate love or understanding of libraries or librarians in the person who makes the decisions and sets the priorities in the technical area.

In February, I had the privilege of speaking to some of the faculty and students at Ohio University regarding the electronic library and the effects of the information technology on society in general. On the program with me was Charles Hildreth, a research scientist doing excellent work at OCLC. It was only after we were both introduced that I realized that we each had liberal arts backgrounds and yet were speaking on the new information technology as "experts."

The ability to understand and communicate with librarians, users and the technology experts is not likely to be found with data processing "bits and bytes" people. Give me a liberal arts trained librarian who is willing and eager to learn over an engineer or computer scientist who is willing to "understand" librarians. The future, ironically, belongs to the generalist, not the specialist.

The first new competency needed, therefore, by public librarians is managing information technology. The public library profession needs visionary people who understand, can utilize and manage information technology. They must understand and know both the limits of the technology as well as the potential. Unfortunately most librarians have had only one course in administration and management and one in library automation, yet they are not educated in managing new technology. This has left many public library administrators at the mercy of library automation vendors, well meaning but biased consultants, or technical staff who talk in "j buffer terminology." Many library administrators are forced to learn the equivalent of quantum physics without any formal training, without a textbook and in quick conversations with overworked staff. It is the school of experience where one wrong decision is magnified, in some cases, to millions of dollars, and costs careers. This lack of knowledge on how to manage the new technology is not theoretically sound or practically tolerable.

Well-educated and experienced library administrators are just as vulnerable as their less experienced colleagues because the new technology is managed differently in some areas from traditional library resources. For example, an excellent article in *Business Week* last year on managing technology said: "One thing is certain: Assumptions grounded in evolutionary, incremental thinking will be severely tested."[7]

Technologies can be either evolutionary or revolutionary. That is, some technologies can evolve from others while some are revolutionary and replace the old completely. The article goes on to say about alpha sites.

> The record is uncomfortably clear. Technology leaders tend to become technology losers. A few companies manage transitions to new technological fields effectively, but many others are unable even to begin the process, and most find it impossible to complete the move successfully.[8]

Even fewer public libraries will find it possible to manage the transition to the electronic library. While the lack of research and development, and the lack of investment capital and political inertia are very important obstacles, the most serious is the lack of skilled information technology managers. An information technology manager knows the technical limits of a new technology, the unrealized potential of technology, the proper time and method for migrating from a mature technology without withdrawing too quickly so as to lose user support. He knows the risks inherent in making transitions, and finally, the often greater risks of avoiding the transitions.

Library directors and managers tend to assume that change will occur at approximately the same rate of speed as in the past and that the rate can be controlled. This is an unfortunate assumption that has failed consistently. Consider that library directors do not typically change their information tehnology goals, directions and speed, but rather boards of trustees change their library directors.

Library patrons cannot be relied upon to decide what might be possible from the new technology. It must be initiated by the professionals. Five or ten years ago who would have guessed the need for something like Donkey Kong, Centipede or Pac Man? There is an article that appeared in a 1982 issue of the *Harvard Business Review* on computerized manufacturing, which says some things that are applicable to libraries:

> This leap in complexity [that is, computers] also prompts some companies to rely too heavily on vendors to solve problems....Turnkey projects, in which vendors assume all responsibility for making the system work are particularly dangerous. Building up in-house experience is critical.... Begin to worry the very moment your...people tell you with reference to some problem or other, "Don't worry, that's the vendor's responsibility."[9]

We cannot shirk the responsibility of understanding, planning and managing the technology or we will have reason to worry.

The first new major skill or competency area that all public professional librarians must possess then consists of the principles of managing information technology and would be a likely requisite in all graduate librarian programs. Planning is a way of life for professionals. The second new major competency area is keeping informed about the *state of the art of specific information technologies*. Every librarian must understand the current application of nonlibrary, as well as library, information technologies that are available in the marketplace.

Typically we learn in library school about automated circulation systems and perhaps bibliographic utilities. Unfortunately this presentation is often not only cursory but out of date. If we are fortunate, we have learned the advantages and disadvantages of some of these and a frame-

work for selecting the efficient and effective. Perhaps we learned the RFP (Request for Proposal) process. Unfortunately this knowledge has been seriously inadequate and does not reflect the real world.

It is as important that every librarian know the state-of-the-art of electronic banking and publishing as it is to know about current online public access catalogs. Most of the nonlibrary information technology is not reviewed in the standard library literature or in most graduate programs, and yet this technology is likely to bring some of the most innovative and efficient future applications to libraries. There is a large difference between typical library automation course work and the range and depth of understanding of specific technologies.

A third new area of professional librarian competency follows quickly after the second and might be called *the future, or developing, information technologies*. These would include technologies which are technically feasible today—although perhaps not yet economically feasible—as well as future research and development into information technology. For instance, this body of knowledge should include the areas of artificial intelligence, laser printing on demand, videotex, and new information storage possibilities such as optical laser discs. Such knowledge is necessary in planning for the future and deciding on the possible implications to the library profession's role.

Last summer, the conservative and widely read business magazine, *Fortune*, did an entire series on robots and artificial intelligence and their effect on the business environment. One of those articles, entitled "Computers On the Road to Self Improvement," made a statement regarding artificial intelligence that should make us think about our future:

> Ever since intelligent machines first began to be talked about, humans have assured themselves that no matter how proficient machines [computers] become at math..., chess, understanding plain Engilsh, or whatever, they would never be able to exhibit true creativity. Unfortunately for that premise, inventing electronic devices and heuristic ways of thinking, probably qualifies as creative by...any standard. So those who still seek to demonstrate the innate superiority of human beings will have to redraw the comfort lines elsewhere.[10]

Personally I do believe in the innate superiority of human beings but not simply for the reasons of intelligence and creativity which the author indicated. There is every reason to suspect that, with the developments of artificial intelligence, for example, the routine ready reference services of today will become mostly automated and self-service. There will be no need for a librarian to answer—for the fiftieth time today—the major vita of, for example, the Russian premier or the address of the local state senator. Librarians should play an important part in the design of such systems and in making them user friendly. How far such systems are in the

future and what their implications are should be the concern of professional librarian think tanks at our graduate library and information programs which will keep the profession prepared for the most likely eventualities. But all librarians who consider themselves professionals must keep abreast of the new developments and measure these against their role: practicing the art of satisfying information quests.

A fourth area of competency is the *analysis and diagnostics of information-seeking behavior.* Understanding users and how they search for information is much broader than reference interrogation, although that represents a good start. It includes understanding patrons' needs which were not completely met or even those who never posed the question in the first place because they could not overcome emotional or other obstacles. How will users react when they search on self-service computer terminals, possibly in the privacy of their own homes? What happens when they need help? This might be considered the professional equivalent of the physician's bedside manner. It is important that library patrons feel personally comfortable and satisfied with sufficient and accurate information provided to them in a timely fashion.

A series of articles appeared last year in *Impact: Information Technology* published by the Administrative Management Society on the people issues of office automation. The article says: "The essense of the people-oriented approach may be summarized in one statement: people don't change unless they want to. If users don't support a project, it is unlikely to succeed."[11] If the electronic library is going to succeed it must take into consideration three factors noted in this article. Patrons must really want a system in order to willingly change their working patterns. Second, the greatest payoffs will come from systems directed at the problems that are key to the patron's success. Third the article says that only patrons (and librarians) are in a position to "design" systems (in their own terms) that are usable, functional and flexible.

We must better understand our patrons and their needs. We must be more client-oriented. The behavorial sciences are not as precise as mathematics, but the people issues are more important. Our users may be the most forgotten factor in typical library automation projects, but they certainly are the most important.

The fifth new competency that all public librarians must possess is *understanding the societal issues that develop from the information technology.* Everyone understands that librarians do not live—and should not live—in vacuums. Yet the average library professionals are not keeping themselves informed about and actively involved in, such changing issues as copyright, privacy, database security, the private sector *v.* the public sector information roles, the right of all citizens to a basic level of information regardless of their ability to pay, equality of access that is not geo-

graphically, politically or socially determined, and the freedom to intellectually pursue the information you want or need on an electronic system. There are questions of a more technical nature that will affect us also such as the common carrier status and franchising of the cable companies; the presentation level protocol standards of videotex that AT&T developed; the lack of standard, or even compatible, operating systems and software for computers; the problem of insufficient resolution of home television sets for graphic and textual information display; and so on. There are dozens of issues and standards that are being debated in Congress or by technical standard committees or other public forums that will have enormous effects upon us and most of us are silent and (much worse) ignorant about them.

The August 1982 edition of *Advanced Technology Libraries* reported that the Videotex '82 conference in New York was very large and well attended by information providers and videotex people from all over the world. It said: "Librarians...were nowhere to be found."[12]

These issues that have been discussed will need to be the subject of a great deal of research and development as well as open debate and discussion in the profession. There are too few resources in the profession to accomplish the agenda that needs to be met unless we focus on many of these critical items. This means that libraries will have to fund research and development projects out of their current budgets. How can we fund research, development and policy questions within already strained and inadequate library budgets? It's simple. Either we invest in our own future or we don't have any. The political reality is there facing us, pushing public libraries in the other direction toward perhaps our eventual demise as the information center of first resort in the community. The question is, can we afford not to defend and even attack the basic premise that we are a not-so-relevant institution any longer? I have lumped research and development with the concept of understanding the impact of the information technology on the societal issues because society will either accept or reject libraries in the future based on their development and usefulness.

John Naisbitt says: "We are drowning in information but starved for knowledge."[13] This is the basis for the last of the new competencies—*building knowledge bases*. It means that librarians must be involved in the process of organizing the electronic information delivery and access, providing a quality filtering and synthesis process that reduces much of the redundant and irrelevant information to just what a practitioner or scholar needs. The critical problem of the next twenty years is not having enough information but having only the necessary and relevant information that specifically meets the user's needs. An interesting initial step in this direction was taken at the National Library of Medicine on the development of a Hepatitis Knowledge Base.[14] It is designed to take from the thousands of

articles published on that narrow field all the relevant information a practitioner needs and no more. It is an attempt to make the information overload problem manageable. While this process is in its infancy, its implication to all librarians is worth our attention.

The profession is schizophrenic due to the conflicting forces of the technocrats on the one hand and the traditional book librarians on the other. We must seek to maintain a balance, with our librarians being oriented toward the service of satisfying information quests regardless of the technology. We must also seek to add six new competencies to the body of skills and knowledge developed for our profession. These are (1) information technology management; (2) state-of-the-art specific information technologies; (3) the future, or developing information technologies; (4) analysis and diagnostics of information-seeking behavior; (5) understanding the societal issues that develop from the information technology; and (6) building knowledge bases. Every professional public librarian must be learning these new areas.

We have two views of the future of the public librarian that make a startling contrast to end this paper. They are two statements that give us a theoretical framework for our profession. The first view is by Carlton Rochell in last October's issue of *Library Journal*, who indicates that public libraries and librarians in the year 2000, "will lose a good many of their patrons to private sector information providers..." and they will "lose their business, and more important, will lose their financial and political support...."[15] The other is a quote about libraries by scientist Carl Sagan in *Cosmos*:

> The library connects us with the insights and knowledge, painfully extracted from Nature, of the greatest minds that ever were, with the best teachers, drawn from the entire planet and from all of our history, to instruct us without tiring, and to inspire us to make our own contribution to the collective knowledge of the human species....[16]

If public librarians adapt this noble philosophy to the changing technology and environment and constantly rethink and relearn new competencies, public libraries and librarians will flourish throughout the remainder of this century.

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