The approaching information age will encompass a different societal system in the 21st century due to the impact of the information revolution resulting from developments in computer and communications technology. In light of these changes, libraries need to evolve with the new technology by preparing now to become part of the electronic revolution. Librarians must become familiar with all aspects of the communication cycle and its relationship with the organizations and communities to be served; they need to educate themselves about future scenarios relating to employment, education, energy, leisure, communications, etc., and the impact of changes on the role of the library; and they need to know the changing human needs of the information society, and how these needs will effect changes in characteristics of the library system. In the future, emphasis on a customized approach to designing information delivery systems will be the norm. Finally, librarians may assume numerous roles, including: initiator of the transformation of the library system; promoter of the library system; personal guides, information consultants, and information synthesizers of the electronic services and sources; interpreters of information; facilitators or linkers of information networks; freelance specialists; and group practitioners. Libraries should act as centers where users can receive instruction in the uses of new communications technology, assistance in exploiting various databases, and important communication information services. (THC)
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THE LIBRARY PROFESSION IN THE 21st CENTURY:
TRANSFORMATION FOR SURVIVAL

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THE LIBRARY PROFESSION IN THE 21ST CENTURY:
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In contrast to present day industrial society, the approaching information age will encompass a different societal system due to society's impact of the information revolution resulting from computer and communications technology. The information-technology revolution will change the way we live, work, communicate, and our fundamental approach to information: thinking and learning. It will influence what is taught, how it is delivered, and the format in which it is presented. As a result, the library profession will be faced with three questions in approaching the 21st century: 1) How will librarians respond?, 2) How can librarians respond?, and 3) How should librarians respond?

As developments in information technology continue to expand, librarians will face changes that will need to be addressed, such as 1) ways in which information is perceived, 2) ways in which information is managed, and 3) ways in which information is used.

THE ROLE OF THE LIBRARIAN

In looking at the role of the librarian, F.W. Lancaster says, "The future of the librarian as a skilled information consultant seems to depend upon answers to a number of critical questions. First, will the demand for information increase? Second, will people need professional help in solving their information problems? And third, will the library profession be able to adapt to a rapidly changing environment and respond to the challenges it presents?"

A perusal of the professional literature suggests that the new age will produce a demand for information, from an information-oriented society, involved in keeping pace with expanding fields of knowledge, affected by..."
changes in information production that provide a greater range of services available from numerous information sources.

The rapid growth in electronic sources will necessitate the need for professional help. Librarians will be needed to implement and exploit new technologies and apply them to all aspects of human behavior. In essence, there will be a need to fulfill an advocacy role in the utilization of information technology. Information produced electronically in the future will become available in numerous sources, and the need for professionals to act as information transfer agents and interpret the extensive amount of data will exist. Professional skills will be required to help the user of information develop skills and increase his ability in selecting resources to meet his information requirements.

Lancaster suggests other tasks for information specialists to include:

- The planning and design of electronic publications,
- The design and operation of electronic networks,
- The organization of electronic information files (for institutions and, perhaps for individuals),
- Devising and implementing new types of information services, and
- Keeping clients aware of new information sources as they become available (2).

Other writers such as John and Robin Adams also suggest new roles for library professionals:

- To advise and guide the industry in the marketing of new technologies,
- To help influence the definition and examination of public policy issues,
- To convince vendors that library services will be an asset to them,
- To solicit financial and technical aid of corporations involved in the development of new technologies, and

- To become knowledgeable about the technical, market, economic, and regulatory aspects of new technologies (3).

The library profession is and will be faced with the need to adapt to a changing society. Its existence will depend upon the willingness to adapt to the challenges and opportunities of a changing profession. Librarians possess invaluable knowledge. Their skills must place them in a powerful position for dealing with the rapid growth of information and getting into the mainstream of handling effectively and efficiently the technology revolution.

Librarians have a role in exploiting the various forms of communication transfer and bringing it to the attention of researchers, thereby enhancing teaching techniques and applications. Applications relating to how information can be delivered, utilized, and manipulated in various forms should be investigated in depth. Users should be informed about text manipulation, scanning, graphics, electronic delivery of documents, downloading and uploading of files, etc. Users also need to be educated about existing information operations and services which may expedite research, assist with counseling techniques, expedite financial request, registration and billing procedures, handling administrative applications, improving teaching techniques, etc.

Communication should be made to users in respect to their present and future information needs. Extra work will be needed in communicating with the faculty member who does not come to the library or request any type of service. Creative and innovative techniques should be exposed to users in order to educate them about library services you, the librarian, can
deliver, as well as establishing goals and objectives for achieving success.

Librarians need to begin NOW to develop an awareness of the changes and trends in users' areas of expertise and bring them to the attention of new methods, procedures, and services available. The following scenario illustrates how to develop a consultant-partnership relationship with faculty members and the community:

Phase 1 - Set up an appointment outside the library with user and use this time to determine his/her present and future needs. Market yourself and the services you can perform and deliver. Do your homework beforehand so you will be knowledgeable of the primary fields of expertise of this user. End this session with a commitment to work together as partners and you as consultant.

Phase 2 - Return to the library to plan and design a customized information packet for this user. Set up another appointment to visit user and deliver the product. I caution against document delivery without communicating the contents of the packet. Continue to market yourself and win the user's confidence in you as his/her partner and consultant.

Phase 3 - Utilize follow-up techniques frequently to inform of new services available. Invite your partner to the library and educate him/her about your environment. Another customized information packet should be available. Follow-up techniques within and external to the library should be ongoing. At some point, shift to Phase 4.

Phase 4 - Ask your partner to make an assessment and evaluation of your services so you can ascertain your performance in this partnership. This is very important for keeping the partnership viable.

In his chapter on "The Disemboidiment of the Library," Mr. Lancaster summarizes the above scenario in this way:

.... Instead of thinking in terms of going to the library (a place), the public would do better to think in terms of going to the librarian (a person). The librarian should be seen as a technical specialist (in much the same way that physicians, attorneys, and stockbrokers are technical specialists) -- a consultant capable of making information available, referring to sources
of information, advising on reading and related needs, bringing relevant materials to the attention of potential users, and arranging for the delivery of materials to users (4).

Librarians, our time has come! Stop working within the interior walls of the library but reach outside these walls to a community waiting to be served. In order for the library profession to transform for continued survival, librarians must emerge with a different image. They must emerge as the consultant, the research partner, the transformer, the promoter—a new role that deals with the new technology, the needs of future society, and the mechanisms needed to keep the future librarian in existence.

LIBRARY ACCOUNTABILITY AND EFFECTIVENESS

When we think of library accountability and effectiveness in the 21st century, we must consider the changes that this information age will produce, for example, changes in 1) an expanded technological environment, 2) organizational structure, and 3) increased interaction between the library, all organizations, and society. These changes will affect the library's mission from providing products of service (the focus of industrial society) to emphasis on products of information, technology, and knowledge in an information society.

The library or information center's traditional organization structure and policy will be subjected to change as a by-product of the technological environment. Technology must be integrated with human resources in the strategic management of information which will affect the organization at every level. The organization must be structured to respond effectively to the "new breed" of library users in the information age.
Turoff states:

... Various customer services may involve higher degrees of cooperation between traditional library divisions. This would give rise to matrix organizational schemes rather than the typical hierarchical lines of authority and decision making. This pertains to inter- and intra-library organizations alike (5).

Libraries and librarians must be viewed as communication systems. Thus the communication systems' mission should focus on integrating the total system, both internally and externally, due to increased interaction between the library and all facets of society.

A review of the above statements indicate the librarian or information manager will need to analyze organizational structure to fit a systems environment, and consider the impact of technology and information on a society of information users who are also information producers. It may become necessary for management to shed some of the old "classical" ways of making decisions resulting from past performance. Librarians will need to be accountable for their performance of response to changing information needs.

Product quality is another facet that will also become broad-based due to the various information users in an interdisciplinary environment. Not only will institutional (faculty and student) accountability be important, but society accountability as well.

Personnel, both professional and support, must be effective and accountable for resources, functions, and services of the system. They must be adequately trained and professionally competent in information technology, information science, and the information work environments of the community.

Furthermore, in measuring and evaluating the performance of our goals
and objectives, we may need to expand applications relating to systems analysis, cost-effectiveness analysis, statistics, operations research, and experimental design. Empirical and factual information for decisions will become important techniques for more rationalized scientific decision making.

LIBRARY EDUCATION

Competencies for the Profession

As we look at library education, the concept of competencies in library and information science has received much attention recently. This is attributed to the rapid growth of technology in the information field that is causing technological and societal change. The competency of information professionals is gaining momentum in the United States and reflected in the professional literature. For example, the U.S. Department of Education commissioned King Research, Inc., to identify current and future competencies of information professionals as defined into three major components: 1) knowledge, 2) skills, and 3) attitudes. We need to consider the possibility that these competencies may eventually lead to library certification on the national level becoming the norm.

Library Education and Library Schools

There is also much concern today about keeping education and training up-to-date because of technological and societal change. Library education must prepare students not only to adapt to technological change but to adopt it as well. It must develop within students a positive attitude necessary for 1) examining the process of how information is originated, communicated, and used, and 2) developing services and products from this
information for human use. In essence, students must be prepared to tie suppliers, handlers, and users of information together. The "new breed" of professionals can effect a service to users if they deepen their understanding of the information-transfer process. Koenig refers to library education in this manner:

Library education must attempt to prepare students not only for the immediate job market but also for the largely unpredictable technological changes that will characterize their career environment (6).

The profession in the 21st century will be predicated by technological implications of 1985. These implications signal greater capabilities and applications in machine-readable databases, online access, indexing policies and practices, searching strategies, vocabulary control, satellite communication, computer conferencing, and information transfer, nationally and internationally, for the delivery of products and services. As these areas continue to grow and change, technology will continue to expand and changes in the way information is used will occur as well as the expansion of theories of information transfer. All of these implications suggest that educational preparation for students and professionals begin NOW, not in the year 2000.

New developments in information technology will require a broad range of skills to exploit them. Therefore, it is imperative that library schools, professional agencies, and continuing education programs focus on improving professional competencies for a changing society. Professional competencies of students and professionals must be improved to develop the knowledge, skills, and attitudes needed to effectively function in an information organization that serves information-oriented users.
Elizabeth Stone points out that,

..., Professionals can no longer hope to continue working with the same knowledge base and understanding with which they started their professional careers. New skills and methods are needed to deal with these changes and new patterns of collaboration with other groups both inside and outside the profession (7).

Harmon states that "the professional education of information personnel at the college and university levels needs to be reviewed and ultimately to be reorganized (8)." These statements present a challenge to the profession. What can we do?

Library schools must accept the challenge and move from the traditional library science curriculum to one that prepares students and practicing professionals for the evolutionary forces of the electronic society. The curriculum must change. It must keep parallel with growth in technology. Revision and reorganization of graduate programs are necessary for keeping pace with a changing society. Some library schools have already moved in this direction, for example, the University of Michigan has instituted a new two-year graduate program of study with an internship and 48 credit hours.

There will be new emphasis on skills in communication, quantitative analysis, forecasting and teaching, theory of organization psychology, personnel management, and the organization of higher education and research (9).

Librarians also have a challenge to insure survival now and long beyond the 21st century. To address the needs of society effectively, we must identify our needs for additional education and training, and convince the profession that its responsibility is to satisfy the needs and commitments we address to them. Because libraries and librarians will be
viewed as communication systems, we must have the professional competencies needed to exercise the system.

SUMMARY

When I began this presentation, I posed three questions that the library profession will be faced with in the 21st century. These are my answers:

First, How will librarians respond? Librarians will need to evolve with the new technology by preparing NOW to become a part of the electronic revolution. Computer literacy is gained gradually, and those who understand the basics of the technology and its potential will find more effective uses for it within and outside the walls of libraries and information centers in the 21st century. Moreover, librarians must become familiar with all aspects of the communication cycle and its relationship with the organizations and communities to be served. They need to educate themselves now about future scenarios relating to employment, education, family/marriage/divorce, energy, leisure, agriculture, communications, etc., and the impact of these on the role of the library and librarians as communication systems in the information society.

Second, How can librarians respond? Librarians will need to know the changing human needs of the information society, and how these needs will effect changes in the characteristics of the library system. Masuda points out that "human needs are moving from material consumption to goal achievement needs ... (10)." The new age will dictate that retrieval become more goal-oriented and interdisciplinary. The information age and human needs will also mean that librarians will have to plan and design with more specialization geared toward identifying user needs within the community. Emphasis
on a customized approach to designing information delivery systems will be the norm.

Third, How should librarians respond? We can assume numerous roles as suggested by Masuda and Lancaster: 1) the initiator of the transformation of the library system, 2) the promoter of the library system (11), 3) the personal guides, information consultants, and information synthesizers of the electronic services and sources, 4) the interpreters of information, 5) the facilitator or linker of information networks, 6) the freelance specialist from the home, 7) the group practice concept used by doctors and attorneys, (12), etc. Molholt says,

We must focus on access to information, more than acquisition of it, and, of equal importance, we must be in the forefront of designing information systems. Our experience in understanding the structure of information, as well as the requirements imposed by users, enables us to act as important links between the technicians and the users (13).

Furthermore, our libraries should act as centers where users can 1) receive instruction in the uses of the new communications technology, 2) receive assistance in exploiting the various databases and databanks, and 3) receive important communication information services.

All of these are important roles and activities for librarians and libraries. None of these, however, need be performed within the four walls of the library. The future should get us out of the library and work more closely with users who need help with their information problems.

Colleagues, in preparation for the 21st century, the need for professional competencies and specialization of services to meet the various changes, both social and technological, will be mandatory. The future of the profession should focus on creativity, experimentation, and innovation -- essential elements in the transformation for survival.
FOOTNOTES


2. Ibid. See pp. 750-51.


11. Ibid. See p. 143.


ADDITIONAL REFERENCES


