The networked environment and the challenge of change

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The way for librarians to manage the environment of the future is to hold fast to their traditional skills and professional abilities. The challenges in the future environment include technology adoption, copyright, scholarly communication, and the role of professional medical societies. Four major areas in which librarians have skills valuable in this environment are the organization of knowledge, quality assurance of information, custodianship, and user instruction.

Given the topic, it would be all too easy to launch into some expansive view of the library without walls, of collection-free libraries where we shift away from all the dreadful stereotypes like Sourdust, the exquisitely named librarian in Mervyn Peake’s Gormenghast, who is Master of the Rituals and Guardian of the Collections. To be Master of the Rituals and Guardian of the Collections is a perfectly respectable role and one that many libraries and librarians will fulfill with distinction even into the future. My theme today is that of the future and change; however, I suggest that the way to cope with and manage that change is by holding fast to our traditional skills and professional abilities. Some librarians have become besotted by a restless search for the latest bright baubles of information technology. They find the provision of a colored-screen Windows environment a substitute for thought and follow every new management fad. I suggest that the way to deal with the future is to hold fast to the core of our profession and to design a future that has solid roots in library and information science.

Whenever I see a herd moving unstoppably in one direction, I am constitutionally inclined to head in the opposite direction. I therefore want to look at some of the major problems that face us when we look at the future and suggest ways to address them. These seem to me quite fundamental problems that may yet, to mix my metaphors, derail that unstoppable herd. But let us begin with the congress’ dominant theme: the Internet and the information superhighway.

There are lots of visions of what this will be and do, but for us, perhaps the most important question is whether we are to be consumers or brokers and providers of information. It is claimed that the Internet is growing by 150,000 users a month and the quantity of data available is growing commensurately. The trouble with creating a technology like World Wide Web home pages, so simple that any idiot can do it, is that any idiot does. Networked information is growing at a faster rate than even the global birth rate, which may explain why there are so many half-wits around. Sir William Osler once wrote that one of the first duties of the physician is to educate the masses not to take medicine [1]. The same might be said for the use of technology. The rhetoric of development and empowerment leads to the actuality of chaos. Instead of adopting any technology, we need to work with the appropriate technology. So let me sketch out my concerns about the environment we face.

TECHNOLOGY

There is almost no evidence that it improves research output or quality. Tens of millions are being invested on information systems with no proof that these provide value for money. At my own institution, there is a major research project to examine some of the
issues surrounding technology take-up using a close study of a small group presented with an information-rich environment. A number of points have emerged. The first problem for researchers is finding the time to invest in setting up and learning the systems. Second, there is not a perceived current unmet need for information; most academics believe they already have good information-gathering systems. In part, this belief reflects a concern with the danger of information overload. Brindley has argued that because of this, there is a need for a much greater and more active future role for the librarian in filtering information [2]. Third, the apparently inevitable technical problems lead to great frustration for users. For example, during the congress, I tried to check my e-mail. During the fifty-five minutes, I was disconnected seventeen times and was able to process only eight out of forty-five messages. Using the telephone would have been much more efficient. There is a feeling of enthusiasm and power for those who succeed but of impotence for those who do not. These lead to complex cultural problems and a need for significantly supportive environments, even though there is a general reluctance to seek that support.

COPYRIGHT

This is the first conference I have attended in the last two or three years where copyright has not been a dominant theme. Most of the copyright of publicly funded research conducted since 1945 lies in private hands, and these publishers are working to extend the period of copyright protection. Nor are these always friendly and supportive hands. Publishers are responsible to their shareholders, not the academy of scientists. They look to charge for everything in order to maintain profit margins, most recently beginning to charge secondary services for abstracts and indexes. It is like a restaurant whose existing profits are slipping, so it starts to charge for reading the menu. By extending copyright, publishers implicitly arrogate to themselves the one function they have never been capable of performing: archiving. No publisher has guaranteed or, I suspect, will guarantee to make available electronic information for seventy years irrespective of changes in media and transmission mechanisms. There is a real danger that large swathes of modern disciplines will go out of print for periods of fifty years and, in the absence of legislated legal deposit, will disappear. The profession needs to reclaim the right to take responsibility for archiving and maintain the primacy of the academy in scholarly communication. Although I believe that print-on-paper publishers are in the process of writing the longest suicide note in history, we should recognize their ability to impair access to the scholarly record.

SCHOLARLY COMMUNICATION

At the same time, I sense that the paradigm of scholarly communication is changing. The collaboratory has arrived. Over the past five years, the number of multi-authored papers with authors from more than one country has risen from 10% to 25% of those listed in Science Citation Index [3]. Working methods are changing. There does seem to be firm evidence that in at least physics, mathematics, and computing, the methods of communicating new knowledge have shifted. Papers are written, circulated, discussed, and modified, and the discipline moves on. Only at a later stage are arrangements made for archival publication. Who is to do that archiving in an electronic world? The publishers who have been incapable of doing it for the last 500 years?

Did you watch that interesting video of the future produced by the Hewlett-Packard Company [4]? It fairly acutely recorded the research process in which scientists develop and test theorems. Apart from the quaint notion that there is enough bandwidth to transmit substantial amounts of video from Europe, did you notice the complete absence of information professionals in the segment on Emily and the mushrooms? In the new research paradigm depicted in the video, our role remains very uncertain.

PROFESSIONAL MEDICAL SOCIETIES

Marion Ball quoted Wyatt in suggesting that professional medical societies are increasingly taking responsibility for their members' competence. I am sure that is true. It also means that they are bound to consider defining, prescribing, and delivering the relevant information to their membership. If, as George Bernard Shaw suggested, all professions are conspiracies against the laity, we may expect professional medical societies to bypass us in a much more planned way.

FUTURE ROLES

Our role in the future has yet to be defined, but it seems to have some obvious features that relate to our traditional skills. The Internet, that network of networks, has been constructed in a climate of controlled chaos and as a public good. It is now threatened, and I use that word advisedly, by the arrival of all sorts of interested parties. These are not just the friendly traditional publishers in new garb, but cable companies, satellite companies, telephone companies, Rupert Murdoch, and other media magnates with squads of lawyers and accountants. We may have to revisit the concept of information rich and infor-
mation poor in a world where the notion of proprietary and generic applies to information as much as to medicine. Anyone in Europe knows that in network terms, you can forget the United States in the afternoon. We also know that multinational publishers and governments have provided restricted access to selected groups. It may be that where speed is of the essence we have to prescribe generic information or even just what is readily available, even when we know that other resources exist.

The view of current users was recently and eloquently described by David Bouchier, an avowed technophobe. He noted, "From time to time I venture into the howling wastes of the Internet. The technocrats promise us that this information overload will increase a thousand times, ten thousand times until every suburban home will have access to every piece of useless information in the universe" [5]. Bringing order to that chaos is a huge challenge and one that we are failing. Jill Foster has painted a wonderful image of computer scientists being like Mickey Mouse in Disney’s Fantasia, where as the Sorcerer’s Apprentice, he waves a wand and unleashes buckets of information onto the network [6]. She claims she knows “the Sorcerer,” the chief cataloger of her university. At this point, the analogy breaks down for me. What have catalogers, our Praetorian Guard, the holders of our sacred mysteries, done? They have added an extra field to the MARC record—the MARC record that even Michael Gorman has called “a glittering coffin” [7]. We need to set the agenda for change, and we can do it through the imaginative extension of our existing professional skills. There are four major areas that I wish to explore in developing this argument: the organization of knowledge, quality assurance of information, custodianship, and user instruction.

ORGANIZATION OF KNOWLEDGE

The Public Broadcasting System’s American Civil War Series, some sixteen hours of television, is now a standard instructional tool. How is the three-minute segment on the Gettysburg address going to be identified bibliographically? Lately, there has been renewed interest in trying to enhance catalog records so that they more fully record the contents of printed volumes. This becomes even more of a problem with networked and multimedia resources, where a whole new set of issues arises. How is the original and uncorrupted text defined? How are the latest and intermediate texts described? Is there a distinction between supported resources and unsupported resources? It is now virtually an article of professional faith that we shall move from holdings to access strategies. How is that to be managed? Do we begin to catalog the things we do not have rather than the things we do? Where Web pages are set up, are these all to be managed at the local level, or are national, subject-based initiatives needed? Can Web crawlers replace our judgment? Managing and making accessible the resources of the Internet is a huge professional challenge, and although the organization of knowledge is one of our traditional domains, thus far, I have seen very little sign that our profession is addressing the issues.

QUALITY ASSURANCE

Electronic publications are much more susceptible to corruption, because it is quite difficult to tell where they originated and whether they have been changed, either accidentally or by design. There are other problems, too. Conventional publication had quality indicators. The Oxford University Press imprint implies something about quality. The home page network address “oxford.ac.uk” implies a range of possibilities from a university press to a student bedroom. To a degree, librarian acquisition policies have provided a form of quality assurance in that we buy only what is presumed to be relevant or appropriate. When everything is available without these indicators, selection by the user becomes more of a problem.

ARCHIVING AND PRESERVATION

I would argue that the responsibility to preserve the intellectual record is ours. University presses may be a means of ensuring that scholarship remains available. Should our profession consider setting up a copyright-clearing mechanism which provides a limited license to commercial publishers? We need to look at how we preserve the intellectual record of the academy.

USER INSTRUCTION

Although I and others have talked about empowering end users, it is clear that users require help to take the fullest advantage of that power. Most of our student users are with us for a few years, and trends in education suggest a greater emphasis on distance learning where support and instruction become critical. The same is true of telemedicine. There is a lot of experience that shows that the costs of acquisition are trivial compared with those of ownership. It is the support, the instruction, and the documentation that make a difference. But we need to argue that loud and long. We do not really want to see videos like “Imagine” that ignore those elements. One of those laws of life that usually come with Murphy’s name attached is, “Intuitive systems aren’t.”
VIRTUAL LIBRARY

I am reluctant to use phrases such as the “library without walls” if only because without walls, the roof falls in. So let me settle for the phrase “the virtual library.” The future is going to be difficult, demanding, and different, but the surest and best way of attacking and enjoying it is through the fruits of our professional discipline and training and through their extension, development, and renewal. The poet Chaucer said “Know your own country and hold the highway” [8]. If we know our own country—surely, one of the tenets of our profession—we too can hold the information highway. We will not do this by hitching our wagon to every glittering and shallow fad that comes along but by being securely knowledgeable about and applying our traditional professional skills. Health information may be more important than remote surgery for improving the lot of most people in the global village.

In conclusion, I want to suggest, as has Paul Evan Peters, that what is needed for the Internet is not a map but a philosophy. We need a Ranganathan of medical informatics. To paraphrase Marion Ball, we do not just need to train tomorrow’s leaders; we need to provide leadership. We have heard dreams and visions over the last day or two, but although the young have visions and the old have dreams, the world is run by the middle-aged. In the pursuit of glittering prizes, we run the dual risk of both neglecting our traditional skills and failing to identify the very serious barriers to generalizable technology take-up and the threats to our rights of access to information. These are our issues that we can tackle with our skills. We can set and resolve our own agenda, and we must.

REFERENCES

4. Ibid.

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