Cyber or Siberia? Library skills in transition

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This article will present some personal observations of the impact of information technology on the traditional skills of librarians, drawn from experiences in the higher education sector and tainted by an obsessive interest in cataloguing. I believe that the development of information processing and communication technologies has had, is having, and will continue to have, such a profound influence on library and information services that all other factors such as finance and costs, politics, social expectations and management styles pale into insignificance.

Some of the things that computers do, of direct relevance to library services, include the rapid and accurate storage and processing of structured data, the ability to operate for 24 hours a day, seven days a week, and world-wide connectivity and communication. It is difficult to avoid noticing the huge changes in information services, of all kinds, that have resulted. It is also important to understand what computers cannot do, for the absence of an impact can be more difficult to recognise. They are not very good at general physical manipulation; they can't hold a conversation, and they just don't understand! I do not believe a fourth-generation Aibo (the Japanese robot dog) will be any more capable of shelving a book properly than a Fiat car assembler, neither do I get worried about claims that cataloguing will become unnecessary or the Web will evolve self-consciousness; Sky-Net maybe, T-2 not.

We can expect, therefore, that the application of information technology to improve the efficiency and effectiveness of library services removes the need for many specialist clerical skills; computers can file, sort, format and analyse catalogue and circulation records far better than any person. Those records must be electronic, of course, and I wonder if there might not already be a skills shortage in the arcane arts of Browne issue and dictionary filing rules for those libraries, surely few in number and small in size, without automated circulation and cataloguing. But this is a temporary state of affairs, and this expertise will soon go the same way as that of the wheeltappers. It will be some time, however, before all the stand-alone resources of the library are replaced by electronic versions; these physical resources require specialist labeling, maintenance and shelving. Nonetheless, the clerical aspects of library services have been significantly de-skilled by information technology, and it is not difficult to imagine an effective library service without paraprofessional staff. Many American education libraries use volunteer lay persons for this kind of work.

The impact on skills in traditional professional work has been less obvious. Automation certainly leads to efficiencies in the work of support services such as cataloguing, acquisitions and document supply, and has potential for front-desk user education and enquiry services. Professional staff have to adapt their traditional skills to an automated environment, acquiring new skills in using specialised computer software and changing workflows and procedures to get best value. The evolution of professional skills to incorporate new tools and techniques is part and parcel of professionalism, and has been going on since the early days of modern librarianship. The IT revolution has created an unprecedented increase in the pace of change; we need the meta-skill of coping with the requirement to learn three new interfaces and forget two old ones several times before breakfast.

We have also seen the emergence of entirely new professional tasks, such as systems management, website design and maintenance, the creation of hyper documents for user education, and data protection and security. The first two examples have generally been seen as distinct enough to be instantiated as new roles within the profession. The others are more often placed within existing sets of responsibilities, which can lead to conflicting priorities and a certain degree of incoherency.

The present situation can be summed up as little impact on 'auxiliary' or 'helper' skills, the virtual elimination of traditional paraprofessional skills, an evolution of traditional professional skills, an uneasy mix of new and loosely-related older skills within the same job description, and the emergence of entirely new job titles. This is not easy to deal with; different sectors, different libraries, and different people with the same job descriptions within those libraries are at differing stages in the mix. The stress levels of most library staff must be considerable.

But we are very much in a period of transition, and may already be at the midway stage as the networked infrastructure extends to all physical libraries. The exposure of public, school and further education libraries to the full impact of information technology will allow us to more clearly discern future trends, and perhaps

better influence the direction of change where we can.

The current wave of change is caused more by networking than automation per se. The ability to link libraries, users and resources together over great distances, and the need to cooperate and share to improve services and reduce costs, will encourage better and greater application of standards. The use, maintenance and development of standards is an important professional skill in many library tasks such as cataloguing, acquisitions and user education. Improvements in the interoperability and quality of networked services and resources can only be achieved by reducing local variations in the interpretation and application of general standards, and the replacement of local codes, formats and structures by those designed for a global environment. We will all have to think globally, while acting locally. This ought to lead to a reduction in the need for specialist knowledge about local conditions. For example, many cataloguers currently need to know local classification schemes, or variations from standard schemes. In the future, these skills should not be required; the enquirer benefits enormously if they have only to know the standard scheme when searching multiple catalogues. Essentially, the de-skilling arising from copy cataloguing will continue; indeed, there are no particular technical reasons why there needs to be more than one copy of a catalogue record in a distributed 'union' catalogue, so the whole task of copy cataloguing might disappear. Not all cataloguers will go, though, as some are required to create the original record, develop the standard, and explain it to others. It isn't difficult to see the production of user guides by reference librarians going the same way, along with other services that can be managed globally and used locally.

Automation has had similar impact on most other professions and public services, albeit at different times and with varying timescales. For example, financial services have seen huge amounts of de-skilling and the disappearance of many jobs, with new skills and roles emerging. However, information technology has a particular impact on information-rich services, and you can't get richer than a library; our business is information, and libraries are the original, non-automated information technology. In other words, IT doesn't just support the services and functions of a library, it represents a direct alternative, the virtual library.

Professionally, we have to shift from providing a local information service to providing training and education in using the coming all-pervasive information 'economy'. We have to teach our users how to fish, and stop providing them with fish on demand. We have to move the application of our skills from the local physical library to the global virtual library. There is no 'know-bot ex machina' about to materialise and sort out the mess of the Web. We have to drop our holier-than-thou attitudes towards archivists, indexers, curators, programmers and the users, and start talking with them; and they have to do the same with us.

This implies the evolution of a different mix of skills required to run the library service of the future. Specialist families of skills are emerging, replacing library-specific expertise. Cataloguers are becoming metadata engineers, while circulation-desk staff have to know how to fix the self-issue terminal as well as collect fines. The skills base is broadening, and so is the range of service providers. Technical skills allied to knowledge of user behaviours and the vagaries of real-world information are in high demand by Internet content providers ranging from electronic banks to the BBC. The existing library infrastructure has been slow to respond to the competition. There is still only tentative convergence, within most organisations, of information services such as library, computing, and community relations, yet even such limited convergence misses the point. In the outside world, the pressure is on for individual organisations to cooperate much more closely with each other, to disaggregate and reaggregate services over a wide area to provide more flexible response to customer needs while improving value for money. Virtual organisations have no such legacy to deal with, and the virtual library of the future doesn't necessarily have to evolve from the physical library of today.

The virtual library ("tell me about ..."), along with the virtual newspaper ("tell me if ...") and my-tv ("entertain me") services of the next few years will require fewer professional staff than their current physical equivalents, employing a broader range of skills which could be readily transferred from one domain to the other. They will be highly paid. During that time, the rest of us will be engaged with the hybrid library, trying to the make the transition to cyberspace. If we lack meta-skill, we will not succeed. Libraries are the last place to find professional peace and quiet.

I do not mean to imply that the physical library will cease to exist in the foreseeable future, but what goes on inside will change in character, if not nature. Libraries have an important role in cultural and community development; they are social spaces with a focus on learning and informed entertainment. They may become something like a large-scale internet café with unusually well-informed and helpful staff who can suggest a good e-book for reading on holiday. There is always going to be a requirement for skills in

understanding the needs of the customer, and how to best satisfy them in a supportive, neutral and objective manner with the resources available. Librarians in all sectors and at all levels traditionally have these skills, but in the future they are likely to be employed in two distinct modes: invisible but global, in the background, making the Web a more useful service; visible and local, in the noisy chatter of the public knowledge house, the cyber-pub landlord.