

## **THE IMPACT OF NEW TECHNOLOGY ON LIBRARIES: AN INTRODUCTORY NOTE\***

**By Hans-Christoph Hobohm**

In his inaugural ALIA (Australian Library and Information Association) Library Week Oration<sup>1</sup> delivered 1<sup>st</sup> May 1996 and entitled „Reading the Future“, Anthony Mason, director of the Australian National Library, described some of the present challenges the libraries are facing. Because of the technical developments they have to provide computer-based facilities for all sorts of new „electronic publications“ and „New Media“ in addition to maintaining infrastructure for print material. Since the computer entered the scene, the new equipment and the special skills required for its use are characterised by a decreasingly short life-time and the constant need for additional staff training and re-allocation of limited resources. Mason then outlines some of the major uncertainties with which librarians now have to deal with today. There is at least the technical uncertainty of the long-term reliability of the new media: nobody really can tell us how long the digitised material will last. And there is the all overshadowing juridical uncertainty of the new situation: which material may be distributed and which electronic text is under special copyright? Mason goes into detail on this specific question because of the current Australian discussion. In fact, the crucial aspects of the current change of the information world are the juridical and ethic questions referring to copyright, information protection and the re-organisation of the information distribution channels.

Another major uncertainty for the Library world is how the users (authors/readers) and the publishing industry will behave in the future. Will the library survive or will other players take its role and functions in the new game<sup>2</sup>? By observing the newest developments in the information and communication industry you may

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<sup>1</sup> <http://www.nla.gov.au/nla/staffpaper/mason.html>

<sup>2</sup> See my statement „Entering the New Market Place: on the Role of Traditional Social Science Information Providers within the Internet Community“. In: *IFLA Journal*, 21 (1995), S. 26-30

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\* Paper delivered at the Open Session of the section Social Science Libraries at the 62nd IFLA General Conference in Beijing, 27 August 1996.

discover new forms of activities which are able to replace the library like electronic document delivery services, commercial „Virtual Libraries“ or scientific-community based specialised information servers.

On the other hand we have already seen the birth of these „fluid, dynamic documents“ (Mason) in form of HTML-objects which are constantly self-renewing with the living resources of the Internet and which are deeply questioning the purpose of the traditional library as confined archives of finite elements of knowledge formerly called books.

Even worse: you can hear people talking about „substituting the *librarian*“ by technical devices such as search engines, information agents or knowbots. Although Edward Valauskas appeases us by declaring that „Librarians have been information gatekeepers as long as records have been gathered and preserved“ he shows how different the job of the future librarian will be after the rise of the artificial life in the overall connected information world<sup>3</sup>. The roles which remain for the „human librarian“ are according to him and his colleagues:

- designing software agents for clients
- designing specialised software agents for the library setting
- cataloguing, distributing and customising software agents
- encouraging the evolution of agents
- contributing to information bases
- working co-operatively with software agents

You all remember: printing as a new technology changed mediaeval libraries from those hegemonic institutions which laid books on chains to public libraries which have the mission to „spread the books“. Will the recent inventions in information processing and especially in telecommunication technology continue in this line of development in making the institution disappear in order to proliferate its content?

You may think that only the latest developments - which can be described by „Internet“ - are questioning the future of the library. However, it is exactly ten years ago that almost the same topic was raised at the IFLA conference in Tokyo. (At the time it was the section on Information Technology which organised the Open Session.) And it was the provocative speech by Pat Molholt („A view from the chip“) which generated a vivid discussion and met with wide approval. We should try to compare her arguments from ten years ago with the current situation

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<sup>3</sup> See Nardi/O'Day/Valauskas forthcoming.

and ask us if the library community is now prepared to cope with the developments predicted at the time.

She also stated that „the invention of the printing press was a mixed blessing for libraries. (...) So long as books were expensive artefacts libraries were crucial to the preservation and transmission of knowledge“<sup>4</sup> but with electronic abstracting and indexing services the reader no longer „has to come to the book“. Remember that at that time nearly nobody spoke of „Internet“! Like Anthony Mason she rose the question of *access versus ownership* and described it as a possible solution to the technological evolution of media: „The farther we get into accepting the principle of access over acquisition, the easier it will be to incorporate additional types of information as they become economically viable.“ (16) New cost structures (access costs instead of acquisition costs) and the necessary redistribution of funds was an important question 1986 in Tokyo as well as 1995 in Istanbul<sup>5</sup>. It is not the concept of networked and distributed information which is now at the basis of this discussion but the concept of *multimedia* new at the time. It allows, according to Pat Molholt, rather a subject than medium-based collection policy.

Finally she draws a picture of the new library: „I envision the library of the not too distant future (...) as an information support centre.“ (15) It will be a fast reacting service which is indifferent to location of information and to its form. It will have access to a highly indexed body of information, and will be highly personalised (!). Compared to computer centres the library is defined especially through its user friendliness and a high degree of subject expertise. The central pieces missing 1987 asking for „development work involving intense co-operation“ are:

- indexing
- conversion of print materials to machine-readable-form
- access
- security
- costs

Please judge yourself whether this intense co-operative development work has been accomplished since then. Interestingly enough, she already saw the new role for librarians in the design, implementation, and maintenance of expert systems modelling the reference interview (being the librarian's core knowledge). When she quoted Michael Koenig (member of our section's standing committee

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<sup>4</sup> Molholt 1987, p. 15

<sup>5</sup> See Line 1996

describing the basic skills of librarians<sup>6</sup> comparable to systems analysts) an re-defined the librarian as a *knowledge engineer*, Pat Molholt was almost not contradicted.

Only Takayasu Miyakawa rose the question concerning the human factor and asked if librarians were capable to assume the new roles<sup>7</sup>: „Looking around colleagues working with us, I have to confess that it is highly unlikely that the majority of librarians in my generation could become chips in the novel library expert systems. Librarians are inclined to be conservative by nature, and usually express hesitancy and trivial criticism toward such a major change in their jobs.“ This is still a very delicate topic addressing the everlasting question of the image and self-confidence of librarians. But it points also to another crucial aspect which even underlay this problem: did library education curricula change as fast as the technology since 1987? Coming from an educational institution I must confess: we could have done better. But as Pat Molholt already put it: „people change slowly“ and even more so administrations. However, there are improvements as for example in the denomination of library and information schools which sometimes either drop the term „library“ or add „information“ as a new term. But considering the fact that education always takes effect only several years later, it could be too hesitantly.

Looking back we must generally recognise that

- libraries did not change to such an extent: they were automated, they got online catalogues
- only few libraries embraced the new paradigm of the „just in case“-Library
- and some disciplines have taken over the roles of the library and information infrastructure on their own (e.g. physics)

What has been done was mere automation: reflecting on the new technologies and adapting to the new situation has never taken place. The result was that other players in the information business are starting to take over our roles and the ground to be regained is continually increasing. The library has not to change *just for the sake of changing*. It has to adapt to the user habits which have changed as a result of the new technological possibilities. For this reason it has become more important than ever to reconsider some basic notions of librarianship like

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<sup>6</sup> See: Koenig 1983: Librarians being able to:

elicit information (in the reference interview)  
organise information in retrieval systems  
understand the technical aspects of the computer systems

<sup>7</sup> 1987, p. 24

- the role of the librarian in the international publication market (knowledge engineer or information gatekeeper?)
- the service or product provided (document delivery or information consultancy?)
- the tools for information handling (online catalogue or information agent?)
- the media (static, single use or dynamic, multipurpose use?)
- the activity area (local or international mission?)
- and even the location: (real building or VIRTUAL LIBRARY?)

Perhaps we can look back in another ten years time to complain again that we have known the development but could not react appropriately in time.

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