

**INFORMATION TECHNOLOGY : DESIGN AND
APPLICATIONS,
Nancy D. Lane and Margaret E. Chisholm (editors),
Boston, G.K. Hall and Co., 1991, 340 pages plus index
\$37.95 U.S.**

The world academic community is in the grip of 'information overload'. Since 1665 the number of journal titles has doubled every ten years. Between 6,000 and 7,000 scientific articles are written daily. The quantity of scientific and technical information increases by more than 13 per cent annually. In 1988 the *Wall Street Journal* reported that less than 50 per cent of all information received from satellites in the last ten years has been processed. Need I say more.

The great challenge posed by this overload is 'to develop and incorporate faster and more efficient means to filter, process, store, and retrieve information'. Already advances in technology have been many and varied. *Information Technology* seeks to examine 'a wide range of information technologies, giving brief background information, while concentrating on applications in librarianship and related fields such as education, communication, journalism, and publishing'. The book aims to give students and practitioners 'sufficient understanding of these technologies to read more widely in the current journal literature'. A glossary explains basic computing concepts and terms (introductory computing is not discussed in the book).

The editors are Nancy Lane, head of the Centre for Library and Information Studies at the University of Canberra, and Margaret Chisholm, Director of the Graduate School of Library and Information Science at the University of Washington and a member of the advisory committee to the White House Conference on Library and Information Sciences. They have assembled a group of very well qualified contributors with vast experience in libraries and in the use of information technologies in Australia and North America. The contributors take the reader on a long journey, which begins with chapters on data communications, networks, and telecommunications applications and then moves on to chapters on television and video, teletext and videotex. Chapters on micrographic and optical disc technologies and CD-ROM and multimedia publishing are followed by three more on personal computer software, database management systems, and artificial intelligence and expert systems. The book ends with chapters on research on information access and information policy and technology placed in an international context. The authors succinctly and without much fuss cover the past, present and, more speculatively, future developments of their subjects. All the authors are optimistic about the future uses of information technology but do not neglect to discuss problem areas and not so rosy scenarios. More stress could perhaps be put on the importance of social and political contexts, and drive for profits in determining the introduction of new technology.

While the book is uniformly informative, different readers will undoubtedly find some chapters more useful and interesting than others. Joel M. Lee's discussion of the benefits and disadvantages of electronic mail, electronic bulletin boards and teleconferencing, telefacsimile, and

online information retrieval systems made many good points. Does the increasing use of FAX and the introduction of voice mail signal the end of electronic mail? Lee describes the development of online information retrieval systems including reference and source databases. There are now some 4,500 commercially available databases mostly enabling bibliographic access to the world's scientific literature. In addition to search strategies using Boolean logic, it is possible to use more sophisticated strategies such as word clustering techniques and natural language processing. Of particular interest is the appearance of full-text databases of newspapers and journals - how will this trend impact on libraries, especially as the user friendliness of these database systems has been enhanced to the point where 'interpreters' are not needed? A very user friendly alternative to the online system, discussed by Nancy Lane, is compact disc-read only memory (CD-ROM), which combines the massive storage capacity (550 megabytes) of 5-1/4 inch optical discs with PC-based retrieval systems. By 1989 about 300 CD-ROM products were available and the number has increased greatly since, although their quality varies and Lane advises purchasers to read reviews of products before buying and 'not to jump on the technology bandwagon'. As well as being user friendly, CD-ROM products are entirely offline and cost library users nothing - their popularity is undoubted. For librarians there are drawbacks such as initially high subscription costs, licensing agreements and updates that are not as frequent and response times that are not as quick as online databases. Lane, interestingly, considers hypertext uses for CD-ROM and notes that CD-ROM 'overlaps many other technologies' (including microform, magnetic storage media and videodisc) and 'in the future may vie with more and more of them'. It is hard to disagree that CD-ROM is 'an appropriate choice of medium when the database contained on it is large, has wide distribution, can benefit from enhanced searching capabilities, is a workstation application, and is historical or infrequently updated'. Its use as a training tool for online searching should not be forgotten.

For anyone interested in the concept of an open university for Australia and anyone involved in amalgamations of institutions with campuses some distance apart, the chapter by Chisholm and Malone on television and video should prove instructive - developments in the area of high-definition television (HDTV) are particularly exciting. Also exciting is the potential use of expert systems in libraries, which, with all the enthusiasm we would expect from a zealot, Donald E. Riggs describes in chapter 10. Riggs is optimistic - perhaps misguidedly so - that librarians will not be superseded by expert systems. Instead, he believes, their time will no longer be encumbered with 'tedious, repetitive tasks' and work practices will become more efficient in areas such as cataloguing, database searching, indexing, management and reference services. I remain unconvinced by Riggs's special pleading. Staffing costs make up a large proportion of university library budgets and, once expert systems are fully developed, few university librarians will resist the temptation to save money by dispensing with, say, a few reference librarians.

In her chapter on research on information access, Raya Fidel reinforces the view that the future for librarians is uncertain. She notes 'with the new information technology, direct access to information is no longer reserved for a few trained professionals; instead, various

information systems are accessed daily by most members of society, at work and at home'. It appears from recent empirical research that 'an increasing number of users prefer to interact directly' with online bibliographic retrieval systems and that they will be assisted in formulating search strategies by intermediary expert systems; some are already available such as CITE, while others are still in the experimental state, CANSEARCH and PLEXUS are two examples which cover a limited subject domain and search a single database.

While *Information Technology* covers much ground and provokes important questions, it is weak in some areas. I would have liked more on the vexed question of copyright - will the development of the electronic or technological library enable a more complete enforcement of copyright entitlements than has been the case so far? No mention seems to have been made of the library information system called Project Mercury at Carnegie-Mellon University and more could have been said about electronic journals but these are mere quibbles. No introductory book of this kind can be exhaustive. To be sure *Information Technology* will not be the last word on the subject but it is a good starting point for librarians at all stages in their careers and anyone interested in gaining an overview of developments in information technology. All should bear in mind the key point -will libraries become the centre for these developments in information technology or will they be by-passed? Either way the 1990s will be a crucial decade for librarians and they should be alert to the opportunities that are presented. Their future might well depend on it.

Review by Dr Stefan Petrow, Law Librarian, University of Tasmania