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If anyone is subject to information overload these days, it is the information professional. Library administrators and librarians, inundated with news about new technologies, may be torn between the desire to develop state-of-the-art facilities and the need to stay within a limited budget. Even given an unlimited budget, it is not clear how tomorrow's library could or should look. This digest will outline some of the technological trends, and discuss administrative issues and strategies for updating the

library.

THE TRENDS

Over the last few decades, the focus of libraries has shifted from digitization of information, to automation of library functions, to integration of library systems. The current trend toward integration extends beyond local area networks to the concept of a wholly integrated information environment. This environment involves not only the immediate community--city, campus, business--but state, national, and international resources. Integration is the byword at every level of library activity. It is evident in: o networks; o o o

technologies; o

intelligence and hypermedia programs; o o o o

specialists.

None of these concepts is new, but they represent a mind-boggling set of technological options for the library administrator to consider. One way to cope is not to try to envision a vast electronic network, but to look at the ultimate goal of the library: serving the user. For the user, the integrated information network can make life remarkably simple. All he or she has to do is log onto a microcomputer at an institutional workstation (or log on from home), read a menu of applications options, and click a mouse. In almost no time, he or she can be accessing, creating, processing, sending, or storing information. The files can be any size, any format, anywhere. The most important part of this picture is that the user is not really aware of the network structure at all.

THE ISSUES

Of course it's a long haul from most of today's libraries to that ideal vision. For the library administrator, the technical, human, and financial issues are complex. Technical issues involve matters of access and delivery, or more specifically, choosing among a myriad of hardware and software options. The microcomputer is ubiquitous; with various peripherals and software, it can complement or replace many mainframe functions. With the potential of networking both inside and outside the library, the administrator must also consider the compatibility of systems, in terms both of linkable hardware and of software that can search different databases and facilitate applications such as word processing and desktop publishing. At best, only educated guesses can now be made as to which systems in a very new and competitive market will become standards. In fact, research and development are at such a competitive and formative stage that users themselves are having a great deal of input.

Human issues involve the changing roles and status of library personnel and library

patrons. In libraries with end-user workstations, librarians tend to spend more time training patrons in database search skills and dealing with increased expectations for the quantity and quality of information. In academic settings, the librarian is likely to be more involved in curriculum development and in the networking of various computerized instruction programs, such as interactive television. Library personnel generally must learn to deal with computerized indexing, cataloging, and reference systems, online retrieval, accounting and other administrative database management, and interpersonal electronic communication systems. The administrator must not only consider these changes, but also work actively to educate personnel and to elicit their support.

The financial issues may be the hardest of all. Initial investments are high. Should the library dive into new technologies now, or wait for continued improvement of products and lowering of prices? It is difficult to foresee what "bugs" exist in new products, and to predict what enhancements and different products will be available next month. There are at present no guarantees as to consistency of services, compatibility of systems, or continuing support by vendors. Market relationships are changing as vendors combine publishing, distribution, and maintenance responsibilities, and as specialized industries develop. Somehow the library administrator must come up with creative strategies, often tradeoffs, for integrating new with existing technologies and services.

THE STRATEGIES

The first step, obviously, is to become informed. At least four dozen periodicals cover new technologies in general and library applications in particular. Articles include management advice, case studies, and product reviews and advertising. Professional organizations sponsor conferences and workshops devoted to specific technological issues. Much current information concerns CD-ROM database services, but the strategies for evaluating and introducing CD-ROM can easily apply to other technologies. Contact vendors directly, and other institutions that are upgrading their systems.

Second, know thyself. What are your patrons' needs? How well do you currently meet these needs? Make a detailed needs assessment of your personnel, collections, services, hardware, and space.

Third, establish the project with a task force and project manager. Solicit input from library personnel at all levels: the more involved employees are, the more likely they are to support and promote change. Work systematically to create a detailed planning document that covers all aspects of the proposed improvements. Begin by considering requirements and writing objectives. Outline selection criteria for hardware and software. Make cost analyses and devise a timetable for implementation. Consider alternative implementation plans. Outline project testing and evaluation procedures. Address issues such as training, publicity, and security, and user policies such as fees.

Be thorough, looking to long-range as well as short-range planning, with room for

change. Cost analyses should include more than prices: consider the terms of database subscriptions, and whether various contracts include delivery, installation, user documentation and training, service, and maintenance. Implementation plans may include multistage introduction of various technologies, hybrid systems, tradeoffs between new and existing systems, and joint programs with other institutions. Special attention should be paid to how pilot projects are set up and evaluations conducted.

SUMMARY

The decision to introduce new technologies has never been simple. It seems that the information professional needs both a cogent overview of the present and a sensible vision of the future in order not to be overwhelmed by the many tempting options. Only through systematic study and planning can he or she be reasonably selective. But whether the decision is to take the plunge or wait and see, the market is developing apace. It is becoming necessary to change just to hold one's position. And obtaining the right technology is not enough: the overall environment must be considered. Penniman (1987) reports that more than 70% of information innovations that fail in the marketplace fail for nontechnical reasons involving marketing, management, capitalization, or organizations themselves. On the other hand, new technologies and media are not replacing, only enhancing the old, and responses to innovations such as CD-ROM database services have been enthusiastic.

SPECIAL RESOURCES

The Online Computer Library Center (OCLC) offers a number of publications--often free--for its member libraries and for independent institutions. Call (800) 848-5878 ext. 4372, or write OCLC, MC 142, 6565 Frantz Road, Dublin, OH 43017. Two publications of particular interest:

o A detailed report of the results of the 1987 OCLC and Users Council Library Strategic Planning Survey. More than 2,200 libraries responded, with more than 200 submitting strategic plans for internal and external use. Plans cover automation, services, staffing, collections, facilities, and funding. For information call the Users Council Office, OCLC.

o Communications & Access Planning Guide is designed for OCLC member libraries to use in evaluating their service, terminal, microcomputer workstation, and access situations with an eye to making decisions on future service and equipment. Included are case studies, a directory of OCLC services, a table of equipment requirements, and worksheets. Guides have been distributed to member libraries and are also available from network offices. Independent institutions can contact the OCLC Library Liaison Officer.

Holibaugh, Ralph. (1987). OPTICAL DISCS FOR STORAGE AND ACCESS IN ARL LIBRARIES. SPEC KIT 133. Washington, DC: Association of Research Libraries, Office of Management Studies. ED 283 534 (microfiche only), or order from ARL, 1527 New

Hampshire Ave., NW, Washington, DC 20036 ($20.00). The 128-page kit contains excerpts from technical, planning and evaluation documents contributed by 40 ARL member libraries, summaries of interviews with ARL members, a glossary of terms, a 10-item reading list, and SPEC kit evaluation and order forms.

Recommended periodicals: Advanced Technology/Libraries, CD-ROM Librarian, Database, Library Hi Tech, Library Hi Tech News, Online, Optical Data Systems, Optical Information Systems, Optical Information Systems Update, Optical Information Systems Update/Library and Information Center Applications, and T.H.E. Journal: Technical Horizons in Education.

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