

Part III. Implementation of Integrated Information Services

Library/Computer Center Partnership

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Information technologies are changing the traditional role of the library from that of a repository of information to that of an aggressive provider of information services utilizing electronic methods. In many cases, the library cannot realistically achieve this transformation independently but must work with the computer center to reach its objectives. Various models of the integration of libraries and computer centers are thus emerging. At the University of Maryland at Baltimore the Health Sciences Library and the Information Resources Management Division have developed a partnership based on functional relationships without changing the organizational structure. Strategic planning for an Integrated Academic Information Management System (IAIMS) acted as a catalyst in the process. The authors present the evolution of the partnership and discuss current projects being developed jointly by the two units.

Trends

The Matheson and Cooper report presented strong arguments for the "logic of the library's central role in advancing the Academic Health Sciences Center (AHCS) toward an integrated network system" [1]. The library is seen as being politically neutral, familiar with computer-based information systems, technically competent, and able to afford the costs of automating its functions with the advent of less expensive minicomputer based library systems [2]. The library is also seen as a model of an integrated information resources management system which should be extended to the whole AHSC. The library's primary role in institutional planning and policy setting for information resources management is stressed. Various scenarios have since appeared in the literature which describe utopian electronic environments. Spinrad presents a vision in which students, professors, and administrators are linked by computer not only to each other but to any information source they could wish to accomplish their work [3]. In each scenario, the character wonders fleetingly if the file he called up was from the

University library, but he really doesn't care from where it came. Although there is no discussion of the realities of achieving such a system, the ultimate goal of an integrated system in the information society is totally seamless access to various kinds of information.

Battin presents a view of the scholar's workstation as a "gateway to the universe of knowledge" [4]. She sees the "electronic scholar" faced with virtual anarchy in the information marketplace. There are growing numbers of databases with no standard forms of access as well as incompatibilities among hardware, software and communications networks. The answer to this plight, she suggests is the Scholarly Information Center formed by merging the library and the computer center [5]. Van Horn and Arms concur with the idea that libraries and computing centers must eventually either work more closely or merge [6,7]. McVoy, while agreeing that libraries must be the facilitator for access to information from all sections, warns that the old image of the library as simply a place for books still persists and that few libraries are involved with campus planning for new information technologies [8]. Others have discussed the relationship of libraries and computer centers in terms of their similarities and their complementary strengths [9-11]. Jones and Molholt stress the technical skills of computer centers in the development of computer and communications systems and the skills of libraries in organizing knowledge as well as the people interface skills of marketing and training. It appears natural that they pool their talents.

Those who had early perceptions of the good that could come from merging libraries and computer centers also expressed some of the underlying difficulties. There may be competition for scarce resources and there is a great deal of learning to be done by both groups about the others' goals and priorities. A true merger will also bring to the fore the disparity in salaries and required qualifications of the two groups. Nevertheless, it is becoming increasingly clear that the two academic support groups must begin to view each other as allies. Sack pointed out that users are interested in the information and the services, not the technology or organizational structure through which these come [12]. Fur-

thermore, the library is a logical place for scholars to learn the new technologies in the context of their own research. This thought was borne out in the recent report on the impact of the scholar's workstation project at Brown University. Surveys of faculty and students show that access to library holdings is a top priority [13]. Basically this brings us back to Matheson and Cooper's ideas regarding the library's role as a leader in the adoption of new information technologies and the integration of information systems.

Recently the concept of the converging paths of libraries and computer centers has been "legitimized" by the *Journal of Academic Librarianship*. In March, 1987 it launched the first issue of a newsletter entitled *Libraries & Computing Centers: Issues of Mutual Concern*. Its editorial states that the newsletter is aimed at the computing center professional and will explore technological issues as they relate to libraries [14]. It is hoped that a mutual exchange of ideas and information will take place.

In spite of all that has been written about trends toward a convergence there are few examples where this has occurred. Existing models range from true merging, as in the case of the Scholarly Information Center at Columbia University, and at the Medical College of Georgia where academic computing is a library department, to situations where some cooperative activities are being conducted [15,16]. For instance, an informal survey of 11 AHSC libraries where subsets of MEDLINE are being mounted revealed that five are working with their campus computing centers on the projects [17]. In between these models are organizational structures in which libraries and computer centers report to the same chief information officer but are not merged [18].

At the University of Maryland at Baltimore the organizational integrity of both the computer center and the library have remained intact. Cooperative projects are being carried out by the two units which consider themselves partners in joint ventures. The following discussion describes the evolution of this relationship and the development of a joint strategic plan for integrated information resources management.

Evolution of a Partnership

The UMAB Campus

The joint strategic plan between the Information Resources Management Division (IRMD), which is responsible for campus computing activities, and the Health Sciences Library (HSL) of the University of Maryland at Baltimore (UMAB) has a relatively short history in the long history of the campus and should be viewed as a beginning in cooperative efforts.

The University of Maryland at Baltimore is the Campus for the Professions of the University of Maryland. UMAB includes the professional schools of Medicine, Dentistry, Law, Nursing, Pharmacy, and Social Work and Community Planning as well as their respective graduate degree programs through the University of Maryland Graduate School,

Baltimore. The School of Medicine was chartered as the first school of the University of Maryland in 1812. Except for the School of Social Work and Community Planning (established in 1961) and the School of Medicine, the professional schools were all established during the 19th century and became part of the University of Maryland during the first two decades of this century.

Originally, University Hospital was included as a part of UMAB, but in July, 1984, it became part of the University of Maryland Medical System (UMMS), a private, non-profit corporation with its own board, independent of the University of Maryland. UMMS includes the University of Maryland Hospital, the Shock Trauma Unit of the Maryland Institute for Emergency Medical Systems, and the Maryland Cancer Center. The health-related components of UMMS and UMAB comprise the University of Maryland Medical Center (UMMC). Although autonomous from the State of Maryland, UMMS maintains affiliation with UMAB through working relationships with the professional schools.

The mission of UMAB is education, research, and public service in health care, law, social service and community planning. The mechanisms for achieving the goals are the six professional schools, the Graduate School, and the University of Maryland Medical System. Both the Health Sciences Library and the Information Resources Management Division are dedicated to support this mission.

Information Resources Management Division (IRMD)

IRMD is currently organized under the direction of an Associate Vice Chancellor for Information Resources, who reports directly to the Chancellor.

The three major divisions of IRMD are Academic Computing and Health Informatics, Administrative Computing, and Database Administration and Development.

Health Sciences Library

The Director of the Health Sciences Library reports to the Vice Chancellor for Academic Affairs. The HSL is organized along traditional lines with both a public services and technical services arm. Technical support for its automated systems is provided by the Systems and Automation Department.

The library employs a staff of nearly 60, with 25 professionals, including three professional systems librarians, and 10 information specialists devoted to information services and information management education.

The library's computer system is composed of several modules which support its internal functions and several other modules designed for public use. Public access modules include MaryMED (a subset of MEDLINE), Electronic Access to Reference Services (EARS) and the online catalog, which can be accessed from remote sites with dumb terminals or microcomputers via the IRMD's computer network, a Gandalf PACX.

The HSL has served as a model on the campus for the concept of an integrated system since 1981 when the Inte-

grated Library System (ILS), was implemented. In addition to the linking of internal processing functions such as cataloging and acquisitions, the public services functions of circulation and the online catalog were also linked. More important to the concept of integration, however, and perhaps the first glimmer of partnership between the professional schools computer center (or PSCC, as the Information Resources Management Division was then called) and the library was the dial-up access provided to the online catalog through the PACX. This modest beginning of cooperation has now grown into a partnership resulting in a Joint Strategic Plan for Integrated Information Resources Management. This partnership developed slowly over a period of several years and is still evolving.

Background

In the late 1970s the Health Sciences Library was faced with a decaying automated circulation system, the only library function that was automated. The library was forced either to abandon the aging circulation system and install a new one or to go for the promise of an Integrated Library System (ILS), then under development at the NLM. The ILS choice was made and the system was installed in 1981 [19]. Off site access to the online catalog was provided through the PACX.

During the same period in the early 80s, the Professional School's Computer Center also faced a number of serious problems. Data processing services could not meet the academic computing needs of the schools and consequently the schools obtained their own systems. The advent of the personal computer placed additional pressures on the PSCC for assistance with applications development. In 1983 the top managers of the PSCC resigned to take other positions, presenting the Chancellor with the opportunity to reorganize the management structure of campus computing. He opted to create the position of Associate Vice Chancellor for Information Resources, a position similar to the Chief Information Officer emerging in the corporate world. The PSCC was also renamed the Information Resources Management Division. At nearly the same time, the Matheson and Cooper report appeared and the National Library of Medicine made contract funds available for strategic planning for an Integrated Academic Information Management System (IAIMS). As stated earlier the report placed the library at the hub of the information network since it was "uniquely qualified . . ."

IAIMS and Core Facilities

With strong support from the late Chancellor, Dr. T. Albert Farmer, the UMAB prepared a proposal in 1983 for strategic planning of an IAIMS which was subsequently funded by NLM in 1984. The Co-Principal Investigators appointed by the Chancellor were the Director of the HSL and the Vice Chancellor for Administration; the Vice-Dean of the School of Medicine was named the Principal Investi-

gator. The Associate Vice Chancellor for Information Resources was designated the IAIMS Project Director in the plan, but the library was not within his jurisdiction.

The idea of the HSL and IRMD as "core facilities" jointly responsible for providing information technology and services to the campus to support the IAIMS began to germinate and take root during the strategic planning process in 1984-85. The strategic plan submitted to the NLM as partial completion of requirements for IAIMS Phase I strategic planning in fact defined this role for the two units [20]. The IAIMS pilot implementation project now underway relies heavily on the resources of the core facilities as the backbone for integrated information systems.

In 1986 the Policy Committee, a review and advisory body of the IRMD, and the Academic Computing Advisory Committee were reconfigured by the Chancellor to broaden their scope and responsibilities to encompass all information resources management (IRM). Both the IRMD and HSL are now primary components of these bodies rather than only the IRMD. This move took the partnership role still one step further and prompted the two units to develop a joint strategic plan for integrated information resources management.

IRM Advisory Committees

The Policy Committee serves to review policy affecting information resources and plans which determine the future direction of the IRMD and the HSL as providers of information services to the campus. The Committee is chaired by the Chancellor, who is supported in his responsibilities as chair by the Associate Vice Chancellor for Information Resources and the Director of the Health Sciences Library. The membership of the Committee consists of the Deans of the professional schools, the Vice Chancellor for Graduate Studies and Research, the Vice Chancellor for Administration, and the Assistant to the Chancellor.

The Academic Computing Advisory Committee makes recommendations to the Policy Committee as well as to the Academic Computing Division of IRMD and the Health Sciences Library. It facilitates communication with the academic community and makes recommendations concerning service levels and computing needs of faculty, students, and researchers. The Committee is co-chaired by the Director of Academic Computing and the Deputy Director of the Library. Members of the Committee include one person from each of the professional schools and the graduate school appointed by the Dean of each school.

A Joint Plan

The goal for 1991 as stated in the joint strategic plan is "to provide for information resources and services at the user's preferred workstation through an integrated computer and communications network" [21]. In looking at the primary objectives which follow, it becomes apparent that the basic role of the IRMD is that of an information utility, while the basic role of the library is to provide information

resources and services. It is an extremely symbiotic relationship; each needs the other to fulfill its mission. The goal of the library is to provide information in electronic formats or by using electronic transmission methods whenever possible. In doing so, the library utilizes the electronic highways and access paths provided and maintained by the IRMD. Each unit is responsible for education and training of its users as it relates to use of their specific systems. The concept of the units as core facilities is being furthered by several joint ventures now in progress. All of the library projects are being conducted with the Academic Computing Division of IRMD since the activities of the Administrative Computing Division are not within the scope of the library.

Joint Ventures

As already stated, the development of the capabilities, services, and products of the core facilities is the underpinning of the IAIMS development on the UMAB campus. Communication among members of the professional schools, the medical system, and administrative units is vital to the functioning of the campus. The sharing of information is a habit to be developed by linking distributed information systems.

In an effort to provide the means for campus-wide communication, the HSL and IRMD have formed a direct partnership to support a conferencing system, CoSy. The system was funded by both units and monies from the IAIMS Pilot Implementation grant. Responsibility for the system's administration and maintenance belongs to the IRMD, while education, training, and publicity are handled by the library. CoSy has become a popular medium of information sharing on campus, boasting over 400 participants and 76 conferences during its first year. Not only has CoSy facilitated communication among campus users, but also between the staffs of the HSL and IRMD. It has certainly fostered a better appreciation of each other's work and priorities.

Planning is currently underway for several other systems which will be developed jointly. These include:

- A personal bibliographic file management system to be mounted on a Local Area Network (LAN) in the School of Pharmacy. IRMD will provide technical support; the HSL will provide assistance with database design, thesaurus development, and downloading from the library's databases.
- A Geriatric Information System, partially funded by the State of Maryland to support education, research, and patient care for the geriatric population. A database containing information about programs and services available to Maryland's elderly will be developed. Again, technical support will be the province of the IRMD and the design that of the HSL.
- A Faculty Database. This file will contain personnel, grants, and publications information about faculty members. The library is developing the data set for each component; the IRMD will assist with developing the functional specifications of the database and the required programming.

- Inter-institutional sharing. Planning is underway for sharing unique databases among the IAIMS institutions in the Baltimore-Washington area: Georgetown University, Johns Hopkins University, and UMAB. To date, the Health Sciences Library at UMAB and the Welch Medical Library at Johns Hopkins have agreed to share several bibliographic databases. The IRMD will assist in the development of communications links among the three institutions.

Conclusions

Both the IRMD and HSL are firmly committed to their emerging partnership. This commitment makes sense in practical, economic, and political terms.

Information technologies are the tools that libraries use to collect, organize, store, retrieve, and disseminate information. The library can capitalize on the knowledge that computing professionals have about information and communications technologies to create new ways to offer information services. Computing professionals can tap the teaching and training skills of librarians and information professionals. On a campus which is basically a loose confederation of six professional schools and a medical system, the library and IRMD are neutral territory. All groups have equal access to information services; political advantage is not sought by either.

Advantages for integrating appropriate library and computer center services are obvious. The various methods of achieving integration will have different degrees of success depending on the environment. UMAB's functional integration without organizational change has proven to be workable, productive, and non-threatening. An essential ingredient in the venture's success is the genuine interest in and dedication to the concept of integrated information resource management by the leaders of both units, and the support of top administration on the campus.

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