

Facing the Millennium: Law Schools, Law Librarians, and Information Technology

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The migration to the use of electronic information and technology in the United States legal system is a *fait accompli*. One might well puzzle over whether one had sufficient resources to be on the cutting edge of change, but even the most stuffy of traditionalists had to acknowledge that the change was well underway.

—Robert C. Berring¹

Bob Berring's comment aptly describes the extent to which information technology is changing the legal profession and legal education in the late 1990s. Yet it has not been so very long since legal educators thought about information technology solely in terms of the law library. And even twenty years ago, when the *Journal of Legal Education* featured an article on the roles of law librarians, the potential effects of computers on legal research could only be hinted at.² In 1996, however, information technology affects all aspects of legal education, and the information and technology issues facing law schools are not limited to the library. As a consequence, the issues require new and creative institutional responses.

This article presents some of the administrative and organizational questions that technology poses for legal education, describes the solutions developed at one law school, and discusses possible new roles for library directors in managing and planning the growing integration of information technology into all aspects of legal education.

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1. The Current State of Networked Information in the United States and Why You Should Care About It, 26 *Law Libr.* 246, 246 (1995) (commenting on the "extraordinary" level of interest in the 1995 AALS workshop on technology and legal education); see also Peter W. Martin, *Prospecting the Internet*, A.B.A. J., Sept. 1995, at 52.
2. See Roy M. Mersky, *Everything You Always Wanted to Know About Law Libraries but Were Afraid to Ask*, 29 *J. Legal Educ.* 139, 144 (1978). No hints at all were provided in the last *JLE* article on law libraries previous to Mersky's: M. Minnette Massey, *Law School Administration and the Law Librarian*, 10 *J. Legal Educ.* 215 (1957).

Technology's Impact on the Law School

Computers and networked computing services create, store, and access information of all sorts, not only in the law library but throughout the law school. The growing reliance on technology, both to accomplish long-standing tasks and to do new things, affects the entire law school environment, requiring new investments and raising new issues in law school administration.

One way to consider the impact of technology on the law school is in terms of Peter F. Drucker's concept of "the theory of the business." For Drucker, the theory of the business for any organization encompasses the set of assumptions that shape the organization's behavior, dictate its decisions about what to do, and define what it will consider to be acceptable results.³ For a theory of the business to be valid, the assumptions must reflect reality, fit together, be known and understood throughout the organization, and be tested regularly.⁴ Among these key assumptions are those about the competencies needed to accomplish the mission of the organization: in what areas must the organization excel if it wishes to maintain leadership in its field?⁵

A recent symposium of comments by business leaders indicates that, in the profit sector, information technology has become an area in which companies must excel in order to be successful.⁶ Several CEOs and others commenting on the importance of technology as a strategic tool in their businesses noted that information technology now touches everything that their companies do. John F. Rockart, director of the Center for Information Systems Research at MIT's Sloan School of Management, followed Drucker's analysis in stating that CEOs must incorporate information technology into their theories of the business. For Rockart, information technology has become one of the four major resources (along with people, money, and machines) that executives can use to shape and operate their organizations. "It is time to see IT for what it is: a major resource that . . . can radically affect the structure of the organization, the way it serves customers, and the way it communicates both internally and externally."⁷

In legal education, as in business,⁸ technology increasingly touches everything, and investments in technology make up an increasing part of the costs

3. The Theory of the Business, *Harv. Bus. Rev.*, Sept.-Oct. 1994, at 95, 96.

4. *Id.* at 100-01.

5. The other assumptions that make up a theory of the business are about the environment in which the organization operates (what the organization is paid for) and about the specific mission of the organization (what the organization considers to be meaningful results from its activities, how it makes a difference). *Id.* at 99-100.

6. The End of Delegation? Information Technology and the CEO, *Harv. Bus. Rev.*, Sept.-Oct. 1995, at 161.

7. *Id.* at 166. Rockart distinguishes information technology from other machines—such as lathes, typewriters, and cars—because it can have multiple uses and purposes.

8. And in business education. Upon being named dean of the Fuqua School of Business at Duke University in November 1995, Rex Adams listed his strategic goals for the school: "to expand its programs around the world, to take maximum advantage of evolving computer and communications technology and increase the size of its faculty." Rex Adams of Mobil Corp. Named Fuqua School Dean, *Dialogue*, Nov. 10, 1995, at 1, 6 (emphasis added).

of providing a legal education. But what do (or should) law schools assume about the role of information technology in their own theories of the business? Have current investments made information technology a core competency—an area in which the school must excel? Among the impacts on the law school's primary activities are the following.

Reliance on Word Processing

With due acknowledgment of the few holdouts in each law school, it can be said now that we all write using computers. One can argue about the larger benefits of word processing, about whether it aids procrastinators who would rather redraft articles than submit them for publication, about whether it eases the task of writers who wish to rework a few ideas into several publications, or about how much it has contributed to the proliferation of new law reviews and marginal contributions to the study of many topics. Regardless of those issues, it is clear that virtually all students, faculty, and staff in law schools use computers to write.

Among other things, this has meant that law schools have had to supply students, faculty, and staff with computers (and places to use computers), and that faculty and students alike often use their own computers to continue writing (and researching) at home after they leave the building. The reliance of law school personnel on the computer for a primary activity—writing—focused their attention on a multipurpose device with the potential to be used not only for writing, but for online research, communications, and a widening variety of other applications.

Widespread Accessibility of Information

In 1976, when Roy Mersky told law school deans “everything you always wanted to know about law libraries,” what computers there were in law schools probably were in the libraries. At the time, librarians thought of computers largely as means of automating internal processes and procedures for producing catalog cards and other paper-based tools, although they looked ahead to computer-based replacements for the card catalog. Few others in legal education thought about computers at all. The Westlaw and Lexis legal research systems were still in the early stages of development and were used only lightly in law schools or in practice.⁹

In 1996, the focus of computer-assisted research in the law school is not in the library, but on the personal computer resting on a desktop in a faculty office, a student computer lab, a study carrel, or the home or dormitory. Lexis and Westlaw have evolved into powerful tools that provide faculty and students, at school or at home, direct access to the texts of much of American legal literature and to massive libraries of other information without direct costs to individual researchers. In the 1990s, the commercial services have themselves been supplemented and challenged by the development of local databases of legal texts maintained at law schools and other sites accessible via

9. For a history of the early development of Lexis and Westlaw, see William G. Harrington, A Brief History of Computer-Assisted Legal Research, 77 *Law Libr. J.* 543 (1984–85).

the Internet. A number of law schools, most notably Cornell through its Legal Information Institute, have identified and organized access to large bodies of domestic and foreign legal materials through the World Wide Web, also largely without direct costs to researchers having the ability to reach the Internet.

Networked Communications

As computer networks become more common in law schools, the already well-established reliance on the computer for word processing and research facilitates use of the desktop terminal for a variety of network applications, perhaps most immediately electronic mail. While hardly an untarnished good, local e-mail provides easy communication among faculty colleagues for a variety of academic and informal purposes, makes it easier to share draft articles and other files, allows law school administrators to broadcast information to the entire community, and makes deans more accessible to the entire community as well.

As networking proceeds, e-mail also provides links to larger networks and opportunities for law faculty to explore and develop Internet discussion groups on topics of legal interest,¹⁰ share files with colleagues nationally and internationally, and start up and contribute to Internet journals and newsletters. Using other tools, faculty and students can access remote information through the World Wide Web. Home computers and modems purchased to access Westlaw and Lexis provide the capabilities to dial in to the law school to access files (or to check e-mail) and, at many universities, to reach services and resources on the campus network and the Internet. The result is that the full range of communications, information, and other resources formerly available only in the law library or through a terminal on the office desktop is now available through the home computer as well.

Instructional Technologies

While not supplanting traditional forms of law school instruction, computer-based instructional tools in an increasing number of formats have developed steadily to supplement and support classroom teaching. The Center for Computer-Assisted Legal Instruction now distributes more than 90 course-related exercises on diskette, in network versions, and in CD-ROM form to more than 150 law schools. Harvard's Educational Technology Department and other producers supply interactive video exercises to law school users in a number of subjects. With the support of CALI and other organizations, a growing number of law teachers have begun developing hypertext versions of classroom and other materials.¹¹ In newer and remodeled build-

10. Lyonette Louis-Jacques of the University of Chicago Law School (e-mail: llou@midway.uchicago.edu) maintains Law Lists, a current listing of listservs for lawyers, which is posted at a number of law-related Internet sites. The July 10, 1995, edition is close to 90 pages long.

11. See Richard A. Matasar & Rosemary Shiels, *Electronic Law Students: Repercussions on Legal Education*, 29 Val. U. L. Rev. 909 (1995), for an enthusiastic description of the uses of technology in the curriculum at one law school.

ings, classrooms are designed to provide power and network connections to support classroom computer use from the podium and at student seats; they often include professional-level equipment to bring audio- and videotapes, as well as various digital resources, to the classroom.

The effects and benefits of classroom and supplemental educational technologies are far from certain,¹² although it is clear that experiments in various forms of technology-based instruction will become a more visible part of legal education. This is assured, if for no other reason, by the recent entrance of both West Publishing and Lexis/Nexis into the market with competing products and programs to support electronic publication of course materials and class-based conferencing software.¹³

Administrative Systems

In law schools, as in business and in other organizations, the regular use of computers for processing and retaining administrative information, as well as for text creation and communication, has expanded to where many administrative departments effectively shut down if problems develop with the systems the staff rely on for daily activities. The development of effective and reliable systems to support typical administrative functions is affected by a variety of complicating factors: the extent to which university support is provided (and meets the law school's needs); whether programs and databases have been developed or selected for the law school under an overall plan for data sharing and transfer among departments; and what priority the school has placed on development and support of administrative computing compared to its efforts to meet academic computing needs. Many schools now find themselves with a patchwork of departmental databases needing to be integrated into a school-wide system, and local law school systems developed to shadow university systems that lack the functionality to meet law school needs. As law school and campus networks create greater opportunities and pressures to rationalize systems, avoid duplication of effort, and facilitate direct access to information for student and faculty consumers (as well as for administrators), administrative computing will be a matter of increasing concern.

As in other organizations, computing and information technologies are becoming integral components of what the law school does. The widespread availability of networked computing and ready access to information create

12. According to some observers, there is no evidence that traditional computer-assisted instruction exercises support the development of higher learning skills (the abilities to make predictions, hypothesize, abstract, and generalize). Programmed instruction does support the lower learning skills (memorization, classification, identification, and the ability to follow procedures). See Remarks of LoriLee M. Sadler at Convergence '95: 5th Annual Conference for Law School Computing Professionals (June 10, 1995).
13. See Letter from Ronald W. Staudt, Lexis-Nexis Director of Legal Education, to author (June 1995) (describing Lexis-Nexis Millennium Initiative program); Letter from Gregory A. Brown, Administrator, West Academic Program, to Pamela B. Gann, Dean, Duke University School of Law (Aug. 2, 1995) (describing West programs for "testing the classroom of the future").

challenges for law schools that are not unlike those posed for other organizations. How does any organization ensure that its investment in computing and networking is contributing to the fulfillment of its mission?

One Law School's Responses: The Experience at Duke

To get a sense of how rapidly and extensively information technologies have transformed one law school, one can look at Duke University. At the Duke law school, the first personal computer was bought for library use in 1983. The purchase required justification in a four-page memorandum to the dean and approval at the university level to ensure compatibility with other campus systems (despite there being no networks connecting the law school with the rest of campus). In 1984 the school made its first significant investment in computing with the purchase of a centralized office automation system linking terminals on faculty and staff desks, and providing shared word-processing and rudimentary communications capabilities. That early network is well-remembered for the occasions when one person's error brought down the entire system and destroyed the day's work of many. Ultimately, however, the system proved its worth by creating a culture of acceptance for more sophisticated networked capabilities as they became available.

By 1995, when the law school completed a comprehensive addition and renovation to its thirty-year-old physical plant, it was evident that the early experiments in computerization and the changed environment of legal education had created an institution that is in many ways centered on its infrastructure of information technologies. That infrastructure is now based in two local area networks: one serving faculty and staff, the other supporting student uses. The faculty network supports word processing, communications, information retrieval, and other needs of all full-time faculty, adjuncts, visitors, joint appointees, and others with offices in the law building, as well as the needs of all administrative departments, including the library. The student network extends to 185 active connections in library carrels and study rooms; in the offices of the five student-edited journals, the student bar association, and other student organizations; and at several public terminals.

Within the law school, network e-mail systems have developed into primary means of communication. E-mail is used regularly for general communications, as well as between individuals and within departments, and in many instances has replaced distribution of information in print formats. We also use the e-mail system to reserve rooms and equipment and to schedule meetings. In addition, the school's World Wide Web home page, which is directly accessible on the local networks, serves as a community information system with electronic newsletters, internal memoranda, and directory information. The Web also provides an easily accessed electronic archive for law school policies, rules, and regulations, and for general information about the school and its programs.¹⁴

14. The Web site is also used as a source of information about the school for alumni, prospective students, potential employers, and other external constituencies with Internet access.

The entire law school community relies heavily on the Internet and on the university backbone network (DukeNet) for external communications and retrieval of information. Legal research and other remote databases are accessed on faculty desktops and in library carrels exclusively through Internet connections, or through the campus network from services provided in cooperation with the main library system. We use external e-mail extensively, and the network provides the capability to fax directly from faculty and staff desktops.

Perhaps the most dramatic evidence of the increased importance of technology in the law school can be seen in the effects of the building project on the law library. The building addition enlarged the library to half again its original size and greatly increased its book stack capacities. Because a major goal of the expansion was to improve study facilities and access to computer-based resources, the bulk of the additional book storage is in movable shelving. The library now has about 165 active network connections, mostly in carrels designed to allow students to work comfortably with computers and books. Eighty-five carrels are equipped with networked desktop computers; sixty others provide connections for portable computers. Once connected, students access the Student Research Network, which provides a full range of services and applications including word processing, shared laser printing, e-mail, instructional exercises, course-based discussion groups, access to Lexis, Westlaw, and other information resources, and full Internet capabilities. Beginning with the 1996 entering class, students will be required to own computers with capabilities for accessing the law school network from their residences.

Information technologies have begun to have an impact on classroom teaching and on other forms of instruction and learning as well. In conjunction with the building project, four classrooms (two large, one midsize, one seminar-size) have been outfitted with state-of-the-art video and digital projection systems and full connections to the law school network and the Internet. In 1996 faculty are working with the university's Center for Teaching and Learning to expand their uses of this equipment in the classroom and with both major online legal information vendors in programs to supplement classroom instruction with self-instructional exercises and with conferencing software to encourage out-of-class discussion and to distribute materials.

Like their counterparts in other law schools, the administrative staff rely heavily on networked communications and access to shared databases. Like other law schools, Duke has a number of departmental databases developed over time to meet specific needs of departments not connected by networks (or, in some cases, even located in the law building). With the completion of the building and the infrastructure to support student and faculty computing, administrative computing services are being rationalized and integrated within the school, and we are taking advantage of improving university systems accessible through the campus network. Assistant deans and departmental directors are expected to include development of uses for information technology in their operating plans and to benchmark their applications of technology against peer institutions.

Issues for Law Schools

Experiences at other schools will vary, of course, but Duke's experience shows one school's efforts to respond comprehensively to legal education's growing reliance on computers and networked services for communications, for research, for writing and publication, for support of instruction, and for administrative operations. It is obvious that a full response can force large and continuing investments in capital equipment and network infrastructure. And regardless of how much a school chooses to invest in information technology, the importance of computing and network access to its faculty, students, and staff will create new demands for services and support, and will raise new organizational and administrative issues.

In thinking about law school computing issues, what first come to mind are the needs to supply basic structures for maintenance and development of the technology and to provide training and other user assistance. But the investment in information technology also raises broader questions of priorities and allocations that can be answered fully only in the context of the larger institutional goals. Will information and the technologies for using it productively and efficiently be seen as essential to attaining the law school's goals, or is information simply a commodity with little direct strategic value? How can a school ensure that the technology is used most productively to support what that particular law school is trying to accomplish? Information technologies will inevitably become integrated into all the daily activities of legal education, but will they have the same importance to the success of the law school as they now seem to have in business? Choices among priorities and decisions about appropriate levels of support for computing depend on the answers to such questions.

Who Comes First?

In the likely case that funds will not be available to meet all the hardware and software demands of faculty, students, and administrators, whose needs will take precedence? Should faculty desktop machines be upgraded regularly and frequently to provide the latest in speed and capabilities to the most demanding and vocal constituency? Or should the school invest in student computing to remain competitive with peer institutions, and to appease perhaps the most sophisticated group of users?¹⁵ Or should it first devote resources to developing sound and efficient administrative computing systems? One can identify law schools that have given priority to each of these constituencies; which should have precedence is clearly a local question, and one that depends on more than the technological perspective. Such issues need to be decided in light of the school's overall goals and priorities.

15. And at what level should the law school provide hardware to support student computing? Should the large investments that some schools have made in desktop machines in computer labs or in the library be continued in the face of large renewal costs, or should students be expected (or required) to arrive for their education with portable computer in hand, ready to plug into a law school or university network? How soon will the computer become like the typewriter: something a student needs to have, but hardly something that the school is expected to provide?

Support and Training

As faculty, students, and staff increase their reliance on computer-based applications and services, the school's needs for reliable platforms, and for support staff, will also increase. Technically qualified persons must be hired to select, install, manage, and maintain network and desktop equipment, wiring, and connections to outside services, and to support the software for operating systems and applications. If the school chooses to develop its own administrative systems or tailor systems to meet local needs, it will require additional programming and development staff.

Most users will need introductory training in local network operations and services to use the technology effectively, and many will need training, as well, in basic applications for word processing, communications, and research. They will also need additional and ongoing training when network and desktop operating software and applications are changed or upgraded, and perhaps when network or desktop hardware is replaced. Even with training, individual users will require assistance to solve problems or improve their abilities to use the resources. In most institutions, the development of effective training and support programs is hindered both by a lack of resources and by the difficulties of devising local programs to meet the varying needs of users. The result is usually a patchwork program of group demonstrations and offers of individual training, coupled with purchases of videotapes, manuals, and other self-help tools. The targeted audiences are all reluctant to invest more than token amounts of time in training; they have other demands on their time and may question whether training will really be helpful. How much should a school invest in training when the results are so uncertain?

For most law schools, keeping systems running and providing assistance to a demanding community will require the hiring of some technical and other support staff devoted to the law school. At some institutions, a university computer center may supply the law school with some support. Some support and services can also be outsourced.¹⁶ Whatever the solution, few law schools will have sufficient resources both to provide and renew the technology infrastructure and to provide full support to the varying (and often competing) computing needs of faculty, students, and administrators.

What to Invest

A major benefit of the current networking environment is that law schools can develop local systems specially tailored to meet local needs. But the initial benefits of designing and developing a full set of resources to support the particular local needs of faculty, students, and staff may seem less attractive after factoring in the continuing costs of providing those services in house. How much of its own resources should the law school invest in hardware,

16. The value of local staff should not be downplayed, however, particularly if staff are skilled in problem-solving techniques and understand the law school's mission and the needs of its constituents. See Cheryl Currid, *Desktop Agenda: Hang On to Your Techies*, *InformationWeek*, Oct. 16, 1995, at 108; Varun Nagaraj, *Reengineering: Seize the Opportunity*, *InformationWeek*, Nov. 13, 1995, at 136.

software, infrastructure, training, technical support, and user assistance for computing? What can be provided by the university? To what extent can the school rely on the services and equipment offered by the online legal information vendors? Can other forms of outsourcing meet the school's needs at a lower cost than that of developing a full shop in house? Most law schools have more than one option available to them. Planners must consider how much benefit can be gained through identifying and leveraging the resources that might be available from outside sources.

If developed locally, computing will take up a large and expanding portion of law school expenditures. What programs will receive less funding to support the growing investment in information technology? Should more reliance on computing and electronic information services mean less support for print resources in the library? Who will make that decision, or determine what other programs will lose some funding?

*When to Upgrade (Why Upgrade at All?!*¹⁷)

In law schools, as elsewhere, technology decision-makers are caught in replacement cycles for both hardware and software—not because the components are no longer functional, but because they are not the latest available. Desktop hardware normally is scheduled for replacement because it no longer runs the latest software releases at acceptable speeds, not because it is worn out or beyond repair. Because hardware manufacturers continue to fulfill the axiom of Intel chip maker Gordon Moore that the performance of chip technology doubles every eighteen months relative to its price,¹⁸ newer and faster machines are nearly always available for about the same price as last year's now obsolescent models. New and upgraded software developed to run on the more powerful machines provides more features, and improved features designed to increase productivity. But how many users fully exploit the power available on the older versions?¹⁹

Because of their system-wide cost implications, decisions about when to upgrade either software or hardware should be weighed against the benefits to be gained. Should the school defer replacement and spend the money instead on more extensive training programs for users of the current hardware and applications?

Though not complete, the list of issues shows that for reasons of policy as well as finance, it is essential for any law school to consider carefully its

17. One clear response to the summer 1995 release of Microsoft's Windows 95 was the posing of this question in both the business and the popular press. See, e.g., Tom Davenport, Management Agenda: Beware the Upgrade Frenzy, *InformationWeek*, Aug. 7, 1995, at 104; Ron Erickson, More Software. Gee., *N.Y. Times*, Aug. 4, 1995, at A27.
18. See Brent Schlender & Henry Goldblatt, Why Andy Grove Can't Stop, *Fortune*, July 10, 1995, at 88, 91.
19. See George Gilder, Telecosm: The Coming Software Shift, *Forbes ASAP*, Aug. 28, 1995, at 146, 148, for an explanation of the way software development responds to increases in processing power.

approaches to information technology. It is equally important to determine how best to organize administrative and planning mechanisms for computing services. What it comes down to is the need for the law school to have a networking strategy that aligns investments in computing to the goals of the school and shows how networking will contribute to the school's performance in meeting its goals.²⁰

Dealing with Computing in the Law School

Law school deans have a number of possible administrative solutions available for dealing with computing issues. Choices among them will be influenced by the same sorts of factors that affect assignment of responsibility for any new or growing program: the flexibility of the current administrative structure, the talents and interests of the incumbents in existing positions, which administrators can be most easily persuaded to take on new responsibilities. For computing, the choice also reflects, although perhaps only implicitly, how high a value the law school places on the role of information in accomplishing its mission. If information and the technologies for using it productively and efficiently are viewed as having little direct strategic value for the institution, it may matter little how computing is organized and who has responsibility for computing services. If information technology is recognized as essential to the school's theory of the business, and considered to be integral to the way the law school meets its goals and aspirations, organization of computing services and responsibility for those services will be of much greater importance to the school.

Regardless of how much thought is put into organizing computing services in a particular law school, some administrator will serve—perhaps by default—as the equivalent of the chief information officer, or CIO, in a business organization. The computing staff must have a reporting relationship within the law school that extends, presumably through an intermediary of some sort, to the dean. Even if large responsibilities for computing are delegated to department-level managers or supplied from outside the law school, someone must be responsible for planning the development of computing services in the school. For a school looking at technology strategically as a means of accomplishing its mission, this is a key administrative position.

Who Should Be the CIO?

Responsibility for computing in the law school can be placed within the jurisdiction of an administrator with other, perhaps broader responsibilities not directly related to computing, or assigned to a more specialized administrator. Depending on the administrative structure of the school, the responsibility could be given to any of the following: a regular faculty member rotating through a limited term as associate dean with administrative or programmatic responsibilities delegated by the dean; a more permanent associate or assis-

20. See Sharon R. Parker, *Strategy: A Network's Business Value*, *InformationWeek*, Oct. 23, 1995, at 144 ("Network planning should not be seen as an activity that is solely the responsibility of technology zealots. It should be imbedded in business planning.")

tant dean with general administrative responsibilities (who may or may not have status on the teaching faculty); the dean's administrative assistant (because of the budgetary implications of information technology purchases); or the head of faculty support services (because of the origins of the current network in word-processing support). Other possibilities depend on local administrative structures.

In the alternative, a school can assign computing responsibilities to more specialized positions. It might establish a new dean-level position with primary responsibilities for computing programs, to be filled either from within the regular faculty or by a more permanent administrator. It might give broad responsibilities for planning and policy, as well as for operations, to the head of the computing staff. Or it could assign full responsibility for computing, within the library and for the entire school, to the law librarian.

Any of these arrangements can be successful, although it should be noted that assigning computing responsibilities to one of the more general administrative positions runs risks of instability and inconsistency if the assignment is based on the personal strengths and interests of a limited-term incumbent in the position, rather than the place of the position itself in the administrative structure. And some arrangements are more likely than others to ensure that planning and policy-making for computing are done with clear understandings of institutional goals and priorities. More permanent administrative deans and limited-term associate deans from the tenure-track faculty are more likely than administrative assistants or faculty support personnel to have the knowledge and authority to perform planning and policy roles. But they are also likely to have multiple responsibilities, and may not have the interest, temperament, or time to devote enough attention to computing matters. In addition, the usually short terms of associate deans on assignment temporarily from the teaching faculty might preclude their being assigned long-term administrative responsibilities.

Under any model, whoever is in charge of computing will not lack for advice or information about how well or poorly the program is doing. Because of the extent to which the entire law school community relies on information technology in their work, the person in charge of computing will receive suggestions, assistance, and criticism on policy matters from students, faculty, and staff alike. At some schools, one or more faculty members occupy positions of de facto authority on technology issues because of their past or continuing roles in bringing computing to the schools. All of these things can add to the pressures on lower-ranking administrators, who might not see themselves as having the status to resolve conflicting demands. Clearly, it will be difficult for administrative assistants or faculty support personnel to make tough decisions on priorities and to establish long-term policy. To provide more formal guidance under any model, a school may establish a computing advisory committee with faculty and student representation. Although computing committees can be helpful in long-range planning and establishment of policies when immediate decisions are not required, they are less helpful in resolving day-to-day issues, and are by nature unlikely to take the lead on computing issues.

Alternatively, a law school can place broad responsibility for computing within the jurisdiction of a specialist administrator: the head of the computing department (if the local computing structure is well developed) or the law librarian. The computing professional (or information technologist) and the law librarian are both members of an information profession.²¹ Both are concerned with information, and both with technology, but each brings a different perspective to law school computing and the responsibilities of chief information officer.

Technologists bring presumed advantages in understanding the capabilities and limitations of computing and network technologies; librarians bring apparent strengths in understanding and meeting user needs through technology or other means. The role of law librarians in the law school is longstanding and well established, as is their experience in using and supporting computer-based research services and systems for library data processing. Law school technologist positions are newer and in most cases were created initially to provide technical support for word processing and administrative support systems. Members of each group may be wary of the other's role as more and more information work is network-based and as library services extend via the network beyond the physical library to faculty offices and elsewhere.²²

Understanding the Business

The heart of the issue in determining who should fill the CIO position in the law school is not in professional backgrounds or perspectives, or in who has had the most experience in opening up a desktop terminal or network server. In the law school, as in business, the key qualification for being a successful chief information officer is understanding the mission of the organization. Understanding a particular law school's sense of what it is trying to do is essential if the law school CIO is to make information technology decisions in light of business considerations, whatever his or her technical or professional background and experience. In law schools, as elsewhere, information technology is becoming fully integrated into the daily work of the organization. Faculty, students, and staff all use computing resources regularly and increasingly. If those uses are to be developed productively in

21. See Andrew Abbott, *The System of Professions* 215–46 (Chicago, 1988). Members of the information professions “provide others with information [and] help clients overburdened with material from which they cannot retrieve usable information.” *Id.* at 216. Traditionally, there have been two sectors of information work: *qualitative information* (an area generally occupied by librarians and academics) and *quantitative information* (historically the domain of cost accountants, management engineers, statisticians, operations researchers, systems analysts, and others). *Id.* According to Abbott, the rapid rise of information science and developments in computer technology since the Second World War signaled a merging of the areas of qualitative and quantitative information, and a likely unification of the information professions into a single field, at least from the perspective of computing professionals. *Id.* at 239–43.
22. Under the terms of Abbott's framework for analyzing the relationships of professional groups in the workplace, librarians and computing professionals can be viewed as competing for dominance in the information area. See *id.* at 224.

support of the mission of the school, they must be developed in light of that mission, not on the basis of technological considerations divorced from business considerations.²³

Beyond that essential qualification, the law school CIO must show other attributes of successful administrators and managers: leadership and communications skills, as well as the ability to build strong relationships with department heads and others planning for successful implementation of technology in their daily work. If not trained in technology, the CIO must be able to understand technical issues and the potential and limitations of technological solutions, and be able to represent law school interests in a variety of forums. But to do any of these things effectively, it is essential that the CIO understand what business the law school is in.

Whither the Law Librarian?

There is no imperative for library directors to assume CIO responsibilities in law schools. Technologists, as well as other law school administrators from outside the information professions, can perform the role. But it is likely that, whether looking to information technology as a strategic tool, or simply wishing to gain control over their investments in technology, law school deans will increasingly turn to librarians to take on these responsibilities. Some deans will wish to avoid establishing another high-level administrative position in the law school and will see no better fit within the existing administrative structure.

In other law schools, deans will turn to law librarians to take on the CIO role because of the strong qualifications that many librarians have for the responsibility. Law librarians have long worked with information technology in the processing of library materials, in research support and training, and, at many schools, in support of student computing services. As managers of large staffs and budgets, experienced library directors have developed a broad range of managerial skills. As providers of services to demanding constituencies of faculty members and law students, librarians should also have developed skills in identifying and meeting the disparate information needs of large user populations. Most important, perhaps nearly all law library directors perform these roles both as senior administrators and as members of the law school faculty. They are positioned to meet the essential qualification of the CIO: understanding the business of the law school.

In 1996 no law library director can escape dealing with the information issues posed by network technologies. Some librarians, however, will have no interest in technological applications beyond those they see as directly relevant to the library role. If so, they may be excused from broader institutional responsibilities. To perform the CIO role effectively, it is necessary both to

23. As expressed by Jonathan Newcomb, president and CEO of Simon & Schuster, the key role of the decision-maker is to "focus on the business needs that technology supports. I don't need to know about the latest video compression tools. But I want to understand the opportunities video compression may offer Simon & Schuster." *The End of Delegation?* *supra* note 6, at 165.

develop an understanding and appreciation of information technology issues, and to be able to look beyond the library to take an institutional perspective toward planning and decision-making. Is it reasonable to expect that any library director will be able to take an institutional perspective consistently? What if the law school's business considerations point to technology decisions that disfavor allocation of resources to the library? Can the library director remain impartial, and apply business considerations when matters of professional contention develop between librarians and technologists?

Perhaps answers to these questions can be found by considering the desirable characteristics for the law library director listed in earlier *Journal of Legal Education* articles by Minnette Massey and Roy Mersky. Massey's 1957 article, "Law School Administration and the Law Librarian," was in part an advocacy document, arguing that the law library should be an administrative unit of the law school, not of the university library system.²⁴ In support of that stance, Massey described the qualifications, rewards, and status appropriate for the director of a law school library. For Massey, in addition to possessing the qualifications stated in current accreditation standards, the law librarian "must be something of a chipmunk, an Elijah, and one of the oracles of Delphi" to meet everyday demands and plan for the future.²⁵

Twenty years later, in "Everything You Always Wanted to Know About Law Libraries but Were Afraid to Ask," Roy Mersky outlined the qualities of "a good law librarian" within the context of the librarian's role in developing and managing the financial resources necessary to support the law school library. He touched on several themes that remain central to discussions of the law library in 1996: the place of computing technologies, the need to develop programs to meet the specific local needs of the school, the importance of networking to provide cooperative access to less-used sources; the importance of cooperation between the faculty and the library, and the need to invest in training to maximize the value of library staff. For Mersky, the law librarian "must be a fiscal manager, a statistician, a psychologist and personnel manager, an architect, a legal scholar, an expert on library technology and information retrieval, and finally, an administrator."²⁶

The approaches of both articles reflect the times when they were written, as do the qualities that each author identified as desirable for law library directors. Massey's concerns were focused on the role of the librarian in meeting the needs of law faculty and students. Her point was that the law librarian's work was in support of law school goals and objectives rather than more

24. Issues of administrative autonomy for the law library remain alive today, although they are played out (and described) in somewhat different terms from those of the 1950s. On many campuses, shared automated systems for ordering, processing, and circulating materials, as well as for display of holdings in online catalogs, require significant cooperation and communication between the law school library and the university library system, regardless of the reporting relationships. In addition, the development and expansion of campus-wide networks and centralized computing and information services have created new administrative issues for law and other academic libraries.

25. Massey, *supra* note 2, at 217.

26. Mersky, *supra* note 2, at 146-47.

generalized library goals. Twenty years after Massey, Mersky offered a more expansive description of the law librarian's desirable qualities, ending with the notion that the law librarian was, "finally, an administrator." In using the term, Mersky might have been thinking of the law librarian solely as an administrator of the library. I suspect, though, that already in 1976 he was thinking more broadly.

As information issues extend beyond the library walls to desktops in faculty and staff offices, and in the homes of faculty and students, they will be seen as law school issues requiring institutional solutions. It is likely that the law librarian will be looked upon more and more as a law school administrator and less as, simply, the administrator of the library. Because of the nature of their work, their legal training, and their status on the law faculty, library directors might be uniquely positioned among the law school's senior administrators to understand the school's mission and its "theory of the business," and to make technology decisions in accordance with them. The nature of the business is changing. As information technology continues to grow in importance as a strategic tool in the pursuit of the law school's objectives, more and more library directors will have opportunities to use their skills outside the traditional boundaries of law library administration. Future descriptions of the desirable characteristics for law library directors will note this, as well as the likelihood that many directors will develop careers as law school administrators broadly responsible for matters well beyond the law library.