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IMPLEMENTATION AND COST EFFECTIVENESS OF COMPUTERIZED LEGAL RESEARCH—*LEXIS AND WESTLAW COMPARED**

*Richard M. McGonigal***

In attempting to analyze the effectiveness of computerized legal research, and to compare the two major systems available to private practitioners in the legal profession, it is essential that one summarize his or her personal experience and involvement with these systems. I am a partner in the Cleveland, Ohio firm of Squire, Sanders & Dempsey. While the firm has more than 220 attorneys today, we were closer to one hundred attorneys when, in 1969, our firm became the test laboratory for the first law firm pilot project of the Ohio State Bar Association's Automated Research Project (better known as "OBAR").

OBAR is a non-profit subsidiary of the Ohio State Bar Association. Jim Preston of our firm, as President of the Ohio State Bar Association, initiated the project and served for some years as Chairman of OBAR; I served as general counsel to OBAR from 1969 through 1974. OBAR entered into full-text, computer-assisted legal research development agreements in 1967 with Data Corporation, which was acquired by the Mead Corporation in 1969, and reappeared as Mead Data Central, Inc. The end product of the Ohio Bar's crusade and commitment, and Mead Data's technology and dollars, is the LEXIS system.

* © Copyright 1978 by Richard M. McGonigal. This paper presents an updated revision of Mr. McGonigal's speech to the American Bar Association, Section of Economics of Law Practice, Seventh National Conference on Law Office Economics and Management, held at Kansas City, Missouri, on November 6, 1976.

** Richard M. McGonigal is a member of the firm of Squire, Sanders & Dempsey, Cleveland, Ohio, a director of Computer Law Association, Inc., a member of the Council of the American Bar Association, Section of Science and Technology, and was Editor-in-chief of its quarterly publication, *JURIMETRICS JOURNAL*, from 1975-1977.

Since 1970, our firm has been a substantial user of the LEXIS system and since 1976 has developed substantial usage on the WESTLAW system offered by West Publishing Company.¹ Our experience with LEXIS and WESTLAW has been extremely satisfactory; both systems are utilized by our attorneys extensively and effectively, and we have experienced a minimum of technical and downtime problems.

For the past three years, I have had no association with any group sponsoring any specific computerized legal research system, but have had the privilege of working with the American Bar Association ("ABA") Section of Science and Technology, which has been charged with assisting in the formulation of an ABA policy position on the subject of public terminals and computerized legal research.² As this article indicates, it is simply economically unfeasible for many lawyers to contract for computerized legal research services through a private terminal installation. Justin A. Stanley, while President of the ABA, expressed the concern that, unless the ABA stepped in, computerized legal research might not be available to general practitioners who either practice alone or in a small office.³

The purpose of this article is to discuss the practical impact of computerized legal research on the practicing lawyer and to compare the two major systems available at this time.⁴ Reference materials on computerized legal research systems are plentiful, but are not that helpful for the purposes of this discussion. Both Mead and West have excellent brochures, and I encourage everyone to personally operate both the LEXIS and WESTLAW terminals and to communicate directly with both Mead and West.⁵ In addition to vendor materials, there are numerous other useful references on the subject.⁶

1. Since 1974, our firm has also subscribed to an effective, automated, case-citation verification system known as "Auto-Cite," marketed by Lawyers Co-operative Publishing Company, Rochester, New York 14603. See McGonigal, *Report on the Lawyers Co-operative Publishing Company's Automated Citation Testing Service ("Auto-Cite")*, 16 JURIMETRICS J. 130 (1975).

2. Stanley, *Address to Young Lawyers and General Practice Sections*, 16 JURIMETRICS J. 258 (1976).

3. *Id.* at 259.

4. While the United States Department of Justice has an excellent system known as JURIS, this system is not available to the general public. See J. SPROWL, *A MANUAL FOR COMPUTER-ASSISTED LEGAL RESEARCH* (1976), published by the American Bar Foundation, 1155 East 60th Street, Chicago, Illinois 60637, \$3.50 (Pub. # ISBN-910058-76-8).

5. Mead Data Central, 200 Park Avenue, New York, New York 10017 (212/883-8560); West Publishing Company, 50 West Kellogg Boulevard, P.O. Box 3526, St. Paul, Minnesota 55165 (612/228-2500).

6. While there has been a large amount of material published on the topic of computer-assisted legal research (*see generally*, the Bibliography in this issue), sev-

A basic reservation in considering any computerized legal research system concerns the bottom-line query of whether or not all the whistles and bells and lights and dollars are worth it. I think they are, not only because computerized systems perform a standard, manual research task more quickly, but also because they have created a new mark in the research area. While legal research represents a major budget item to any lawyer, both in terms of attorney time and the cost of physical library materials, it generally represents a task lawyers would rather do without, and is commonly a "loss leader" item. Traditional, manual library research requires the attorney to examine a client's fact situation, and then to locate the applicable theory or theories of law. The actual searching for cases with a similar fact situation begins with an analysis of a legal doctrine or theory, rather than the location of a theory based on the relevant facts. The computer breakthrough in legal research has freed the researcher from the constraints of searching within a formal index for concepts or legal doctrines; instead, the user may feed a combination of words and phrases into a computer terminal, and the computer can use this input to search and locate cases which may have numerous theories and concepts. It should be noted, however, that the interface between the attorney and the data base is never quite as free and unrestricted as the vendor would have one believe, since (1) software limitations are imposed in order to improve response time, and (2) the data file structure itself contains certain limitations, including the particular vocabulary utilized by the judge who wrote the opinion.

Too often, we forget just how difficult legal research is, and yet how important it is to our practice. Canon 6 of the ABA Code of Professional Responsibility requires a lawyer to represent a client competently and to maintain a high level of competence.⁷ Computers accelerate the research process, but the sweat is still there,

eral items are of particular interest. On LEXIS, these include: Harrington, *What's Happening in Computer-Assisted Legal Research?*, 60 A.B.A.J. 924 (1974); McGonigal, *Computerized Legal Research: One Firm's User Experience*, in ABA, *SENSE AND SYSTEMS IN AUTOMATED LAW RESEARCH* 113 (May ed. 1975), revised and reprinted in 15 *LAW OFF. ECON. & MANAGEMENT* 213 (1974); and Sprowl, *Computer-Assisted Legal Research—An Analysis of Full-Text Document Retrieval Systems, Particularly the Lexis System*, 1976 *AM. B. FOUND. RESEARCH J.* 175. On WESTLAW, these include: Halladay, *Legal Research with Westlaw*, 61 A.B.A.J. 1414 (1975); and Sprowl, *The Westlaw System—A Different Approach to Computer-Assisted Legal Research*, 16 *JURIMETRICS J.* 142 (1976). See also SPROWL, note 4 *supra*.

7. ABA CODE OF PROFESSIONAL RESPONSIBILITY, Canon 6, E-C 6-1 (1976):

Because of his vital role in the legal process, a lawyer should act with competence and proper care in representing clients. He should strive to become and remain proficient in his practice and should accept employment only in matters which he is or intends to become competent to handle.

and the whistles and bells do not produce automatic answers. We must recognize that computer-assisted research still involves the individual lawyer's agony, toil and intellectual ability and, while the computer will provide speed and quality, the effectiveness of the output depends upon the researcher's input request and his analysis of the computer's response.

It is true that you can save time and money through such a system, and that there are some computer searches that are simply impossible to do manually, such as locating every case that defines the term "good faith." The principal advantage, however, of computerized legal research lies in the quality and accuracy of the end product. While most searches take time under either method, the accuracy, thoroughness and certainty of computer searches are outstanding. No printed indices can even begin to anticipate the myriad of cross references essential to high quality research; it is in this area that you cannot do without access to a computer research system. Thoroughness is the key, and these systems, particularly LEXIS, offer the most sophisticated and flexible cross-indexing tool yet developed.

The most significant problems encountered today in increasing usage of computer research systems lie in the areas of user education and user resistance.⁸ Conventional research methods are comfortable to most of us, and it takes time to overcome this natural resistance and the concern that the "black box" does not contain a complete and accurate data base. For the past five years, all Ohio law schools⁹ have had LEXIS instruction in their legal research courses. It has been refreshing to see the receptiveness of the emerging wave of young attorneys to computer research. For the rest of us, it is a new game, and the most disenchanting aspect of my close connection with computer research projects has been the discovery that the total amount of research performed by the legal profession is not substantial and, indeed, borders on the dismally inadequate. With the incredible increase in research materials, we must find a quick and economical way to acquire a grasp of the applicable law if we are to adequately serve our clients' needs.

8. In a paper entitled *The Education of Users of Scientific and Technical Information*, presented by Carole Ganz at the NFAIS Annual Conference in March, 1976, Ms. Ganz reported that present scientific and technical information services are used by only a small proportion of potential users, primarily because of a lack of user familiarity with the available resources, and the absence of sufficient instruction in how to access and use the services.

9. See Dee & Kessler, *The Impact of Computerized Methods on Legal Research Courses: A Survey of LEXIS Experience and Some Probable Effects of WESTLAW*, 69 LAW LIB. J. 164 (1976).

One of the principal advantages of the computer research systems lies in their ability to provide access to legal materials not available in your library. New decisions are in the data base before they reach your shelves. Decisions from other states found only in local reporters, and unpublished opinions may also be available. Regulatory materials, for example "no-action" letters issued by the Securities and Exchange Commission, are accessible. Other legal services are or will become available to computer research subscribers, such as litigation support systems,¹⁰ storage of private internal memoranda, and legal form preparation.

Further, the law business is becoming less and less confined to legal statutes and opinions. In the pollution area, for example, you need scientific articles, government releases, and foundation studies, while in the corporate field, business information is vital. There are numerous, non-legal data bases that are available to a private party for a modest charge, once one has a terminal, data phone, and basic familiarity with computer retrieval. For instance, abstracts of government-sponsored economic reports, urban planning studies, and engineering reports are available from the Department of Commerce through its National Technical Information Service (NTIS) at a \$35 an hour on-line charge. Business forecasting data is available from The Information Bank, a subsidiary of The New York Times Company. At \$70 an hour you can search the Social Science Citation Index, which is a multi-disciplinary data base indexing every significant item from the one thousand most important social science journals worldwide. Numerous on-line systems are available, which contain materials on ecology, engineering, energy, transportation, psychology, agriculture, education, business, and the sciences. Currently, West will permit you to utilize your WESTLAW terminal for communications with other data bases, while Mead restricts usage of its terminal to LEXIS services.

Computer research is here to stay. If you are involved in litigation in federal court with a large law firm, or a government agency, you should realize that your opponent, as well as the judge's clerks, will have some form of computer research available to it. In a complaint, dated August 16, 1976, filed by Mead against West in the Southern District of New York, Mead claimed that: "Approximately 23,000 lawyers, law students and accountants in twenty-one states and the District of Columbia have been trained to use the LEXIS

10. LEXIS already provides litigation support services to its users. West has just announced an agreement with Aspen Systems Corporation, which will permit subscribers to access the Aspen litigation support system through their WESTLAW terminal. See *Legal Research Services Accessible from One Terminal*, Computerworld, Sept. 4, 1978, at 51, col. 3.

service."¹¹ Notwithstanding this lawsuit, in which Mead charges West with monopolizing the legal research materials market in both book and computer-assisted forms, I will attempt to evaluate the two systems.

WESTLAW's data base, described in Appendix A *infra*, now contains much more than the initial headnotes, since full-text coverage has been added for a substantial portion of the federal base. Moreover, the WESTLAW library also contains the military justice reporter and case collections on such topics as civil rights, products liability and securities regulation.

The LEXIS library materials are described in Appendix B *infra*. This is a completely full-text data base and includes all federal court decisions from 1960 for district courts, from 1945 for courts of appeals, and from 1938 for the United States Supreme Court. Special data bases on federal securities law, tax law, patent, trademark and copyright law, and trade regulation law are available, as is the United States Code. One word of caution concerning these specialized bases—they contain *selected* materials only and are not intended to be exhaustive. Accordingly, the user must have a good grasp of the particular field of law before he may assume that a complete search has been made. Extensive case law and statutory material from the states of Arizona, California, Delaware, Florida, Georgia, Illinois, Kansas, Kentucky, Massachusetts, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, Texas and Virginia are also available. If your state data base is not yet included in LEXIS, and you can gather a group of subscribers, Mead is reasonably receptive to embarking on a program to build a state file covering the past ten to twenty years. The LEXIS data base represents an incredible accomplishment, and the statutory and administrative materials, as well as the depth of its case data base, give Mead the edge in this area. The advantage of the WESTLAW data base lies in its fifty-state case law coverage.

The LEXIS base is unindexed and full text, and includes every word of each respective case and statute. I feel that the advantages of full text, certainty and thoroughness, outweigh its drawbacks, the number of irrelevant documents that often accompany the relevant and the tendency to output a formidable number of documents. A major portion of the WESTLAW base is indexed and limited text, consisting of the familiar West headnotes. With the WESTLAW system, you encounter the limitation of any indexing system, where,

11. Mead Data Central, Inc. v. West Publishing Co., No. 76 Civ. 3618 (WCC) (S.D.N.Y., filed March 15, 1977). It was recently reported that Mead has dismissed its suit. *Lexis Drops Westlaw Antitrust Suit; Both Sides Claim Strategic Victory*, Nat'l L.J., Sept. 18, 1978, at 3, col. 1.

for example, you search on the word "contract" and the headnote writer used the word "agreement." Of course, most of us were trained on the West National Reporter System and are familiar with headnotes and the Key Number System. As West expands its full-text coverage, the user will be able to utilize the advantages of both full-text and limited-text retrieval, since the headnote search option will be retained within the full-text library.

LEXIS, as a nonstatistical research system, requires the researcher to draft his search request in a special Boolean logic-based retrieval language, which must be learned. WESTLAW accepts natural language queries and then uses statistical techniques to determine how closely in word usage and frequency each document in the library matches the query.

WESTLAW, however, is more than headnotes when the Key Number factor is considered since, once you locate a relevant headnote, you can obtain the Key Number and move into the National Reporter System contained in most public law libraries. The WESTLAW system is as good as the West Key Number System, and you are in a position to evaluate this for yourself, since the printed product has been in existence for many years.¹²

From a user's standpoint, WESTLAW is easier to learn since it accepts natural language queries. WESTLAW also attempt to display the most relevant documents ahead of others; LEXIS makes no such attempt. LEXIS is an excellent citator, while WESTLAW cannot be used as a citator for the portions of its library still limited to headnotes. The principal advantage of LEXIS lies in its ability to assemble collections of documents relating to one another in a well-defined manner. For example, LEXIS can retrieve all cases relating to a specific fact situation, or all cases decided by a given judge. The LEXIS "key-word-in-context" feature ("KWIC") permits the user to display a number of words on either side of the search words found in a given case, and aids in the determination of relevance. If the case is relevant, the user can browse through the entire decision, a process which often leads to other points of law and other search terms. One can work with LEXIS as one would a large printed library; one cannot do this with substantial portions of the WESTLAW data base.

12. The United States Department of Justice's JURIS system also contains West headnotes, at least for federal cases, but the designers of JURIS did not define each individual headnote to be an independently searchable document, as did the WESTLAW designers. Instead, they defined the *set* of headnotes for each decision as the basic, searchable document. They assigned individual document numbers to collections of related headnotes, rather than individual headnotes. As such, the JURIS system views all the headnotes for a single case simultaneously.

The direct costs of LEXIS are somewhat complex to explain. For terminal installation and training, you pay a flat fee of \$2,600 under any of the three price options, which are inconveniently listed as Schedules Q, A and B.¹³ In addition, you have a fixed communications and equipment charge of from \$500 to \$590 per month, depending on what printer speed you desire—slow or snail's pace. Assuming you choose the better printer, the minimum cost will be \$9,680 for the first year without any usage. If you choose a usage commitment of \$2,500 per month (Option B), your usage rate is \$77 per hour for what Mead calls "research time" (which is really connect time), plus a surcharge of \$3.25 per minute for each minute between the time your search request is transmitted to the computer and a response appears on the terminal stating that a certain number of documents satisfy your request. Generally, this surcharge will occur during approximately ten percent of your connect time, so when you add the \$19 (6 minutes x \$3.25) to the \$77 hourly research charge, you have an actual usage charge of \$96 per hour. Under this option's \$2,500 usage minimum, you receive approximately twenty-six hours of usage, with all additional hours billed at the same \$96 per hour rate. On an annual basis, for the first year you will pay a minimum of \$39,680 for 312 hours of usage, or a direct cost of approximately \$127 per hour.

The LEXIS Option A requires a \$12,000 per annum usage commitment with a usage rate of approximately \$116 per hour, resulting in a usage commitment of 103 hours per year or 8-3/4 hours per month. The first year in Option A will cost \$21,680, for a direct cost of \$210 per hour. Option Q requires *no* minimum usage commitment, so in addition to the \$9,680 fixed cost of the first year, the usage charge is \$131 per hour. Under Option Q, if you were to use 60 hours, your direct cost would be \$292 per hour.

With all of these packages there is an off-peak connect time rate of \$48 per hour, which reduces the effective usage rate, including surcharge, to \$67 per hour. The availability of this off-peak rate depends upon the time zone situs and the stamina and personal lifestyle of the user. Generally, on Monday through Friday, off-peak means after 7:30 p.m., while on Saturday and Sunday, the off-peak rate applies from 10:00 a.m. to 6:00 p.m.

The WESTLAW pricing options are somewhat simpler. For \$2,600 per month, you receive unlimited search privileges, while for \$1,500 per month, you receive twenty hours of usage per month, with a \$50 per hour rate thereafter. Under the third option, you pay a flat fee of \$500 per month, plus \$75 per hour for usage, with no minimum

13. Interestingly enough, the cost spectrum for these options runs from B for the most dollars to A to Q for the least.

monthly commitment. Accordingly, under WESTLAW, you face an annual minimum ranging from \$6,000 to \$31,200. The WESTLAW prices include installation, equipment and communications.

I think you will concede that these are major budget items and, if your firm anticipates less than sixty hours of usage per year, it is questionable that a private terminal is economically feasible. Public terminals, located in law libraries, bar association offices and law schools, where users only pay on a "per search" basis, appear to provide a viable alternative for these users.¹⁴

The indirect costs of computer-assisted research can also be substantial. These systems require:

- (1) involvement on the part of senior firm members to ensure that all junior attorneys are trained and encouraged to utilize the terminals;
- (2) an adequate physical environment (space, ventilation, air conditioning) and individuals to assist the users;
- (3) financial controls to ensure adequate usage and accountability for client billing purposes; and
- (4) (generally) the presence of the attorney, which results in a double billing rate.

The implementation process of a computer-assisted research system by a firm is critical to successful use. The top level management of the firm must let it be known that the firm considers the computer research system a critical part of the practice. Senior attorneys must query whether a junior attorney checked a problem through the system, and should demonstrate a positive attitude toward system use. Regarding training, I am against the military drill concept, where bodies 1 through 5 must show up at 8:00 a.m. for two days of nonsense. I favor a brief, initial orientation, followed by actual training when the attorney has a good client problem, re-enforced by some search training sessions thereafter. West is more flexible in this area than Mead, and this may be because the WESTLAW system is easier to learn and operate, since search framing rules are not as complex and rigid. Mead presumes the way in which all lawyers should practice law, and insists on exhaustive training sessions that can have a negative impact on the program. You should *not* attempt to implement or train your attorneys on both systems at once or you will not survive past sundown.

Squire, Sanders & Dempsey has obtained extremely valuable usage from both systems, though our experience may or may not be particularly relevant to your situation. Any firm with one hundred or more attorneys should have both systems, since we find them to

14. For an extensive discussion of the current status of public terminals, see Greguras & Carlisle, *The Public Terminal Study*, 1 *COMPUTER/L. J.* 255 (1978).

be complementary rather than competitive. In other words, for us it has not been a question of choosing between two publishers for a tax service. In addition, the LEXIS data base in Ohio is rather unique since it contains *all* case law. Accordingly, if you have a forty-man firm in Ohio and are looking into both systems, I feel that you really have no choice but LEXIS on the basis of its current library. However, if you are in a state for which LEXIS does not have a complete data base, or if you are in a medium-sized firm, then from the standpoint of data base coverage and per hour or per search cost, you will simply have to choose one over the other.

During the year 1977, our firm ran 882 searches on LEXIS and incurred approximately 478 hours of usage, of which 87% involved real time matters for clients and 13% were attributable to general library and office use. We also incurred an additional 50 hours of usage for training time, for which we received training credit. When you add our fixed cost of \$7,080 for equipment and communications to our usage time, our annual cost was approximately \$53,160 or \$60 per search, with a total charge of \$111 per hour. Our 1978 LEXIS charges and usage are running parallel to our 1977 figures.

During 1977, we ran 3,838 searches on WESTLAW and had 208 hours of usage, of which 85% represented real time usage. We were operating under the \$500 a month no-minimum option, with usage billed at \$75 an hour. Accordingly, our annual fixed charge was \$6,000 and our search usage charge was \$15,600 for a total of \$12,600 or \$5.63 per search. Since there are eleven separate files in the WESTLAW system, and, since a complete search requires a query of all eleven files, a search really cost us \$62 ($\5.63×11). The actual cost for WESTLAW was approximately \$104 per hour. Our 1978 WESTLAW charges and usage are running parallel to our 1977 figures.

If you are a substantial user of both systems, you will find that the actual cost per hour and per search is quite comparable. You can then evaluate which system provides better results. The cost analysis becomes difficult if your usage will be only half of that discussed. This is because your fixed charges will bear much more heavily on your actual hours of usage. For example, if you were to run 300 hours on LEXIS during a year, your cost per hour would be greater than 300 times \$96 (\$28,800) since you have a minimum commitment of \$36,000 and an additional fixed charge of \$7,080. Accordingly, your hourly rate would jump to \$143 per hour from our \$111, and all other options would be just as expensive. On the WESTLAW system, with the lowest price option, the annual charge is \$6,000, plus \$75 per hour. With the second option, the rate remains \$75 per hour, but there is no additional \$6,000 base charge,

and additional usage is billed at \$50 per hour. A subscriber must utilize over 445 hours per year for WESTLAW's unlimited usage figure of \$31,200 per annum to be attractive.

I should note that it might be convenient for your firm to share a terminal with two or three other firms in the same building in order to substantially reduce each firm's costs. Both Mead and West permit sharing as long as one firm is responsible for the housing and usage charges of the terminal.

With respect to your firm's implementation and training, you will need space, hopefully in an air-conditioned office in or adjacent to your library, and an active firm committee. Training for fifty to one hundred attorneys can easily take two weeks, so be ready for chaos, and encourage attorneys to take client matters with them to the terminal to both generate more meaningful training and somewhat reduce lost billable time.

There are research problems that are not really suited for computer research, and a search on such a problem will be expensive and may discourage further usage. As Jim Sprowl points out in his new book:

When a researcher knows little or nothing about an area of law, he may do himself a disservice by relying solely upon a computerized system. The LEXIS system at present requires one to know in advance what words and phrases are likely to be in the case or statutes to be retrieved, and it does not stimulate the thinking of the researcher by suggesting possible alternative words and phrases other than those he may encounter while browsing. If the researcher is unaware of the existence of a particular issue or doctrine, a computerized system will not necessarily draw it to his attention. A researcher unfamiliar with an area of law is better served by treatises, articles, loose-leaf services, and other more traditional tools of legal research that can stimulate his thinking by suggesting to him a variety of possible solutions to his problem.¹⁵

If one is not familiar with an area of law, a treatise should be consulted first to narrow the issues and generate applicable words and phrases. We find that our WESTLAW system is a better first-search "quick hit" device to jump the researcher into the middle of the problem, while LEXIS is an excellent tool for conceptual matters and for reviewing a number of cases once you have narrowed the issues. Notwithstanding the limited data base, WESTLAW can locate a substantial amount of relevant material in much less time than LEXIS. However, you cannot review the material at the WESTLAW terminal, since it contains only headnotes for most of its libraries, and WESTLAW coverage in terms of time span and materials is more limited than LEXIS.

15. Sprowl, *supra* note 4, at 14-15.

A significant factor in achieving a high level of user acceptance in our firm has been the use of law students to provide the computerized legal research service to our attorneys. In 1972, upon the recommendation of Robert J. Asman, President of OBAR, we began training second- and third-year law students to man the terminal full-time in the summer and part-time during the school year. These law students are not terminal operators; instead, they are terminal supervisors. We encourage direct interface by attorneys, but obtain maximum results through supervised, direct interface. The students are paid an average of \$5 per hour and respond enthusiastically to a part-time job which permits them to become research experts while witnessing the practice of law. We have had no problems with our law students in any area (including confidentiality). Our law students are experts at individual orientation and reinforcement of vendor training. In addition, they bring to the training session invaluable experience gained through numerous actual searches, and also adopt the tone and posture of the law firm as only an in-house person can. Our law students request that the individual bring a current client matter to the training session in order to increase that person's interest in the system and, possibly, to offset some of the training expense through a chargeable account. Proper orientation is accomplished in a thorough, but informal, manner by the same individual who will assist the attorney in future search requests.

Positive reinforcement can best be accomplished through use of law students. With his experience, the law student can assist the attorney in realizing maximum results in a minimum amount of time, through search framing and keyboard suggestions. Unless an individual uses the system twice a week, he will not maintain an awareness of all available keyboard techniques. In addition, search framing requires a somewhat different mental research strategy than manual research, and a law student who runs some ninety searches a month can ably assist the user in this area. Such a student can also discourage unproductive searches or modify them to make them productive. Each data file contains a general description of those library materials included in that file, but the law student knows exactly what is available, and can relate the materials to the attorney's area of practice. During a search the law student can also locate key decision volumes or supplementary treatises in the library to aid the search.

There are many attorneys in our firm who would simply not use the system without law student assistance. Attorneys can fill out a search request form, forward it to our librarian, and receive the printed results from the law student following the search, or request that they be called when the law student is getting close to locating

the relevant authority. A number of searches are routine, but valuable, such as statutory section numbers or decisional cite checks; the obvious waste of attorney time on such searches is avoided by the use of law student personnel. The billing is easily handled by the law students, for they perform all record-keeping functions. In addition, they accumulate invaluable usage data, offer advice for improvement of the service, and monitor invoices to make certain that we are being accurately billed for our usage time.

Your law librarian is vital to the success of any research system since he will frequently be asked to find something, and the requesting party normally has no preference as to how the librarian locates the relevant material. He will also be most familiar with the additional on-line services available which contain materials other than legal data. Your librarian's attitude towards efficient computer-assisted research may prove to be the key element in the success of such a system in your firm.

Our clients' acceptance of billing for usage of these systems has been excellent. Each system is billed as attorney time, and not as disbursement time as you might bill for a photocopy machine. It has been our experience that, while research time in general is charged down more than any other type of time in our firm, computer research time is generally charged by the billing attorney at the designated rate.

In summary, both LEXIS and WESTLAW are valuable research tools and appear to be surviving well. Computer research is expensive and may equal a firm's expenses for its annual library accessions, but I believe that it is well worth the cost and effort. I urge you to consider computer-assisted research, to receive vendor orientations, to talk to firms of comparable size and practice who have either or both of the systems, and to review your practice needs and compare them against the respective vendor data files and price options.

I am certain that I have not done justice to either Mead Data or West and, in recognition of such failing, I should compliment both for having the economic fortitude to market a highly essential product to the toughest and tightest market in the world—the legal profession.

APPENDIX A
CONTENTS OF WESTLAW LIBRARIES

NAME OF FILE	COVERAGE
Supreme Court Reporter	Full text, including headnotes, of U.S. Supreme Court cases, 1932 to date.
Federal Reporter 2d	Full text, including headnotes, of reported cases from the U.S. Courts of Appeals, Court of Claims, Court of Customs and Patent Appeals and Temporary Emergency Court of Appeals—all from 1961 to date.
Federal Supplement	Full text, including headnotes, of reported cases from the U.S. District Courts, Customs Court, Special Court, Regional Rail Reorganization Act, Judicial Panel on Multidistrict Litigation; also includes cases reported in FEDERAL RULES DECISIONS—all from 1961 to date.

NAME OF FILE	STATES	SCOPE OF COVERAGE
California Rptr.	California	Covers Supreme Court, Courts of Appeal, Appellate Department—Superior Court. Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date.
Pacific 2d	Alaska Arizona California Colorado Hawaii Idaho Kansas Montana Nevada New Mexico Oklahoma Oregon Utah Washington Wyoming	Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date. (For California, this file covers Supreme Court cases only. Other courts of record covered in California file.)
North Western 2d	Iowa Michigan Minnesota Nebraska North Dakota South Dakota Wisconsin	Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date.

New York Supplement 2d	New York	Covers Court of Appeals, Appellate Division, Supreme Court and other courts of record. Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date.
North Eastern 2d	Illinois Indiana Massachusetts New York Ohio	Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date. (For New York, this file covers Court of Appeals only. Other courts of record covered in New York Supplement file.)
Atlantic 2d	Connecticut Delaware Maine Maryland New Hampshire New Jersey Pennsylvania Rhode Island Vermont Washington, D.C.	Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date. (New Jersey includes headnotes from 1948 through 1977, and full text of all reported cases from 1978 to date.)
South Eastern 2d	Georgia North Carolina South Carolina Virginia West Virginia	Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date.
Southern 2d	Alabama Florida Louisiana Mississippi	Headnotes of all reported cases, 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date.
South Western 2d	Arkansas Kentucky Missouri Tennessee Texas	Headnotes of all reported cases 1967 through 1977. Full text, including headnotes, of all reported cases, 1978 to date.

MILITARY JUSTICE REPORTER

Covers decisions of the U.S. Court of Military Appeals, and Courts of Military Review for the Army, Navy, Air Force and Coast Guard.

SPECIAL COVERAGE

The following new West Key Number Digest topics in the WESTLAW data base provide coverage from the earliest reported cases to date:

Civil Rights
Drugs and Narcotics
Public Contracts
Products Liability
Securities Regulation

As new topics are developed, they will be added to this list.

WESTLAW CASE HIGHLIGHTS

This special information file brings you, each week, specially prepared summa-

ries of the most significant state and federal cases from around the country.

A case citation is furnished whether headnotes or the full text of opinions are retrieved.

UPDATING OF FILES

The latest cases are added to the files as new decisions are reported. In addition, any case retrieved will *always* have a case citation.

APPENDIX B CONTENTS OF LEXIS LIBRARIES

MATERIALS NOW AVAILABLE:

LIBRARY

CONTENTS

Federal Materials

General Federal

United States Code—current version

Federal Court Decisions

Supreme Court (1938-present)
Court of Appeals (1945-present)
District Courts (1960-present)
Court of Claims (1977-present)

Patent, Trademark, & Copyright Law

Federal Court Decisions

Supreme Court (1938-present)
Court of Appeals (1945-present)
District Courts (1960-present)
Court of Claims (1977-present)
Court of Customs and Patent Appeals
[patent and trademark decisions only]
(1952-present)

Securities Law

United States Code—current version
Title 15, Sections 77a-80b

Federal Court Decisions

Supreme Court (1933-present)
Court of Appeals (1933-present)
District Courts (1933-present)

SEC Rules and Regulations—final and proposed
17 C.F.R. Chapter II

Selected Interpretive Releases of the SEC
listed in 17 C.F.R. Chapter II

No-Action Letters (1971-present)

Selected Administrative Decisions
of the SEC (1933-present)

Federal Reserve Board Regulations—
final and proposed
G, T, U, and X

Legislative History

House, Senate and Conference
Reports for 1933 and 1934 Acts
and amendments thereto

Tax Law	Internal Revenue Code—current version Regulations Final, temporary, and proposed—current version Cumulative Bulletin Finding List tables (1954-present) Commissioner's Acquiescence and Non-Acquiescence tables (1942-present) Rulings under the Internal Revenue Codes of 1939 and 1954, except those pertaining to alcohol, tobacco, and firearms (1954-present) Administrative, procedural, and miscellaneous matters (1954-present) Announcements; technical and other information releases and news releases issued by the Internal Revenue Service (1972-present) Private rulings released to the public by the Internal Revenue Service (1977-present)*
	Tax Court Decisions Opinions and Memorandum Decisions (1942-present)
	Federal Court Decisions Supreme Court (1913-present) Court of Appeals (1945-present) District Courts (1960-present) Court of Claims (1942-present)
	Legislative History Public Laws and House, Senate, and Conference Reports for 1954 Code and amendments thereto (1954-present)
Trade Regulation Law	Federal Court Decisions Supreme Court (1890-present) Court of Appeals (1945-present) District Courts (1950-present) Federal Trade Commission Decisions Opinions (1950-present) Consent and Interlocutory Orders (1970-present)
<i>State Materials</i>	
Arizona	Decisions of the Courts of Arizona Supreme Court (1965-present) Court of Appeals (1965-present)
California	Decisions of the Courts of California

* The Internal Revenue Service began to release retrospective Private Rulings in June 1978. As these rulings are released by the IRS, they will be made available in LEXIS.

- Supreme Court, as reported in California Reports, Second and Third Series (1945-present)
- Courts of Appeal, as reported in California Appellate Reports, Second and Third Series (1955-present)
- Appellate Departments of Superior Court, as reported in California Appellate Reports, Second and Third Series (1955-present)
- Delaware Corporation Law** Delaware cases construing Delaware Corporation Law
- Reported (1898-present)
Unreported (1970-present)
- Federal cases construing Delaware Corporation Law
- Supreme Court (1938-present)
Courts of Appeals (1945-present)
District Courts (1960-present)
- Florida** Decisions of the Courts of Florida
- Supreme Court (1968-present)
District Courts of Appeal (1968-present)
- Georgia** Decisions of the Courts of Georgia
- Supreme Court (1965-present)
Court of Appeals (1965-present)
- Illinois** Decisions of the Courts of Illinois
- Supreme Court, as reported in Illinois Reports and Illinois Reports, Second Series (1945-present)
- Appellate Court, as reported in Illinois Appellate Court Reports, Second and Third Series (1962-present)
- Kansas** Constitution and Statutes—current version
- Decisions of the courts of Kansas
- Supreme Court (1963-present)
Court of Appeals (1977-present)
- Kentucky** Decisions of the Courts of Kentucky
- Supreme Court (formerly Court of Appeals) (1955-present)
Court of Appeals (1976-present)
- Massachusetts** Decisions of the Courts of Massachusetts
- Supreme Judicial Court, as reported in Massachusetts Reports (1950-present)
Appeals Court (1973-present)
- Michigan** Decisions of the Courts of Michigan
- Supreme Court (1977-present)
Court of Appeals (1977-present)
- Missouri** Constitution, Revised Statutes, and Session Laws—current version
- Decisions of the Courts of Missouri

- Supreme Court (1945-present)
Court of Appeals (1945-present)
- New Jersey Decisions of the Courts of New Jersey
Supreme Court (1948-present)
Superior Court (1965-present)
- New York Constitutional and Consolidated Laws—current version
Decisions of the Courts of New York
Court of Appeals, as reported in New York Reports [opinions only] (1940-1956)
Court of Appeals, as reported in New York Reports, Second Series (1956-present)
Supreme Court, Appellate Division, as reported in Appellate Division Reports, Second Series (1956-present)
Lower Courts, as reported in Miscellaneous Reports, Second Series (1956-present)
- Ohio Constitution, Revised Code, and Rules of Civil Procedure—current version
Decisions of the Courts of Ohio
Supreme Court, as reported in Ohio State Reports and Ohio State Reports, Second Series (1940-present)
Courts of Appeals, as reported in Ohio Appellate Reports and Ohio Appellate Reports, Second Series (1940-present)
Lower Courts, as reported in Ohio Law Abstract and Ohio Miscellaneous Reports (1940-present)
- Pennsylvania Decisions of the Courts of Pennsylvania
Supreme Court (1955-present)
Superior Court (1955-present)
Commonwealth Court (1970-present)
- Texas Decisions of the Courts of Texas
Supreme Court (1955-present)
Courts of Civil Appeals (1965-present)
Court of Criminal Appeals (1965-present)
- Virginia Decisions of the Supreme Court of Virginia (1925-present)
- ALL STATES Decisions of State Courts
Combined library consisting of decisions of the courts of Arizona, California, Florida, Georgia, Illinois, Kansas, Kentucky, Massachusetts, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, Texas, and Virginia in the LEXIS service.

MATERIALS TO BE MADE AVAILABLE SOON:

LIBRARY	SCHEDULED AVAILABILITY DATE	CONTENTS
<i>Federal Materials</i>		
Patent, Trademark, & Copyright Law	4th Quarter 1978	Federal Court Decisions Supreme Court (1850-1937)
Trade Regulation Law	3rd Quarter 1978	Federal Trade Commission Decisions Procedural Rulings of the Adminis- trative Judges (1976-present)
<i>State Materials</i>		
Illinois	3rd Quarter 1978	Decisions of the Courts of Illinois Appellate Court (1955-1961)
Michigan	3rd Quarter 1978	Decisions of the Courts of Michigan Supreme Court (1965-1976) Court of Appeals (1972-1976)
	1st Quarter 1979	Decisions of the Courts of Michigan Court of Appeals (1965-1971)