FROM THE CHAIR
Ruth Armstrong

Welcome! This issue will concentrate on the fields of Multimedia and Imaging. These terms have been around for several years, and while most librarians have a general knowledge of the technology they reflect that this is another medium that librarians often find more confusing than it should be.

The ASD SIS will continue investigations of other technologies currently on the library scene. These include, CD-ROM’s (please read our last issue for more information), imaging systems, scanners, multimedia, interactive media, desk-top publishing, online database links, desk-top document management, standardization of keys in retrieval software (Z39.50 may take the place of this), and what is going to replace all that microfilm and microfiche. Of course there are networks and related issues. Last and in no manner least, an investigation into virtual reality advancement must be pursued.

The net result of this is that we the ASD SIS need to become more involved in the “scientific development” of new technologies. This does not mean that we embrace all of the latest schemes but instead, provide the most accurate information to our members and the library community at large. These new developments are going to strongly impact on us as law librarians. These new developments are most often data retrieve enhancements (hardware and software) and if we are to remain the information provider and repository, we must be knowledgeable about the newly created technology. Since law libraries seem to be one of the last major subject areas to automate and embrace networks we have the advantage. We cannot default to other departments and still maintain our professionalism. I am not saying that we all should become computer mavens, but that we should be educated to that technology that lies within our province. It is our professional responsibility to know where to get information that will help us make educated decisions about the technology and information retrieval systems to come. In that light, I would like to recommend several seminars that are being held at the convention in July. “The Computer Services Librarian: the Next Generation is Now,” “Imaging Technology and Application,” “Networking for the Next Generation - NREN/Internet: Progress Report and Policy Implications,” “Cooperation Between Librarians and MIS: Forging Mutually Beneficial Relationships,” “Death of the Law Book: A Virtual Reality?” and, “Imaging Technology - Demonstration.”

Library automation has been around for a good 15 plus years, some of the other technologies have been on the scene less than 5 years. The SIS will continue to update the library automation market, especially those vendors who operate in the PC market, since the larger and older vendors are also venturing into this realm. In the past the SIS has done a survey every two years to see which suppliers are still in the market place and who has dropped out. I am placing a call for volunteers to monitor this particular marketplace and run a survey to update our last list. Most of this information is available in the trade journals. However we need to obtain personal experiences as well. For example, this past year in Library Journal, it was the first time that smaller library application vendors were surveyed. While most of the names were recognizable some were not. In these days of downsizing to the PC, market this was rather disturbing as there were many more systems now available to the firm, corporate and special library market.

I would like to offer my congratulations to the newly elected Vice Chair/Chair Elect Gary Gott of the University of North Dakota School of Law, and to wish every success to Tom Fleming as the incoming Chair.
From the Editor:

Some of you may have long since given up hope of receiving an issue of the Automatome this year and some may be surprised to see Anna Belle Leiserson’s name missing from this column. The two events are connected. Through no fault of her own Anna Belle found herself unable to continue with the duties of editing the Automatome. My name was suggested as someone who might help on a “temporary” basis until Anna Belle was able to resume her duties as editor. Knowing how much she enjoyed working on the Automatome, I know that it was with great regret that she stepped down as editor.

Unfortunately for the readers of Automatome, a significant amount of time passed without action. Fortunately, Anna Belle had all the groundwork laid for what I think is a very interesting issue on the subject of imaging technology. The articles range from descriptions of massive efforts to preserve and make available vast quantities of documents to a novice’s first efforts with a scanner and optical character recognition software.

I owe a great debt to Anna Belle and to Anna Bele Humphreys and to the many individuals who have contributed to this issue of the Automatome. For the next issue, I will need even more help. If you have an area of interest or expertise, let me know - send me an article! Help this SIS help all the members by sharing your knowledge. We have many members who are asking the same questions that people just beginning to work with automation always ask and we have members who are asking questions on the cutting edge of automation. We need ideas and articles addressed to the needs and interests of both groups so that as a profession we can adapt to and cope gracefully with the only scientific constant - change.

Minutes of the Business Meeting
Automation and Scientific Development SIS
July 19, 1992
Hilton, San Francisco

The meeting was called to order at 3:00 p.m. by ASD/SIS Chair Nuchine Nobari. She introduced Ruth Armstrong, the Vice-Chair/Chair Elect; Tom Fleming, the new Vice-Chair/Chair Elect; Jo Ann Humphreys, Secretary/Treasurer; and Anna Belle Leiserson, the newsletter editor.

Nuchine reported on what the SIS has done during the past year. Articles in Automatome have been very good, and the newsletter has been very well received. Nuchine announced the SIS sponsored programs to be held at this annual meeting. There will be a program on “Beyond Artwork: Using Desktop Publishing to Make the Connection Between You and the Printing Plant” and “E-Mail Isn’t Just a Substitute for Snailmail: A Hitchhiker’s Guide to the Nets”. The e-mail program had the second highest preregistration of the annual meeting educational programs.

Jo Ann Humphreys the Secretary/Treasurer gave the financial status report. As of May 31, 1992, the SIS had $4,478.14.

Nuchine announced that several present and past office holders had dinner on Saturday night to discuss the SIS and possible ways to encourage better attendance at the business meeting. There is also a need for more members to be involved in the work of the SIS during the course of the year.

Nuchine Nobari “passed” the gavel to Ruth Armstrong, and she assumed the Chair of the SIS.

Ruth Armstrong reported on the SIS Business Leadership meeting: (1) The AALL Board wants the Special Interest Sections to decide by October 1992 if they want to be responsible for their own funds. The dues would be sent from headquarters to the SIS treasurer. This suggestion came from the auditor. There is a feeling that it takes too long to get account funds information from headquarters. This would require a change in the by-laws and would present several problems. It was discussed that the funds should stay at headquarters but that headquarters needs a better accounting system. (2) There was a by-laws amendment for dues. This was not an increase. (3) It was suggested that each SIS have a brochure that could be used to market the SIS. (4) A volunteer was requested for the AALL Public Relations Committee. Lucinda Harrison-Cox volunteered. (5) Our membership is up by 40 people. (6) The AALL Nominations Committee announced that the membership at large can place any person’s name on the list to nomination for a national office.

Tom Fleming announced several program ideas for next year’s annual meeting. Possible topics included a technology fair (this is under local arrangement but the ASD/SIS should work with them); free nets; relationship between the law library and the information services department; shareware; technological knowledge; databases; document imaging. Other possible program ideas given were viruses; technology during tight economic time; and TSR programs.

Anna Belle Leiserson gave a report on the newsletter. Volunteers are needed to write articles and new columns. The deadline for the next issue is September 30, 1992. Anna Belle is applying for an ISSN for the newsletter. Mary Jensen made a motion that the SIS have a dinner for all those who write articles for Automatome. Lucinda Harrison-Cox seconded.

The meeting adjourned at 4:00 p.m.

Respectfully Submitted,
Jo Ann Humphreys
Secretary/Treasurer
Chicago-Kent's Library Online Imaging System

Lucy Moss
Chicago-Kent College of Law Library

"This is so simple," said the technical expert who had been asked to sit in on a recent demonstration of Chicago-Kent's electronic library at a law library in Texas. The library staff watched as representatives of Chicago-Kent College of Law used a laptop computer to dial into the electronic library in Chicago, call up the text of a treaty on the screen, type in the Texas law library's FAX number and collect the text moments later from the FAX machine right there in the office.

The electronic library is available to subscribers world-wide and may be accessed via modem without assistance from library staff in Chicago. It is available from the user's own office 24 hours a day, without regard to whether Chicago-Kent's Law Library is open at the time. Crucial documents may be obtained as quickly as they will print out on a FAX machine.

Using the electronic library is inexpensive. Subscribers pay an annual subscription fee, and a transaction fee of $21 per document printed out. The system automatically bills for any applicable copyright licensing fees. Online time may affect the user's telephone bill, but there are no online charges, as such. Therefore, users can inspect document text on screen before printing out documents and incurring charges.

To obtain exact imaged documents from the collection of Chicago-Kent College of Law Library and its Library of International Relations, subscribers need only a 386 PC with Windows, a 9600 baud modem, Microcom's Carbon Copy for Windows, and a FAX machine. The image that comes up on the screen is a picture of the actual page of the original document, including illustrations, such as the drawings in Official U.S. Patent Gazette. Notes in the margin, date stamps, foreign languages, such as Chinese, all appear as in the original.

Images of documents are a desirable format for users. Images are familiar, incorporating the visual cues on the typeset page of the original: boldface type, different character sizes and fonts, page placement, and the like, which in themselves carry some amount of information. Images of Code of Federal Regulations text, for example, look like that in the paper copy, not like machine readable ASCII text. Images can be enlarged for easier viewing, rotated, reversed black to white and manipulated in a variety of other ways.

Because the image is a bit-map, there is no successive degradation as it moves from one format to another, from print to hard drive to optical disk. Moreover, the bitmapped format provides the raw data for any improved OCR conversion algorithm which may be developed in the future. (Unfortunately today none is sophisticated enough to provide highly accurate conversion of all the different materials in libraries. This means that full text searching of imaged documents may be practicable in the future, without additional handling.

Meanwhile, searching in Chicago-Kent's imaged database is simple because the searcher need only enter one or more of a few search fields. For example, treaties may be searched by title, place where signed, signature date, date treaty went into force, the citation, or publication number. To find the Maastricht treaty, a searcher could enter the place where the treaty was signed, "Maastricht." Partial words, as long as they are not too generic, work as well, and "Maas" will retrieve the treaty as well as the completely spelled word.

Various databases are in development. The system presently contains treaties, international trade statistics and the Illinois Administrative Code. The staff has begun scanning the superseded Code of Federal Regulations. Arrangements have been made to scan Illinois Institute of Continuing Legal Education practice materials, a popular source from which looseleaf pages tend to disappear.

Conversion of other materials from Chicago-Kent's unique Library of International Relations will follow, as funding permits. The LIR began as a private collection of cross-disciplinary materials related to international studies and international relations--political science, history, geography, economics, sociology & law. The LIR is a depository for the European communities, United Nations, General Agreement on Tariffs and Trade, International Labour Organization, Food and Agricultural Organization, and several others. It also collects central bank reports from over 80 countries, World Industrial Patent Organization documents, most treaty collections, and international arbitration and environmental law materials. Imaging will make these materials available to business, legal, and research communities any where in the world.

Imaging is also the solution for a variety of problems faced by the Chicago-Kent Library. It is a way to save the Library's crumbling collection of League of Nations documents. It solves the space needs of a rapidly growing collection which have been cased only temporarily by a new building. The library has an extensive collection of primary law materials from all 50 states, from which volumes tend to disappear, and imaging will ultimately keep the volumes available to everyone. Imaging is also the solution for books in heavy demand, such as the English translation of The Japanese Chart of Charts by Seiki Shimizu. The Library owns one of five copies of this book in the United States. It is in demand by persons wanting to learn the techniques for tracking global market trends and goes out on interlibrary loan almost as fast as it returns.

Finally, imaging is a source of revenue for the library. Chicago-Kent has long had a
One Non-Techie’s Adventures in Scanning

Lucinda Harrison-Cox
University of Richmond Law Library

Last fall, our library decided to upgrade our desk-top publishing software and at the same time, to acquire a full-page scanner. We had been using First Publisher and a Logitech Scanman Plus hand held scanner. As part of my job, I prepare the Library’s in-house newsletter. This made me the candidate for prime user of the new publishing software. It also meant that I would be a person likely to make use of the new scanner despite the fact that I had never actually learned how to use the old scanner. This article provided me with the impetus to learn to use the new scanner.

We selected PageMaker as our publishing software and for the scanner we selected the HP ScanJet 15P with a sheet feeder. The ScanJet software included PhotoFinish software. We also bought Caere OmniPage optical character recognition software. The scanner and software were to be installed on a 386sx/20 computer with 4 MB RAM and a 80 MB hard drive. The computer came with Windows 3.1 installed.

My first step was to unpack everything. The manual accompanying the scanner was well laid out and clear. The scanner software was installed by using the command “install” and replacing disks in the drive when prompted by the computer. This process installed both the scanner software and PhotoFinish. After installing the software, the manual had me check the switch settings on the interface card. The manual included helpful pictures of where the switches were and what they looked like.

As I began reading the OmniPage manual, it quickly became apparent that this stage would be more difficult. The installation chapter began referring to creating “swap files,” “installation macros” and “registering new applications.” Worse yet, when I began searching through the Windows manual, it did not include anything on creating a swap file. The changes between Windows 3.0 and 3.1 gave me several minutes of frustration as I tried to find a way to make sense of the two manuals. Finally, I decided to ignore the instructions that did not make sense, install the software and just see if it would work. If it did not work, then I would call customer service. I ran the “opsetup” program. That part was simple. Then came the moment of truth. As a novice to Windows, it took two tries to make the software work, but it did work.

The scanner software “scanner test” feature was selected. The scanner flunked the test. Our computer had an expanded memory manager that we did not know about. The software, however, not only recognized what the problem was, but also told us how to fix it by altering the config.sys file. With the manual and Paul’s knowledge of DOS text editing, we added one line to the config.sys file and ran the test again. At each option, we allowed the software to determine the best answer. It worked!

It worked!
I wanted to play!

I wanted to play, but alas, until the printer arrived I would not be able to see the end product of my work or be able to judge the quality of my efforts at graphics manipulation. It was time to install the character recognition software, with that I could then effectively begin testing and learning.

My problem with Windows had been the concept and execution of “opening” the OmniPage software first and then “opening” the word processing software. Once I figured out what that entailed, the software itself is easy to use and essentially runs itself. After turning on the OmniPage software by clicking on the OmniPage icon, I selected the word processing software. In the word processing software, a menu option appears to scan text. Selecting that option activates the OmniPage menus and options. The first tests were done with the Write program that came with Windows 3.1. I have now installed WordPerfect and scanned several documents. The software works with a variety of word processing and publishing software packages. Which package is used in conjunction with OmniPage is unimportant.

The documents I used as samples gave me the opportunity to test various aspects of the OmniPage software. My samples were: a three-page, double-spaced, laser-printed article; a one-page memo from an HP ThinkJet printer; a four-page resume; and, an old typewritten page of “law French” text.

The article came through quite nicely. Only one letter was incorrect and only one word was lost. However, underlining, page breaks, and footnote text separation were gone. Also, the numbers for footnotes come in as ordinary sized numbers. When I scanned the same article after writing in some editing changes, the quality of the end product declined. This is not entirely surprising, but worth noting. The software was not designed to read handwriting.

The memo did not fare as well. I tried three different combinations of settings: an automatic format for fully formed (conventionally printed) text; a column format for fully formed text; and, a column format for dot matrix text. The column format worked better for the right-aligned information, but
the difference between fully formed and dot matrix was marginal. There were a significant number of errors in the character recognition, but interestingly the errors varied from copy to copy. I also noticed that a document which was scanned more than once, even with the same settings, would vary from copy to copy.

The resume was a mess. The letters came through fine, but the layout left much to be desired. Using the column format instead of the auto format helped. At least then the indented and right-aligned text stayed with the appropriate headings. Under auto, portions of the text were out of sequence. Additionally, the resume paper had a tendency to feed two pages at once and had to be monitored closely.

The "law French" was the biggest surprise. The typewritten copy was old and somewhat smudgy. On the first try, I left all the settings on automatic. The scanned copy had a great many errors. On the second and third tries, I progressively lightened the setting for intensity. The difference was amazing. None of the French diacritics were recognized but the text entered a state in which corrections instead of re-typing became an easy alternative.

My conclusions are straightforward. One, installation and use is not beyond the ordinary user's ability. You do not need to be technically inclined. Two, it's going to take continued practice to manage this software efficiently. Three, some items just will not be good candidates for scanning. The cleaner and plainer the copy, the better the end result will be. Finally, there is still a certain amount of luck or "art" involved in this seemingly "scientific" process.

Notes:
1. The "we" involved in the selection of the software and hardware was composed of our Director, Steve Hinckley, and Computer Services/Reference Librarian, Paul Birch, and myself (but mostly them).
2. As you may have noticed, this newsletter is proof that I have made progress in using the scanner and PageMaker. The scanner was used extensively.

Chicago-Kent
(Continued from page 3)

Program allowing local law firms and corporations to be library subscribers for a fee. Local subscribers may check out library materials on the same basis as students and receive some additional staff services. These subscribers are now provided with access to the image system as part of the services. This arrangement produces a regular amount of revenue for the library and the imaged document transactions will add to this.

How do we do the imaging? We soon expect to have an imaging project manager and a crew of paid law student scanners. Scanning has so far been done by the library clerical staff with indexing done by reference librarians—a Walkman is standard equipment. Both scanning and indexing proceed quite rapidly. The Library uses a Fujitsu which scans at the rate of 2.1 seconds per page. The staff need only check to see if all pages scanned and all text for each page appears on the screen. There is no cleanup of text needed as for OCR scanners. Indexing is a simple procedure involving new indexing fields and the indexers provide additional quality control by checking to make sure each document has scanned completely.

The software being used is the ExLibris Library Image system from The ExLibris Group. ExLibris runs under Windows on most local or wide-area networks, using standard 386 or 486-equipped workstations. These workstations need not be dedicated to imaging: at the LIR they also perform the other tasks for which they were originally acquired, including word processing, computer-assisted legal research, computer-assisted instruction, e-mail, outlining, and the like. ExLibris supports a number of scanners and we expect to have multiple scan stations in addition to the Fujitsu. The Library has been storing document images on individual 5 1/4" optical disks which each hold about 20,000 pages, as well as on a "jukebox" which provides multiple 12" optical disks to handle the very large collections it is converting; the jukebox can hold 10 million pages in 96 cubic feet. Printing of images, when needed here in the library is done on a standard laser printer, using a decompression board for higher speed.

We run the image system on the Novell network of the law school. It is known internally as "LOIS," the Library Online Image System. (CLARK, the online catalog is also on the network.)

We expect law schools and larger law libraries to use the electronic library to expand existing collections. It is also a way for small law firm libraries to defeat time and circumstance by accessing a large collection of documents instantly and at modest cost.

A consortium of libraries expects to share documents converted by consortium members, either by duplicate disks or by mutual remote access. A coordinated effort to convert official state reports and other joint projects are planned.

For more information, contact Mickie Voges, Director, Legal Information Center, Chicago-Kent College of Law, 565 West Adams Street, Chicago, Illinois 60661-3691 (312) 906-5615.
Document Imaging in the Library
A Challenge
Nicholas D. Finke*

Electronic imaging technology has gotten a great deal of attention from the library community lately. There appear to be a number of preservation advantages offered by the optical storage of digital images, since digitized documents can be inspected and read by many users with no deterioration to the original. In addition, electronic documents can have the potential to be found more easily and delivered to users instantaneously.

A Library Technology with Business Roots

For newly published material, there are methods of storage and transmission that do not take up the relatively large amount of space that is required by bit-mapped image files, even when they have been compressed. For this reason, it does not seem likely that there will be a great deal of long-term publisher interest in delivering information via bit-mapped images, especially when techniques such as SGML coding of ASCII text seem to enable the same sort of graphical information advantages without needing anywhere as much storage space. This makes digital imaging a tool with which libraries should become familiar. The central focus of the use of this technology in libraries appears to be to deal with the preservation and delivery of material that is already on the shelves. In most cases, the commercial demand for this information will not be great enough to entice publishers to convert it to electronic form. This will leave the judgement to the librarian as to whether it is worthwhile to convert the information to digital image form.

This technology which offers so much promise to libraries was originally developed to solve problems with business records. Digital images of paper documents are being used more and more everyday in commercial areas such as insurance and banking. Through the use of digital images, filerooms of paper documents, hard to find and easy to lose, have been converted into a few optical platters full of images that are easily accessible and preserved unchanged.

The fact that imaging technology was originally developed to manage business paperwork carries with it a few additional problems that business never had to address, but that will be crucial to libraries. The problems are found in two areas: copyright and intersystem standards.

Copyright

Under the copyright law, unless there is some intervening privilege such as fair use, only the owner of the copyright in a work may make an electronic digital image of any part of that work. In the case of any material that was published less than 75 years ago, it is possible that the work is still under copyright. This may be the case whether or not the work was ever formally published. Mere physical ownership of letters or other papers does not necessarily convey the right to make digital copies. Obtaining the right to make electronic digital images of any particular work or group of works may take inordinate amount of time, especially if the holder of the copyright has to be searched.

There are a number of possible avenues toward solving the problems for library uses of imaging technology presently posed by copyright law. Concerted effort to find solutions in this area will be essential to ultimate success, especially where publishers are very reluctant to experiment with what are viewed as possibly threatening technologies. Addressing these issues is one of the major goals of the Consortium for Optical Imaging in Law Libraries.

Standards Considerations

While there are a number of standards that are applicable to the imaging industry, the ones that librarians who wish to work with electronic digital images should be careful about are those for image file formats and for document architecture.

The primary reason why librarians should be concerned about image file formats is to enable interchange of data between libraries. This does not generally concern business records users. The sheer economics of digital conversion, however, urges libraries to share the burden. The goal is to be able to share the results of the imaging effort with others (and to be able to receive their data as well). Without common file formats, such sharing will be difficult if not impossible.

Almost every document imaging system on the market today stores its images in TIFF (Tagged Image File Format) files. TIFF is not a true legislated industry standard, but is rather a de facto standard. It is a very flexible way of structuring an image file so that it can contain a wide variety of information about the image. The great advantage of TIFF files is that with appropriate software they are widely readable (on both Mac and MS-DOS machines). The great disadvantage of TIFF files is that the format is too flexible. What this means is that the fact that an application produces TIFF files does not by itself mean that the files will necessarily be readable by another application that claims to be able to read TIFF files. Too frequently vendors have sought to improve performance in areas such as file retrieval time by customizing the TIFF files they use. In purchasing hardware and software to produce and manage image files, questions about TIFF customization should be asked of the vendors to assure that untoward changes have not been made.

Developments

There is a movement to supplant TIFF files in document imaging with a new standard that is an actual industry standard, not just a de facto one like TIFF. This brand-new standard is called MS53 and it has been developed by the C13.7 committee of the Association for Information and Image

(Continued on page 11)
Law librarians are finding themselves increasingly asked by law students, associates, partners, judges, etc. as to what is the best computer system for them to buy for their home, office, etc. While there are many arguments going on as to whether or not we should venture into such consultation, advice, etc. as part of our many duties, for those people who choose to do so this article is intended to assist them in doing out such information.

One should always attempt to elicit from the patron what their purpose is in buying such a system. Are they going to use the computer solely for word processing or do you suspect once they have mastered one program will their learning curve move onward and upward to the point that you may need to advise them upon or prepare them for expandability? As in selecting any computer system, find out what software they intend to use, then help them design their system around the software. What is their computer level of expertise? Bear in mind that with the ever changing advancement of computer technology that this information is current at the time of this writing.

486 Machine.
Many people even today do not understand the differences between a 386 or 486 machine. I have found it helpful to analogize between computers and cars, the difference between buying an economy model versus a middle or luxury model. What 386 and 486 deal with is the processing speed of the computer. 486 is currently the industry standard, at least for the next few months. Retailers now are currently "bundling" computer set ups with all of the features I will mention in this article for approximately fifteen hundred dollars ($1500.00) or even less.

Monitor.
Color monitors with super or enhanced VGA capability are now within the realm of everyone's pocketbook. They can now be purchased in the vicinity of two hundred and fifty dollars ($250.00) separately and allow the user many more hours of work time with less eyestrain. In a time where the concern for computer ergonomics is paramount, the extra investment in a super or enhanced VGA monitor may be well justified.

There is also the question of dot or pitch with regard to monitors. The lower the dot or pitch numbers for a monitor the higher the resolution or sharpness of the screen. You may see specifications such as .39 or .31 dot or pitch. The .31 monitor would be a superior quality monitor because of the higher resolution. A good rule of thumb is to have the prospective seller load a sample of the word processing software you are going to be using to demonstrate the quality of the monitor. Graphics displays can be deceptive or misleading as to the true quality of the screen.

Modem.
Internal 2400 baud modems can now be purchased as low as thirty five dollars ($35.00) and usually more than sufficient for the average user's needs. However, even 14,400 baud modems are now available in the three to four hundred dollar range and will probably become standard as more and more online services make their product available at 9600 baud access.

Enhanced keyboard.
While standard keyboards have gone by the wayside (thankfully) for IBM and IBM compatible computers, the Macintosh computers still offer the standard (85 or so keys) keyboard as well as enhanced keyboards (over 100 keys). Definitely make the investment in the enhanced keyboard. As stated earlier, as software increases in complexity so do the various options and commands for a particular type of keyboard. An enhanced keyboard will allow for more versatility and flexibility and will prove to be more convenient in the long run.

Windows.
IBM and IBM compatible computer packages are now available with Windows, a graphical user interface (GUI), already installed. Windows, as opposed to DOS, uses icons instead of word commands to manage and operate the various software on a computer. Software manufacturers such as WordPerfect are besieging the marketplace with the Windows version of their products to the point that users have a seemingly infinite variety of choices. While you can use both Windows and DOS on your computer, if you are going to use Windows a great deal, you may need to consider a RAM upgrade.

RAM?
What is RAM and how much do I need? RAM stands for random access memory that is needed when a program or programs are running simultaneously. As stated earlier, since software products are needing increasingly greater amounts of memory, and especially if they are running in the Windows environment (which takes up a great deal of RAM), the standard two (2) megabytes of RAM may not be enough. An upgrade from two (2) to four (4) or even eight (8) megabytes of RAM may be justified. Fifty dollars ($50.00) per megabyte upgrade is average.

DOS.
The current version of DOS is 5.0 although many users do fine running at version 3.3. If you are considering advising or purchasing a new set up, running Windows, and a variety of the latest versions of software, I would suggest that you use DOS 5.0. While 486 machines are becoming quite reasonable in price, the catch 22 of the situation is that as new software and version upgrades are released, they are requiring more and more machine to be able to run them.

Finally, be patient with the questions. Undertaking a computer purchase is often an expensive and nerve racking experience especially for novice computer users. I have found that a guide sheet based upon this article and updated periodically will help to allay their fears dramatically and help lower your workload. Have your users comparison shop, especially in this soft and volatile market, as well as negotiate the best possible price. Educate them before they walk into the store as far as warranties, what to ask for, service, etc. This will make their job (as well as yours) a great deal easier.

This edition of What's What will present an overview of multi-media hardware and software. Tune in next time for specific multi-media applications and product information for IBM and Macintosh computers.

What is multi-media? According to Webster’s II New Riverside University Dictionary, multi-media means “including or involving the use of several media”. Multi-media brings video, TV, sound, photographs, drawings, pictures, animation, and text to your workstation for viewing, processing, and media production. When thinking about using multi-media, ask not what you can do for multi-media, but what multi-media can do for you.

Let’s take a step back and look at a diagram that describes the basic operation of a computer. In Figure 1, various types of data are entered into the computer where the central processing unit (CPU) manipulates the data. Once processed, some form of output is produced. A simple example is a word processing application where text (the data), is entered via a keyboard. The word processing software then formats the text which is finally printed on paper.

Multi-media works in the same way. Video, sound, photographs, drawings, etc. are entered into the computer where they are edited or combined to produce a finished product such as a large group presentation, an on-line training session, overheads, slide shows, demo’s, tutorials, video discs, CD-ROMs, videos, or printed publications. Let’s look at the various types of media and the hardware and software needed for these inputs and outputs.

**TEXT**

Most text is initially entered through a keyboard into a word processing, database, or spreadsheet program. Output is generally printed in black and white or stored on a disk of some type. Text may also be printed in color, on transparencies for overheads, or made into slides for presentations. Once input into the computer, the text may simply be viewed on the screen or transmitted electronically through a modem or across the internet.

Text may also be entered via a scanner. Flat-bed scanners work similar to a photocopy machine. Hand-held scanners are more portable and useful for oversized documents. Pages of books, articles, or other documents can be scanned directly into the computer as images. Optical character recognition software (OCR) converts the images to text. Scanners usually include a processing board that’s installed in an open slot inside the computer. Scanning software is also included.

Are there other ways to input text? Sure. Voice recognition software packages allow you to actually talk into a computer. Voice is directly converted into text by speaking into a microphone or headset that is plugged into an interface board at the back of the computer. Undoubtedly, someone, somewhere, is working on or has developed software that pulls the words from songs off of CD’s, or the scripts out of videos converting them into word processing documents. Perhaps someday there will be brain scanners that will put down your thoughts into words - Not!

I’ve decided to include numerical data collection systems in the text category. Measurements such as temperature, time, pressure, weight, speed, and other sensory data can be input directly into a computer by a data collection system. Sensors are wired into a termination box that plugs into a data collection board installed in the computer. Programs read data at predetermined time intervals, storing the data on the hard drive for processing. Bar code scanners fit in this category.

Note: In all these examples, I’ve used interface boards installed internally in IBM or Macintosh computers for scanners, voice recognition, and data collection. Some software packages accomplish these same tasks without any additional hardware (boards) required by using the standard serial or parallel ports. Products with interface boards tend to work faster.

**IMAGES**

Color or black and white graphics, drawings, sketches, or photographs may be digitized with the use of a color scanner. Once the images are scanned, they can be manipulated using one of many powerful editing software packages. How powerful are they? You can easily change the color of...
someone's hair or create a two headed monster. Try merging any two photographs - is that you shaking hands with the President? The final product can easily be copied into a word processing document or printed by a color laser printer.

Photo's can also be input from cameras that store the images on 3.5" disks. These images can be displayed on screens, turned into slides and overheads, or used in tutorials.

Numerous drawing software packages are available on the market that range from creating sketches to detailed computer aided designs. Software is also available for the animation of images.

SOUND

Various software programs allow for sound input. Most Macintosh computers include a microphone that will record sounds and play them back on the computer's speaker. Microphones, telephones, or headsets can be used for recording sound into computers. Sound boards may also be installed for recording voice, music, or other noises. Sound boards provide connections for playback through stereo speakers. Music from CD's, cassette tapes, or other media can also be loaded into software programs that manipulate the sound before playing it through speakers, writing it onto CD's, or storing it on hard drives. Unlike voice recognition software, these programs just record the sound and do not convert the lyrics to text. Other programs allow you to compose your own symphony or create strange sounds.

VIDEO / TV

Video boards accept video input from camcorders and VCR's. The video can then be edited frame by frame, spliced or merged with other video, or even colorized. Graphics and text may also be incorporated into the video. The finished product can be displayed on the computer screen, stored on a video-disc, or copied onto a VHS or Beta tape. TV boards convert your PC screen into a television. Some applications display the TV in a small window on the screen with options to capture the video to a disk.

PUTTING IT ALL TOGETHER

Multi-media combines the above data into a final product. Here are a few examples. Desktop publishing software combines images, photos, drawings, sketches, graphs, and text into a document for printing. Presentation software can create and actually present data to individuals or groups of any size. Presentation software easily creates slides or overheads for projectors. Slide show features allow the computer to be used for an individual tutorial or in conjunction with an overhead projection system for small group presentations. Large screen projection systems display graphics, text, and video directly from computers for use in lecture halls and auditoriums. Additionally, LCD panels present alternatives to projection systems. For example, rock groups have employed large LCD panels for outdoor concerts.

Although almost nothing limits what can be done technically with multi-media, the costs may be prohibitive. To display ten seconds of video on a computer requires gigabytes of disk space, megabytes of RAM, and more processing speed than most desktop computers can handle. Furthermore, the costs of training and preparation time for a presentation, tutorial, or publication may not be worth the investment. These costs in terms of equipment and time will be discussed in the next issue.

The multi-media explosion has occurred and hundreds of exciting products are available on the market today. The challenge is to find the right products to complete the specific tasks required with the least amount of cost and time. "Multi multa, nemo omnia novit - Many men have known many things; no one has known everything." - Black's Law Dictionary.

**Upcoming Events**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 22 - 26</td>
<td>IFLA Annual Conference, Barcelona, Spain.</td>
<td></td>
</tr>
<tr>
<td>September 21 - 23</td>
<td>&quot;IMC Document Imaging,&quot; Brussels Exhibition Center, Brussels, Belgium.</td>
<td>For more information call 303-440-7085 or Fax 303-440-7234.</td>
</tr>
<tr>
<td>September 23 - 24</td>
<td>&quot;Optical Disks vs. Micrographics: A Comparative Analysis of Their Records Management Applications&quot;, Washington, D.C.</td>
<td>Sponsored by the George Washington University Continuing Engineering Education Program. Course reviews micrographics and optical-disk concepts and discusses the advantages and disadvantages of each technology. Contact Merril Ferber at 202-994-8522 or 800-424-9773 or Fax 202-872-0645.</td>
</tr>
</tbody>
</table>
IN REVIEW

Mary Hemmings
University of Calgary Law Library

Microcomputer Software Selection for the Law Library. Part Two: Library and Legal Software. By Catherine A. Pennington

Having covered business software applications of interest to law libraries in the first volume of this title, Pennington outlines software designed specifically for law library management in this second volume. Designed for library practitioners ranging from small legal information managers to academic professionals, this book reviews software for cataloging, acquisitions, serials control, circulation and reference. Each chapter is supplemented by a questionnaire constructed to guide the reader to the best choice for one’s own situation. Presuming your library is sufficiently large, the reader is gently led into the twilight zone of the integrated system. Those familiar with the make-your-adventure of children’s literature will understand the feeling.

Pennington doesn’t offer complete shopping lists of available software for library functions. Instead, she discusses how software is designed to accomplish the task of organizing and sorting information. For example, cataloging software is based on the standard MARC record. She explains and illustrates its basic structure, its availability through various sources and how software manipulates the MARC record to serve the purposes of any sized library. The questionnaire evaluates the reader’s situation and recommendations are given for the type of electronic management necessary for varying needs.

Her chapter on integrated systems offers an overview of what a turn-key package can do for library management. She tracks a publication throughout its life cycle by presenting an idealized scenario. By avoiding lists, ratings and prices, Pennington outlines in very general terms what an integrated system ought to do.

The chapter dealing with reference applications is again very general. It offers some ideas on the sort of PC-based software that might be useful in a reference situation. Although she mentions some CD interface options for integrated systems, she avoids discussing sources available through standard communication software such as databases for interlibrary loans, journal indexes, full document databases as well as the Internet. Hopefully, this warrants another book.

Her bibliographies are selective, current, and usefully annotated. Clearly written, she avoids weasel words, jargon and tiny typeface. Missing is a treatment of the LAN potential for library operations (for example, distributing CD access to a number of PC’s).

This is meant to be a brief guide to the potential of certain kinds of software for the law library practitioner. As such, it achieves its purpose with clarity, style and sense of humor. Highly recommended as a good starting point.

AUTOMATION AND SCIENTIFIC DEVELOPMENT SIS
FINANCIAL REPORT
As of February 28, 1992


<table>
<thead>
<tr>
<th>Income:</th>
<th>Expenses:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expenses to 2/28/93</td>
</tr>
<tr>
<td>Dues (1991-1992 Dues)</td>
<td>$3,234.50</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>$ 9.00</td>
</tr>
<tr>
<td>Workshops</td>
<td>$ 12.00</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td><strong>+$3,255.50</strong></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$5,679.70</strong></td>
</tr>
<tr>
<td><strong>Balance on February 28, 1993</strong></td>
<td><strong>$5,679.70</strong></td>
</tr>
</tbody>
</table>

Respectfully Submitted,
Jo Ann Humphreys
Secretary/Treasurer ASD-SIS

Digitized from Best Copy Available
Document Imaging

(Continued from page 6)

Management. The development of this true standard should not cause us to hesitate in the current use of TIFF files to store imaging data, since it will be possible, when desired, to convert TIFF files to the new standard. Implementation of this new standard will require that it be supported by vendors. COILL will be asking vendors who target law libraries as a vertical market to consider supporting this new file standard.

Document Architecture

One further area where interchangeability standards will be necessary for library image collections, but are not yet as readily available as the TIFF format, is in the area of document architecture. Many document imaging systems, which have been designed for management of office workflow and not complex document archiving and distribution, do not have a very sophisticated way of representing the way the various images that might together represent a single book, pamphlet or periodical article are related to each other, nor the way in which they each share in depicting the total document. Many office automation document systems merely represent related documents as all inhabiting the same file folder, and in some cases the only way to represent the relative order of the pages is to scan them in proper sequence. Even where systems are capable of adequately representing images as comprising larger documents, they do not necessarily do so in a standard way that will allow the information to be used by other applications or transported to other systems. This difficult problem is being addressed in several ways. The primary one for our purposes is through the MS53 standard format for image representation referred to above. This standard is compatible with the international Open Document Architecture (ODA) standard. While the primary intended use of the ODA standard is in tasks such as the translation of word processing documents from one system to another, it can, as an electronic document architecture, also serve to structure complex documents composed of images. Agreement on a standard such as the MS53 format will allow easy transport of imaged documents such as articles and books between law library imaging systems without time-consuming re-indexing or re-keying of data.

Conclusion

Imaging a document looks relatively easy. Systems to make and store images are available on a variety of platforms at a price to fit almost any pocketbook. If document imaging technology is going to be a viable library tool, however, the problems described in this article must be addressed and solved in a consistent way.

*Executive Director, The Consortium for Optical Imaging in Law Libraries (COILL). The opinions expressed in this article are those of the author and do not necessarily represent those of COILL or any member thereof.

| AUTOMATION AND SCIENTIFIC DEVELOPMENT SIS |
| FINANCIAL REPORT |
| As of August 31, 1992 |

| Beginning Balance | $7,506.43 |

<table>
<thead>
<tr>
<th>Income:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dues</td>
</tr>
<tr>
<td>Registration</td>
</tr>
<tr>
<td>Sales</td>
</tr>
<tr>
<td>Subscriptions</td>
</tr>
<tr>
<td>Workshops</td>
</tr>
<tr>
<td>Income to 8/31/92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
</tr>
<tr>
<td>Miscellaneous</td>
</tr>
<tr>
<td>Office Supplies</td>
</tr>
<tr>
<td>Postage</td>
</tr>
<tr>
<td>Printing</td>
</tr>
<tr>
<td>Expenses to 8/31/92</td>
</tr>
</tbody>
</table>

| Subtotal | $8,241.29 |
| Balance on August 31, 1992 | $3,905.95 |

Respectfully Submitted,
Jo Ann Humphreys
Secretary/Treasurer
ASD-SIS