or billing information would be in another, and substantive case information would be in yet another. Because each record is smaller, sorting is quicker. For correspondence purposes, letters still have to be composed with a word processor, and most of the relational databases seem to be geared toward WordStar and Mailmerge.

II. COMPUTERS FOR ARBITRATORS?

C. CHESTER BRISCO*

An appropriate title to my portion of this panel might be "One Arbitrator's Approach To Computer Literacy."

If you have delayed purchasing a computer or are considering upgrading your present system, perhaps my experience will be of some use. Each passing month brings improved software and hardware to the market, usually at reduced prices. The computer market is, however, chaotic. A private university in southern California decided that commencing with the 1983-84 school year, each student would be required to purchase a computer upon matriculation. The consultant they had hired carefully reviewed the market and, based upon price and performance criteria, recommended the Victor 9000 computer as the standard. A few months ago, Victor filed Chapter 11 bankruptcy, and the Victor 9000 is of a doubtful future, although it is an excellent machine.

First Considerations

We are constantly reminded that we are in a computer-ruled world. A former IBM employee who left to form his own software company was recently quoted, "Computers are in the process of changing our society, our economy and our everyday lives. That's going to accelerate more dramatically and significantly than anything we've seen in the past. Things that were virtually impossible to accomplish in the past are now trivial tasks to computers."[1] Well, that's easy for him to say, but just what does all this mean to an arbitrator?

The answer is, "Plenty!" But it may mean more to the arbitrator's secretary (in some cases the arbitrator's spouse) who no longer spends hours typing and retyping manuscripts. The spouse may find those hours are now available for recreational activities, and a marvelous opportunity to enjoy her (or his) half of the community property. Nonspouse secretaries may have a different view.

The fact is that computers so reduce the skill required to create text and so increase the speed of preparing text that it is no longer economical to employ secretaries in the traditional manner. But there is a catch; the arbitrator has to acquire some new skills. These new skills do not include errorless touch typing (because errors are so easy to fix), but there is no doubt that touch typing is a definite advantage. The same former IBM employee just quoted, also said in the interview,

> "I have a Master's degree and I went two-thirds of the way to a Ph.D. The most important course I took outside of [those taken at] IBM, was touch typing in junior high school. I can type over 100 words per minute, which means that I can get my ideas into a computer several times faster than most people. That means that I get my results several times faster and get more work done than a person who types 20 words per minute."[2]

Fortunately, typists are made and not born. You can even buy typing training programs, called "tutorials," which run on your computer. My own typing, learned years ago in a first year college class (taken, originally, because it had lots of girls) and polished sufficiently only to type the bar exam, has continued to improve in speed if not in accuracy using my word processing program. In any event, you must be comfortable composing at a keyboard and not be intimidated by it, regardless of the number of fingers employed. If for some reason you feel that this is unattainable or not worth the effort, computers are not for you.

Surmounting the Jargon

The computers which we are talking about here today are called general purpose computers to distinguish them from the special purpose ones which, for example, run your digital watch. These general purpose computers can do many things depending on what instructions, called application programs, are fed into them. The appropriate jargon is: a computer is "booted

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[2]*Ibid.*

up"[3] from ROM (read only memory) and then the program is "loaded" into RAM (random access memory) . The computer is booted up because it needs to install an operating system in its RAM to control the relationships between its memory, the CPU (central processing unit), the disk drives, the screen, the printer, or other devices which may be connected to the computer. The applications program is loaded because it contains the particular instructions for the task which the operator wishes to perform: a word processing program for creating text files, a spreadsheet for accounting or other numerical analysis, or a database program for manipulating text and numbers. This jargon, unless you have already been haunting the computer stores or have browsed any one of a number of computer magazines, is strange to you and only partially makes sense.

Assuming you have reached a satisfactory interface with the keyboard, the next thing you must do, if you are to use a computer, is learn some of this jargon. At first, school finances will seem a breeze by comparison. It is not all that bad, but it does require some effort. You must have an elementary understanding of the functions of the CPU, ROM, RAM, floppy disk drives, and printers on the hardware side, and the difference between DOS (disk operating system) and applications programs on the software side. If you are not willing to make the effort, I say again, computers are not for you. I am tempted to make an analogy to automobiles, but I suspect a number of you have driven successfully for years without the faintest idea about how an automobile works. Automobiles, however, are made to be driven by the least among us; computers demand intelligent operation or you will surely crash.

Applications

If you are still with me, having decided two fingers will do—or might go for ten—and you are willing to deal with bits, bytes, and the rest of the jargon, some more decisions must now be made. Just what do you want to do with your computer? The obvious

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[3]The word "boot" is short for "bootstrap," the name of the program which initiates operation of the computer. The ROM contains a simple program which, when the computer is turned on or "reset," reads track 0 in drive 0 (or A) and places that information in RAM. RAM takes the next step of reading the directory on the disk in that drive, then the system file which it executes, then the COM file which it executes. By this sequence the computer bootstraps its way up to loading the disk operation system (DOS) and is ready to accept an applications program.

answer for arbitrators is "word processing." Next in priority is accounting ledgers and billing. Ledgers are easy, because they are a simple application of a spreadsheet program. (Lotus 1-2-3 is the most popular spreadsheet program at this time.) A complete billing application is more complicated. I simply use the word processing program to create and store on floppy disk a standard billing form which I recall as needed and insert the addresses of the parties, case identification, and dollar amounts. It is perfectly feasible to use a database program to store case information of the type, for example, that you submit on AAA and FMCS forms, which could then be sorted by party, issue, and so on. Database management programs are not easy to learn and, frankly, I don't think it is worth the effort. The potential software needed, then, is word processing, spreadsheet, and database management programs. The latter two programs often have a graphics capability, but I can't think of any interesting histograms or pie charts applied to one's bank account or arbitration statistics.

Please observe that I discussed software before I discussed hardware, the computer itself. This is the reverse of the priority the computer salesman would like you to observe. Sellers make more money from selling hardware than software. Software is more difficult for the purchaser to understand and requires more sales effort. *Rule*: do not purchase a computer and printer until you have decided on the software and have seen those applications programs up and running on the computer and printed out on the printer you will buy. You will be urged to buy computers for which fantastic software is "coming out next month." Don't believe it until you see it.

This advice reminds me of those legal rules which are described as simple to state but difficult to apply. The rule against perpetuities comes to mind. The difficulty here is, how do you compare software when you don't know the intricacies of the applications programs or how to operate the computer which is to run them? Well, that's what friends, meetings like this, instructional manuals, and tutorials are for—roughly in that order. I have deliberately left out computer salesmen. There are many who are quite competent, but my own experience is that all those young men who were selling hi-fi equipment ten years ago are now found in the computers stores and don't understand how computers work either. Regardless of whom you talk to, including me, the advice you will receive is based

upon the limited knowledge that person happens to have acquired. You will inevitably be advised that what that person has learned is the *best* and is just right for you.

Word Processing

As to word processing programs, there are probably at least a dozen that will be quite satisfactory. Some of them, for example, WordStar, which is the most widely sold, will run on many different computers. But, the word processing program "WORD," by MicroSoft, was available initially on the IBM-PC and is only now becoming available for other computers. My advice here is to be sure that the program will handle lengthy documents (up to 20 pages, to pick a number); have convenient commands for insertion, deletion, and transposition of text; show page endings as you are creating the text; and, in general, display the text on the screen as it will be printed on paper and not require print codes except in rare cases. Don't get carried away by features such as micro-justification, windows, or multiple fonts.

Some word processing programs are much easier to learn than others. Usually there is a trade-off between flexibility, the ability to manipulate text in a variety of ways, and ease of learning. The keyboard commands which one must learn to operate all of the features of WordStar, for example, are numerous and lengthy to accomplish certain results; it is easy to err and the timid won't even try. Newer programs seek a way around this dilemma by the use of a mouse which, when moved over a flat surface, controls cursor movement on the screen and is used to execute a variety of commands by the push of only one or two buttons on the mouse device. My own view is mice are an infestation which require me to move my hands from the keyboard, push aside my coffee cup, ruler, and partially consumed apple to make room to move the mouse device—after retrieving it from under the printer—so that it will correctly position the cursor over the command word, then push a key on the mouse to execute the command. A few keystrokes (almost always) accomplish the same result and I don't risk spilling my coffee. On this question, as in most debates over matters of great import, there are opposing views.

Spelling Checker

A spelling checker, as a companion to your word processing program, is very desirable. I do not say this to suggest that you cannot spell, although that is unfortunately true in my case. Spelling checkers are marvelous for catching typographical errors, providing the error does not produce a recognizable word, because all they do is match up your text in alphabetical sequence with words stored in the dictionary. If a match is found, the word is assumed to be spelled correctly. If a match is not found, either because you have used a word not contained in the dictionary or have misspelled a word it does contain, the word will be marked for attention. In the next step, and each program uses a different method, the screen displays each marked word and you will be asked to skip the word, correct it, or add it to the dictionary either for the current checking session only or permanently. There are also programs which are claimed to aid in grammar, punctuation, and style. I have not tried these.

Spreadsheets

The best selling spreadsheet, Lotus 1-2-3, is available only on the IBM-PC and a few others. One should also be aware that there are a number of computers designed to be compatible with the IBM-PC (the April 1984 issue of PC World magazine reviewed 40 compatibles), and that this, perhaps, is now the largest single computer market for developers of software. One should beware, however, of the word "compatibility" because there are varying degrees of compatibility. Lotus 1-2-3, for example, will run on some of these alledgedly compatible machines and not on others. So, in buying software which was designed to run on the IBM-PC, be sure that it will actually work on your "compatible" computer before you purchase.

Printers

We have not talked about printers. Just as there are many kinds of personal computers, all of which work slightly differently, so there are many varieties of printers, all of which work slightly differently. The word processing program designed to work with certain brands of printers may not work with others

unless the software is especially configured, and this is no job for the uninformed. So, try your word processing program not only with the computer of your choice, but also with the printer of your choice. They must all work together.

There are two major kind of printers sold for use with personal computers: dot matrix and character. The latter is often referred to as a "letter quality" or "daisy wheel" printer because the characters are placed at the end of the spokes of a wheel which rotates to the appropriate letter when a key is pressed. The character printers are slower and more expensive than the dot matrix. My daisy wheel prints bidirectionally at about 40 characters per second instead of 120 characters per second typical of the dot matrix variety. The advertised rate for my printer is 55 cps. I figure the other 15 cps got lost in the marketing department. I have been advised that this discrepancy is a function of "slew rate." The advertised speed is calculated as if 55 "A"s were typed in succession and, therefore, the print wheel did not rotate, "slew," to each letter in turn as the printer spelled out the words. This is something like calculating miles per gallon using an absolutely steady speed with all windows closed and electrical circuits off. However, 40 cps produces a double spaced page of 10 characters per inch text in less than a minute and is quite satisfactory.

Until our clients become used to seeing letters obviously formed by a series of little dots (the dot matrix printer), you are best advised to purchase the more expensive character printers which produce text indistinguishable from the ordinary IBM Selectric typewriter. On the horizon, are dot matrix printers which combine very high quality character formation with high speed. The price is likely to be higher than present letter quality printers and I would not be the first to purchase. Wait until the durability of the 24 pin dot matrix print heads, which will replace the 9 pin print heads now in use, has been demonstrated.

Hardware

The choices I have made for hardware and software are:

- IBM-PC personal computer with RAM increased to 320K; two 5¼″ floppy disk drives; monochrome screen. The increased memory is used for a RAM disk, an area of memory designated by software which emulates a physical disk

drive, in this case drive "C." The advantage is that all of the applications program and data are in memory and the computer does not need to read the disk during operation. This makes the program run faster and saves wear on the physical disk drive.

- C.Itoh F 10-55 parallel daisy wheel printer.
- WordStar Professional Package (WordStar, Mailmerge, SpelStar and StarIndex). Of these, I use only WordStar and find that Proofreader by Aspen Software Company, with its 80,000 word dictionary is satisfactory, if a bit slow for short documents.
- Prokey. This program allows command strings or any text string to be assigned to a key and is very useful with, for example, Lotus 1-2-3 and almost essential with WordStar.
- Lotus 1-2-3.
- Hayes 1200B modem.

Modem

Computers may be used to communicate with (access) a database or talk directly to another computer's screen over phone lines through the use of a Modem (modulator-demodulator). An example of the operation of modems is of particular interest to arbitrators. The Labor Relations Press maintains a database of arbitration decisions claimed to exceed 70,000 cases. No doubt many of your cases are included, each connected with your unique identifying number, whether you have sent them in or not. The Communication Workers Union, for example, has an agreement with LRP to send in all of their arbitration awards. Biographical data is available on each arbitrator (whether you have responded to their questionnaire or not) as well as the number of cases decided, the number won by the company, the number of cases won by the union, the number of split decisions, and the number of federal cases. Cases may be selected for examination by key words. For example, "insubordination, self-help, safety" could be used to screen for cases which used those words. A list of case citations is then printed out. The user may request that the full text of specified cases be printed, but this is expensive because you are being charged by the minute. It is cheaper to have the hard copy sent by mail.

I discussed this subject in a recent meeting of the Southern California Region and the reaction of some members of the group was rather interesting. They felt that it was somehow unseemly for one's decisions to be so available without the arbitrator's knowledge. Perhaps some were thinking of the free BNA bound volumes that come with a published decision.

Conclusion

There is no doubt that computers have made things dramatically different for arbitrators. However, there is no computerized Easy Arb and there can never be, because machines lack judgment—that priceless commodity which the members of the Academy are engaged to employ.

III. WORD PROCESSING AS A TOOL OF THE ARBITRATOR'S TRADE

I.B. HELBURN*

This presentation could be aptly titled "You can teach an old dog new tricks." After initially resisting the rush to computers, I now find myself wondering how I did without one for so long. The decision to buy a Kaypro II was based on three considerations: cost, portability, and the accompanying software, particularly the word processing programs. The Kaypro II cost $1,995 purchased in December, 1982. It now costs $1,295. That model has been supplemented by two additional portable models. The Kaypro IV uses double-sided floppy, or flexible, disks instead of the single-sided disks used in the Kaypro II. The Kaypro 10 uses one 10 megabyte hard disk. The price includes the following software: M-basic, S-basic and C-basic; Wordstar and The Word Plus spelling checker for word processing; plus Mailmerge, Calcstar, and Microplan for filing, accounting, and spreadsheet work. Two additional programs, dBase II and Superterm, come with the Kaypro IV and 10. The software alone would be worth about $2,000 if purchased separately. I have been using Perfect Writer, which was the word processing

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