

The Selection of Hardware & Software: Tips & Traps

by Stephen McNamara

Selecting hardware & software for litigation support is a little akin to buying photocopy paper. Once you have decided on the quality required to achieve your purpose, the brand name is of no importance. Your buy decision comes down to the personalities and in the support you get from the Supplier.

Introduction

You can't choose which hardware or software to use unless you have some idea of what you are trying to achieve with the litigation support. It does not take a long time; there are not many steps involved. Don't make it a tortuous process, but do PLAN.

This article is not meant to be an all encompassing treatise on computer hardware and software for litigation support. Its purpose is to give you some useful tips based on experience with a wide range of hardware and software.

Let's start by getting things into perspective:

A Computer Is a Tool - Nothing More

The main strengths of a computer are its ability to store, sort through and re-present large amounts of data in a very short time. Where a tool of this nature can be used in your lead up to and during the trial, a computer will be useful; but remember the computer is a tool and a tool only. The computer should not become an end in itself or the main focus of your case.

In litigation support, computers can be used for traditional purposes,

from word processing and document management through to animation to re-constructing events, systematic chart building or graphs to emphasise a point.

Whether, When & For What

Before asking what to use, consider whether you should use a computer, if so, when to use and for what. Answering these questions involves a consideration of the following:

- (i) The purpose you wish to achieve.
- (ii) The skills upon which you can draw.
- (iii) The time-frame in which you have to work.
- (iv) The computer resources you have at your disposal.

Consider these matters in concert, but items (ii) and (iii) are the most important.

◆ Give yourself plenty of time.

Don't wait for 'The Mother Of All Cases' to try litigation support for the first time. Build your skills slowly and without pressure. Use skills outside your firm to assist until you build up the necessary skills within. Start with simple tasks such as document management, chronologies, etc and when your firm has mastered these, tackle the more complex tasks.

◆ Define the Purpose

Commit the purpose you wish the computer to achieve to paper. Ask yourself, 'What need do I presently have that the computer can satisfy?' and write the

answer down. Simple answers or definitions may be 'I need a computer to assist with document management' or 'I need a computer to assist with the presentation of complex evidence.'

When you have identified your objectives, make sure you use the computer for these objectives only. If you find other uses for it, re-define your objective and adjust the other matters that flow from this, otherwise you may find you commence many tasks but fail to satisfy your original objectives.

◆ How Many Documents?

'How many documents before I need to use litigation support?' There is no rule as to how many documents a case should generate before litigation support is used. It depends on the type of case and importance of the actual documents to the case. If you define your purpose, you will not need to ask this question. You may need to redefine it by asking 'How much do I spend on litigation support?' The answer to which depends on the case at hand. There are some matters to take into account.

The cost per document of running a 10,000 document case manually is about 3 cents a document, whereas using an automated litigation support system, the cost is less than 1.5 cent per document. These figures may vary widely from case to case and obviously the more documents involved the greater the saving but they give you some idea of the costing involved.

Once you have a litigation support or document management system set up, it is quite easy to introduce second, third and fourth cases to your system. Spread the initial start-up costs and running costs over a number of cases in order to get the most cost effective use of the system introduced.

The important thing to remember is that the first case in which you use a computer system is the most difficult case. Therefore, ensure that you take things slowly, use the computer to accomplish one task only and get as much assistance as possible if your firm does not have the internal skills.

How to Choose

Match the Purpose to your Firm

Assess your firm's skill levels, your time-frame and the computing resources you have available. Matters to be addressed are:

Does your firm have excess computing capacity?

If yes,

Is the computer equipment in the firm sufficient to satisfy the need?

and

Are there people within the firm with the skills necessary to carry out the tasks required to achieve your purpose?

Traditionally, litigation support involving document management, chronology generation and/or graphics is an intense user of computer power during the build-up to trial. You should consider using a separate system for litigation support or at least a separate computer file server on your network.

If your firm does not have the necessary computing equipment you must either purchase the equipment or hire the equipment. Hiring equipment is a good way to commence litigation support, to ensure that you have the correct equipment to satisfy your purpose.

Make sure the equipment you need is available and obtainable within the time-frame you require.

The Hardware

The type of computer system used depends on the task to be undertaken. The hardware you require depends largely on:

- (i) the software needed;
- (ii) the size of the case;
- (iii) the time frame available; and
- (iv) where you wish to use the computer.

My advice is, where possible stay with the computer resources you have and the computer resources that your staff feel comfortable with.

◆ Graphical User Interfaces (GUI's)

Generally, where solicitors and barristers are concerned, employ a computer system with a graphical user interface, that is, pictures on the screen to which the user refers. These computer systems have a very short learning curve and will not distract solicitors and barristers from the main purpose, that is, winning the case.

Graphical user interface computer systems allow people to retain what they have learnt over longer periods of non-use. It is quite possible in many cases that automated litigation support may start and then stop so that the solicitors and in particular the barristers may not come to use

the system for some considerable length of time. A computer system that requires the solicitors and barristers to re-learn how it works on the recommencement of the case is a system that does not properly support the law firm.

◆ Mix & Match

Unless you have plenty of time on your hands, and you know what you are doing, do not mix and match your computer hardware, and definitely do not mix and match your operating systems. It is hard enough trying to get on top of one operating system without complicating the issue by adding another and then trying to get them to work together. There is really no need to do this for litigation support.

I recommend the same for hardware. Buy a single brand of equipment for the total system. This will ensure that you can 'plug and play'. If something goes wrong. Assuming that you take the sensible step and have your system covered by a maintenance agreement, same brand hardware will give the service engineer a greater opportunity to pull parts out of one machine and put in another to give you a temporary fix and keep you going while he or she goes away to fix the problem.

◆ Sizing the System

Floppy Disks - On a personal computer, floppy disks are not usually a viable storage option for litigation support except for very small tasks. A typical double sided 720K floppy disk will handle about three days of hearing transcript. This is without considering space required for the indices created by the searching

software, which will consume a further 80-200K per day of transcript. With this included, one day's transcript may run to 180-450K, meaning that only one or two days may fit on to one floppy.

Compression programs as *Stuffit* for the Macintosh and *Super Store* for DOS will reduce files sizes by as much as 50%, but these add another level of complexity to the management problem, and should therefore be avoided. If you have three months of pre-trial transcript for searching, you will need to load a library of 20-30 floppy disks to search individually, making the whole exercise non-viable.

The best use for floppy disks is as archive or backup storage media. Copy each day's transcript and indices created by the full text searching software to floppy disks and store off-site as a precaution against damage to the major computer system. Also, present a set of the entire transcript and indices on floppy disk to the client at the conclusion of the case.

Hard Disk Storage - An abstract database of documents (summaries of documents) involving say 10,000 documents may take up to 40 megabytes of disk storage space. If your system involves taking a graphic or photograph of the document and storing it on the computer as well, then you will need considerably more disk space and will soon need to advance to a network to handle storage and data input. A 10,000 document case may take 400 megabytes compressed or 1 gigabyte uncompressed.

You will need more disk storage

than the size of your final database as you will need room to work especially where images have to be scanned and then compressed.

For transcript, consider the following. On the assumption of 40 pages of transcript a day, and 45 lines per page, 1 week of hearing will yield 200 pages of transcript, or about 9,000 lines. If the hearing is set down for 2 weeks, which is not uncommon, the case will generate 400 pages of transcript, or 18,000 lines, which is in the area of 940,000 characters.

One megabyte of storage space will theoretically accommodate one million characters. In a full text application such as *Personal Librarian*, you can be reasonably sure of fitting the text into 1 megabyte of hard disk space. The indices will require another megabyte, if we include comments, thesaurus and synonym files. The application itself needs about 300K of space. So, if you used the machine for nothing else but full text searching of transcript alone, estimate 3 megabytes alone for storage. A 40 - 80 megabyte hard disk should do nicely to support this and all your other applications and files.

Of course, some cases generate more transcript than others. As an example 47 days of hearing yielded 2401 pages of transcript, with an average of about 60 pages per day. Total storage space for transcript plus index files was 20.4 megabytes. Added to this was the space required for reports generated after searches on the transcript. In the case referred to above, the case generated about 70 actual reports on transcript. This re-

quired about 3 mb storage, with the largest taking 386K, the smallest about 5K.

Random Access Memory - RAM is the memory required by the computer to run the application and perform operations. Generally the more RAM installed the quicker the programme will run. Whether your operating system is DOS, OS/2 or Macintosh, for litigation support use at least 4 mb of RAM.

For scanning, make sure your machine has at least 6 mb of RAM otherwise it will tend to freeze when processing large volumes of information.

Input Terminals - As a rule of thumb, it takes about three minutes to input a document, whether this be keying an abstract or summary of the document or scanning the full text of the document into the system. In a 10,000 document case it will take one operator about twelve and a half working weeks to input all the data should that person work full-time on the job.

This equation will vary depending on how complex the documents are and how the documents are attached together, whether they require photocopying for briefs and whether the originals or best copies of the documents are secured. Using the three minute rule of thumb, you can determine how many terminals are required to have data entered within the available time-frame.

◆ Where to use the Computer

Where you wish to use the computer will impact on the shape

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and size of the computers you purchase. As a general rule, the smaller the physical size, the higher the price, but the difference is becoming less by the day. Small does not necessarily mean less power, and whilst the advantages of a smaller computer with the same power as a large computer are readily apparent, there are some disadvantages that need to be considered.

The major disadvantage is security. Small computers are easy to pinch (or mis-place). Small computers have smaller keyboards, therefore if you are a marginal typist at the best of times, a smaller keyboard will not improve your performance. Small computers have smaller screens. This has a number of effects. They are usually monochrome (black & white) and harder to see in any event, but the resolution is not as great, nor is the physical size. If you are using the computer all day, a small monochrome screen can become tedious. This can be avoided by purchasing a full size screen, keeping it at the site you most commonly use the computer and plugging it in.

Until you are a very competent user avoid using a computer in court at all costs. If the computer does not function properly in court, or users make mistakes under stress, it will detract markedly from your case. Use the computer at your office and use it to assist in the preparation of your case. Anticipate as much as possible, the type of reports or supporting evidence that you may be required to produce from the computer prior to attending court.

Giving Access to Counsel - You should also consider the added risks to security when using a computer system related to litigation support outside your firm's office environment. This includes allowing solicitors to take portable computers home or leaving computers with barristers. Computer data can be damaged in transit and theft of the computer, particularly portables, is an important consideration.

Even if unauthorised personnel cannot gain access to your litigation material, they may be able to introduce foreign (unauthorised) programs into the computer system. These programs may include viruses and other material that can corrupt your computer system. Do not allow unauthorised programs on your system, and have all computers, particularly portables, checked for viruses before allowing them back onto a network.

Access and inspecting documents - It is very useful to have access to your document database when inspecting documents produced by the other side. Again only take a computer to the inspection if you are a competent user.

◆ **To Network or Not to Network**

If your law firm is new to the use of computers and litigation support then where possible, avoid using a network (joining two or more computers together) as this only adds a further complication to the equation. In many instances, networks cannot be avoided because of the size of the case and the time frame involved. Data input is probably the main reason for introducing a network as you will need more

than one input terminal in order to get all the data into the system quickly. Until all the data is in the computer system, the database is not usually useful to the solicitors running the case, thus all effort must be made to getting the database in order quickly. To this end, the more input terminals available, the quicker the data will be entered.

Use a consultant to help determine what type of network will accomplish your purpose, and how to set it up to get the speed and cost efficiencies you require. If your litigation involves large amounts of graphics, there may be good reason to go for the more expensive 'token ring topology' rather than 'ethernet'.

◆ **To integrate or not to integrate**

Should the litigation support system that you are using be integrated with your firm's general computing including word processing and accounting? In most instances, our advice is not to integrate as litigation support requires large amounts of computer processing at specific periods of time. This is particularly true as you get closer to the trial when solicitors and barristers need reports generated from the system. If this happens at, say the end of the month, or the time when large amounts of word processing are being run, your system will come to a halt if you have your litigation support integrated with your general computing system.

If you wish to have a measure of integration, ensure that you have a separate file server or processor for your litigation support purposes. This allows the luxury of sending and receiving reports to your general word processing and

accounting sections and integrating them into your litigation support should the need arise. In our experience there is usually little need to do this. Integration may be useful in order to pick up many documents that have been generated on your word processing section and incorporate them into your litigation support data base but this may be done by floppy disk thus avoiding the expense of integrating. Integration is also useful to cut down on the cost of peripherals, such as printers, scanners and back up mechanisms as information can be transferred to other hard disks or other back up media accessed through the firm's practice management or word processing system.

◆ Backing up

Every litigation support system must have a back up device that allows the system to be backed up at least daily. As previously stated the simplest method is to back up on floppy disks, but this is very time consuming, is non-automated and staff will soon run out of patience backing up in this fashion. Other methods are to use a streaming tape back up device or optical disks. Optical disks are relatively inexpensive and have the advantage of allowing sections of data to be restored to the system rather than the whole of the data on the media having to be restored each time. This technology is very worthwhile particularly if you need to purchase a new back up device.

◆ Printing

The printer you purchase depends on the purpose of your litigation support. If it is for presentation of material in court then consider purchasing a col-

our printer. The price of these has dropped dramatically in recent times, but they are slow and you have to be very careful with the cost of consumables.

Most litigation support systems that handle document control require a laser printer. If you have images stored on the system make sure that the printer can print bitmapped files at a reasonable speed.

Make sure the printer:

- has print drivers available for the software you wish to run with, and that the drivers are easily obtainable
- does not clash with any other peripheral that you are running with
- can print in portrait as well as landscape
- can handle the paper sizes you need (including thickness).

◆ Scanning

Optical Character Reading (OCR) equipment scans every page of a document electronically and puts the image of each character (letter or number) that it recognises into computer-readable form. It is a procedure limited to transferring high resolution printed, typeset or typewritten documents. If the original document quality is poor, the OCR equipment will be unable to produce a readable copy and a great deal of time will be necessary to correct errors. Very high quality material should yield an accuracy rate of between 95% to 98%.

You must have a sheet feeder on the scanner. This does not need to hold any more than fifty sheets, as a batch of this size is

probably all you should feed in at one time in case errors arise. Check to see how the sheet feeder handles a multipaged and a double sided document. Some sheet feeders require multipaged documents to be reverse collated for them to feed paper into the scanner in the correct order. This is very time consuming and can lead to mistakes. Check the sheet feeder or you may find your database terribly out of order.

Make sure the scanner:

- has scanner drivers available for the software you wish to run, and that the drivers are easily obtainable
- does not clash with any other peripheral that you are running
- can scan in portrait as well as landscape
- can handle the paper sizes you need (including thickness).

What to use on the Computer

The programs you use on the computer depend on your requirements. For litigation support purposes you generally require:

- (i) a database product;
- (ii) a word processor;
- (iii) a spread sheet; and
- (iv) a drawing product for presentation purposes

Other software to consider includes:

- (i) Case and task management and scheduling;
- (ii) Case assessment and analysis; and
- (iii) Flow charting and graphing software.

You do not need to purchase specialist software for litigation support. 'Off the Shelf' software is sufficiently powerful to handle any litigation support situation. If you are a novice, you will need help in configuring the software.

Document management and chronology production can be handled by the database product and reports can be tailored by the word processing program which is also available to produce any documents that may be required for court purposes. Numeric analysis and graphs can be generated by the spreadsheet.

◆ Document Control

There are basically three distinct methods of entering data related

to documents into a computer:

Full Text

Full text data entry puts all the text related to the document into the database and this is then used to search upon.

Make sure the full text search software builds indices and searches from these rather than by character string searches through the body of the text. Serious search programs uses an index. Don't get caught without it.

Abstract or Bibliographic

Abstracting requires a summary of the document to be entered

into the computer with key words for searching.

Most document management software relies on abstracting documents. Be wary of relational databases, particularly if you are configuring them yourself. Relational databases are by far the most powerful in terms of speed of searching, but unless the relationships between data are built correctly, the results returned to you from a search will be garbage: worse still, you may not realise it. Flat structured databases such as *FileMaker Pro* or *Q&A* are safer and generally adequate for most litigation support purposes.

Methods of Entering Data		
Type of Entry	Strengths	Weaknesses
Full Text	<ul style="list-style-type: none"> • less involvement by solicitors and expensive staff at the data entry stage • many documents are in electronic form these days and can quickly be attached to the database • good for transcript • very useful in cases involving large amounts of documents 	<ul style="list-style-type: none"> • the richness of the English language which makes searching difficult • the time and expense in entering the text of all documents associated with the case if they are not in electronic form • the unstructured reports that a search generates
Abstract or Bibliographic	<ul style="list-style-type: none"> • quick searching • good reporting structure 	<ul style="list-style-type: none"> • involves solicitor and expert witnesses to read documents at an early stage in the case • requires good organisation at commencement of case • misses detail of document • great care required inputting data.
Imaging	<ul style="list-style-type: none"> • all detail of the document is captured 	<ul style="list-style-type: none"> • Solicitor intervention required to interpret many documents • data entry of index cards detracts from the speed of entering the picture of the document • uses a large amount of storage space.

Current Uses of Technology

Imaging

Imaging puts a photograph of the document on to the computer with an index card.

Imaging requires special consideration of disk space and speed, and can be quite expensive. Many people do not realise that you cannot search a word in the image. Assess whether you really need the image, as the same amount of work has to be done indexing the image as has to be done for an abstract database. Consider whether you need to go to the expense of imaging software.

Combination software

A combination of the three methods drawing on the strengths and overcoming the weaknesses is what should be aimed for. Each case will require greater access to certain features and therefore each should be assessed on their merits. You may require different software for each case or dif-

ferent software for different aspects of the same case. Don't be afraid of this provided you have a clear vision of what you wish to achieve, and you have good support from either within or outside your firm.

Conclusion

You did not go to law school to learn how to use a computer. Nor do you get paid for learning how to use one. So keep your litigation support simple. Litigation support is about doing what you need to win your case, not having the most expensive computer system. Don't be afraid to experiment with new techniques and ideas, but have a clear understanding of what you wish to achieve, the time frame that you want to achieve it in, and the cost.

Don't experiment with equipment unless you have plenty of time. Litigation support is critical and in times of pressure you don't want equipment failing on you. Make your purchases more conservative than

usual. Rely on the advice of people that have actually worked on cases. Most litigation support techniques are developed through experience.

Buy recognised industry standard equipment, because you do not have the time to find out that the equipment does not work, or how to make it work. Buy and use some type of backup device.

Make a decision. Don't procrastinate as your case may be over before you get the benefit of the litigation support. Don't be afraid to hire equipment if you are unsure of your needs or the advice that you have been given. Most data can be transported from one system to another with minimal effort. ☐

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The Paperless Legal Office