PAPER 1 : SOME APPLICATION FOR COMPUTERS IN THE LAW

by
ANGUS NEIL-SMITH

INTRODUCTION:

First of all: **Legal Research.** This is the most widely discussed application for computers and the law. It is to be discussed far more eruditely, and in far more detail than I can, later in the day.

In recent years there has been a terrific explosion in the volume of legal literature. There are more and more statutes, court decisions, regulations, by-laws, legal text books and articles being produced every day. It is now impossible for one man to read all there is to read on practically any legal subject. Most people, at some time or other, must have dreamt of this vast amount of information being stored in the memory of a computer. Practitioners could then supposedly pose a properly framed question to the machine, and the machine could answer in a couple of seconds. Unfortunately, though technologically possible, this cannot be done at the moment.

There are many research programmes all over the world trying to find out the best way of automating legal research. Most have managed to store on the computer a limited range of law; in some cases a limited range of statutes; in some cases court decisions and most have managed to develop some sort of enquiry language to facilitate retrieval.

However, until a much cheaper method of direct access storage is developed, there will be no computer capable of storing for immediate access more than a tiny percentage of the law.

Also, there is much more research needed as to the framing of enquiries. It is not enough to know about the questions being asked at the moment by people doing legal research. What we need to study is how people would ask their questions if they were not limited by the present system of manual searching. Various techniques have been used. Indexes, keywords, statistically prepared abstracts, associative concept searching, descriptive word profiles. Two of the simple methods are outlined in my Paper.

There are several retrieval systems operating commercially overseas. Many of these have proved markedly superior to current hit and miss manual methods. In the U.S. the Aspen Systems Corporation operates a private retrieval system on all Federal and State Statutes, involving over two hundred million words of data. A similar service is operated by the Ohio Bar Association. In England, a successful pilot scheme has been carried out on all Acts of Parliament and Statutory instruments using atomic energy. This is known as the STATUS project.

In France and Belgium, a statute searching service has been operating for some time. The practitioner pays the equivalent of $2 per question. There is a team of experts employed full-time by the professional bodies of these countries to evaluate the questions and interrogate the text.

In a few years solicitors will have computer terminals in their offices connected to a central computer by telephone lines. They will be able to type in a properly formatted question into the terminal and receive an answer within seconds.

I have here a typical computer terminal I will show you — a keyboard and a video screen. I have already typed in some information on the screen. Machines like this can be part of a solicitor's office, connected to a computer via telephone lines, and through a machine like this you can do many of the tasks that are done manually at the moment. One of these is worth about $80 a month to rent.

Apart from legal research, there are many other applications for computers in the law. Already a few solicitors in New Zealand have automated some of their **conveyancing**. Machines in use consist of a keyboard typewriter with magnetic tape storage. A girl types all non-standard clauses on the keyboard. Standard clauses are retrieved from the magnetic tape and printed automatically. These machines, though slow compared with a computer, are useful for documents containing many standard clauses such as leases and wills. We could do much better than that using a computer. The format of a will, for instance, is based very largely on securing the answers to fairly standard questions. There is no reason why a computer could not be used to ask and accept the answers to such questions. At the end of the question session, a will could be printed in its entirety. Questions and advice, sometimes forgotten by a solicitor, could not be forgotten by a computer. In the United States, a programme to do this has been written and used successfully.

Then, of course, there is **bookkeeping and office management**. Bookkeeping in a law office is basically similar to bookkeeping in any office. In many instances it can be done much better by computer than by hand. Overseas, in many legal offices, they use a computer bureau. A terminal on line to a computer could be used just as well. In addition to handling the general ledger and trust account and the reconciliation of disbursements and other payments, most systems keep track of accounts receivable, carry out client billing, and maintain all sorts of internal records such as client and file indexes, indexes of documents held for clients, indexes of legal opinions and library records. The maintenance of time and service records for client billing can be very useful in cases where the Law Society scale fee does not apply. As a by-product various other reports could be produced, such as the total chargeable and administrative time by each solicitor and employee.

Admittedly, the small firms bookkeeping and internal record keeping needs are less than the big firms'. Nevertheless, every firm should look into the economics of computerisation. It can save time and staff and produce more accurate information than a manual system. Once a generalised legal bookkeeping and record keeping package becomes available, implementation will become much easier and less costly than at the moment.

Judicial Decisions: There have been several programmes written to predict judicial decisions. Results have not been very reliable in any instance. However, methods of prediction should become better in time, and it is reasonable to assume that eventually fairly accurate predictions will be able to be made. An accurate prediction system would reduce some of the uncertainty inherent in litigation, and would probably reduce the number of cases litigated.

Land Registration: This is the application that most people think of when they consider computers and the law. It is to be discussed in much greater detail later in the day. The present system of land registration is ripe for reform. There has been a tremendous increase in the number of dealings in recent years and

delays are becoming steadily longer. The biggest bottleneck is registration. Often weeks elapse between the presentation of documents for registration and the updating of the certificate of title. This results in inconvenience and insecurity of title. There are many queues and wasted time. It is usually necessary to consult several documents in addition to the title being searched. The daily transactions journal must be consulted to make sure no transactions have been registered but the title not yet updated. Frequently mortgages, easements and other documents must be found and transcribed, must be inspected and copied. For solicitors searching outside the twelve main centres, all searches and registrations must be done through agents, with consequential delay and extra expense. There is inadequate security in the case of fire or destruction.

A well designed computer system could remove nearly all of these difficulties.

In my Paper I have suggested that all Auckland documents should be held on microfilm. At present the volume of data would be too great to hold economically on a computer's direct access storage and a wholly magnetic tape system would be too slow. This is fully explained in my Paper. Eventually, when direct access storage becomes cheaper, solicitors will be able to search titles through a computer terminal in their offices. Title searches could be made by typing a title number into the terminal. The title number would be produced in seconds on the video screen. If a copy was desired the searcher would just press a button and a copy would be produced immediately.

Registration could be concluded in a similar way by typing details into the terminal. Registration could even be concluded at the time of settlement. To eliminate fraud it would probably be necessary for registered proprietors to have identifying cards or badges that could be read by the terminal. The computer would perform a check on the transaction data. If, for example, the registered proprietor declared in the transaction did not correspond to the registered proprietor on the title, then the transaction would not be accepted. All titles would be current to within a fraction of a second. There need be no actual documents anywhere once the information was inside the computer. Once a computerised system of land registration was operating various other particulars attached to the title could be put on the file. Although not currently registered as interests in the land, drainage easements, Town & Country Planning zonings, public health restructions, rates, land tax, fair rent provisions, noxious weed and animal provisions, sewerage connection and many other items which affect the value of the land could be conveniently added to the file. This would lessen the duplication of information held by Government Departments and Local Bodies which occurs at present.

Government Departments and Local Bodies could all use the same file. Items such as street address, map reference, zoning, use, valuations, drainage, soil, building characteristics, police and civil defence information, fire information, etc. all could be held. These items need not affect land registrations but could be usefully held to support the information needs of other public bodies.

I think a feasibility study could at this stage be profitably made by the Justice Department.

Computers could be used for court bookkeeping and scheduling and the automatic selection of jurors. We all know how crowded our courts are. We all

know the number of adjournments that are necessary because or scheduling difficulties, perhaps because counsel acting in the case is busy in another court.

There is a need for better administration of payments into court, such as fees, fines and maintenance payments, or better information as to defaulters. There is a need for faster servicing of enquiries. There is a need for better prediction of jury requirements and the automatic selection, summoning and payment of jurors. Most of all there is a need for better scheduling of cases. All of these things can be done by computer, saving time, labour, storage space and money.

Other applications discussed briefly in my Paper are: **Chattels Transfer and Company Registrations** and **Searching, Estate Planning, Client Interviewing,** the **Filing of Tax Returns,** the **Maintenance and Search of Criminal Records,** the **Indexing and Crossreference of Bills in Parliament,** the **Computerised Typesetting of Statutes,** and the **Use of Computers as a Teaching Tool for Law Students.**

There are many other possible applications. It has been suggested that computerised sentencing would be much fairer than the present system. There could be an appeal from the sentence imposed by the machine just as there is at present. In the same way the assessment of damages in civil cases could be done in a much more uniform way than it is done at present. Another application is the management of evidence in complex cases, and the indexing of documents for discovery, and their contents. Perhaps one day computers will even be able to advise the best strategy to adopt in a case.

Computerised international patent and copyright searches are a possibility. Full international legal information systems should eventually become a reality.

A major block to the establishment of common world standards in legal matters has been the unavailability of foreign legal material to lawyers, teachers and Government officials. The information explosion brought about by computers has circumvented this obstacle. An idea can now be sent completely round the world via satellite in one seventh of a second. International computers to computer links are becoming commonplace.

The World Peace Through Law centre in Geneva is developing a system for computer storage and retrieval of statutory laws of all nations, high court decisions of all nations and treaties and conventions. A lawyer from anywhere in the world may one day be able to dial a set of digits on a telex or other communication device linked to the central computer and find all the details of a case on international law in a matter of seconds. Now, for the first time in history, a first step towards a world law regime is made possible.

The technology to do all the things I have suggested is with us now. Some of the tasks I have mentioned are currently being performed by computers overseas. Others are in their developing stages. Others have merely been thought of. What is needed in this country is for solicitors to realise the potential of computers, and to collectively finance research into computer applications.

The computer is one of the most revolutionary tools ever developed. Man's landing on the moon within yards of a point preselected in Houston, Texas, would have been impossible without a computer. So, too, would many other technological advances which have occurred in the last twenty years. It has brought about dramatic changes in methods and procedures of manufacturers, hospitals, government departments and businesses of all kinds. It has proved an

invaluable aid to engineers, accountants and doctors. By comparison its effect upon lawyers has been insignificant.

Lawyers will not remain unaffected by the computer for very much longer. Within the next few years most lawyers will use computers in their practices to do some of the tasks discussed in this paper.

LEGAL RESEARCH

The most widely discussed application for computers in the law is in the field of information retrieval. In recent years there has been a terrific explosion in the volume of literature produced. There are more and more statutes, court decisions, regulations, by-laws, legal text books and articles being produced every day. There can no longer be contained in even the biggest office library. It is now impossible for one man to read all there is to read on practically any legal subject. Most people, at some time or other, must have dreamt of the possibility of this vast amount of information being stored in the memory of a computer. Practitioners could then supposedly present a properly framed question to the machine and the machine could answer the question after referring to the information in its memory store. Unfortunately, this is not possible at the moment. There are many research projects being conducted all over the world at this moment, with a view to finding out the best way of automating legal research. All have managed to store on a computer a limited sphere of law; usually a limited range of statutes, in some cases a limited range of court decisions; and most have developed some sort of enquiry language used to extract information from the computer's storage. However, until a much cheaper method of direct access storage is developed, there will be no computer capable of storing for immediate access, more than a tiny percentage of the law. Also, much more research is needed as to the framing of enquiries. It is not enough to know how questions are asked at the moment by people doing legal research. What we need to study is how people would ask their questions if they were not limited by the present system of manual searching. Various techniques have been used: indexes, keywords, statistically prepared abstracts, associative concept searching, descriptive word profiles. Two of the simpler methods are now briefly described:—

The Point of Law Method:—

The material to be stored in the computer is examined by trained personnel and an analysis of each case is produced. A word or a phrase or a paragraph is extracted from the case which identifies the issue or concept laid down. An alphabetical list of concepts is then produced by the computer. From this list the researcher selects the concepts which identify his particular problem. These are then presented to the computer, which searches its store of information for cases which bear all or most of these concepts. In some projects the researcher can ask for a full text of the cases, in others he can get citations only.

This system is thus capable of searching for several concepts at one time, which is not so in the case of a manual search in a law library. Another advantage over the present manual system of research is that, if a precedent exists in the system, it will not be missed by the computer.

The system has a number of disadvantages. To begin with, the analysis of

11

the materials is very expensive. Trained personnel, who have a sound knowledge of the law, must be used. As this job must be done by several people, there is a lack of uniformity in their classifications. Published accounts indicate that it appears to be impossible to devise any system of classifying cases in which two people classify a particular case in the same way. Even the same person at different times is liable to classify a case differently. Also, the evaluation that a particular case is relevant to a particular concept is liable to change with time. Later cases may refuse to follow, or distinguish out of existence, certain rulings in the earlier case; or conversely, later cases or textbooks may highlight a particular aspect of the case that seemed insignificant at the time of classification.

The Keywords Method:—

This method was pioneered by Professor Horty of the University of Pittsburgh. He began, in 1959, by storing on the computer the full text of all the statutes of Pennsylvania dealing with Health. The system has since been developed to the point where now all State and Federal Statutes are stored. Each section is assigned a unique number. A concordance is then produced and stored in the computer of every word that appears in the texts, and alongside each word the section numbers of the sections in which it appears; the sentence in the sections and the position of the word in the sentence are also identified. The researcher, aided by a thesaurus, selects a word or words he believes should appear in a statute touching upon his problem. If he were interested in the rights of illegitimate children, for example, he might ask the computer for sections containing "BABY or CHILD or FOUNDLING or INFANT or MINOR or JUVENILE or ORPHAN" **and** "FATHER or MOTHER or PARENT" **and** "UNWED or UNMARRIED" **or** "ILLEGITIMATE", etc., occurring in the same sentence or within a certain number of words of each other. The computer then prints out the relevant sections. The system can also be adapted to case law searching.

This system has its disadvantages as well. There is the obvious disadvantage that, until computers can read books, which is not so very far away, the full text of all materials must be keyed in. A further disadvantage is that the searcher must have considerable practice and training to make his questions efficient. Badly framed questions will obtain a large number of false drops, i.e. many sections which are not applicable to the problem, but satisfy the question, will be given. Efforts are being made at the moment towards storing thesaurus or list of synonyms can be compared against the words of the text and their synonyms. This has not yet been accomplished satisfactorily. In addition, there is always the possibility that such a system will miss relevant material, no matter how good the thesaurus and no matter how well framed the question is.

A further disadvantage is that the questioner must know what it is he does not know before he starts. This is a big problem with most systems of information retrieval. Frequently people doing legal research know only the facts of the situation in which they are interested, and they are not sure what they ought to know in the law that covers those facts. They are often not even sure which facts are important and which are not.

Despite these disadvantages, the keyword system was proved a useful tool for statutory research, markedly superior to manual methods.

The Aspen System Corporation now successfully operates a private commercial retrieval service in many states of the United States, using a keyword system to interrogate all State and Federal statudes, involving over 200 million words of data. A similar service is sponsored by the Ohio Bar Association.

In England a successful pilot scheme has been carried out, using a keyword system, on all acts of Parliament and Statutory instruments dealing with Atomic Energy. This is known as the STATUS project. There are moves afoot to extend it to a wider sphere of law.

In France and Belgium, a statute searching service has been operating for some time. The practitioner pays the equivalent of about $2.00 per question. There is a team of lawyers employed full time by the professional bodies of these countries to evaluate the questions and interrogate the text.

There are several other methods of computerised legal research being developed besides the two mentioned above. The ideal system will probably be one that involves storing the full text of all documents and not merely an abstract of them. No expensive analysis step should be necessary before inputting the data to the computer. In addition the researcher should be able to interrogate the store of information directly, without the intervention of another human specialised in the interrogation techniques. Any system should be interactive so that, on receipt of an answer to a question, the researcher can ask any further question which occurs to him as a result of the answer he got. This implies the use of a computer terminal, and not remote processing. Also, it is essential that a collection of cases stored on a computer be susceptible to searches for identical or similar fact situations as well as for basic legal concepts. Such an ideal system is possibly a few years away yet, but it will come in the end.

CONVEYANCING

Already a few solicitors in New Zealand have automated some of their conveyancing. The machines in use consist of a keyboard typewriter with magnetic tape storage. A girl types all non-standard clauses on the keyboard; standard clauses are retrieved from the magnetic tape and printed automatically. These machines, though slow compared with a computer, are useful for documents containing many standard clauses, such as leases and wills. They are also useful where several drafts of the same document are likely to be made. The typist types a draft of the document, and this is stored on magnetic tape. Every succeeding draft is produced by the machine with only the changes, corrections and insertions typed by the typist. To prepare a revised will, the typist finds and loads the tape of the old will, types the changes and pushes the start button. The machine thereupon produces a new will without errors at a speed of over 100 words per minute.

The technology exists to do much better than this using a computer. The format of a will, for instance, is based very largely on securing answers to fairly standard questions. There is absolutely no reason why a computer program could not be written to ask and accept the answers to such questions via a terminal. At the end of the question session a will could automatically be printed in its entirety. The client could then sign it then and there. Questions and advice, sometimes forgotten by solicitors, could not be forgotten by the computer. In the United States, an experimental program to do this has been written and used successfully.

13

BOOKKEEPING AND MANAGEMENT

Bookkeeping in a law office is basically similar to bookkeeping in any office. In most instances it can be done better by a computer than by hand. A large number of law firms overseas use a computer for their accounts; in most cases they use a computer bureau. Most solicitors in this country are unaware of the benefits to be gained.

In addition to handling the general ledger and trust account and the reconciliation of disbursements and other payments, most systems keep track of accounts receivable, carry out client billing, and maintain all sorts of internal records such as client and file indexes, indexes of documents held for clients, indexes of legal opinions, and library records. The maintenance of time and service records for client billing would be very useful in cases where the Law Society Scale Fee does not apply. As a by-product, various other reports could be produced such as the chargeable and administrative time worked by each solicitor and employee, and various statistical data that may be required from time to time.

Admittedly, the small firm's bookkeeping and internal record keeping needs are less than the large firm's. Nevertheless, every firm should look into the economics of computerisation. It can save staff and time and produce more accurate information than a manual system. Once a generalised legal bookkeeping and record keeping package becomes available, implementation will become very much easier and less costly than it is at the moment.

PREDICTING JUDICIAL DECISIONS

There have been several programs written to predict judicial decisions. Some have been based on the presence or absence of a large number of specific fact elements that the courts have mentioned as affecting the outcome of particular classes of case. Others have been based on the prior decisions of individual judges, in particular classes of case. Results have not been spectacularly reliable in any instance. However, methods of prediction should improve with time, and it is reasonable to assume that eventually fairly accurate predictions will be able to be made.

On several occasions in the past, the mention of decision prediction by computer has produced an outcry amongst lawyers who seem to have thought that predicting judicial decisions would be very much the same as actually making the decisions, and would lead to the computerisation of judges and juries.

It is improbable, however that any prediction system will be able to operate with absolute certainty. Because of this, computers will never replace judges. But an accurate prediction system would reduce some of the uncertainty inherent in litigation, and would probably reduce the number of cases litigated. It would tend to make settlements out of court fairer and more frequent.

LAND REGISTRATION

The present system of land registration is ripe for reform. There has been a tremendous increase in the number of dealings in recent years and dealings are tending to become more complicated. Delays are tending to become longer. The biggest bottleneck at the moment is registration and the updating of the

14

certificate of title. This results in inconvenience and insecurity of title. There are many queries and wasted time when waiting to register dealings. When searching old titles, search clerks must laboriously copy details from the title; (happily this does not now apply to new titles which are photocopied). It is usually necessary to consult several documents in addition to the title being searched: the daily transactions journal must be consulted to make sure no transactions have been registered but the title not yet updated; frequently mortgages, easements and other documents must be found and transcribed; plans must be inspected and copied. There are long delays before new certificates of title are issued. There is inadequate security in the case of fire or destruction. The cost of the staff required to maintain and operate the system must be huge. For solicitors practising outside the 12 main centres, all searching and registration must be done through agents, with consequential delay and extra expense.

A well designed computer system could remove nearly all of these difficulties.

In Auckland there are approximately 500 registrations every day. There are probably nearly twice as many searches. There are, possibly, half a million certificates of title and other current documents. The average number of characters on a certificate of title must be about one thousand. It would be possible to store all of this information in a computer's backing store. However, the expense of storing 500 million characters on disc or other immediate access device would be colossal and prohibitive. It would probably not prove satisfactory to store it on magnetic tapes as the time to retrieve a given certificate of title would, in most cases, to too long. However, the cost per character of disc backing storage has more than halved every three years over the last decade. This trend seems likely to continue. In addition, technology is producing cheaper backing storage all the time. Laser beam memories are an example. In a few years' time, therefore, it should be possible to use direct access storage, even though it is not economically feasible at the moment.

If direct access computer storage was used, retrieval of any information would take a matter of seconds. Title searches could be made by typing a certificate of title number into a computer terminal. The title would be reproduced within seconds on the video screen of the terminal. If a copy was desired, all the searcher would need to do would be to press a button and a copy would be produced immediately. If the searcher did not know the title number, then he could refer, via the terminal, to other indexes just as is done at present. Registration of new dealings could be done in a similar way, by typing details into the terminal. Registration could be concluded at the time of settlement. To eliminate fraud, it would probably be necessary for registered proprietors to have identifying cards or badges which could be read by the terminal. The computer would perform checks on the transaction data. If, for example, the registered proprietor declared in the transaction did not correspond to the registered proprietor on the title, then the transaction would not be accepted. All titles would be current to a few millionths of a second. There need be no actual documents anywhere once the information was inside the computer.

Solicitors could have terminals in their offices at quite a moderate cost, connected to the computer by telephone lines. These same terminals could be used for registration and searches under the Chattels Transfer Act and the Companies Act. They could be used for the filing of Tax Returns and of court documents.

There are, however, other problems besides the problem of storage expense. The implementation of an on-line search and registration system would prove a mammoth task. Conversion of all documents to computer readable form would take years. Existing documents are not acceptable to optical character readers at this stage in their development, so that all information would have to be keyed in. This would be like retyping all existing records. Another difficulty would be that the documents being converted would have to be in use throughout the changeover period.

It can be seen, therefore, that although the technology for such a system is with us now, it will not be a feasible proposition for a few years yet.

In the meantime, something should be done about the present Land Registration System. An alternative approach to using direct access computer storage may be to use microfilm storage. Using modern and relatively cheap microfilm retrieval techniques, the time taken to access an image of a particular document out of hundreds of thousands of documents, is about six seconds. A hard copy of the document can be produced instantaneously if required.

All certificates of title and other current documents in the Land Transfer Office could be held on microfilm reels at small expense. Under the present land transfer system all titles are copies to microfilm anyway every few years, as a security precaution against destruction. This is to prevent the recurrence of the chaos that resulted in Napier after the earthquake in 1932. (Following the destruction of the Napier Land Transfer Office, interim titles had to be issued. These were open to challenge by anybody contesting their validity). This system of security is unsatisfactory, as the duplicate microfilm titles are in many cases out of date after a few years.

A viable microfilm computer system could work as follows: In the Land Transfer Office there could be a microfilm reader as well as a computer terminal online to a computer. This computer need only have a relatively small amount of direct access backing storage. All certificates of title and other current documents could be held in the Land Transfer Office on microfilm on cassette reels as well as on magnetic tapes inside the computer. The registration of transactions and other amendments to the titles could be carried out using the computer. Transactions could be input via the terminal, or via a document reader or a card reader. These transactions could then be used to update the magnetic tape file of titles, and these amended titles could be written to disc. When a search was being made, the operator would first type the certificate of title number into the terminal to enquire whether or not the particular title being searched was one that had been amended. If it was, then a copy of the title, complete except for the diagram, could be shown on the video screen of the terminal, and a printed copy could be obtained if desired. If the title was not one that had been amended, a copy could be obtained from the microfilm reader. Every so often, say every three months, as the disc storage on the computer became overloaded with titles which had been amended, a completely new set of up to date titles on microfilm could be output direct from magnetic tape. Computer output to microfilm ("COM") units are operating fairly cheaply in this country at the moment, on a bureau basis, and one of these could be used. The old reels of microfilm would thus be replaced with new reels produced by the COM unit containing completely up to date titles. The amendments held on disc could thus be discarded and the whole process could start all over again.

16

An advantage of a system of this sort, apart from the cheapness of storing all the titles on microfilm and storing only the transactions on disc, would be the relatively painless conversion from the present system. To set up the microfilm files in the first place, the titles would be photographed in the conventional way. No tedious keying in process would be necessary. As transactions came in, the title involved could itself be keyed in to the computer, if this had not been done previously, at the same time as the transaction. That is, only those titles being amended need be keyed in. It would be several years before all titles were held on magnetic tapes, but this would not matter. During the conversion process, an index could be kept on disc of those titles which had been converted. The terminal would indicate where the latest microfilm image of a particular title was held, either amongst those photographed originally or amongst those output from magnetic tape via the COM unit.

A further advantage would be the ease of eventually converting to the ideal system of holding all titles on-line on direct access storage.

Such a system would give nearly all of the benefits of a fully computerised on-line system. It would help to protect land owners against the dangers inherent in the present system with all its delays. Titles would be current to within a few seconds. Transactions would still have to be checked by the Land Transfer Office Staff, as they are now, but as soon as a full on-line system was introduced, this would no longer be necessary, as the computer could do all the checking. Searching would be very much easier than it is now. There would be no manual copying of documents. There would be no need to consult the journal. Security against destruction would be very much better than it is now, duplicate microfilms and magnetic tapes can be made at very little cost and stored away from the originals. There would be a saving in clerical staff at the Land Transfer Office, the entering of all transactions and amendments to titles would be done by the computer.

One slight problem with a computer system would be the inputting and storage of diagrams. This would be impracticable. The diagram at present on each certificate of title would, therefore, have to be stored elsewhere, perhaps on separate microfilm reels. It is possible to merge two microfilms; so that it may be feasible to merge microfilm holding the diagram with those output by the COM unit. This would enable the present system of having the diagrams on the title document to be continued. If this proved too expensive, then there is no reason why all diagrams could not be photographed and held separately from the rest of the information on the title, but accessed at the same time during searching.

The New Zealand Government plans to start converting all units of measurement to the metric system very shortly. This could be done for the Land Transfer System so easily if the material to be converted was held on computer files as proposed. All that would be necessary would be to run a simple program once to convert all measurements.

Once a computer system of land registration was operating, whether using microfilm storage or disc storage or some other sort of storage, various other particulars attached to a piece of land could be added to the file. Although not currently registered as interests in the land, drainage easements, Town and Country Planning zonings, Public Health restrictions, rates, land tax, fair rent provisions, noxious weed and animal provisions, sewerage connection and many other items which affect the value of the land could be conveniently added to

the file. This would lessen the duplication of information held by various Government Departments and land authorities which occurs at present. All Government departments and local bodies could use the same computer files. A truly comprehensive and up to date record of every parcel of land would be available to everybody. Items such as street address, map reference, zoning, use, valuations, drainage, soil particulars, building characteristics, civil defence facilities, police information, fire information, etc. could all be held. These items need not affect land registrations, but could be usefully held to support the information needs of other public bodies.

From a brief explanation of the present system of land registration and a rough estimate of volumes of data, it appears that a microfilm storage computer system along the lines suggested would be workable and economical. The benefits of such a system would be many. A feasibility study by the Justice Department could profitably be made.

CHATTELS TRANSFER ACT AND COMPANY REGISTRATION AND SEARCHING

In the same way that land searches can be speeded up using a computer system, so can company searching and Chattels Transfer Act searches.

There have been suggestions recently that the scope of the Chattels Transfer Act should be widened to cover many of the articles listed in the schedule to the Act as being exempt from registration. Many chattels customarily subject to hire purchase agreements are exempt from registration because of their mobility, and the inconvenience of having to register and search for hire purchase agreements on the chattels in registries all over the country. It would be an intolerable situation if a potential purchaser of a motor vehicle had to search registries all over New Zealand in order to find out whether or not there was a charge on the vehicle. However, if there was one centralised computer registration system for the whole country, searchers anywhere in the country could access the computer via terminals connected through telephone lines and obtain details of charges within seconds. Similarly, registrations could be carried out remotely with equal convenience.

ESTATE PLANNING

Estate Planning is a field which involves many complicated calculations. These can very easily be done by a computer. Programs are available on a commercial basis in the United States that will plan the estate of a client. Classification of estate laws by fact pattern has been done, indexed and stored on a computer. On the input of a particular fact pattern relating to a client, the computer will print out the applicable laws, the problems and the planning opportunities. In other words, an up to date analysis of a client's particular case is produced. Of course, the proper collection of the relevant facts is important. Lawyers are aided in this by questionnaires which, in addition to acting as a guide to the lawyer to enable him to obtain all relevant information, contain the information in a form suitable for imput to the computer.

A useful by-product of one system is a yearly follow-up report. This is a listing of the client's property, its value, income and encumberances, his family situation and a short description of his last estate plan. This is sent to the client

for him to indicate any changes that have taken place during the last year. These are, in turn, input to the computer and screened for problems and opportunities that have arisen since the last time the estate was planned. In other words, the client has an automatic annual legal check-up.

When planning an estate manually, it is often difficult to judge accurately the economic results of various estate plans. Calculating taxes can be very time consuming. The effect of inflation can at best only be guessed at. Discounted cash flow techniques are hardly ever used. Estimated earning capacity and life expectancy tables are rarely taken into account. A computer system can take account of all of these things. In addition it can calculate the effect of unexpected contingencies such as the birth of another child or the immediate death of the client or his spouse. The computer's cost in one instance has been calculated to average out at 18 cents per estate.

COMPUTERS IN PARLIAMENT

The increasing volume and complexity of statutes and their frequent amendment make it difficult for a conventional indexing system to be comprehensive. Also, statute drafters are beset by time consuming statute comparing problems, and the annotating and redrafting of new provisions every time the substance of a bill changes during its passage through parliament. If all statutes were held on a computer right from the drafting stage, many of these cross referencing problems could be easily solved. In addition, the subsequent printing of the statutes could be done by computerised photocomposition, eliminating typesetting costs and shortening the time between the passing of a bill and its appearance in the official bound statute books. The statutes stored on computer could then be used for information retrieval and legal research as discussed previously. The main problem is data capture; all characters would have to be keyed in to the computer. However, newly drafted statutes must be typed, and each amendment retyped, even now. If they were keyed into a computer instead, the computer could produce the hard copy and no extra work would be involved. Then all that would remain to be done would be the keying in of all existing statutes. While this would be a large task, it would only have to be done once, and once done it would be done for good. In theory, the complete statute book should be revised and reprinted every few years anyway, and this involves a large amount of retyping.

The typesetting of new statutes by computer is done at present in several states of the United States and Canada at considerably less cost than that involved in printing them in the convenional way.

COURT BOOKKEEPING AND SCHEDULE AND THE SELECTION OF JURORS

We all know the tremendous amount of time wasted by people waiting in court for their cases to be heard. Usually 10:30 a.m. is specified on the summons as being the time for the hearing, and the solicitor and client must wait, in many cases, until after midday for the case to be called. We all know how crowded our courts are, and the time it takes to have a case set down for hearing. We all know the number of adjournments that are necessary because of scheduling difficulties, perhaps because a counsel acting in the case is busy in another court.

These and other aspects of court administration can be improved by the use of computers. Accurate financial records must be kept, and various statistical

data is needed, just as in any business. There is a need for better administration of payments into court, such as fees, fines and maintenance payments, and better information as to defaulters. There is a need for the faster servicing of enquiries. There is a need for better prediction of jury requirements and the automatic selection, summoning and payment of jurors. Most of all, there is a need for better scheduling of cases. All of these things can be done by computer, saving time, labour, storage space, and money.

THE COMPUTER AS A TEACHING TOOL

Much research work has been done in the field of computer assisted education. Computers can be used in the education of law students just as well as other types of student. The student sits at a computer terminal with a keyboard and perhaps a visual display unit. Via the terminal he receives instruction and is asked questions. A law teaching program might begin with work on the keyboard. At an appropriate point the program might branch to a short video-tape featuring some expert speaking on his topic, or a panel discussion, or a documentary on how some institution functions. After the video presentation, students could be questioned individually. A student could ask the computer for various kinds of assistance when necessary.

Computer teaching programs have the advantage that there is ready capability for multiple branching. This enables the brighter students to get ahead of the less intelligent ones. If the computer judges that detailed explanation of a particular topic is not necessary in a particular instance, it can jump ahead to the next topic. On the other hand, if the computer judges that a course of instruction should be repeated for a particular student, then this can be done without holding up the other students. Revision is easy and done only where necessary. Another advantage is that student responses can be measured and recorded and an accurate assessment of each student made.

CRIMINAL RECORDS

Computers are being used all over the world for the maintenance and searching of criminal records. Descriptions of known criminals and details of crimes committed are accessible to interrogation by police for possible suspects as well as for general administrative purposes.

CLIENT INTERVIEWING

In a few hospitals, patients are interviewed with the aid of a computer terminal to ascertain their medical history and the cause of the present complaint. Lawyers could use a computer for client interviews in the same way. This may be some years away yet, however.

TAX RETURNS

Programs have been written and are in commercial use in the United States to prepare tax returns. Once a client's details are stored in the system, only the changes need be input for following years. A tax return is automatically produced by the computer at very low cost, taking advantage of every permissable allowance and exemption available to the client.

OTHER POSSIBLE APPLICATIONS

It has been suggested that computerised sentencing would be much fairer than the present system. At present the severity of a sentence depends to some extent on the idiosyncracies of the particular judge or magistrate trying the case.

In the same way, the assessment of damages in civil cases, and the calculation of maintenance or alimony, could be done by computer in a much more uniform fashion than it is at present. Any such calculation could, of course, be open to appeal, as it is at present.

Another application that has been suggested is the management of evidence in complex cases. Perhaps, one day, computers will even be able to advise the best strategy to adopt in a case.

Computerised international patent and copyright searches are not so very far away. Full international legal information systems should eventually become a reality.

In 1967 the World Peace Through Law Centre's section on law and computer technology was set up in Geneva. The aim of this body is, through cooperative exchange of information, to explore all methods of making world law available to the legal profession of every nation.

A major block to the establishment of common world standards in legal matters has been the unavailability of foreign legal material to lawyers, teachers and Government officials. The information explosion brought about by computers has circumvented this obstacle. An idea can now be sent completely round the world via satellite in one seventh of a second. International computer-to-computer links are becoming commonplace. Now, for the first time in history, a first step towards a World Law Regime is made possible.

The World Peace Through Law Centre is developing a system for computer storage and retrieval of statutory law of all nations, high court decisions of all nations, and treaties and conventions. A lawyer from anywhere in the world may one day be able to dial a set of digits on a telex or other communication device linked to the central computer and obtain all the references needed on a case concerning international law within a matter of seconds. This will inevitably lead to the development of common legal terminology, standards and principles throughout the world.