PAPER 4: THE COMPUTER — A TWO EDGED SWORD FOR LAWYERS

by
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You have seen my paper which starts at page one and goes on for an unconscionable number of pages. I deal with two topics: the need for lawyers to involve themselves in computer technology and the privacy problems raised by the new technology.

A.   LAWYERS AND COMPUTERS

I shall attempt to summarize my message by asking and trying to get answers to these questions about lawyers and computers: Why? How? Who? and When?

Why should lawyers become involved with computers?
How should lawyers become involved?
Who should become involved?
And, **When** should we become involved?

1.   *Why should we become involved with computers?*

You will note that I use edge-notched system cards to organize my research and general materials. My colleagues chide me about them, although I have converted at least some of my colleagues to their use. The next step would be for me to have a card system which would be sorted by a machine. The second step would be for me to use a computer to organize my material. However, in the best traditions of the legal profession, I am two steps behind the times.

But, as lawyers, we cannot afford to remain indifferent about the computer revolution. Computers are here to stay and we cannot be latter day Luddites. We would be legal King Canutes if we tried to stem the automation tide.

Indeed, not only do we need to understand this new device, but we must begin to assess its implications for society which I see as being very extensive.

Furthermore, I believe that, as a profession, we must start using this new technology for our professional needs. The computer is a useful tool for us, but we must get involved to ensure that the technology is tuned to our needs rather than our needs being tuned to existing technology. If we do not, the profession will be in the position of having to accept what has been done **for** it not **by** it. Our choice is simple, direct or be directed.

2.   *How should we become involved?*

There is a problem here, because we are going to have to understand the new technology and there really is a severe communications gap. We lawyers are alleged to use jargon but, as we heard on the film shown this morning, the computer men win hands down in the jargon race. When the two professions meet it is like a meeting of the United Nations, without a simultaneous translation service. As illustrations of computer jargon, I mention these:

(a)   I though that I knew what an "argument" was until I found that it is

"an independent variable e.g. in looking up a quantity in a table, the number, or any of the numbers, that identifies the location of the desired value";

(b) We all know what an "adder" is, even Cleopatra knew what an . . . no that was an asp; but do you know what a "half-adder" is?

(c) "Bus" to a computer man means "one or more conductors used for transmitting signals or power". To a commuter a "bus" is a conveyance that often did not run when I used to be in Auckland.

(d) Finally, "Hamming distance" according to the computer man is the same as "signal distance". We all know that "Hamming distance" is the distance between you and me.

So, short of somebody sitting down and writing a book on **How a Lawyer Should Talk to His Friendly Computer,** I have no complete answer to this problem. I believe the law schools must get involved and, as a first step, we instructors must get adequately instructed.

3. *Who should be involved?*

All of us must become involved, but we must be careful not to get trapped into becoming "every man his own programmer" and thus getting involved in mechanical technical details.

But for library research purposes we shall have to learn to use the equipment. I know that a photo-copying or Roneotronic machine **does** work (actually such machines always laugh at me and refuse to work), but I do not need to know **how** it works.

4. *When will we become involved?*

I think that perhaps in the case of statutory materials, most of the problems have been solved to a reasonable degree, except perhaps the problem of the legislative trail − that is, the problem of being able to find out what has happened to a piece of legislation over a period of years as it has been amended. Thus statutory materials could be used even in Australasia in the relatively near future. But it will be longer before cases and other materials are in common usage. The main problem here is one of semantics − different words or phrases may mean the same thing, or the same words or phrases may mean different things. Reducing these nuances to retrievable form is proving difficult.

Parenthetically, I would say that I do not see that the computer will replace judges in the foreseeable future. I do not suggest that the computer be used as a bloodless substitute for Shakespeare's Dick Butcher who would first kill all the lawyers. I am not suggesting that a computer should act as judge and jury and decide issues and award damages on the basis of a vast store containing a digest (or perhaps it would be more apt to call it an indigestion) of past decisions. Such a use I suggest (at least in the present state of computer technology) would result in the elimination of the development of thought and judgment and freeze them into the cold opinion of the past, whether good or bad. That would be *stare decisis* gone mad. Judges and juries act as catalysts: at the present time computers would act as fixing agents.

But I cheer you all up by mentioning that a computer still does not have the discrimination that a human being has.

For instance, one would have trouble with a computerized law library that had to deal with a request like this one which is a common occurrence when I go into the law library. I ask for a book "so" thick, but it turns out that it is "this" thick; I say that is cover is browny-orange and it turns out that it is red; I say that I had it out three months ago but it wasn't me who had it out at all — it was one of my colleagues who had borrowed it who showed it to me; I saw it was published about ten years ago (in fact it was just after the war) and I can't remember its title but can roughly describe its subject matter.

You would find it difficult to get a computer to answer this type of question, but our law school library staff, who know their collection very well, will go straight over to the shelf, put up their hand and find that my colleague hasn't yet returned it.

B. PRIVACY

1. *The Problems*

Finally, I turn to look at the problem of privacy that I raise at the end of my paper. Privacy no longer concerns only indiscreet film stars and cameramen with a telephoto lens: intrusions upon privacy now concern us all. For, using laser beam technology, a 20 page dossier on every man, woman and child in New Zealand can be stored on a piece of tape about as long as a cricket pitch.

Electronic technology will meet George Orwell's *1984* date with ease: society must decide if it will permit it to do so.

In the past a person's privacy has been protected by inefficient record keeping. But no longer: the computer records all, forgets nothing, and recalls selected facts instantly. For a computer really is fast. The latest and tiniest addition to the computer speed family is the pico-second, or one thousand millionth of a second. To gauge how small this is, we can say that a one thousand millionth of a second is proportionate to one second as one second is proportionate to thirty years. A comparison can also be made on this basis: during this session a computer could process a number of steps equivalent to the number of key depressions made during the working life of a competent typist. Mind you, I am still young enough to say "Long live the difference."

We are asked on computer cards not to "bend, spike, or mutilate". The card may remain perfect; my fear is that by the misuse of the card the individual's life may be "bent, spiked or mutilated."

But there is a paradox; we have the clash of two principles both of them good: on the one hand a person's privacy should be respected; on the other hand the truth should be discovered.

I take the credit rating example. If somebody is a bad credit risk it is quite fair that a retailer or other business man should be able to protect himself against the prospective purchaser who is careless or optimistic about his chances of repaying or who is just plain dishonest. My concern is that decisions about credit rating are made about people upon the basis of information that they do not know exists let alone know whether it is right, wrong, accurate or inaccurate, and they certainly don't know it is being used.

To use an extreme example on invasion of privacy: one bite from one piranha fish might be nasty but not too serious; many bites from many piranhas soon leave a bare skeleton. One little bit of information kept does not matter,

but many, many little bits, result in laying bare the skeleton of the person's life.

2. *Possible Solutions to the Problems of Privacy.*

I know of no complete solution to the problems, but I offer three possibilities — *Habeas notas,* open decision making and widening the Ombudsman's powers.

(a) *Habeas notas* — "that you may have the secret writings." Some years ago I suggested the development of a concept which I called *habeas notas.* If any person knows or suspects that any type of record is kept about him in any information pool or data bank of any kind (not only a computer-based one), then he should be able to ask for a copy of that record to be supplied to him. The Courts would be given power to enforce the rights given.

(b) *Open decision making* on the Scandinavian pattern — I suggest this with tongue-in-cheek because it would involve too much change in our attitudes to attain acceptability. Indeed, even in Sweden it is under reconsideration as a result of the automation revolution.   -

(c) *Widening the Ombudsman's powers* — Just as no public servant acting carefully and properly has anything to fear from an Ombudsman nor has the proper private organization. No reputable private organization now roars as Commodore Vanderbilt allegedly did: "The public be damned!" Indeed, business organizations invariably devote substantial resources, in an endeavour to deal with complaints or dissatisfactions. It is also good business practice to do so.

New Zealand has been fortunate enough to discover that the office of Ombudsman is justified, so why should it be so restricted? I suggest that injustice or impropriety is nonetheless injustice or impropriety whether perpetrated by a government official or by a careless or incompetent credit agency.

The fact is that complaints and problems are being thrown up by the galloping developments of the electronic age and the remedial action seems not to be moving fast enough. Might it not be to everyone's advantage to have a skilled, impartial person settling difficulties at a less formal level than at the level of the Courts?

Traditionally it has been for the legal profession to see the dangers of, and to protect the individual or group against, suppressive or oppressive change. As lawyers we have a responsibility to see that this powerful tool is used responsibly. I believe that it is not enough for us merely to see that the new technology is not misused; we must use the means available to us in a positive way for the good of society.

Finally, in seeking a solution we must note that there is a clash between the individual's rights to have his privacy protected, and the need to ensure that governments, organizations and individuals are not so restricted in gathering and using information that important public and private activities are unduly impeded. Indeed, in seeking a solution, I am reminded of the man who attended a seance. He sat quietly for some time until the medium laughed and then he hit the medium. Asked why he has done it he replied:

"I was always told to strike a happy medium."

We must strike a happy medium with our use of computers.

A.   SETTING THE SCENE

Despite the very significant use of computer capacity in Australia and New Zealand in many fields, there is still a fairly general lack of awareness within the legal profession in Australia and New Zealand of computer potential both as a useful legal tool and as a possible source of legal problems. Indeed, as befits a law school which yields to none in Australasia in its appreciation and application of progressive ideas in legal education, the state of awareness about the computer revolution in the University of Auckland Law School is as great as in any Australasian school.

(a)   *Description of a Computer.*

Most people present will be familiar with computer installations, but perhaps a brief non-technical recapitulation may be justified. In the law we are principally concerned with a digital computer and not an analog computer. The difference is this: an analog computer operates on continuously variable data to give an answer; a digital computer operates on representations of numbers or characteristics and solves problems by counting, adding, subtracting and comparing.

A simple form of an analog computer is the speedometer on a motor car where the revolutions are converted into a scale showing miles per hour. A more

complicated analog computer would be one which, acting in response to changes in a number of variables, such as temperature, pressure, or revolutions, would process the data produced and control the manufacturing operations of an oil refinery or steel mill. An analog computer could figure in legal proceedings, but it is not so centrally important as the digital computer.

In our digital computer, instructions for processing data and the actual data are recorded on punched cards, paper tape or magnetic tape which is fed through an input device to the computer complex, coverted into electronic impulses and stored in the memory system of the complex.

Operating in accordance with the set of instructions, or programme, the control unit of the complex takes the instructions one by one from storage and executes them consecutively until the whole programme has been run. Each instruction will give the address in storage of the data to be operated on, the function to be performed on it, the address where the result is to be stored, whether as the final product, until required for further processing perhaps only a few millionths of a second later, or pending output by an output device, and the location of the next instruction that is to be taken from storage and executed. There are likely to be instructions in the programme for the output devices to print out such results of the operations as are wanted. These results will be in the form of punched cards, typescript or other form depending upon the particular output peripheral used.

Thus we have in our computer complex a means of putting material in (whether it be instructions for handling our material – our programme – or the material itself), we have a number of units that store our material, operating units which operate in accordance with our requests, and a means of getting our answers out.

(b)   *Characteristics of a Computer*

What then are the characteristics and advantages of computers? I select four. First, we can communicate with it; secondly, it is fast; thirdly, it obeys orders; and finally, it has a large, long memory.

Let us look at each of these in turn.

First, by various means we can communicate with and interrogate the computer.

Next, although we are very slow at our end, the computer is fast. Each addition, subtraction or comparison is made at a fantastic speed. The latest and tiniest addition to the computer speed family is the pico-second, or one thousand millionth of a second. To gauge how small this is, we can say that a one thousand millionth of a second is proportion to one second as one second is proportionate to thirty years. Translating this into human terms to show how effective the increase in computation speeds has been, it has been noted that whereas human travel has been speeded up by a factor of 10^2 (comparing walking with jet transport), over a much shorter period computers have increased computation speeds by a factor of 10^8 over manual rates of computation. A comparison can also be made on this basis: during this session a modern computer could process a number of steps equivalent to the number of key depressions made during the working life of a competent typist.

Thirdly, a computer obeys orders. The computer will do exactly as you tell it. Indeed one of its most irritating characteristics is that it does obey its

instructions implicitly, and if you give it bad instructions, you get foolish answers. As the computer man says: "Garbage in, garbage out."

Finally a computer has a large long memory. Unlike our human fallibility, the computer can store as much information as we care to put in its memory system. Of course it does not have the discrimination that a human might have; in fact it is an incredibly fast idiot.

B.   THE LAW SCHOOL'S PART IN THE COMPUTER AGE

One of the principal problems faced by lawyers (and it is one that other professions also have to face) is the educational one of acquiring sufficient knowledge about, and familiarity with, computers for professional purposes. Although there are a number of professional courses in computer science as such and there are also specialist practical courses of various kinds, there is not yet in Australasia a course adequate for lawyers. Perhaps the main difficulty is that, before students can be tutored, first the instructors must be instructed. Those few people who have got beyond the stage of saying "Oooh look at the wonderful machine we **must** start using it" — and then getting back to the good old solid Law Reports and Statute Reprint — have done so on a knockabout, hit-or-miss basis. The development of an appropriate level instructor's course must be one of the prime targets.

As is usual in any aspect of legal education there are the two aspects of teaching and research. But in this case I feel that before an adequate teaching course can be developed, there needs to be some work done on what is needed in such a course.[1] Any course given by any teacher at any time is, or should be, in a sense experimental; once it ceases to be so a course is dead. But the first computer courses offered in Australasia are certainly going to be guinea pig processes for both teacher and student. The University of Auckland honours seminar system lends itself admirably to this development, but I emphasize that it is but one stage in the process to gain sufficient knowledge for the wider teaching of appropriate computer knowledge to all law students.

It is my belief that we do lack knowledge and that we cannot import and use directly work that has been done elsewhere. I illustrate my point. Whenever I suggest that we should undertake a local computerized data retrieval research exercise one criticism that is made of my suggestion is that it has all been done before overseas and anything that we do would be more wasteful duplication. I have two answers: first, because of our lack of knowledge of even elementary techniques, we must go through this stage in order to learn; and, secondly, I am by no means certain that the retrieval techniques and retrieval trails developed overseas will automatically satisfy our needs. Certainly many people will probably need to alter their traditional research approach if we do adopt methods developed overseas. I suspect that in our "consumer group" the conditioning in our use of legal materials may well be different to that of similar overseas groups for whom systems have been developed. If my belief proves well-founded then either the retrieval techniques developed overseas will need to be altered or, alternatively, the local "consumer" will need to be reconditioned.

But the matter must move quite quickly from the experimental to the practical. As this happens it may well be that it will not be enough to teach only in the law schools at the undergraduate level, but, because of the speed of

developments that I foresee, practitioners too will need some help in the course of their continuing education programmes.

On the purely law school side I suggest that there must be computer terminals within every law school within 5 years or, at a maximum, within ten years. This may sound far out, but, in retrospect, one would not have expected to see the growth in usage of remote terminals that has already occurred in all of our Universities. This usage has now extended far beyond the strict physical sciences into the social sciences; law must not lag behind.

Although I do not foresee that law libraries, or, at any rate, substantial parts of them will be computerized within a decade, nevertheless there will be a gradual build up of aspects of the library that will be computer-controlled. There will be instant inter-loan from a growing bank of material stored not in any central place but throughout the country. Already current communications technology is handling much more difficult problems than would be involved here. The use of this communications technology, will become both possible and necessary with legal data within the next decade. For this reason an under-graduate course or part of a course is a necessity for dealing with this form of handling information. Just as, at present, a student learns techniques for the use of currently used technical tools (for example, he learns to use the library and practises the techniques of legal writing) he will need to understand the rudiments of the new technology. Not only will he need to understand the new technology but he will need to be able to use it. Such a discipline will not only involve technical retrieval but will also have an impact upon many branches of the substantive law; to choose, almost at random, disciplines that will be affected in a major way I nominate property, jurisprudence, commercial law and criminal law.

In addition to this strictly law school undergraduate teaching, scholarly post-graduate work and continuing legal education programmes, appropriately qualified back-up staff will need to be provided just as library or secretarial staff are necessary at present. In other disciplines one of the hold-ups in the application of computers was that the ideas and needs of the people engaged moved more quickly than institutional budgets and they had, of necessity, to become technicians as well as people working in their own disciplines. It is not necessary for lawyers to have a detailed knowledge of library cataloguing or the knowledge to run roneotronic machines or other such magical matters (even the photocopying machine laughs at me and refuses to function) in order to use a library or to benefit from these other technological advances. Similarly, I think that we should learn from the experience of other disciplines and not become "every man his own computer programmer". Sadly because of the communications gap between lawyers and computer men a number of us are having to do so. Nevertheless, perhaps there are some advantages in this, because, in some ways, it ensures that the processes of the computer world are bent to suit us rather than that our needs should be bent to fit in with the existing techniques of the technologists.

C. ADVANTAGEOUS USE OF COMPUTERS BY THE LEGAL PROFESSION

(a) *General Office Use*

Even before we get to the "pure law" use of computers, some considerable dividends can be obtained in the simple use of computer technology in legal offices for clerical, accounting and office management purposes. I suggest that there is no peculiar professional character involved in legal office procedures to distinguish them from other forms of office management and thus the procedures developed for these functions for other types of offices will be adaptable to the legal office.

Yet I do see a problem here. In the short term it will be necessary to employ a service bureau to process much of the work, as the range and volume of work in even the largest legal offices would not yet justify a computer set-up that would cover the whole function. Thus the problem of confidentiality arises: material will need to be processed outside the control of the legal office by an independent contractor who, although he is bound by his own code of ethics, is not under the control of, and bound by, the code of ethics laid down by the bodies that govern the legal profession. This problem will disappear as time sharing and mini-computers develop, for them it will be possible to conduct these functions wholly within the legal office.

This use in office procedures might have other advantages too. It is always a good idea in starting any new activity to begin on familiar ground and move to the less familiar. Furthermore, in the necessary analysis of the known procedures in converting to computer usage, flaws in the existing system maybe uncovered; for the routine, logically and systematically.

But even today it is possible to go further in the office than this simple use for general office procedures. Although it is overstating to describe it as using computer technology in its fullest sense, some Australian legal firms have already got to the stage of using automated typewriters for drafting standard legal forms and correspondence. Soon it may be desirable, and possible, to go further as has been done overseas.

For example, would it be too fanciful to suggest that a computer could be useful in estate planning? Estate planning is time-consuming in all but the simplest cases and can be complicated by the need to consider a large number of alternatives. A computer would be programmed to store all the facts, laws and assumptions that need to be considered. Then computer compatible data in the form of punched cards, punched tape or magnetic tape can be prepared from a set of questions and answers completed by the practitioner with his client. The speed of the computer will then permit analyses and computations to be made using different assumptions. Moreover the computer will not omit to consider all of them as even the most proficient person might occasionally do. The technology and methods involved would be very unsophisticated compared with those used already in Australasia in other disciplines and, indeed, used by people in company or industrial planning. Certainly, too, the solutions obtained would be superior to those evolved by human effort alone, because human judgment and intuition could be applied to a wider range of possibilities and alternatives offered by the computer. The only real question is whether it is yet economically feasible.

In this possible area of estate planning, as in other areas where the

computer could be used, its use will not lead to a diminution in professionalsim. Rather it will be the reverse and the computer will increase our effectiveness by relieving us from recalling or working out laborious details and, I hope, leave us to do more creative and analytical work. Perhaps it may even give us time to think once more.

(b) *Retrieval of Legal Information*

1. *The Aim*

Here we are concerned with the possible use of computer technology to supplement the comventional library or, indeed, replace it in some respects. We would be using a computer to help us with our research where now we would work in a library collection. Several systems are being developed or are already at the commercially operational level and, although they vary considerably in detail, the ultimate aim of all is to have judgments, statutory texts and pertinent comments stored, indexed and analysed in a way suitable for the use of practitioners.

2. *The Difficulties*

As opposed to the situation where various statistical materials are being stored and used in a situation where little depends on the weight to be given to various aspects of the material under consideration, very much greater difficulties are encountered in developing useful library substitutes. In the simple office management situation or even in the use of computers to produce legal documents there are no subtle nuances of meaning to be considered, but in the present exercise these nuances may be of decisive importance. Particularly in judgments or comments, and perhaps even in statutes, different words or phrases may mean the same thing or the same words or phrases may mean different things.[2]

Here one of the major difficulties is really that so much depends on the interpretation of the person doing the processing of the materials. Even with conventional materials we can think of textbooks with inadequate indexes, but the problem is highlighted with the computer because we cannot "thumb through" computer material as with a textbook.

As I have said elsewhere[3] the processing of simple documents is like programming a computer to play noughts and crosses. That is, every possible combination can be covered in such a way as to render the computer infallible. The use of statistical material[4] is like programming a computer to play draughts; it is difficult but still a practical programming possibility. But the storage and retrieval process with which we are concerned here is similar to programming a computer to play chess; there are so many combinations and permutations that it is very much more difficult to cover all possibilities. It would be difficult to programme a computer that would always defeat the world champion Spassky. Perhaps our difficulty is highlighted by saying that our computer would have the best winning chance if it were programmed by Spassky. Nevertheless, considerable progress is being made and workable systems are in operation overseas.

When a lawyer is faced with any legal problem he must perform an information retrieval exercise to collect the appropriate statutes, regulations, cases and other materials. Having done this he then evaluates the client's legal

position in the light of this information and upon this basis he then advises his client of his legal rights and liabilities. Information-gathering processes are in an advanced stage but, although we may reach the last stage at some time in the future, that time is at present a long way off.

Certainly several people are endeavouring to use computer-aided statistical techniques involving the analysis of factors such as the background of the judiciary and of the parties and political and sociological trends in an endeavour to predict possible judicial attitudes, but these "jurimetrics" studies are a long way from replacing lawyers with computers. In other words the computer is a long, long way yet from acting as a bloodless substitute for Shakespeare's Dick Butcher who would first kill all the lawyers. In the foreseeable future computers will not act as lawyer, judge and jury to decide issues and award damages on the basis of a vast store containing a digest (or perhaps it would be more apt to call it an indigestion) or past decisions. Such a use I suggest (at least in the present or foreseeable state of computer technology) would result in the elimination of the development of thought and judgment and freeze them into the cold opinion of the past whether good or bad. That would be *stare decisis* gone mad. Judges and juries act as catalysts: at the present time computers would act as fixing agents. But processes falling short of this are well advanced.

When seeking information to solve a problem very often the lawyer need not have an intimate knowledge of the legal aspects involved but only needs to have a knowledge of the particular way in which the subject matter is set out in the various texts and digests. In short, he does not need to know the law but to know where and how to find it.

Indeed, even before we can get to the computer stage, I believe that we need to discover answers to such questions as these.[5]

What are the present legal research habits of lawyers and other users of legal information? Is the information they need sufficiently accessible to them at present? If there is necessary information that is not sufficiently accessible, what is it? Is speed of retrieval a significant factor in the legal process? If there were an improved legal information retrieval system, what impact would this have on the profession? Would ease of access mean that the top professionals could more easily and quickly do their own devilling and thus improve the standard of legal retrieval and practice? Or would the ease of retrieval have almost the opposite effect and lead to the growth of a group of sub-professionals? Could this changed form of information retrieval with its professionally oriented search machinery lead to the charge that the profession is adding to the mystique of the law by making it less practically possible for someone to discover the law for himself?

Whatever may be the answers to these questions, we return to the fundamental difficulty of retrieval which applies to both a manual or a computerized system. This is to ensure that the compiler and the information system and the consumer are on the same wavelength. This is difficult enough when statutes, judgments, books, digests and enclyclopaedias are in visual form and deficiencies can be overcome by being able to browse. But with a computerized system's non-readability of stored information, the constraints are very much greater and require that there be very much greater precision There is the danger that not only is the information in a different language, but there is no Rosetta Stone at hand to give the key.

3. Present Approaches

The two basic approaches so far used have been the "point-of-law" and the "full-text" techniques. Most successful computerized search systems operative at present are "full-text" system.

(i) "Point-of-Law"

The point-of-law technique is really largely a computerization of conventional indexing to use the speed and accuracy of the computer for fast and exhaustive searching. Apart from the disadvantages of the narrow end product of a search under a "point-of-law" system, its value and the quality of its out-put are very dependent upon the quality of the indexing. Although the cost of "full-text" systems would seem to be fairly high at present (but computer costs are falling dramatically and rapidly), the "point-of-law" system may be even higher when one compares the value of its products.

(ii) "Full-text"

Thus it is the "full-text" approach that is achieving most prominence. "Full-text" systems vary considerably as between themselves both in file creation and in the way they operate, but basically they involve these characteristics. From the raw material of judgments, statutes and the rest, machine-readable input is created – probably by a key-punch operator – in the form of cards or punched tape[6]. When the total text has been captured and stored, a "concordance" is created to make the record useful for research purposes. Each word in the text will be stored in alphabetical sequence and after each word[7] will be stored its location in the original text; in reality this is a giant "dictionary" of words in which text locations are stored instead of meanings. In effect, there is created a text and a massive special kind of dictionary containing the exact locations of all the words in the text. It then becomes possible to search the files by using words occurring in the text without needing to have recourse to a humanly created index of terms. The computer is instructed to look up the "dictionary" and this process locates the document or number of documents in which the words sought are to be found. The documents, or appropriate parts of them, are then printed out in human readable form for use.

Two advantages of the full text method would seem to be that, because a lawyer can search for any word, he can thus search fact situations as well as legal topics and that the searcher ceases to be entirely dependent upon the subjective judgment of the fallible human indexer. As I have said, we do not know enough about our research techniques, but I suggest that a full-text system would seem to permit the user to narrow or broaden the parameters until the information sought is found. We could, in fact, browse in the materials by surveying the results of each command and framing the next command either wider or narrower depending upon the result of the survey.

Perhaps the ideal would be for us to finish up with a print out of the full text of the appropriate parts of our search, although, until we become very expert, I just wonder if, having got on to the "right" area that we are seeking, it might be easier, and even quicker, for us, if we then turned to the actual written text of the particular statute or other relevant material. I suggest this because, so often in any search in conventional materials, we find that we pick up points before and after a specific reference that we get on to, which, although we would not have thought of looking for those points in any index, we find are

most certainly relevant. It may be that this would also lower computer operating costs.

Despite the advantages of full text systems of storage and retrieval, the very open-endedness of the system does pose a user problem. I illustrate. A layman would not have too much difficulty in finding his way around the slim volume of *John Citizen and the Law;* he might have more difficulty with *Halsbury* or the *English and Empire Digest;* and he might be quite baffled if simply put into a major law library and asked to find quickly the law relevant to a particular problem. Similarly, if a lawyer started with a "point-of-law" or index type of system, the very index terms will simplify (but also limit) his search. But with a full text system greater responsibility would be placed on the user to understand how the storage and retrieval system actually works and to learn to phrase his questions appropriately. Certain it is that whatever computerized system he uses, the lawyer is going to have to reason his problem through more than he does at present and to be very aware of language ambiguities.

4. *The Special Problems of Case Law, Text Books and Other Commentary.*

Much of what has already been said is applicable to statutes[8] and judgments or texts, but there do seem to be some additional problems with case law and other interpretative materials.

Perhaps the greatest difficulty is simply that of the volume of the material involved. Simply stated, it could be said that statute law in our jurisdiction extends from and including the latest consolidation, or with less accuracy, the latest reprint, whereas the case law can have enormously wide parameters. But even with statute law there are subjective problems: What is to be done with early English statutes? Could a system run the risk of using a reprint instead of a consolidation?[9] How is implied repeal to be dealt with? How are the difficulties with early regulations and even recent Proclamations to be overcome? And the really difficult one, How is the problem of the "legislative trail"[10] to be overcome? Perhaps some of these are largely matters of file creation. But they do also involve subjective judgment as to relevance for filing purposes.

Although there are significant difficulties with statutory legislative material, with case law the task is of immense magnitude. This is partly, but not solely, because of the sheer volume of material available.

Perhaps one side of the nature of the problem of magnitude is spot-lighted by saying that in the very remote centres of Papua-New Guinea possibly decisions on criminal law are perhaps decided upon the authority of the one text book generally available, whereas, if one were preparing upon the basis of materials available in the United States Library of Congress, even ten years ago one would have had about 40 shelf miles of books upon which to draw. Applying this to a computerized retrieval system one has to decide where between the one text book and the Library of Congress such a collection becomes of use in normal legal practice, what is adequate in the circumstances and what is the appropriate breadth and analytical depth. The answer to the problem may well be different in different circumstances.

In addition, the problem of sheer volume does pose very great difficulties because of the costs of conversion. Even if one were to select only cases of

binding legal authority in New Zealand, the amount of material involved would be very great indeed.

Another problem that I touched on before which exists with case law and other interpretative materials and does not arise with statutes[11] is that of concepts. This is a problem for full text systems as well as other systems and creates difficulties both for the compiler of the computer file and for the user of it. In a sense this is a problem of semantics and the imprecise use of language, or perhaps, in many cases, it is simply reducible to a synonym problem: the same word in one judgment or text may have a different meaning in another judgment or text. Or conversely, different words may be used but they may be intended to have precisely the same meaning.

In the result the word search that may be adequate with statute law will not produce such a good result in case law. Even with a manual search a carefully drafted and amended statute, which follows the well known general pattern and style adopted for the drafting of statutes in any particular jurisdiction[12], is much easier to search than the infinite variety of shapes, sizes and forms of judgments or texts. Also in the case of judgments there is the problem of *obiter* material.

In theory, perhaps an expert group could be used to produce carefully worded abstracts of cases something like extended headnotes. However, not only would the cost of this be prohibitive, but the difficulties might be such that the panel might take as long as the Academie Francaise to solve the particular word problems. Even if there were some such solution it would still leave the vital indexing province to a matter of subjective judgment. Furthermore, this does involve moving away from the actual text of the judgment and would necessitate a second step by the searcher to check the text and context. One interesting possibility is the experimental one that is being tried on the continent of Europe where the judicial officer who decides the case is bound to write a short abstract of his decision along with his judgement. With such a system operating the short abstract would then be useful for computer storage and search purposes.

One hopeful heretical possibility might be to diminish the case law difficulties by extending the codification of the general law. The codification would form a basis for the less difficult statutory type of computerization, and, one would expect, also lead to a reduction to manageable size of subsequent case law. But, given the progress that has been made where codification or even consolidation have been attempted in Common Law jurisdictions, this suggestion is not likely to bear very much fruit.

5. Conclusions Concerning Retrieval

Despite all the theoretical and practical difficulties in the retrieval area, we can note some hope, for there are a number of commercially operative automated legal information retrieval systems in the United States of America and Canada.

They vary from small exclusive collections of particular statutes to the much bigger systems which have built up very large machine searchable data banks consisting mainly, but not exclusively, of statutes. LITE[13], which is a computer information retrieval system operated by the United States Air Force on behalf of the Department of Defence, and OBAR, which is being created for the use of members of the Ohio State Bar Association, are examples of

substantial working systems, but perhaps the broadest operative collection is the Aspen System Corporation's which has available for computerized searching the full texts of the statutes of all fifty United States states. In Canada, Manitoba has a complete store of its Revised Statutes and other provinces are also far advanced. Some of these systems are being used on a day-to-day, practical commercially economic basis in legal offices.

But, as opposed to this hopeful progress with statutes, there does seem to be a gap between the hopes and performance with case law retrieval. No doubt new methods of storing texts in computer memory, new methods of communication and new kinds of terminal will all influence rapid development. But I cannot help but wonder if some of the case law retrieval exercises that have been undertaken have gone too soon to the computer without adequate research going into the present lack of real knowledge of the nature of a lawyer's methods of research using present materials. In short, an endeavour needs to be made to find out how lawyers think in their present searching processes.

As I said some six years ago with the much narrower and simpler Torrens System project and some three or four years ago in relation to a computerized research and law reform centre in Australia, now is the time to consider the feasibility of computers for use as a tool by the legal practitioner in his office. It is no longer possible for the individual lawyer to read, let alone understand and digest, all that he should in order to stay professionally up-to-date. Indeed, keeping up with the present growing mountain of legislative and interpretative material is like trying to catch an armadillo; it gets away faster than one can dig.

It is possible that the new technology involving computerized storage and retrieval, which has fortuitously happened along now, may provide us with some of the answers. At least I believe that it is time for us to ask some of the questions.

D. PROTECTION OF PRIVACY IN THE COMPUTER AGE

(a) *The Problem.*

When some of us expressed concern some years ago[14] about the problems of the intrusions upon privacy attendant upon the development of computerized records even in Australasia we were perhaps regarded as alarmist. But recently there has been more general awareness here that disadvantages as well as advantages can flow from the age of automation.

With the awakening as to the possibility of pollution of privacy – to combine two presently popular points – there have been several interesting legislative developments overseas but, as yet, no action has reached fruition in Australasia[15]. Nevertheless, although I think that we are justified in looking at the problem at this Symposium, it can be seen from what goes before in this paper that I am certainly no latter day Luddite who would wish to destroy the computer.

Invasion of privacy used to involve indiscreet film stars and cameramen with a telephoto lens; in the computer age it concerns us all. For, using laser beam technology, a 20 page dossier on every man, woman and child in New Zealand can be stored on a piece of tape about as long as a cricket pitch.

Despite its advantages the new computer technology if misused can be used to enslave people – it can make George Orwell's *1984* Big Brother society a reality. Electronic technology will meet the 1984 deadline with ease; society

must decide if it will let it become a reality.

To misquote Winston Churchill I would say that never in the history of human endeavour has there been the opportunity for so much to be made available to so many by so few.

In both governmental and private or institutional hands there is available information about the individual: his history, his family, his business, his financial circumstances, his education, his health record — information available for such diverse uses as giving a credit rating or security clearance; an individual's life history is there to be used or misused. I would suggest that what exists now is merely prodromic of what will come later unless we do something about it.

The keeping of Big Brother type information is not new; in England the Domesday Book of 1086-1087 was a magnificently horrifying collection of Big Brother information in an accessible form for governmental use or misuse.

What is new is the technology — a person's privacy has only been protected in the past because of inefficient record keeping. Privacy was safeguarded simply because of the scattered nature of the records and the problems of time and economics involved in retrieving the information. But no longer: once recorded it can be added to, subtracted from, or combined with information from other computer complexes. The computer records all, forgets nothing, and recalls selected facts instantly.

We are asked on computer cards not to "bend, spike or mutilate". The card may remain perfect; my fear is that by the misuse of the card the individual's life may be "bent, spiked or mutilated".

But there is a paradox; we have the clash of two principles both of them good: on the one hand a person's privacy should be respected; on the other hand the truth should be discovered.

I take the credit rating example. If somebody is a bad credit risk it is quite fair that a retailer or other businessman should be able to protect themselves against the prospective purchaser who is careless or optimistic about his chances of repaying or who is just plain dishonest. My concern is that decisions about credit rating are made about people upon the basis of information that they do not know exists let alone know whether it is right, wrong, accurate or inaccurate, and they certainly don't know it is being used.

Similarly, I believe that Governments or other institutions have got to have information available to them so that adequate planning can be undertaken. But the dangers must not be overlooked or underestimated.

(b) *Possible Solutions*

I know of no complete solution and in making suggestions I am very aware of the danger of reacting too strongly against computers and their users and thus impeding the usefulness that computers can have. For computer users and the professional bodies concerned with the technology are taking a responsible view. Not only are technological methods of restricting access to information within data banks being developed, but also the professional societies are active on the non-technological side. The British Computer Society has a Privacy Committee and the Australian Computer Society has a Social Implications Committee. As a member of the latter committee I know the care and responsibility that computer professionals are showing.

However, I feel that the technical barriers alone will not give adequate protection and I believe that the problem is too pressing for the Courts to be left

to develop adequate safeguards[16]. Thus I believe that legislation which must be based solidly upon knowledge of, rather than speculation about, the problem, will be found to be necessary.

1.   *Habeas notas* — *"That you may have the secret writings".*

I have previously suggested[17] that we should develop a concept of *habeas notas* — "that you may have the secret writings". Under this, if any person knows or suspects that any type of record is kept about him in any information pool or data bank of any kind (not only a computer-based one), then he should be able to ask for a copy of that record to be supplied to him. The Courts would be given power to enforce the rights given. This idea may give some protection at least against the use of inaccurate information[18]. In spelling out this idea principles that could be considered might include these:

  (i) *Those concerning the individual's rights*

a. A person might be given the right to have access to all information concerning him held in a data bank and receive a print-out upon request or perhaps automatically upon any change being made in that information.

b. There might be a right to question the accuracy of such information, to have an explanation added to it even if it is accurate, to have removed from the data bank information that cannot be proved by the collecting agency to be accurate, and possibly, to have even accurate information discarded after a specified period of years.

c. A person might be given the option of forbidding the handing on of information concerning him by anybody collecting information from him.

d. There might be conferred a right of action for damages for injury or less suffered through the misuse of personal information or the use of false or inaccurate information.

e. It is important to ensure that national security be not prejudiced by the development of this protection.

f. The Court would need to be given adequate power to enforce these provisions.

  (ii) *Those principles concerning the control of organizations.*

a. There could be a statutory authority to regulate the operation of organizations wishing to have data banks.

b. Data banks, a description of their purpose, and the heads of data to be covered could be required to be registered in a public register.

c. There could be a public record of people entitled to access to particular collections of data and, if there are built-in curtains of accessibility, the extent to which a particular person has access.

d. A record of actual access should perhaps be required.

e. Enforceability sanctions might well be considered.

2.   *Open Decision Making.*

Another quite opposite approach might be that there should be complete openness about all aspects of information gathering and use of public decision making. This suggestion is based on the Swedish position where (subject to obvious exceptions such as national security) public records and decisions are open to free scrutiny. I suppose the basis of this suggestion when it is moved into the privacy field is that, if everybody can know or find out about things, then nobody bothers to know or find out. Probably almost everybody would object to this proposal in New Zealand, and I note that within the last three or four months there have been moves to reconsider the position in Sweden as a direct result of the computer revolution.

3. *Widening the Ombudsman's Powers*

The two suggestions made so far are at opposite ends of the scale; *habeas notas* suggests protection under which the ultimate sanction is Court action; openness involves very substantial changes in our decision-making processes and in our attitudes.

Perhaps the middle way is to give the **Ombudsman** additional powers and not restrict him to government decisions alone.

John Milton, almost three hundred years ago, while conceding that there will always be people discontented with the way that affairs are conducted, went on to say that —

> "[w]hen complaints are freely heard, deeply considered and
> speedily reformed, then is the utmost bound of civil liberty attained
> that wise men look for".

On each occasion in the last few years that the media have reported my concern about these problems, I have received many letters — some hundreds in all. In many cases I acted as an unofficial **Ombudsman** and so often so little was needed to sort things out.

Just as no public servant acting carefully and properly has anything to fear from an **Ombudsman** nor has the proper private organization. No reputable private organization now roars as Commodore Vanderbilt allegedly did: "The public be damned!" Indeed, business organizations invariably devote substantial resources in an endeavour to deal with complaints or dissatisfactions. It is also good business practice to do so.

If the office of **Ombudsman** is justified at all (and New Zealand has been fortunate enough to discover that it is, why should it be so restricted? I suggest that injustice or impropriety is nonetheless injustice or impropriety whether perpetrated by a government official or perpetrated by a careless or incompetent credit agency.

For the fact is that complaints and problems are being thrown up by the galloping developments of the electronic age and the remedial action seems not to be moving fast enough. Might it not be to everyone's advantage to have a skilled, impartial person settling difficulties at a less formal level than at the level of the Courst?

E.   CONCLUSION

At the beginning of the discussion on privacy I said that I was no latter day Luddite who would wish to destroy the computer. On the contrary, I am tremendously aware of the advantages of the computer age and, even if I were not, I would need to face the reality of its existence. But I emphasize that we must realize that, just as the machines of the Industrial Revolution did much more than merely carry out the technical task of spinning or weaving, the implications of the computer revolution go far beyond the purely technical one of the computer's range of possible operations. I believe that its impact upon the whole social fabric will be immense, and it is for society to ensure that it harnesses the computer to do society's will rather than the computer should narness society to serve it. It is society's choice, for the capabilities and potentialities of computers are limited by the imagination of man.

Traditionally it has been for the legal profession to see the dangers of, and protect the individual or group against, supressive or oppressive change. As lawyers we have a responsibility to see that this powerful tool is used responsibly. I believe that it is not enough for us merely to see that the new technology is not misused; we must use the means available to us in a positive way for the good of society.

Perhaps sometimes we lawyers tend to busy ourselves in re-discussing the already adequately discussed, in re-formulating the favourably formulated, in re-organizing the reasonably organized or perhaps in re-scheduling the schedule of meetings to re-discuss the already reasonable discussed. The Legal Research Foundation with its particularly wide membership has not done these things in its short history and I would like to think that in arranging this Computer Law Symposium it is once again taking a broad view.

FOOTNOTES

1 I leave aside for the moment the question of the pure research problems that must become commonplace within the next decade.

2 I give a simple illustration: Although the terms most often used in judicial and academic writing to describe the quality of the registered title under Torrens System Acts is "indefeasible title", the term does not appear in the sections of the statutes that confer this quality. Furthermore, among the variety of other terms that have been used by the courts to convey the same idea are "unimpeachable" *(Assets Co. Ltd.* v. *Mere Roihi,* [1905] A.C. 176, 199; (1905), N.Z.P.C.C. 275, 287, per Lord Lindley delivering the judgment of the Privy Council), "conclusive" *(ibid.,* 212, 300), "absolute" *(Fels* v. *Knowles* (1906), 26 N.Z.L.R. 604, 612, per Stout, C.J.), "irrefragable" *(Harris* v. *McGregor* (1912), 32 N.Z.L.R. 15, 41 per Williams, J., delivering the judgment of the New Zealand Court of Appeal), "unexaminable" *(Boyd* v. *Mayor of Wellington.* [1924] N.Z.L.R. 1174, 1202, per Salmond J.) and "unassailable" *(ibid.,* 1186, per Stout, C.J.).

3 Douglas J. Whalan, *The Law and Computers,* Inaugural Lecture, 17 June 1979, 7-8.

4 The interesting projects that have been undertaken on the storage and retrieval of data on accident cases and damages awards would come within this category.

5 Some at least of these I would expect to be answered from the work I mentioned that should be done in the law schools.

6 In passing it is noted that as more publishers start using computers for composition of type then, in addition to the conventional printed texts, there could be created magnetic tape for use as input for computer retrieval systems; this would cut out the costly problem of conversion. One of the main problems facing the setting up of a workable retrieval system is the cost of converting existing records.

7 Or in most systems after each significant word with certain conjunctive words—"which", "and", "the" and so on—not being dealt with, although even these words will be stored in the full text.

8 "Statute" is used here with a wider meaning to include not only strictly statutory material but also regulations or any other legislative matter.

9 Indeed this is yet another argument against reprints and in favour of consolidations.

10 Often a lawyer needs to know not only what the law now is, but also how it came to be in that form, and, indeed, what the law was at a particular time. Legislation trails must be developed so that we can find out.

11 Or at least it should not arise with well drafted statutes!

12 It may well be that there is also a need to develop some uniform pattern for Australasian statutory draftsmanship.

13 Legal Information Thru Electronics.

14 Douglas J. Whalan, *The Law and Computers,* Inaugural Lecture, 17 June, 1969. Zelman Cowen, *The Private Man,* The Boyer Lectures (1969).

15 The Queensland Government has announced its intention to introduce legislation in the present Parliamentary session and the Australian Committee of State and Federal Attorneys General has set up a sub-committee to look at the problems.

16 Even in the United States of America where some privacy protection has been developed by the Courts the Fair Credit Reporting Act has recently come into operation.

17 Douglas J. Whalan, *The Law and Computers,* Inaugural Lecture, 17 June 1969, 16.

18 As illustrations that such a concept is becoming acceptable recently overseas I again mention the United States of America Fair Credit Reporting Act which does give some control over credit bureaus and a Bill that is before Parliament in Ontario, Canada, which seems to be much tougher than my idea. Under the Canadian proposal a person will be entitled to see his file and have it corrected, a credit granting authority is forbidden to collect information about an individual's personal habits and morals and any one using the services of a bureau would be obliged to say if a refusal of credit was based on such information. The proposed legislation also contains sanctions in the form of liability for fines of up to $25,000.00. In addition, of course, there have been a number of Bills introduced into the British Parliament but none of these has yet become law.