

LAW, TECHNOLOGY AND DEVELOPING COUNTRIES

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The interest in harnessing technology to legal work is longstanding in many industrialised countries. Yet the success of efforts so far has been patchy. Many promises have been unfulfilled, and the early optimism has been replaced by a more cautious view of the relevance - and particularly the cost effectiveness - of technology. During this time the contribution of technology to legal work in developing countries has been minimal and few commentators have predicted significant growth. In this paper some aspects of the developments in applying technology to law are highlighted. This is done mostly by reference to the United Kingdom, but attention is also given to the 'small jurisdiction' of Northern Ireland. Some suggestions as to where technology may be of relevance to developing countries and to other small jurisdictions in the Commonwealth, are attached.

Background

2. When enthusiasts first recommended the exploitation of technology in legal work in the 1960s, the focus was on information retrieval. The idea then was that since the text of the law was so voluminous it should be possible, given current computing techniques, to hold and search the text on computer. This would aid legal work by improving the accuracy and reliability of legal research and thus be attractive to the legal profession. First in the United States, and then in Europe, full text information retrieval systems were launched - either commercially or subsidized by government. In America the LEXIS and WESTLAW systems are best known. In the United Kingdom LEXIS (this time in partnership with the legal publishers Butterworths) and EUROLEX were launched. For a number of years informed commentators knew that, despite publicity to the contrary, both systems were finding it hard going. There are various conjectures as to why progress in the United Kingdom should have been so halting. The different research habits of a divided profession, the significant cost of searching the LEXIS and EUROLEX databases, the relative awkwardness experienced by 'novice' users in arranging telecommunication access, have all been suggested. But no matter the exact reason, both systems struggled. EUROLEX was effectively closed down in 1985 with some of its operations being taken over by LEXIS. It does not seem that the profession at large has even now endorsed in a practical way the theoretical appeal of such services - i.e. there is still not a widespread uptake. This is disappointing given the enormous technical strides made by those offering the service - there have been significant improvements in the reliability and sophistication of the systems in recent years.

3. Yet this lack of progress in information retrieval is off-set by the uptake of technology in other areas in the practising legal profession. In essence the success story for the legal profession has been the installation and development of wordprocessing (WP) systems. A clear majority of all legal practices in the United Kingdom (from the smallest to the largest) now use and depend on wordprocessors. On the back of WP have been built Time-recording and Accounting systems. These three applications are trusted and well proven in the profession. So the enthusiasts of the 1960s were right to suggest technology was of increasing relevance, but wrong in the area they highlighted as a particular priority. Of course now there are many other applications of technology in the legal profession even if

none of them has achieved anything like the success of the three just mentioned. Legal support systems, debt collection systems and improvements to communications can all be found in the practising profession. Details are contained in the Study of Lawyers and Office Technology, National Law Library, 1983

4. One area in which the United Kingdom has continued to lag behind has been in exploiting computers for legislative drafting. The early progress made in Canada (reported in Memoranda to 1983 Meeting of Commonwealth Law Ministers, Colombo, Sri Lanka and available from the Commonwealth Secretariat) provided an appealing and strong case for using technology to assist in the legislative process. However, for circumstantial reasons the early experiments made in the Houses of Parliament in Westminster were not notably successful and it remains true that little practical work has been done. There have been developments in Northern Ireland (as will be explained below) but even here the accomplishments are of a limited nature.

Underlying Factors

5. As indicated, the current status of technology and law in the United Kingdom is that information retrieval systems so far have had a disappointing career, but that technology has been applied popularly and widely in other areas. Progress to this present state has not been free of difficulty or expense. Many lawyers have been involved in financial burdens and mistakes (understandably few admit to this in public) and many legal practices have been wrongly advised or have been misled by aggressive overselling by the computer industry. Even though technology is now a stable and dependable contributor to the legal process in the United Kingdom, lessons can be learned by reviewing the factors that influenced development.

6. First, the commercial dimension can never be ignored. The computer industry is one of the fastest growing, but also most volatile, sectors in many Western economies. Extreme competition has caused problems for many customers. Technologies have appeared on the market place and then been withdrawn quickly, equipment has proved incompatible, and it has been difficult to know what trends in the industry were really reliable and would continue. These worrying features, combined historically with the relatively high cost of technology, inhibited many lawyers from installing systems and making effective use of them.

7. Second, with benefit of hindsight, it is clear that the early focus on full text information retrieval - databases containing the full text of statutes, statutory instruments and case law - was based on a misreading of the work of the legal profession. It might be that American lawyers have recourse to original source materials regularly but that does not mean the same applies in the United Kingdom. For example it is now apparent that solicitors use the Bar for much research work. Solicitors certainly do work in an information intensive environment and constantly require access to information. But the information needed is often practical 'know how' -material on 'how to do it' (i.e. secondary information) rather than access to primary sources. In any event there are obvious inhibitions to using databases at charges of more than £100 an hour, where the services can be difficult to use or require 'dedicated' equipment additional to that already possessed in the office. EUROLEX paid the price for misreading the market. Perhaps, however, useful lessons have emerged from experience to date. In particular there is now a growing interest in inhouse information retrieval system, and this is combined with an increasing feeling that technology used for one purpose should, to the maximum extent, also be capable of being used for other purposes.

8. Third, there are policy and even public policy issues involved in the development of technological applications to law. Some commentators have worried about legal databases being held in countries other than the sovereign jurisdiction. Some countries have recognised a governmental obligation to 'publish' laws in magnetic form; others have not and

feel it right to rely on market forces. Yet where market forces are recognised (as in the United Kingdom) there are anxieties that this may introduce distortions to legal practice and to the legal profession. Such distortions flow from the charging policies of services which favour the larger (and richest) law firms. The questions that can be posed from this brief review are (1) On the basis of experience so far, what developments are likely in the future? (2) How relevant may these developments be for developing countries?

Current Developments

9. There are three current developments in computing which hold promise for the future both generally and for developing countries. These relate to microprocessors, storage media and financial costs.

I. Micros

10. When early work in applying computers to law was undertaken there was reliance on the large or 'mainframe' computer. When it became possible, about 10-15 years ago, to have real computing operations carried out in small micro computers something of a revolution got underway. It is well known that the micro is now reliable and its power has increased dramatically while prices have remained static (this representing a significant fall in real terms). Micro computers began with the eight bit processor but the sixteen bit or even thirty-two bit processor is now common. Put simply, this has extended the capacity of the micro to undertake a wider and wider range of tasks and still give good performance. And since the micro is an inhouse computer a new market of enormous size has opened up to the industry.

11. Now it is possible for non-technical users to use micros, and they need not have telecommunications access to the other installations. The developments in this part of the industry are so rapid that desk top terminals are becoming a reality in many professions and occupations. And the computers themselves have been redesigned so as to allow use by the financial controller, lawyer, manager or executive - someone who would not know how to log in to or use a mainframe computer. The computers, in other words, have become smaller, faster and much easier to use.

12. Examples underline the significance of the progress made. Amstrad wordprocessors (keyboard, processor, screen and printer) now sell at a price lower than a respectable typewriter. Buying a wordprocessor for £400 or £500 is, accordingly, no longer a high risk business. Equally a desk top terminal (comprising a telephone, telecommunication access to databases, wordprocessing, spread sheet, archival software, programming facilities and calculator) is available from ICL in a package called One-Per-Desk. Prices for this unit vary between £1,500 and £2,000. The MacIntosh from Apple Corporation costs under a thousand pounds and offers other attractive features - in particular those who wish to avoid using a keyboard but be able to exploit the excellent graphic capabilities now have facilities for doing so. Built round the industry standard of IBM there is now an encyclopaedic range of software to allow most users to make extensive and effective use of a micro.

13. The growth of the micro computer market has helped to reposition the computing industry. The micro is portable, cheap, relatively easy to use and reliable. It has no very rigorous operating constraints (e.g. it does not require air conditioning) and is thus suitable for use at home or in the office, and in most countries of the world.

II. Storage

14. When the micro computer first became available it used small (5 inch or 7.5 inch) 'floppy' discs. These discs could, variously, hold between 30 and 100 pages of text and provided sensible precautions were adopted, offered a relatively secure storage medium. Gradually safeguards against degradation and corruption have been improved, and such discs remain popular and widely used. More reliable and secure discs, capable of holding more information, are the so-called hard discs (or Winchester discs). These are now readily available for most micros and a disc can contain 10, 20, 40 or more megabytes (each megabyte is about 400 pages of text). Combined with advances in the power of micro itself these storage media have extended the utility of the inhouse computer.

15. Now another technology is about to pull this development through to another stage. The CD ROM (Compact Disc - Read Only Memory) is one of the most exciting and potentially most important advances in technology to have appeared in the last decade. The CD ROM disc can hold text, data, image as well as sound - where the compact disc is already popular with hi-fi aficionados. But the technology is a quantum leap forward both in storage life (the disc can last for 10 years as compared with a norm of 3 years for hard discs) and in volume. A 12 inch disc can hold 2 gigabytes (equivalent to 600,000 letter size pages of text) and a 5 inch about 400 megabytes. A laser beam searches the disc to find information and presents it on the screen - as noted this can be the text of a document, a drawing, or photograph. At the moment discs on the market are 'read only' by and large, although it is confidently predicted that 'write and read' discs will be available at an affordable price soon. At that stage it will be possible to think not only of maintaining the entire required library inhouse, but of adding to it or editing it regularly.

III. Costs

16. As the micros and the storage media have improved dramatically, the industry claim that costs have fallen significantly in real terms is in fact true. Micro computers in a price range between £500 and £3,000 are now attractive aids to many offices. The price, when set against labour costs, makes use of the micro a sensible proposition requiring a write-off period of between one and three years.

17. In summary the power of the computer, the extent of the storage and the range of prices, combine to suggest that the outstanding issues for most users thinking of computers now relate to organization and management. The technology and the price are right if - but only if - those managing the installation know how to manage it properly. Progress can be made in simple tasks, and the experience accumulated is an investment for more challenging applications at a later stage.

A small jurisdiction

18. By way of example some instances of applying technology to simple tasks in a small jurisdiction can be cited. The work referred to has been undertaken in Northern Ireland in the last 7-8 years and it is thought that the experience has been entirely cost effective as well as beneficial to the users.

19. Like many small jurisdictions Northern Ireland has not enjoyed an extensive range of legal publications. The market was not big enough to attract commercial publishers. It was decided in 1980 (with the benefit of a small recurrent subsidy) to launch the Servicing the

Legal System programme, which would publish a current awareness service for the legal profession, legal textbooks, materials about the law for the lay public etc. At the outset the decision was made to produce all current awareness materials on a wordprocessor. Given the amount of collating, editing and revision involved this seemed essential. But the decision was also made at the same time to retain the magnetic copy of the text typed. That is, the wordprocessor was used to prepare and edit the material which was printed, and available on sale to the legal profession. But as the profession bought the monthly issues, the discs that held the original copy were retained and held against the day when computer based information retrieval would become viable. At virtually no cost, and as a by-product to the publishing venture itself, a computer database of legal developments in Northern Ireland has been constructed.

20. Similarly when the Government decided to produce a new consolidated edition of the statutes in force, the perceptive judgement was made that computer based photo-typesetting methods should be used. This was justifiable on economic grounds but again the magnetic tapes have been made available so that (after some admittedly complicated editing) the legislation is available for electronic information retrieval.

21. The logic in both these examples is that text should only be typed (or keyed) once. If the magnetic version of the text is then retained it may be copied, edited, up-dated, or re-edited; but the labour intensive and costly exercise of typing material is only done once.

22. The biggest challenge is in maintaining the right balance between paper copy (so called hard copy) and computer copy (soft or magnetic copy). Some material is already available in computer form; some is only available in paper form but facilities such as OCR (Optical Character Recognition) allow the paper form to be fed into a computer without rekeying. The challenge is to plan for the time when computers will be relied on for most organizational and administrative tasks (in the much vaunted 'electronic office') while maintaining cost-effective procedures that cater for both hard and soft copy.

23. One dimension which is of growing importance in some industrialized countries is that of electronic communications. Electronic mail and electronic messaging (e.g. with Teletex, the new International super Telex which operates at 240 characters per second in upper and lower case) should promote efficiency and work flow. They should also however advance the movement to the electronic office. This is because the capture of keystrokes electronically makes possible the interface of wordprocessing, communicated messages and inhouse retrieval systems - materials produced inhouse or received by electronic methods can be stored in the electronic filing system.

Developing Countries

24. The context for work in developing countries varies significantly according to economic, geo-morphological and technological factors. Clearly if there is not an advanced telecommunications infrastructure, exploitation of electronic messaging - or even use of remote information retrieval systems - is out of the question. However there may be some basic steps that are worth considering in many developing countries.

25. First, if the argument about the changes in microcomputers and storage is correct, there is strong reason to acquire a suitable micro and storage system. In this way, practical experience and real understanding of what is involved in applying computerised methods to various tasks can be gained. It would not be surprising if the position in the United Kingdom was not mirrored in many developing countries i.e. the current managers or heads of organizations have missed any formal education in computing, and yet must accept that computers have significant contributions to make. Actual experience with computing (so

called 'hands on experience') is essential to gain insight into what is really possible, and to cut through the competing claims made by pundits and luddites.

26. Second, if a microcomputer is made available it is wise to concentrate on simple tasks at the outset. Here wordprocessing is the prime candidate for early work, and even limited experience of wordprocessing will teach the advantages of only capturing data once or only keying in data once. Material keyed in on a wordprocessor may be retained in floppy or hard disc, and gradually a library of inhouse materials may be built up. If, as is likely, it is essential to maintain an organization which deals both with paper copy and magnetic copy, early consideration should be given to using the more advanced printers (the laser printers) now becoming available. In most wordprocessing installations the printer has slowed operations, but the modern laser printer can be connected to the smallest system and can produce better quality output at high speed. This allows offices (those of legal practitioners, faculties of law, or government agencies) to produce or publish material more efficiently than before, but also to maintain electronic databases for exploitation in future years.

27. Now that computers really do work it is possible to think that after a short period of familiarization, for the lawyer, public servant or manager to identify and organize purpose-built applications (perhaps in consultation with his supplier) without requiring much technical backup. Outside agencies, temporary programming staff and consultants may be engaged as appropriate to implement various tasks, but the management of the installation can soon truly belong to the non-technical manager. In these circumstances discussions between representatives of developing countries, or 'small jurisdictions', on common problems seems desirable. The first meeting between Law Officers from small Commonwealth jurisdictions was convened in 1983 in the Isle of Man, and regular exchange on technological applications to common problems would seem desirable.

28. Finally, and in case some of the suggestions above seem simplistic, it is possible to engage consultants for advice. Unfortunately, as is well known, experience with outside consultants has been highly variable and sometimes very expensive. Depending on the level of interest in developing countries it is worth considering whether an information clearing house or the establishment of a retained consultancy resource, might be an inexpensive way of ensuring that various jurisdictions had access to the required expertise.