Microcomputers in the Library of Parliament

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In recent years there has been a dramatic upsurge in the potential of the microcomputer. Previously tagged as the lowly microprocessor, its range was limited to a dedicated task or tasks. Developments in chip technology, however, have increased the microcomputer's power to the point where the distinctions between centralized and stand-alone systems are becoming blurred.

At a recent conference in Detroit it was suggested that the only objective measure of a computer's status lies in the method of its selling. If the salesman comes at an appointed time with an entourage, wears a grey flannel suit, and leaves a card, then most likely he sells a mainframe computer. If as "sales rep." he drops by more or less casually in a sports jacket and turtle neck sweater his produce most probably is a mini-computer. But should you receive a call telling you that your equipment can be picked up at the store, it's a micro!

A good question at this point is: "Why consider the micro?" After all, if as this story relates it comes in a box then surely the very thought of bringing together its disparate peripherals and attempting to make the sum of these parts work as a whole is enough to send the more nervous in pursuit of a friendly systems vendor. A packaged service is, it must be said, a tempting prospect. Intimidating hardware may not even be seen. Assessment of software needs are all taken off your hands. You are relieved of such administrative bogs as writing job descriptions and calculating fringe benefits. Serious space problems are unlikely to be encountered. Yet the microcomputer continues to be the number one choice of many companies and public institutions and, in fact, has been the favoured route at the Library of Parliament.

Advantages to the Library are twofold. First, being stand-alone, a microcomputer system can best help the staff safeguard the confidentialities of the clientele. Allowing any library records to be stored outside always gives rise to a certain uneasiness,notwithstanding the earnest guarantees of the supplier. Secondly, despite a relatively high initial outlay, the ongoing cost factor reflects more the traditional lower cost ratio to capital expenditure over a growing time period for information stored. With a

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turnkey vendor system the supplier usually assumes the responsibility for storing the data, thus committing the client to continuously increasing costs of operation as the size of the data base grows.

The drawback to acquiring a microcomputer is, of course, having to find the expertise to operate it. The supplier will help you with off-the-shelf software and the manuals to go with it. Often the manual is difficult to read, and consequently we have seen the marketing of equipment which is so called "user-friendly". It is also possible to call upon the assistance of the invisible college of computer enthusiasts who are becoming more and more numerous.

From the beginning it is important that the question of compatibility be given the utmost consideration. Compatibility allows the interconnecting of equipment to form your own truly local area network, if such a move becomes desirable. With such a network communication between remote points becomes possible, using the terminals as mail drops. Adding the specification of compatibility to your shopping list makes the business of choosing suitable hardware, however, even more formidable than it already is. A librarian is not always well equipped to take stock of an endless array of computer units and their attachments. On the other side the suppliers are even less informed, very often, concerning the particular needs of library workers. In a bilingual work environment these needs become even more complex.

We first got our feet wet at the Library of Parliament in March 1983 by purchasing a CP/M module inserted into an AES word processor. This particular machine, used in the Index Section was already equipped with AES Super Plus programs. The module accepted dBase II software, and allowed us some experimentation. This modest beginning soon bore fruit with publication of *The Checklist of Committees*, a database which details the broad subjects of parliamentary committee proceedings and witnesses appearing before these committees. It was not long before the capacity problem reared its ugly head, as the small floppy disks used to store the information proved inadequate for proper cumulation. We had to consider some means of transferring the information to a larger capacity hard disk, but more on that later.

The first true microcomputer made its appearance in the Library of Parliament in September 1983. This may seem rather late in the day, but caution had been exercised deliberately due to the many variables presented by our own existing data bases, and the lack of hardware conforming to the basic specifications already mentioned. External forces helped push us towards a decision

when the Library co-operated in a trial operation of an ambitious electronic information transfer network mounted by Bell Canada called i/NET. This acronym stands for "intelligent network gateway" and it is only necessary to say here that the Library became involved in an experimental data base which disseminated data on the status of government bills being debated by Parliament. We had access to i/NET through a loaned Microtel terminal, which lacked printer installation facilities.

This was a frustrating situation as the Microtel incorporated a videotex which allowed the display of i/NET data bases in colour, including graphs and charts. But these graphs and other data could not be printed. The IBM PC Micro at this point received attention as it accepted Microstar, a program that will screen graphics thus eliminating the need for a videotex decoder. Further, with the IBM PC a colour printer could be attached, and in most technical respects the IBM PC met our specifications. This model had previously been considered as a means of accessing the commercial online data bases, but due to its expense no decision had been made. These services were being searched at that time by means of a Hewlett Packard terminal. It was now realized that the IBM PC could be put to work in the two areas of i/NET and our online services. Not only could we replace two dumb terminals with one access point, but having a programmable microcomputer increased the possible effectiveness of our services.

Reference has already been made to the advances made in the field of microcomputer technology, the blurring of the lines that formerly marked the differences between micro, mini and mainframe machines. As access equipment, the micro has these days moved away from the pole represented by the term "dumb" and more towards that known as "smart". Now if you teach a dog tricks you have a smart dog. A programmable terminal with a memory, is, of course, a computer. Micros have acquired not only capacity but the ability to accept more and more programs, which themselves are becoming increasingly sophisticated. In this respect it was perceived that for our online data bases the access procedures could be streamlined. We have contracts which allow us to use over 400 data bases which come to us through 15 systems, each of which shakes hands with the user in a different fashion. Changes are made which may prove awkward if the signing on has to be error free.

The logic of the proposal to buy IBM was accepted and the equipment purchased. For updates and page creation to the status of bills data base we obtained also a program called CIDUS (CANTEL Information Providers' Database Update System). Previously, updating using the Microtel terminal had required sending the information to our contractor, for keying in. For general access to this data base we used Microstar, already mentioned, and to access online data bases a program called Smartcom II. To use it we needed another piece of equipment called a Hayes Smartmodem.

With it the convoluted signing on procedures were condensed down to the simple business of inserting a disk, switching on to a menu, then pressing two function buttons, and presto—- the smart little computer telephones its big brother mainframe, signs on, gives the necessary identification and password data, after which searching can begin. Thus with the basic retrieval procedures hopefully fixed in their heads the reference staff may now access all systems without embarrassment. Changes in signing on

procedures are simply fed in at the keyboard by the online co-ordinator into the Smartcom program and all information is now readily available for use by the grateful librarians.

These then are stored access procedures. It might be as well to caution those wishing to emulate the technique that as your password is stored along with the other data one might have a security problem arising if the possible users are not all within the authorized team. Another piece of advice concerns the screen used. For accessing the i/NET data bases we required a colour monitor. We had hoped that this one monitor would serve us for viewing online services data also. For the information in the federal government base known as CANTEL it was indeed a most agreeable asset. We could call up the StatsCan Telichart which in graphic form depicted selected updated data, then to be printed out, likewise in colour. The status of bills data base shared these enhancements. It was a less satisfactory situation in the accessing of our online services. We found that for reading purely bibliographic information this screen did not serve us well. A flickering image of glob like appearance soon reduced the hapless librarians to a state of nausea. Consequently we were compelled to acquire also a monochrome monitor. A switch mechanism was installed and this now routes the users to the appropriate screen, colour for graphics and monochrome for printed information. Another design fault as far as the Canadian market is concerned is the lack of a bilingual keyboard, an awkward omission for a Library serving a federal Parliament.

As the general objective of compatibility of equipment had been established we were now committed to machines which were compatible with IBM. The easiest method of achieving compatibility, is of course, to buy other IBMs. Shortly after the first purchase, our Technical Services Branch decided that a microcomputer would assist them in their administrative operations. At this point it is necessary to indicate that the cataloguing of the collection is fed into the government library shared cataloguing system called DOBIS, which uses an external mainframe, of course. Technical Services need a micro for their statistics, word processing and general housekeeping records. For the statistics they use the LOTUS 1-2-3 spreadsheet, for word processing *Le secretaire personnel*, with which they overcome the disadvantages of not having a bilingual keyboard. Looking well into the future they specified that their IBM come equipped with a hard disk, which has a 20 megabyte capacity. This equals that of 60 or more double sided, double density diskettes. As with all electronic information storage some form of backup record is necessary to guard against accidents. Copying on to diskettes from a hard disk with information from perhaps a complete day will cause problems. Technical Services use a tape system backup. Should the hard disk "crash" the information is saved on this tape.

Our Index Section, which is part of the Information Dissemination Division, had for some time been considering upgrading its operations by installing a local area network using microcomputers. Such a system saves in several ways. Input is direct from a microcomputer on to a "what-you-see-is-what-you-get" screen, thus eliminating the tiresome business of handwritten cards which must then be transcribed by a typist, whose work in turn must be proofread. Being smart the micro can help in numerous other ways, detecting spelling errors for instance if fed a suitable program, and in general greatly improving the lot of the hard-working indexers.

Their work is now completely bilingual, and consequently the requirements call for a bilingual keyboard, a split screen to allow simultaneous access to both English and French indexes when necessary, and, an upgradeable configuration so that other terminals can be added as required. Again the hard disk is needed to accept the ever cumulating length of indexes to Senate Committee proceedings, in addition to which, work could proceed on other major projects. The capacity of a single hard disk is such that it could accept ongoing publications as *The Checklist of Committees*, and the enormous *History of the Federal Ridings*. For the most part, however, the Section works on the proceedings of Senate Committees. it would be a great help if the Library staff at least could have access to these indexes during their period of gestation.

Its lack of a bilingual keyboard here eliminates the IBM PC, but one machine that answers to the complex specifications of the Section is the North Star Dimension. At present this equipment is undergoing review. It is IBM compatible and thus the sub-network cluster of six terminals which might be formed could be linked to a library-wide local area network, or even to the Parliament Hill network recently implemented. It is called OASIS or Office Automated Services and Systems, wired into the House of Commons' buildings. When fully developed OASIS will allow Members and staff of the House, and in time perhaps the Senate, to access not only the publications of the Index Section but other Library online services.

Our Research Branch decided to move towards automation of their operations by acquiring an IBM PC. This move took place very recently, so it is somewhat premature to speculate on anything but the obvious. This PC comes also with a hard disk, and the primary aim is to increase the effectiveness of the service. To this end a data base will be created listing all of the Research Branch publications and briefings. Much of their output is confidential and intended only for the eyes of individual parliamentarians and staff. Thus the records are intended for internal use. Because of some intricate management requirements the choice of software has presented difficulties, calling for some considerable homework by senior Research Branch staff.

It is not only fanciful but presumptuous to look for future possibilities but perhaps at some point it will be possible for Members to receive, say, short full text briefings courtesy of OASIS direct to the Hill offices, provided that appropriate technology and security precautions are in place. In the immediate future the Research Officers can access online data bases including the full StatsCan CANSIM service. No doubt the plotter attached to the PC will receive much use as charts and graphs represent a convenient method of transmitting urgently needed data. For open literature the Information and Reference Branch could anticipate that updated listings of say, *Current Issue Reviews* and *Background Papers* be made available through a library local area network.

In September 1984 the Administration and Personnel Branch entered the arena by buying an IBM PC. Intended primarily for office automation it has of necessity a letter quality printer. This machine will be used for the organization of payroll and personnel data, financial planning, other internal records and word processing. To this end it will utilize Symphony software which offers a spreadsheet, data base, word processing and communication facilities in one integrated package. This Branch has for some years been located off Parliament Hill, so if the equipment can eventually be plugged into a Library-wide network the facilities are there for the transmission of administrative notices, such as postings, departures, holidays and the like. Electronic mail has not yet been mentioned but it will be available to any Branch with a computer. In the case of Administration it will be of the very greatest benefit.

What does the future hold? It is possible to speak only in the context of microcomputer technology as the other looming developments in information transfer are so complex in their nature as to defy prediction. It is hoped in time to link together our equipment to form a Library network, and then to seek an interface with other networks such as OASIS. By this means the services of the Library will be enhanced. In time our Branch libraries will be equipped with compatible machines allowing for better access to Main library resources from remote locations. Our current awareness services are under in-depth scrutiny and possibly they will be automated for electronic dissemination if and when the administrative and software problems are overcome. Over and above the Library situation there is the immensity of the technical problems emerging on the Hill itself. Traditionally, the various bureaus of the Hill have always organized and distributed their own documentation. OASIS will exert a compressing effect on these currently fragmented dissemination services. The terminology problems alone pose a pressing need for co-operation. It is not improbable that the expertise now available in the Library will furnish an obvious resolution to some of these potential difficulties. If this proves the case the Library will require even more microcomputer technology. Meanwhile we work with what we have and hope it results in better services to parliamentarians and other users.