

Computerization of Ontario Hansard Reporting Service

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Soon after the inception of the Ontario Hansard Reporting Service as a full-time operation in 1970, we, as editors, felt pressure to transform our typewritten transcription of debates to some machine-readable form, for improved economy and convenience. Most of the people we talked to in the computer business, however, both company salesmen and Ministry of Government Services consultants, seemed patently over-optimistic about the savings that could be achieved in time, labour and printing costs.

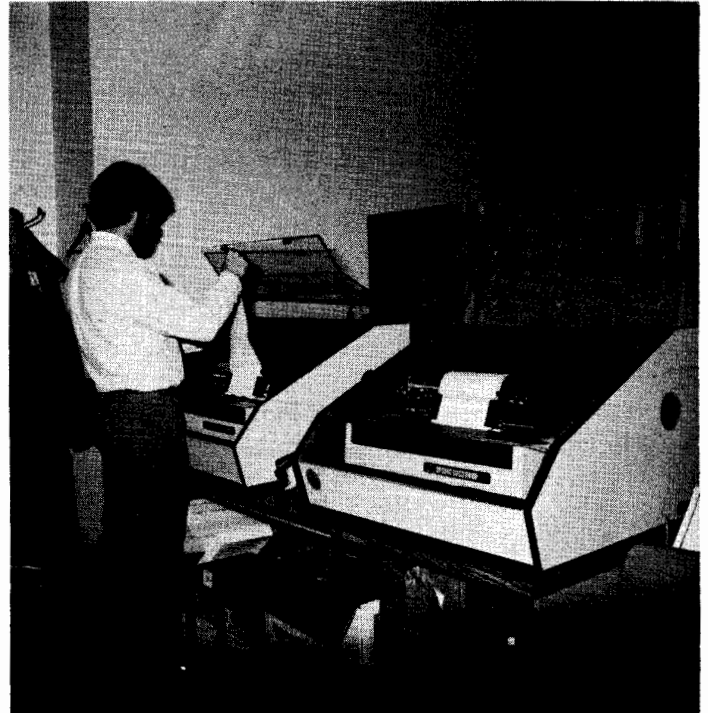
Most of the promised savings arose from projected reductions in staff – primarily in transcribers (or, as the experts insisted on calling them, typists). It seemed to us that as long as the speed of operation was restricted by some other factor – in the case of Hansard transcription, by the difficulties of deciphering or presenting the taped debate – then the increase in output due to word processing would not be as great as it might be in more routine typing jobs. We dismissed claims of “at least a thirty per cent increase in production” as fiction, and our stand has been justified in the light of experience.

In the early seventies, we had a relatively new staff of transcribers. The equipment they used for transcription from the audio tape was primitive, and the transcribers had their hands full without being exposed to the problems of an operational changeover.

We were told repeatedly that by converting to word processing and video display terminals we would be spared the chore of having to retype our material. In fact, we never needed to retype material, since our printer was able to accept the manuscripts, with all their corrected errors and editorial changes, and convert them to printed form via Linotype machine.

We made enquiries through other provincial jurisdictions and in Ottawa, and discovered that our printing costs were in fact, competitive (even advantageous) compared with other Hansard operations where computer systems were in use.

Some years later, with our operation running smoothly through the efforts of a trained and competent staff, we were again persuaded to look at the introduction of word processing as a means of arresting escalating printing costs.



Brian Baillie retrieves a portion of the unedited draft printout. It will become part of the “instant” Hansard available to members within an hour of any given sitting.

The Queen’s Park Computing Branch of the Ministry of Government Services produced an extensive report on the possible computerization of Hansard. Its recommendation was that we should use the computing branch’s central computer for the processing and storage of our material. After careful consideration, we decided we did not want to depend upon an outside computer system. The cost of renting the terminals, plus storage capacity, was likely, as well, to be excessive in comparison with the cost of smaller, self-contained computer systems available.

Our cost concern was justified by subsequent experience in other places. The Alberta Hansard operation employed a system in conjunction with its central government computer for several years; its costs were almost double ours, although the reliability of its system left something to be desired. Alberta has now adopted an in-house word processing system.

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We were convinced, finally, that we must adopt some new technology; and as a first step we introduced a word processing terminal in our indexing section. It was connected on-line to a mainframe computer at a reliable Toronto typesetting company. This enabled us to get a feel for word processing, and to test the reliability of the equipment. Although the system worked reasonably well, there were occasional mainframe breakdowns, plus some limitation on the times the computer could be accessed. These were not serious problems in the indexing application; but such holdups would not have been acceptable in our day-to-day reporting operations.

Some time later, we decided to experiment with the installation of a small, pilot, word processing operation in the transcribing area. Drawing largely on the experience of the British Columbia Hansard service, we chose the Micom system, and rented six stand-alone word processing screens and two printers. The advantage of this system from our point of view was that each terminal was independent, with its own memory, so that any failures affected only individual operators and positions. Our choice was prompted by the fear of a general breakdown with disastrous consequences for the rapid production of the report of debates.

We persevered with Micom for the contracted rental period, but became convinced that the heavy traffic in diskettes caused more trouble and greater damage than the benefits from the stand-alone aspect of the system were worth. We moved away from our almost psychopathic desire for security by experimenting with a rival system offering a small central computer to which all terminals are linked for the storage and exchange of information.

Economic considerations, together with the fact that the Manitoba Hansard operation had adopted the Wang system after a study of available equipment, led to the rental of a small Wang installation for our second experiment. We set this up in our Committee section, so that House Hansard production would not be affected by a general breakdown; but our experience with the Wang over the period of a one-year rental erased most of our fears regarding computer failure. We became convinced that, in this instance at least, the manufacturers were justified in their claims regarding the reliability of their equipment.

The great advantage, from the Hansard viewpoint, of having a Central Processing Unit (or computer) is that material can be inserted at a number of terminals in the transcribing area and extracted by editors immediately afterwards, using terminals in another area, without any shuffling or transporting of diskettes. Other advantages of the central system include the ability to insert programs to assist and expedite the transcribing and editing process. Sections of standardized format can be inserted by using two or three keys and other services, such as 'global search and replace' and a dictionary check, can be utilized.

Not least of the considerations in an operation of Hansard size, when comparing stand-alone systems with the CPU installation, is the fact that individual terminals attached to a CPU are much cheaper than stand alone terminals, such as the early Micoms.

Still preoccupied by the need for caution and backup, we adopted the Wang system but installed an additional CPU in our House section so that we had two separate computer installations.

The rationale for this was twofold: we needed the larger number of ports (connections to the CPU) afforded by the two systems to enable us to install an adequate number of terminals, printers, communication systems, etc.; and the acquisition of the separate system afforded the back up we needed. The plan was that, if our House system went 'down', we would move the House operation to the Committee section on an emergency basis.

Subsequently we installed an additional disc drive for the House system, which, in addition to doubling our storage capacity, provides backup in the event of damage or breakdown affecting the main disc drive. During the past two years of use, however, we have experienced only minor breakdowns of relatively short duration, and have not had to resort to transferring the House operation to the Committee section.

As a further backup, we have established two-way communication between the computers, via Bell Telephone datalink. The main function of the datalink is to transmit copy to the commercial printer. It has, however, the further advantage of enabling us to exchange material between the two systems.

Our external communication system enables us to send copy to any commercial printer or word processing company that has the appropriate datalink receiver. It also affords us an unforeseen benefit. We occasionally receive a large volume of typed answers to written questions of ministries, which must be included in the Hansard report. We usually have time to keyboard this material ourselves; but, if not, we can send it to one of the word processing service companies in Toronto and (provided it was typed in an acceptable typeface) have them process it through an Optical Character Reader. The resulting input can then be transmitted back into our CPU via the datalink.

One possible future development for Hansard would be the acquisition of an Optical Character Reader in-house, so that we could avoid having to rekeyboard such documents, and could offset the cost of relying upon outside agencies.

A spin-off benefit from the Wang installation has been utilization of its capacity by other branches of the Office of the Assembly. One terminal, shared by the Administration Office and the Office of the Speaker, and a second in use by the Library, are hooked into our CPU by cable laid by Hansard technicians. This additional use of Hansard's computer is a feature that could be expanded in the future.

As a general observation, the installation of the Wang system has greatly benefited the Hansard Reporting Service and the people it serves. Probably the most tangible benefit has been the production of clean committee transcripts.

Since these committee reports are not formally printed they had previously been produced as rough draft transcripts, with any alterations or editing written in freehand, and then photocopied for distribution. With the advent of word processing, all corrections or editorial changes are made in the system before the final printout. Copy delivered to the user is now, therefore, much more legible and presentable.

The question of increased production is a more complex one. There is no doubt the transcriber output increased after the initial training period.



Editors Charles Bogue left and Ed Patrick right with House Editorial Supervisor Alex Jenkins process copy on three of the eight terminals.

No conscientious typist likes to see mistakes in his or her output and this breeds a certain caution that results in reduced speed. Knowing that any mistakes can be instantly eradicated helps the typist to go faster, particularly when dealing with relatively straightforward transcription such as a continuing speech. The absence of any carriage return and the capacity for inputting sections of procedural format through the use of one or two keys, as already mentioned, help to speed up the work. Further, there is no paper to be inserted and no completed file to be delivered to another point in the office. The whole process has been streamlined and improved.

Perhaps the greatest advantage of the word processor keyboard over the typewriter in the Hansard environment has been the elimination of the clatter of 12 or 15 typewriters, making for a much more comfortable and efficient workplace.

Word processing was introduced, gently, as an experiment; but was quickly and widely accepted by the transcribing staff with just one exception. One individual was opposed to working at the terminal and, although given other duties in the office, subsequently resigned her position. We had few, if any, complaints about physical discomfort or eyestrain; but we soon implemented the policy of providing special eyeglasses, at the employer's expense, for people who normally wear bi-focals or who had any difficulty working with the screen. We found that bi-focals are not suitable for the operation of a word processor screen, since they tend to make the operator tilt his or her head backwards, incurring postural strain. The focal length of the reading segment of eyeglasses is also not generally satisfactory for working at a VDT.

In the initial stage of our move to word processing, the editors continued to edit on paper (or 'hard copy' as it is called); but

it was suggested by one editorial supervisor that we should at least experiment with editors working at the screens (as they do at many newspapers and magazines). Having a limited number of terminals at that time, we staggered shifts so that the editors could work after the transcribers had completed their task. The reception was mixed. Some editors enjoyed the challenge of manipulating material on the screen. Others showed less aptitude and were less happy.

There is no doubt that the use of screens slowed the editing process substantially more than it had initially slowed the transcription.

It was natural that the editors, who did not normally work at keyboards, should take longer to become proficient in the new art than their transcribing colleagues. Had the effect been permanent, there was the prospect that any financial advantage envisaged by the introduction of word processing might be wiped out by having to increase the more costly editing labour pool. With experience, however, most of the editors have recovered their former editing speed (and some may have increased it).

The question of saving printing costs is also complex. The introduction of word processing has eliminated the manual typesetting phase – a formerly costly part of the printing operation – and the task of proofreading has effectively been transferred to members of the Hansard staff.

On the face of it, this should have immediately and greatly reduced printing costs, but in practice the process has been more gradual. The factors were these: first, we were under contract to our printer at a fixed cost per page; and in order to cooperate with us and to accommodate our changing technology, the printer had to acquire new equipment and skills. Furthermore, we did not want the printer to totally relinquish his proofreading role. We felt that initially we needed that extra safeguard (since an experienced editor is not necessarily a competent proofreader) to ensure the minimum number of errors during the transition period.

In consideration of these factors, the printer agreed to give us a substantially reduced cost-per-page in exchange for an extension of the current contract to help him absorb the additional costs involved in going from hot metal to coldtype reproduction. This new contract is due to expire in December, 1983.

The resulting breathing space has been invaluable, and has given us the flexibility to dispatch copy by the new datalink route or, if there were any kind of breakdown, by the former hard copy, manuscript method.

Through feedback from the printer's reading staff, we have also been able to determine that our proofreading phase is working satisfactorily. This has given us the confidence to face future

tendering of the printing contract without fear of any serious problem on our part. The flexibility of the system and the universality of the datalink transmission, should also make it possible for a greater number of commercial printers to bid on the Hansard contract. (In the past, there has been a noticeable disinclination for firms to become involved in the printing of Hansard.)

It is too early to conclude whether we are saving a great deal of money by pursuing the word processing/coldtype route in Hansard production. We did have a real reduction of about \$98,000 in our printing costs for the first full year of operation (1981). Against this we had to set our Wang lease purchase costs of about \$75,000 per annum, plus incidental material costs and some additional editing/proofreading costs. The leasing fees are scheduled to terminate at the end of five years from the initial contract in 1979; and if we continue using the system thereafter, we will be faced with maintenance charges only, of approximately \$25,000 a year.

Additional savings may be realized when the printing contract is tendered at the end of 1983. At that time we will be able to gauge more accurately, due to the competitive pressure of the market, just how much we can save on printing costs in the future. By then we will have eliminated the costly proofreading requirement from the terms of the contract, in addition to being able to reap the full benefit from the elimination of the costly and time consuming business of keyboarding the Hansard copy.

Apart from cost, one major advantage from the printing aspect has been the transmission of copy over the datalink. We still have a messenger service, provided by the printer, for the pickup of the hard copy manuscript as a backup to the transmission, but the former urgency and inconvenience of this step has been eliminated.

Other benefits may accrue down the road from the use of word processing. Having the report of debates in machine-readable form means that it can be placed in a data bank for retrieval by libraries or research services. Unlike some other computer users who are constantly striving for further advances in technology, we are well served and satisfied with the current state of the art. In fact we are by no means using all of the current capabilities of the Wang system.

This leads us to believe that, subject to the serviceability and durability of the equipment, we will be able to continue to use our present system for several years after the lease purchase payments cease. The only impediment currently foreseen is that we may be called upon to upgrade our terminals to comply with any ergonomic regulations. In the meantime we are doing everything we can to make the working environment as comfortable and healthy as possible and will not hesitate to implement any reasonable improvements or safeguards that become available.