The tools for the job: an overview

Julie Harnett

Editor, Office Equipment News, *Ruislip, UK*

Today, 10 November 1983, is just fifty-two days away from 1984. If you have read George Orwell's famous novel, then you will know that he predicted the invasion of video screens which would monitor everything you do and say, in order to ensure that everyone was loyal to the State. If he walked round offices and homes today he could be forgiven for believing that his prediction, made back in 1949, had already come true. But he wasn't far from the truth, was he? If a video screen is not attached to every product, then a microchip is certain to be incorporated. Even filing systems use microprocessors today, so that at the touch of a button the document you require, one out of thousands, appears in front of you without you having to search for it.

Technological development is marvellous, if used for everyone's benefit. But I wonder how many of you will believe that the developments in speech recognition and speech synthesis are beneficial to you. At the Telecoms 83 exhibition held in Geneva two weeks ago, the Japanese company, NEC, showed off its world leadership in speech technology by demonstrating a research model of an automatic interpreting system. A conversation was held in Japanese and English, and another in English and Spanish; both were taking place as if the language barrier just didn't exist. At the moment only around 150 words are utilised, but it is not simply word recognition: it is continuous speech recognition with sentences being composed which are almost grammatically correct. NEC is also researching a speaker-independent system which can recognise words spoken by a variety of people, with the aim of producing an operational automatic interpreting system by the turn of the century.

But do not worry too much yet: your jobs are safe for the present. The electronic systems actually available now will simply help to make life in the translator's office a little easier and perhaps more productive.

For instance, dictating systems are not normally considered to be the most exciting thing when it comes to technological advance. Nevertheless, even they have not managed to escape the microchip invasion. There are of course many hand-held machines, available at reasonable prices, into which you can record your information for later transcription by a typist; these are ideal for the small office with only two or three staff. For larger offices a centralised system would be more appropriate, such as the Nucleus system recently launched by Dictaphone. It uses a small word processing unit of its own for automatic dictation and transcription, work measurement and analysis, job tracking and word-processing supervisor's information. Staff can dictate into the system from anywhere in the world.

The new centralised system from Philips is also advanced, incorporating a dictation management system which constantly monitors up to twenty dictation units for information on incoming dictation, which is then stored on disk for later analysis. It also has a data-interrogation and remote operation capability which provides the supervisor with greater control: transcription work can be distributed to typists evenly, according to their language specialisation; and regardless of how many cassettes are in use, the supervisor will be able to track their route through the system.

Naturally, a typist needs the appropriate typewriter for the language being used. Companies such as Daro Robotron specialise in such keyboards, supplying over 140 from Arabic to Albanian, Bengali to Brazilian, Hebrew to Hungarian. If any language is used constantly, then a typewriter dedicated to that language would obviously be required.

Recently, however, Olympia, well known for being first in the electronic typewriter field, developed the Eurotronic in co-operation with the European Community in Brussels. It is a universal machine for embassies, translation agencies and any company conducting business throughout the EEC. The user can now type on his usual keyboard layout and yet communicate effortlessly with all countries in the EEC; for at a touch of a switch, accents and dead keys for eleven European languages are available from one typewriter.

Screens can be added to most electronic typewriters today, turning them into economical word processors - an excellent way to enter the field of automation. A translation bureau would find the ETAP word processor a very useful system to install. It, too, has a multilanguage keyboard, with a full range of characters for typing in English, French and German. All specified accents and characters exist on

the keyboard, and will therefore be reproduced on the screen. It is not necessary to change character sets when typing in another language, since all characters are available in one set. The daisy-wheel printing element also contains those different characters and accents, so that printing out in different languages no longer involves interruptions. The continual retyping of successive drafts is also unnecessary on the ETAP system. Only amendments need to be retyped, and when information is inserted or deleted, the text which follows is automatically adjusted. You can handle column work, editing within columns and leaving subsequent ones intact. The ETAP has a full-page screen, which is useful not only for complicated layouts but for showing exactly what a page will look like before it is finally printed out. Scientific, partly Greek symbols are also included in the system.

Taking the word processing capability a step further is the computer-based 8010 professional information system just launched by Rank Xerox. It lets the user create documents and send electronic mail in nine of the world's languages: English, Russian, Japanese, German, French, Spanish, Chinese, Italian and Portuguese. For the first time it is possible to create documents that freely intermix text in any combination of those languages, using a single device. These significant advances in language processing should appeal to multinational corporations, government agencies and educational institutions in many markets. The basic work-station currently supports German, French, Spanish, Italian, Portuguese and Scandinavian languages in addition to English. The Russian alphabet will be added soon and Japanese will be made available as an add-on software option, with Chinese availability scheduled for early 1984. Arabic, Korean and Hebrew capabilities are currently under development. The system combines computing, text editing, graphics, forms creation, records processing, terminal emulation and so on. It operates on the Ethernet local communications network, and high-resolution laser printers reproduce all text and graphics. Electronic mail can be sent or received over the network in any of the languages, at speeds of up to 500 pages per second. To type a foreign language, for example Russian, the user can command the system to display a picture of a Russian keyboard on the screen. As long as it appears, any typing will produce Russian characters. Japanese, considered to be the most difficult of all written languages, uses a mixture of 169 phonetic symbols called Kana plus 6,349 Chinese-style characters called Kanji. For typing Japanese, special soft-ware lets the user first type the sound of the word using Kana and then touch a command key which instructs the system to look up the word in its online dictionary of

110,000 words in Kanji spelling... technology at its most interesting.

Ordinary computer and word processing printers too are being developed with the international market in view. The Newbury Data range, for example, includes a new dot matrix machine which offers eight resident character sets and has been specially designed to compete favourably in the European market-place.

Already available in Europe, but launched only two days ago in the UK by Bytech, was a Wenger Datentechnik printer which incorporates fifteen character sets: the European languages, Japanese, Hebrew, Greek and Russian Cyrillic. Greek maths symbols are also included. An advance in printer technology, this brand new machine can produce a mix of up to six different languages on one line, so you could perhaps produce columns of text in different languages all automatically printed on the same page. Another useful feature of this printer is that you need only transmit a letter once and it will reproduce it as many times as required. (Normally the information would have to be transmitted from the word processor each time.) In Spring 1984 this printer will also be available in colour.

One of the problems often encountered with computers or word processors is that the screen is either in landscape form, suitable for conventional data processing tasks, or in portrait form, for word processing applications. Now, however, Facit Data Products has unveiled a radically new concept in terminal technology called the 'Twist'. It has a large dual-display format and separate 'super-slim' keyboard. The monitor integration allows it to be tilted, lifted, and even twisted from landscape to portrait format while in use, so that the screen format can always be suited to the work being performed.

Another interesting advance in office technology is the IMP range of personal workstations developed by Office Technology Ltd. These integrate voice, data, text and graphics with electronic filing and electronic mail. An interesting application for the translator would be to check that the typist has typed the text correctly and, should there be, say, a spelling mistake, pick up the integral telephone handset and put a voice message into the system giving the correct spelling. There will be numerous other applications for this, of course, and it could show the way to the combined dictating and word processing systems of tomorrow.

Yet another advance, this time a little more pertinent to the translator of the future, is the Logos automatic translator which you will hear about in detail later. I first saw this software wonder at the Hanover Fair in April, where it was being demonstrated on a Wang Office Information

System, translating between German and English. Basically, the Logos system allows the translation of over 20,000 words of technical or commercial text in a 24-hour period. Time-consuming routine work is done by the system, leaving questions requiring language competence, judgement and creativity to the human translator. But because of the system's sensitivity to context, the result is claimed to be automated translation superior to any produced in the past.

Technological developments are becoming more and more incredible. One such development is the optical disk. Filing documents electronically on optical disks means that you can store any kind of information in its original form, whether it be a drawing or a document. The system that was launched by Toshiba three weeks ago in the UK provides a storage capacity of 10,000 pages per side of the disk, allowing great space savings in offices. Think of it... no more stacks of paper, no more unwieldy filing systems which take hours to search through for one document. With electronic filing you can access any desired document from thousands within 10 seconds. Reading and writing of the picture image is done by laser beam. The only drawback is that, while information can be stored and deleted, the disk cannot as yet be amended. Updatable disks are under development, however, and meanwhile optical disks are an ideal storage method for information which is constant and will not need amending.

Naturally you do not simply translate information and store it. Usually the finished document is needed elsewhere, and distributing it in an efficient way is essential. One very efficient modern method is via facsimile machines, such as the latest one from Muirhead, which will transmit a typical A4 document anywhere in the world over normal telephone lines in just 30 seconds. In the last couple of weeks Muirhead announced the introduction of an add-on security device for their Mufax 7800 Group 3 digital fax equipment to provide a high degree of security against possible leakage of confidential information. The device automatically enciphers the facsimile signals before transmission, thus making it virtually impossible for a rogue receiver to decipher these signals without a similarly programmed device at the remote end. It will be most suitable for military, government and other high-security applications, as well as for commercial uses by banks and oil companies where the need for high-security protection of transmitted data is vital.

The telex network has never been ideal for communicating information for foreign language use, but the new super telex development called Teletex (not to be confused with teletext information services) is ideal. The first live demonstration in the UK of this new service was given by Triumph Adler at the recent International Business Show. It

allowed an A4 document to be sent over standard telephone lines in less than 10 seconds. Teletex is not only fast, but cheap - less than the cost of a first-class letter - and, unlike facsimile or telex, produces letter-quality copy. But systems are yet to be installed in any offices in the UK, although there are already a thousand installed in Germany.

Even with Teletex on the way, advances have been made in telex preparation and telex terminals. Indeed, it is now possible to send telexes via normal electronic type-writers, saving companies quite a lot of money in terminal costs. Where telex traffic is heavy, however, a dedicated system is bound to be better. A new microcomputer-based teleprinter was launched by Philips last week at the Telecoms 83 exhibition in Geneva. The Pact 250, as it is called, is a desk-top machine whose standard features include a 50,000-character electronic memory, powerful but simple message-end functions and a high-resolution bi-directional printer suitable for most scripts, including Cyrillic, Greek, Arabic, Farsi and Thai as well as all the Roman-based alphabets. Additional options include a visual display unit for on-screen editing of messages. Later versions will be produced for Teletex use.

In large translation offices information often has to be passed between people until the work is finalised. The way to allow this communication to be undertaken easily is for the electronic equipment to be linked together so that one word processor, for instance, can 'talk' to another. This is done by installing what is called a local area network. It also allows word processors to share expensive resources (such as a printer). Often an office finds the need to link up various pieces of kit, only to find eventually that the wiring is uncontrollable and consequently not all the systems are linked effectively. If you install a suitable network, however, you will gain a large measure of versatility which will allow the layout to keep pace with expanding office requirements. One relatively low-cost system is the Clearway from Real Time Developments. When, for instance, an expensive new multilingual printer is installed, it can easily be hooked on to the network and made available to staff working at any of the keyboards linked into it. With a network, users can share all information stored in the system, passing it around, filing it, amending it, with recourse to nothing more elaborate than their own work-station.

I could go on for hours discussing the new electronic equipment available for use in the translator's office. Time precludes that, but nevertheless I hope I have set the scene for today's conference.

This overview at least will indicate that there is plenty of equipment available today to make your work more

efficient and perhaps more productive. It may be frightening to contemplate the future with its automatic translation systems, but if these are viewed as an aid rather than as something to be feared, the next few years will be very interesting. The world is becoming more conscious of the need for good communications, and the systems being developed will make achieving that goal a little easier and much faster.

AUTHOR

Julie Harnett, Editor, <u>Office Equipment News</u>, Business Publications Limited, Audit House, Field End Road, Eastcote, Ruislip, Middlesex HA4 9LT, UK.   (Now: Editorial Consultant, 10 Post Lane, Meadway, Twickenham, Middlesex TW2 6NZ, UK.)