Finding new jobs for computers

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Alan Turning, the British mathematician credited with the invention of computing, thought the world would need no more than a handful of electronic computing machines. He was a little out: according to the market research company Romtec, some 1.2 million 16-bit personal computers are now in use in Britain alone. This figure does not include the multiplicity of smaller games machines.

The Which Computer Show at the National Exhibition Centre, in Birmingham last year hosted some 450 companies trying to sell even more personal computers together with the software and peripherals that actually make them useful.

The big story at the show was the number of companies offering computers claimed to be compatible with IBM's "second generation" personal computers, the PS2. This is really a clutch of improvements, ranging from 3.5-inch disk drives (together and carrying more data than the previous 5.25-inch disks) to a new type of graphics display, VGA, which will give business microcomputers colour displays with the resolution of video screens.

For most people the significant improvement is the new operating system, (the "housekeeping" software which gives a computer its distinctive feel) developed with IBM by Microsoft. This operating system, called OS/2, is designed to replace the MS-DOS that is standard today. It will allow the writers of applications software (programmes to do a specific job such as word-processing) to make programmes faster and easier to use.

This promise is still a little in the future, however. In the meantime, it is important to remember that OS/2 will run only on computers centred around microprocessors more powerful than those in first generation microcomputers. Expect to see a bevy of new machines centred around the Intel 80286 and 80386 chips, which handle data in chunks twice as long as the 16-bit 8086 chip in most IBM-style microcomputers. However, for most people who need computers for producing reports and handling data bases and spreadsheet calculations, 16-bit personal computers, working on the MS-DOS operating system, should be powerful enough for the forseeable future.

Portable and "laptop" computers will figure strongly at the show. It will be the first public showing of Amstrad's PPC computer, a standard IBM-type machine which folds into a shoulder bag. Prices range from £399 to £599, excluding VAT, roughly half those of rival IBM-compatible laptops.

People who want even more compactness will look at Cambridge Computer's Z88 which is the size of an A4 pad. This computer, designed by Sir Clive Sinclair, was launched two years ago. At the time, industry watchers, remembering some of Sir Clive's other ventures, greeted the Z88 with suspicion. However, the computer is now winning a following as a practical business machine.

Ian Sinclair (no relation to Sir Clive), author of the first independent book about the Z88, said: "It's the only true portable computer. It's the only thing light enough to sit on your lap for any length of time."

Mr Sinclair has particular praise for the built-in software which comes with the Z88: "It's excellent, among the best integrated software I've seen. I wish it was available on other machines.' Mr Sinclair's only reservations are the silent rubber keyboard and the limited memory (the Z88 does not have internal disk drives). "Certainly, compared with some of Clive Sinclair's machines in the past, it's very good."

Most real developments at last year's show are about finding new jobs for computers rather than producing new machines. Some of the most exciting developments are in the handling of pictures from computer screens. Polaroid, best known for instant-picture cameras, is demonstrating a new version of its Palette system, which produces instant photographs or slides from computer graphics. Producing slides in this way is one of the few fields in which a computer really does save money, the company claims.

Palette comes into its own as a way of producing slides of charts and graphs. The software and camera cost around £2,000, and each slide works out at less than £1. "We compared this with an outside bureau, which took a week, they didn't get it right and invoiced us £150," said Robin Cartwright marketing manager.

A more conventional way of presenting information from a computer is to print it on paper. The firm trend here is towards laser printers, which work on a similar principle to Xerox photocopiers, producing prints of far higher quality (and with far less noise) than dot-matrix printers. Prices are falling fast. Toshiba is showing a £3,000 printer claimed to have the lowest cost per page yet, 1.2p.

Prices will fall further as laser printers become standard accessories. According to Romtec, demand for laser printers is doubling every year.

An innovation breaks one of the final barriers to producing professional quality publications on micro-computers and laser printers. A new British company, Graphic Solutions, demonstrated what it called the first kit to put proper half-tone pictures into desktop publishing. The device can take in images from a video camera or scanner, manipulate them on screen, and print them either alone or as part of a published document on a laser printer.

"For less than £10,000, anybody can set up their own publishing company," said Guy Coldwell, managing director of Graphic Solutions. "Previous systems, without half-tone reproduction, have been totally unacceptable." One of the system's tricks is to boost, by roughly four times, the fine resolution of conventional laser printers which form their images from 300 dots per inch.

The system will appeal to "anybody who needs to combine graphic images with text," Mr Coldwell said. Estate agents are one potential market. The system is claimed to be compatible with the most popular page make-up software such as Ventura Publisher and Aldus Pagemaker.

The next breakthrough will be colour printing, although this is still waiting for the arrival of the colour laser printer. The Japanese laboratories which set the standards in this technology are working on such devices — but the printers will have to wait until next year at the earliest.