Tim Perrin

The Future of Computing is Flat

I realized this week that it's been just over 20 years since I bought my first computer. In the spring of 1982, I paid $2,400 for an Osborne 1, and another $1,000 for an Epson dot matrix printer that printed in those wide open, nine-dot patterns.

The Osborne had 64 kilobytes of memory—0.1 percent of the memory on just the video card in my current computer—0.01 percent of my main memory. It ran an operating system called CP/M that fit neatly into about 3K of memory. The Osborne used a tiny 5-inch screen only 52 characters wide so it scrolled from side to side to show you an entire line. I used two floppy disks. One held my software and the other my data. One disk could hold 50 pages of text! Imagine!

And it was portable, sort of. It would close up into a case about the size of a portable sewing machine, and I could lug it around with me, all 24 pounds of it. I actually took it—and the printer—with me on a trip to New York, dragging it from one end of Toronto's Pearson International to the other as I made my connection.

I thought I was in heaven, mainly because I no longer had to type up those final, perfect copies of my articles. It was marvellous.

Our expectations have come a very long way in 20 years.

Now, I rarely even type my copy. I use voice recognition software to do my writing and editing.

Our expectations have come a very long way in 20 years.

It's been interesting to watch alternative input software like voice recognition develop.

First came the optical character recognition (OCR) programs that could read a page of text and convert it into characters on your computer. At first, you had to use special fonts designed to be easy for the computer to read. You can still see them at the bottom of your bank cheques (if you write cheques any more). Then you had to use fonts with a fixed pitch, each character taking exactly the same amount of space on the line. Now, of course, off-the-shelf software can deal with virtually any font laid out in the most complex of page designs.

The next challenge was voice recognition software, the kind I am using right now to write this column. At first, you had to dictate one . . . word . . . at . . . a . . . time. It was actually rather hard on your vocal cords. Today, if you say one word at a time, you actually hurt the accuracy.

The latest challenge for the software wizards is a program that can read the scrawl I call "handwriting." Again, the programs have started out by requiring the user to adjust to the computer. For example, on my Pocket PC, I can write on the screen and the computer can usually read what I have written, but I have to print carefully. Any chance of actually reading my cursive writing—which sometimes even I cannot read—is probably beyond hope. But who knows? Maybe some software genius somewhere will develop a way of taking words in context and reading the twitchings of my muscles to figure out what I *meant* to write.

Why is this important? Because the next generation of computers—and they are already here—are tablet computers. These are computers without keyboards but screens the size of a notebook. They're designed for handwritten input, and Microsoft is banking a lot of money that a lot of us just can't wait to get our hands on one.

Several hardware companies will be introducing computers based on the Windows XP Tablet operating system later this year. The idea is that many of us spend a lot of time away from our desks and, while many take along a PalmPilot or Pocket PC, few of us lug our laptops everywhere we go. A tablet computer—about the size of a legal notepad—is designed to fill that gap. Weighing about three pounds, it is the kind of thing you can slip under your arm as you go to a meeting. You'll be able to jot down your notes on the screen where they can either be stored as a data type that Microsoft refers to as *ink*, or be instantly recognized and turned into computer text.

The key to all this is the new Windows XP Tablet operating system Microsoft describes as "a superset of Windows XP with extensions for inking, direct manipulation, speech input, handwriting recognition, and a Windows Journal utility—a digital note-book with an infinite supply of paper."

You're still going to have to write pretty clearly. The software is not good enough to adjust to individual nuances in writing. In other words, we have to adjust to the computers, rather than have the computers adjust to us. If you're like me, however, anything that makes me write a bit more clearly is probably a good thing.

Many of the new tablet PCs will actually be combination units that are part laptops, part tablet PC. At your desk, you can use it as a normal laptop, but you'll be able to easily detach the screen and use it as a tablet PC.

You can expect tablet PC offerings from Acer, Fujitsu Hewlett-Packard, Toshiba, and ViewSonic—all on the market in time for Christmas. Several are already here. The Acer TravelMate 100, the Fujitsu Life-book P-1000, and the Hewlett-Packard Meritage are all laptops with detachable screens. Fujitsu already offers a pair of straight tablet machines—the LT p-600 and the 3500—aimed at vertical markets, such as insurance and health-care companies. They currently run Windows 2000 Professional with CIC PenX 2.02 extensions for stylus input and handwriting recognition.

The ViewSonic ViewPad 1000 is another tablet-only offering, but one that is hampered by too much weight: 4.4 lbs. Perhaps the most interesting offering is the Toshiba Paperback Tablet. Rather than being the size of a legal- or letter-sized pad of paper, this unit is the size of a paperback book: 8 x 5 inches and 1 inch thick, weighing 1.6 lbs. And rather than running any version of Windows, it uses Linux and the Opera Web browser, along with a small suite of applications: a notepad, a handwriting recognition program, a scheduler, and an email program. It also includes wireless Ethernet, and you can connect it to an external USB keyboard.

Obviously, this field is quickly developing and far from stabilized.

Obviously, this field is quickly developing and far from stabilized. But it is also likely to affect all of us within a few years. Only eight years ago, I had my first look at voice recognition software; I have been using it on a daily basis for the last three. I would not be surprised to see many of us using tablet computers in some form within the next five years.

I picked up a copy of *PC Magazine* the other day. It weighed in at a mere 150 pages. Heck, *PC Mag* used to run 150 pages before it got to the first of the features; it regularly ran to 450 to 500 pages. If you needed any more evidence of troubled times in the high-technology industry, there it is. ▲

Timothy Perrin, a former lawyer, is a technology writer for a variety of magazines. He teaches writing in the Professional Writing program at Okanagan University College in Kelowna; online for the Community College of Southern Nevada; and through his own school, WritingSchool.com. www.TimothyPerrin.com