

Crucial Technology

There comes a time in every PC's life when its age catches up and things start to slow down. Enter memory specialist Crucial Technology. Its RAM upgrades help systems keep pace with the latest machines on the market for that little bit longer. Robert Blincoe went to East Kilbride to pay the company a visit

The cheapest way of boosting PC performance is by stuffing an ageing machine with as much extra memory as it can take. This is exactly what Crucial Technology's business is all about: RAM upgrades. The company has worked hard to make the process of finding and installing the correct kind of memory very simple for its customers.

Crucial is part of US memory giant Micron Technology, the only DRAM manufacturer in the States and one of the three largest in the world. Samsung rules the RAM roost and Micron fights it out for second place in the market with Infineon. Together, the three companies accounted for almost 69 percent of the market during the first half of 2003.

Crucial's European base is in East Kilbride, just outside Edinburgh. The area is known as Silicon Glen but Crucial's general manager Stefanie Summerfield happily refers to the place as the Milton Keynes of Scotland. Her office view of the rolling lowlands is about to be obscured by a new building on the same business park.

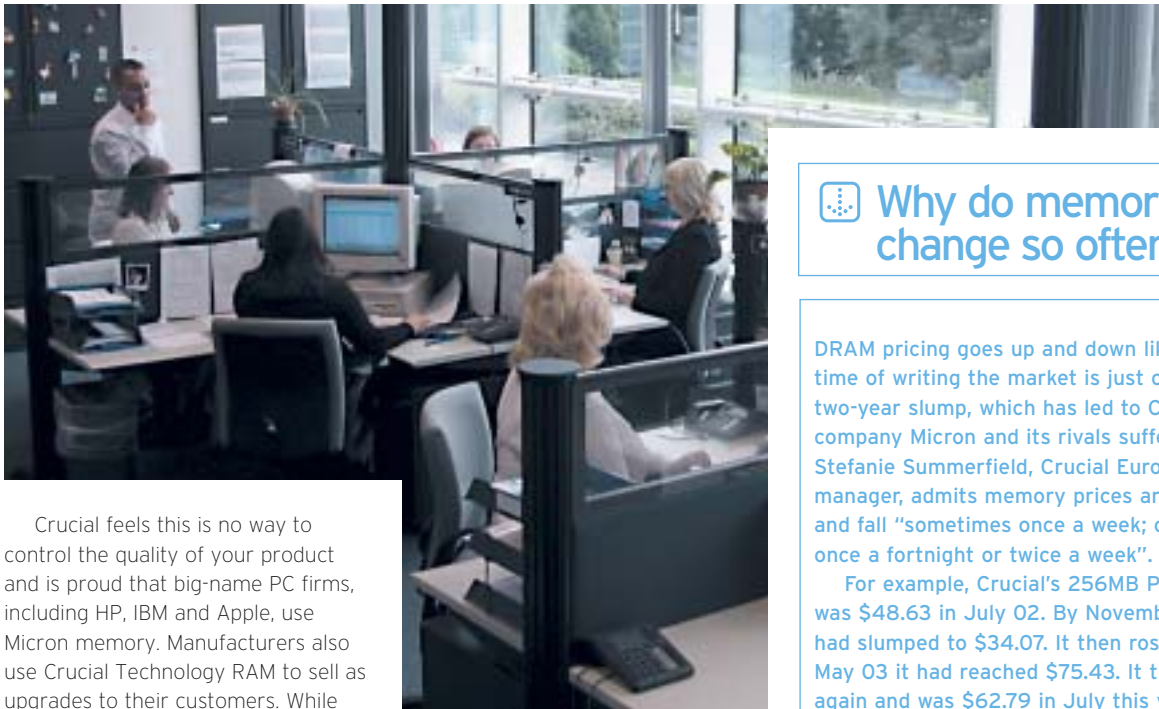
Trip down memory lane

Crucial shares its Scottish plant with a Micron assembly plant that puts together most of the memory Crucial's European operation sells. What sets Crucial apart is that it is the only memory upgrade supplier selling to consumers that is part of a major DRAM manufacturer.

"I think this gives us a big advantage," says Summerfield. "We make the DRAM and we're the only place you can buy memory direct from the manufacturer." The point is crucial for Crucial. The company goes to a lot of trouble on its very informative website about why good quality RAM is important.

Making memory is an expensive business. Wafer fabrication plants require hundreds of millions of dollars for state-of-the-art, high-tech kit and process development so only a small handful of firms can do it. Crucial makes a big deal about its Micron connection because rival operations also call themselves memory manufacturers when they just assemble premanufactured RAM parts.





Crucial feels this is no way to control the quality of your product and is proud that big-name PC firms, including HP, IBM and Apple, use Micron memory. Manufacturers also use Crucial Technology RAM to sell as upgrades to their customers. While visiting the East Kilbride centre I had to swear not to name any companies whose names I spotted because these relationships are meant to be secret. There is a simple reason for this.

As Pat Kriley, Micron Europe's general manager, says "I think their intent is to put systems out with the bare minimum and let customers upgrade." It's likely that buying RAM direct from Crucial will be cheaper than buying it from the PC supplier.

Make the right choice

This is where Crucial comes into its own and why its made so much effort with its website. According to Summerfield, when Crucial was launched in Europe in 1999 the company was faced with a market of "many people who'd never opened up their PCs".

But Crucial had "the Memory Selector which was so different than what was being offered", she says. Crucial's Memory Selector database contains information on 110,000 memory options for more than 20,000 different computers, printers and servers. Simply key in details of your system or follow a series of menus to select your PC setup.

The Memory Selector then tells you what upgrades will work for you. Crucial's online blurb even boasts its "Memory Selector contains details about your machine that are likely not to appear in your owner's manual".

With its 30-day compatibility guarantee, the deal is zero risk. If what you buy isn't compatible with

your system you can get your money back or swap it for the correct RAM.

Crucial's site also features a Belarc Advisor download, which will let the you know what system you're working on and what's inside it. If you've inherited a PC it's not easy to know exactly what you've got your hands on.

Background knowledge

But Crucial's site isn't just about purchasing memory upgrades; it also contains a lot of useful articles. A few are sales-led, letting you know why you should upgrade. Others offer installation guidelines, while some are ideal if you want to really bone up on the subject. For example, you can read such delights as 'What are the differences between SDRAM, DDR and Rambus?' and 'The difficulties meeting the PC100 specification'.

But then Crucial takes its technology seriously. Every member of staff - and this includes admin folk - has to pass an in-house Technical Certification Program test. They must know about PC architectures and be able to visually identify memory modules of different configurations. Naturally the engineers know a hell of a lot more than this.

New articles are added to the Crucial website regularly and the whole site is overhauled once a year. The work has paid off. Summerfield says: "For the first few months, 40 percent of our sales were online. Now 95 percent of the business comes from online." To back up its online

Why do memory prices change so often?

DRAM pricing goes up and down like a yo-yo. At the time of writing the market is just coming out of a two-year slump, which has led to Crucial's parent company Micron and its rivals suffering heavy losses. Stefanie Summerfield, Crucial Europe's general manager, admits memory prices are known to rise and fall "sometimes once a week; other occasions once a fortnight or twice a week".

For example, Crucial's 256MB PC100 module was \$48.63 in July 02. By November that year it had slumped to \$34.07. It then rose steadily and by May 03 it had reached \$75.43. It then started falling again and was \$62.79 in July this year.

Mixed fortunes

The fortunes of the newer 256MB PC2700 module have been a little different. From \$73.45 in September 02, it had reached \$82.54 by November. The price continued to drop and hit \$37.89 by May 03. It then turned and was \$44.57 in July 03.

These prices fluctuate for several reasons. In September 02 256MB PC2700 was new and in short supply so its price shot up. Once it began to be used in higher volumes, costs came down.

As 256MB PC100 is used more in new PC production, its price in the upgrade market will rise because there's less available. "Something new comes along and the market gets ahead of the manufacturer. It's all about speed these days," says Micron Europe's general manager Pat Kriley.

Recovery position

Memory is a commodity market and works on supply and demand. It's influenced by computer sales, the release of more memory intensive software, changeovers to next-generation products, producers entering or leaving the industry and even natural disasters.

The forthcoming recovery "is going to be based on lack of supply, not increasing demand", according to Andrew Norwood, principal analyst for market watcher Gartner.

Memory prices have been pretty low recently so DRAM manufacturers are expected to scale back production. With less DRAM available for purchase, prices should go up and restore profits to the makers.

Summerfield doesn't see consistent pricing arriving anytime soon. "I think for that the whole industry would need to change. I can't see it happening. It's one of those markets it doesn't work in."

It's probably a good idea to ram your PC with DRAM now before prices are hiked up even more.



service, Crucial has 10 full-time memory advisors answering sales and technical support calls on a freephone number. These are backed by technical engineers.

In terms of shipping, everything is sent special delivery in recycled packaging. And though the company cautiously promises it will arrive within two days, the internal target is for next day and it's usually achieved.

Oh, and the memory has a lifetime warranty. Even if you're cynical and

assume people are going to buy a new PC every three years, that's still a lot of confidence in your product. But as Crucial still supplies EDO memory (quick, call the Natural History Museum), it's well aware that some people hold on to their PCs for quite a long time. ☒

Crucial Technology at a glance

- **History** Micron Technology, Crucial's parent company, was founded in 1978 in Boise, Idaho. Crucial Technology launched in 1996. Crucial Europe opened for business in March 99 in East Kilbride, Scotland.
- **Employees** Micron has 16,700 workers worldwide. Crucial Europe employs 68 people.
- **Turnover** Micron made a loss of \$907m on sales of \$2.59bn in 2002.
- **Product range** Memory upgrades, flash cards and readers, graphics cards, USB flash drives
- **UK address** 12 Redwood Crescent, Peel Park Campus, East Kilbride G74 5PA
- **Website** www.crucial.com/uk/index.asp
- **Freephone** 0800 013 0330

Memory's not what it used to be

The memory market has that feel of the very last days of the Wild West about it. Civilisation is almost in place but a few outlaws keep causing havoc. First there is unbranded RAM. Players in this market aren't necessarily dodgy but lack of quality control means it's hard to be confident of buying something that'll definitely work in your PC.

Brand loyalty

Helen Slinger, product marketing manager for online retailer Dabs.com, says "Customers buying unbranded memory tend to look for the lowest cost solution. But Dabs.com ceased selling unbranded memory over two years ago due to the increasing number of faults and incompatibility problems experienced.

"Memory marketed under our Dabs Value range, while sourced from a lesser known manufacturer, is still branded to ensure it offers similar quality and reliability levels as the major players."

Then there is the criminal side of things. In recent months several UK distributors have been fined for selling counterfeit memory after investigations by trading standards.

"Buy branded memory" is Crucial's mantra. Well, it would be, wouldn't it? But there are sound reasons for doing so. Top-tier memory goes through extensive tests so you can be confident it will work for a long time. Some of the parts that fail testing are graded to lesser speeds and DRAM makers may sell this memory to third-party vendors who then relabel with their own brand name.

Even if the memory is good, the assembly process could ruin it through bad soldering or by storing it badly. Substandard RAM can cause problems ranging from annoying error messages to a complete system crash. So is Crucial's quality that much better than its competitors? Slinger says "The quality of products from all the major memory manufacturers is very high. Dabs.com chooses Crucial because their differentiator is their warranty, good prices and higher specifications."