Gordon Laing sings the praises of Intel's mobile Celeron – the cheaper chip it just can't hold back.

The Celeron excels

Word has it we'll all be dumping our desktops and using portables in a few short years. You only have to look at Intel's ramping up of mobile chip manufacturing and performance to see that demand for portable products is steadily increasing. But is it all as simple as that? I've done a little digging around and discovered a few crisp biscuits any potential portable purchaser should know about...

Like its desktop range of processors, Intel divides its mobile CPUs into two categories: Pentium and Celeron, and also mirroring the desktop components, the mobile Pentium IIs are all but superseded by newer Pentium III flavours. Again like the desktop chips, the difference between a mobile PIII and mobile Celeron is not just a matter of the former being available at higher megahertz – there's the fact that Intel squeezes all its cunning new ideas and technologies into the PIII models, leaving the humble Celerons to plod along with modest performance but much lower price. Or do they?

Compare Pentiums and Celerons and, under the right conditions, you'd be hard-pushed to TELL THE DIFFERENCE – apart from the lower price

Regular readers of this column or anyone who follows the antics of the enthusiast's hardware websites, will know that the Celeron isn't as far below the Pentium in performance as its marketing would have you believe. In fact, compare Pentiums and Celerons at the same clock speed and, under the right conditions, you'd be hard-pushed to tell the difference – apart from the lower price, of course.

Now, before you get worried that I'm going to bang on about dual, over-clocked Celerons in an Abit BP6 motherboard, fear not! Do not turn this page! I've got some news on the mobile side of things that I'm sure you'd like to know. About six months ago I mentioned in this very column that the 400MHz mobile Celeron was in fact virtually the same chip as the more expensive mobile 400MHz Pentium II. Both obviously beat at 400MHz internally, but also match speeds externally, at 66MHz. In fact the only difference was the on-die Level 2 cache, which was 256KB on the PII and 128KB on the Celeron. Sure, 256 is better than 128, but in our real-world tests of notebooks featuring both chips, their overall performance was, in some cases, identical.

Well, despite assurances to me from top Intel people last year that the unusual closeness of Celeron and Pentium performance was just coincidence, it's gone and happened again. Amid the fun and games of ever-increasing clock speeds for high-end, desktop Pentium IIIs and AMD Athlons, a recent mobile announcement may have gone unnoticed: Intel has launched new 450 and 500MHz mobile Celerons. Now there's also existing 450MHz and 500MHz mobile Pentium III chips, but these run at 100MHz externally, feature streaming Internet extensions, and are manufactured using Intel's latest 0.18micron process. In comparison, the new 450 and 500MHz mobile Celerons run at 100MHz externally, are the first Celerons (mobile or otherwise) to feature the streaming Internet extensions and, oh, hang on, are also manufactured using the 0.18micron process. In fact, the only difference is their on-die Level-2 cache: 256KB on the PIII versus 128KB on the Celeron. Oh, but don't forget these mobile Celerons are about half the price of the mobile 450/500 PIIIs.

Sound familiar? While we've not had a chance to test any notebooks with these new Celerons, I wouldn't be surprised if they essentially offer the same performance as their more expensive 450/500 PIII counterparts. If you want still faster performance and a genuine technology benefit that the Celerons can only dream of, then consider Intel's top-of-the-range 600 and 650MHz mobile Pentium III chips. Exclusively boasting Intel's cunning new SpeedStep technology, they can instantly drop their voltage under battery power, resulting in a considerable power saving but only a small reduction in performance.

You may be paying a premium for SpeedStep, but it is a revolution in mobile computing. Remember, though, the only mobile Pentiums which employ it are the 600 and 650MHz models. If you're after a notebook running at 450 or 500MHz, do yourself a favour by considering the Celeron instead and spending the money you save on more RAM, a bigger hard disk, better screen, or perhaps a really good night out – just remember to drink a toast to the humble chip that once again has done good.

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Barry Fox can't bring himself to support an OS that will cost hundreds of pounds to fix.

The hidden cost of Win2K

Large companies are in business to make money and grow bigger. Initially they can only do this by winning over the press and trade, which helps them win customers. Past a certain point they can afford to care less. Then, like modern governments, they substitute PR spin for hard fact, make pronouncements and try to duck questions.

Microsoft launched Windows 98 without a press briefing. Reports of upgrade problems were brushed aside as self-inflicted by users.

Similarly, Office 2000 was unveiled at a lavish party, with no chance to ask questions. Installation fell over if the PC was fitted with a current US Robotics modem. Months later a spokesman admitted that the bug had not been fixed, but users could go to a website for DIY advice.

John Connors, Microsoft's chief financial officer, said the company 'bet the ranch' on Windows 2000. Advance publicity promised 'the mainstream desktop and laptop operating system for businesses of all sizes'.

Microsoft has already used the 2000 name for Office, which works with Windows 98. But Windows 2000 is based on NT rather than DOS. A lot of legacy hardware and software won't work with it.

Windows 2000 was launched in the UK with a glitzy party at Earl's Court. There was no mainstream press briefing to deal with nitty gritty issues such as compatibility with legacy hardware and software.

Because I'd said publicly that I would not dare load it on my 500MHz Windows 98 Pentium III, for fear of breaking what didn't need fixing, the BBC invited me on a radio programme after the Earl's Court bunfight. Microsoft's MD Neil Holloway ducked out and sent Andrew Lees, director of emerging markets, as his deputy.

'Our target was to be three times more reliable than Windows 98, but it is significantly better', said Lees. Since Microsoft never admitted there was anything wrong with Windows 98, it's hard to know how this figure was arrived at. Lees explained that Windows 2000 Professional is 'aimed at businesses, not for consumers, but businesses can be individual users.'

So will Windows 2000 be on sale through high-street stores such as Dixons and PC World? 'We are encouraging them not to stock and display large quantities', said Lees.

PC World promptly ran adverts in the national press promising 'the UK's lowest priced Windows 2000' with 'special student pricing'. Teachers, students in full-time education and parents with children in full-time education can buy the 'complete Windows 2000 Professional' for £50.

So what happens if students, schools or small businesses install and have trouble? They have no company IT department to call on.

Lees replied: 'It's the same as for all Microsoft software. You get free help on two incidents and after that you pay'.

But how much? Lees didn't know, but thought it was around £15. Microsoft's PR agency, and party organiser, August One, didn't know either. But at my insistence it found out. I quote: 'Microsoft recommends that customers make their retailer the first point of call for support queries, as it will be able to cheaply and effectively solve the majority of problems.

'Mastercare, part of Dixons Stores Group, offers telephone support in two different pay structures. The first is a £1-a-minute premium rate call and Mastercare have advised that the average call lasts five to six minutes. The second operates on an incident basis, charging £59.99 ex VAT for three incidents, £20 each, and Mastercare's lines are open between 8am and 8pm.

What happens if schools or small businesses install and have trouble? They have NO COMPANY IT DEPARTMENT to call on

'Software Warehouse offers telephone IT support at a national rate call. Microsoft offers additional direct support to its customers with two free support incidents over an unlimited timescale. After these two incidents are used up, Microsoft charges either for each incident or for sets of five. Desktop apps are charged at £45 ex VAT per incident or £150 ex VAT for five. Business systems are charged at £185 ex VAT per incident or £675 ex VAT for five.

'Desktop apps also includes Windows 95 and 98. Since Windows 2000 requires a higher level of support... it falls under the umbrella of business applications.'

So with VAT, it's going to cost £217 per problem after the first two freebies. And what price Andrew Lees' guesstimate of £15 per problem?

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True 24-hour banking has yet to arrive and Brian Clegg is sick of waiting for his cheques to clear.

Money troubles

The banking industry has a vast investment in computing. Electronic cash can fly around the world in fractions of a second. So how come a cheque paid in on a Thursday can fail to be processed until the following Wednesday? That mysterious period of time we mortals think of as nearly a week, but banks call three days. Why is it, with all that computing power to call on, the banks still can't deliver?

Some of the problems are down to a reluctance to acknowledge the real world. Banks live in a fictional twilight, where no-one could possibly need to do more at the weekend than withdraw cash. It would seem bizarre if a supermarket wasn't fully open on Saturday and Sunday. We would rightly complain to *Watchdog* if airlines grounded planes from Friday night to Monday morning. But we meekly accept it from banks.

I asked Lloyds TSB and the industry body APACS (the snappily titled Association of Payment and Clearing Services) just what was going on. Lloyds is one of the more switched-on banks. It has Internet banking for personal accounts, and will be adding a service for limited companies and partnerships this year. It has a 24-hour telephone service. But it still can't cope with the weekend. The Lloyds spokesman pointed out that many Lloyds TSB branches are open on Saturday, and that online and phone banking services are available seven days a week. The trouble is, the weekend operation is only at the front end of the company. Behind the counters there's a big zilch, so any work done from Friday evening onwards just accumulates for Monday.

The outcome of this is that the famous 'three days' to clear transactions conveniently doesn't include the weekend. The man from APACS held out little hope for change. Customers, he pointed out, are small fry to the banks compared with the money markets. As long as there's no market activity at the weekend, the banks aren't likely to bother either.

So much for the weekend – but why those three days? The banks claim that the delay in cashing a cheque is there to protect us, because it ensures there's a piece of paper to back up our transaction – yet every day these same institutions send millions of pounds over wires, without a second thought.

The good news is that Lloyds is working on a real-time system that could clear internal transactions almost instantly. The bad news is that it won't be around until next year, and even then, inter-bank clearing will still be the responsibility of BACS, the industry's antiquated, automated clearing house. As the APACS spokesperson pointed out to me, this isn't likely to change any time soon. BACS is designed to replicate cheque movement, so even an electronic transfer from one online bank to another still takes those infuriating three days – and will continue to until the banks build a special network for transfers, which no-one is planning at the moment.

It's not all gloom. Technological developments in the pipeline should make banking easier for us in the future. Like everyone else, banks have great hopes for the possibilities brought about by mobile phones 'very soon now'. Meanwhile, the end might be in sight for PINs, passwords and even the creaky old signature.

There's something rather charming about a bank advertising for twins, professional impersonators and PEOPLE WITH COLDS to test its systems

For a long time it looked like handwriting recognition was going to do the job, but the rapid growth in telephone banking means that voice pattern recognition has won the day. Lloyds expects to introduce it in the next year, provided that current tests being conducted with twins, professional impersonators and people with colds work out (there's something rather charming about a bank advertising for twins, professional impersonators and people with colds to help test its systems).

The banks are now facing immense pressure. As I write, NatWest has just given in to the Royal Bank of Scotland's hostile take-over bid, and Lloyds TSB has announced another 3,000 jobs are to go. Online and telephone banks such as Egg and Standard Life Bank are steadily slicing into the market. It's time to recognise that the customers aren't there for the banks' benefit, but the other way round. Perhaps at last the banking industry will get its collective finger out and make its computer systems benefit us and not them.

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David Fearon spits his dummy at hackers who think they're activists, but are actually just a pain.

Hack off and get a life

This past month, I've found myself getting extremely angry at a certain misguided section of the Internet community. It began when my other half downloaded some Word documents from her office to her home system to work on over the weekend. The documents all contained viruses, and it turned out her system was already infected. This was the first time I'd actually seen a virus in action: scanners on my systems have always caught infections before the symptoms appear. Seeing her installation of Word 97 corrupting important documents she'd worked hard on really brought home to me just how sad hackers and virus writers are.

A bit of investigation on the web revealed that some pathetic individual has actually produced a macro virus construction kit for Office 97, and it's the bastard offspring of this delightful tool that's been causing untold grief to my partner and her work colleagues.

More investigation revealed that experienced hackers like to label people who use this kind of pre-built tool 'script kiddies', apparently implying that writing hacking tools yourself is the grown-up thing to do. You can draw your own conclusions. Hackers also like to pretend that they're social activists, battling to keep the Internet free from the oppression of faceless corporate machines. I have some measure of sympathy for the broad concept of hacktivists: civil disobedience for legitimate ends can be a noble thing. But visit www.freespeech.org/resistance/index.htm and you'll see that most examples of hacktivism are nothing more than mindless, self-aggrandising electronic graffiti. You'll also notice that these political activists invariably say 'hi' to their friends.

Most examples of hacktivism are nothing more than MINDLESS, SELF-AGGRANDISING electronic graffiti

What really annoys me is the way that folk of this ilk seem to imagine that they're acting as electronic vigilantes when they exploit Internet security vulnerabilities. But out in the real world, the point of delivery of most of their feeble-minded vandalism is an innocent person who correctly sees their computer as a tool, rather than a means of asserting their virility. The vast majority of users today know nothing about computers beyond how to use Word, Excel and Outlook, and have no idea how to secure their machine against Internet-based attacks. Contrary to the belief of most hackers, however, this doesn't make them poor saps that deserve all the electronic grief that can be visited upon them. It means they're normal people, with interesting lives and better things to do than memorise Unix manuals and download fixes for security loopholes. In the orchestrated denial-of-service attacks on Yahoo, Hotmail and others recently, it was the end user that suffered, not the corporations that the hackers targeted.

It's an oft-repeated excuse that by writing viruses and hacking systems, these people are raising security issues and exposing means by which software companies can covertly extract data about users. 'Look!' they bleat. 'By remotely trashing your system/ISP's network/company network we're demonstrating the means by which really evil people might rip you off!' Of course there's a definite place on the net for individuals concerned with finding and documenting security loopholes. But this job is done perfectly well by people such as Richard Smith, who first publicised the issue of GUIDs (globally-unique identifiers) that were embedding hardware Ethernet adaptor addresses in Office 97 documents. Ironically, it was this GUID that helped the FBI track down the author of the Melissa macro virus, David Smith. Visit Richard's site at www.tiac.net/users/smiths for some fascinating and scary security info and demos.

If it happens that you're one of the people who've been tinkering with virus construction kits, running port scanners on other people's networks and reading the Internet RFCs with the sole purpose of finding possible exploits, consider this. When the tedious fruits of your labour are unleashed on the world, your two spotty friends might think you're quite cool. But the thousands of innocent recipients of that slice of your intellectual prowess will sit in front of their mangled systems staring at the sTuPid mESsagE (sic) that'll no doubt be a part of your code's payload, genuinely and sincerely wishing you a horrible, painful death. So do yourself and the world a favour: go and get a life.

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