

Shhh... can you keep a secret? Gordon Laing tells you **how to beat Intel** at its own game.

The truth is out there



Without sounding too *X-Files*, I reckon there's some strange stuff going on in the world of processors. I'm talking about Intel's Celeron, a CPU full of surprises, and one that has again accidentally given a convincing argument to be

your chip of choice in almost any configuration.

But Celerons are cheap and nasty, right? Surely a reassuringly expensive PIII is the way forward for top performance? Well, the PIII (and PII) features four times the Level 2 cache – 512Kb vs 128Kb – but the Celeron's is on-die, which means it runs at the chip's core speed – double that of the L2 cache in the PII and PIII.

Current PIIIs boast a front side bus (FSB) of 100MHz compared to the Celeron's 66MHz, and uniquely boast the additional Internet Streaming Extensions, but does any of it make any difference?

Take the SysMark benchmarks used in *PCW*, which run an extremely broad range of applications (although

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none yet supporting the PIII extensions). In June, *PCW* group tested a load of PIII 500s, which scored on average 195. In September, the first Celeron 500 hit the VNU Labs, scoring 185. Not a massive difference is it?

The Celeron effect is even closer with mobile notebook processors. Both Intel's mobile Celeron and PII processors run at 66MHz externally and are available with identical clock speeds. The only difference is again with the L2 cache, this time both on-die, but only 128Kb vs 256Kb for the mobile Celeron and PII respectively.

PCW group tested six Celeron notebooks, and one running at 366MHz scored 132, the same as a mobile 366MHz PII reviewed a couple of months back. Yet there is a threefold difference in the cost of the CPU!

The PII and PIII range has one other 'superior' differentiating quality from the Celerons, and that is support for Symmetric Multi-Processing (SMP). This allows you to pop typically two or four identical CPUs onto one motherboard and have them work together. Your OS will have to be SMP aware, which means BeOS, Linux, Windows NT or Windows 2000. SMP-savvy apps

include Adobe Photoshop and even Quake Arena (build 1.06 onwards); ID's John Carmack has suggested that SMP will boost Quake Arena's average performance by 20-30 per cent and by as much as 80 per cent in busy fight scenes.

But you'll need an expensive dual PII or PIII system, right? Well, wrong actually. SMP support may have been disabled in the Celeron, but anyone brave enough with soldering irons and tiny drill bits can re-enable the feature. Tomohiro Kawada of Kikumaru Technical Laboratory is the Web's recognised expert on such matters, and his site shows exactly what's involved.

Owners of Socket 370 Celerons can fit them to cheap Slot 1 (Slocket) adaptors and make the modifications to these instead. Then again, why not check out Abit's BP-6 dual Socket 370 motherboard, which seems to happily support SMP with two S370 Celerons?

The latest craze is to overclock SMP Celerons. Intel may have locked the clock multiplier on its recent chips, but you can easily increase the external FSB settings. The Socket 370 366MHz Celeron uses a 5.5 times multiplier

on its recommended 66MHz FSB. According to many hardware sites, it will happily run at an FSB of 100MHz, resulting in a 550MHz CPU. And remember, this is one with an L2 cache now running at 550MHz (a 550MHz PIII only runs its L2 cache at 225MHz).

At the time of writing, one supplier was selling its remaining 366MHz Socket 370 Celerons for £47 each and the Abit BP-6 board for £80; a single PIII 550 would cost you £439. According to a number of sites (see www.firingsquad.com), a pair of overclocked 366 Celerons outperform a pair of PIII 500s running Quake Arena, at a fraction of the cost.

Windows 2000 will give the mass-market OS support for SMP, and it's encouraging to see games like Quake Arena make use of dual processors. It's even better to see that with a little effort, you can persuade a pair of cheap Celerons to work together. Overclocking has traditionally been the realm of the true hardcore experts, but there's nothing difficult about increasing the motherboard's FSB from 66MHz to 100MHz – just watch that pair of 366 Celerons ramp up to 550MHz each, and you won't even need to buy exotic 133MHz memory. For these reasons I invite you to join me in a toast to the humble Celeron – I never thought I'd be able to afford more than 1GHz of dual-processing power.

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The DTI is pushing ebusiness, but Barry Fox finds everyone **passes the buck** when problems arise.

Ecommerce breakdown



The British Government's DTI wants to 'build trust in electronic business and make the UK the most ecommerce-friendly nation'. Nice idea, pity about the reality.

After I reported that CompuServe subscribers are at risk from scam messages – which look official and ask for their password, credit card and banking details – many readers told similar tales. CompuServe has never been willing or able to explain why it is powerless to trap the scammers or block the messages. And it is still going on.

A user in Germany recently received a message which threatened to shut down his account unless he replied with his banking details. 'We are sorry for the inconvenience and hope that you will continue to enjoy CompuServe,' it reads, ending with the note: 'Copyright CompuServe Interactive Services Inc.'

So I bundled up a pile of evidence and sent it to David Edmunds, director general of the telecomms

comes pre-loaded or the PC has not previously been set up to use another service. Freeserve can trample existing settings and phoning the Help Line then costs 50p a minute (and it used to be £1).

Some users are finding that there is an unexpected price to pay for the free service. This is caused by the system Freeserve uses to allocate the 'unlimited email addresses' promised in its adverts. I found out for myself when I belatedly accessed my Freeserve email box and found over 650 messages waiting, some of them megabytes long. I gave up downloading when I realised that none were meant for me.

The usual way to allocate email addresses is to put the user's name ahead of the @ sign, with the host name following. So if I signed up to AOL, I'd be Fox@AOL, or something like Fox16 if others had got in earlier.

Freeserve puts the user's name after the @ sign, so my identifying address would be @Fox.freeserve.co.uk. I could then create any number of mailboxes, such as Mum@Fox, Dad@Fox and so on. But if I don't set up mailboxes, any messages sent to Barry@Fox, Fred@Fox, etc will all be delivered to me.

This is the price that you pay for privacy. Freeserve does not publish any list of addresses, so there is no way of knowing whether I am Barry@Fox, Anyname@Fox or Anyname@Fox16, unless I tell you. (All these addresses are fictitious, by the way).

'People are trying to guess other people's addresses and getting them wrong,' says a spokeswoman for Freeserve. Early adopters with simple addresses – such as @Smith rather than @Smith55 – are most at risk of receiving other people's email.

Freeserve's addressing system was modelled on Demon Internet's, one of the earliest ISPs. After seven years, Demon has 250,000 paying subscribers but doesn't experience problems with incorrect delivery.

The difference is that Demon caters for specialist users who are serious about the Internet and can grasp the mind-bending address system, whereas Freeserve is a bag of sweets given away in Dixons stores. The problem will only get worse as the user base expands. Dixons says it is now 'looking' at what can be done. But it's hard to see how the system can be changed, without driving customers off to the rival free services that are popping up like mushrooms. And that's when the bubble bursts.

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watchdog Oftel. He referred it to his Policy and Analysis Office, which declared it had 'no regulatory powers' and passed it to the DTI's Corporate and Consumer Affairs Office, because it is 'responsible for implementing the European Union Distant Selling Directive'.

I heard zilch from the DTI, and after two ignored reminders raised the issue with Kim Howells, the minister in charge. This finally produced a response – six months after I raised it with Oftel. 'It's nothing to do with us,' said the DTI. 'You should try the Home Office. We can't forward the papers forwarded from Oftel because we can't find any trace of them.'

Thanks to Freeserve, it's probably academic anyway, because time is fast running out for CompuServe and its owner AOL. They still charge silly prices and are struggling to find a way to offer free access to some users, while still charging others.

Dixons has just floated Freeserve and made a killing. In less than a year, more than one million people have signed on. When asked, I recommend it, but only if it

Brian Clegg wonders if business is **embracing the Web** for entirely the wrong reasons.

Lest we forget...



There's only one certainty when using computers in business – things will turn out differently from the predictions. This has been the case ever since the study commissioned 50 years ago by Thomas Watson Snr of IBM decided that the world

would only ever need a handful of those new-fangled electronic machines. Bill Gates showed it was still true in 1995 by getting it oh, so wrong about the Internet.

This unpredictability also applies to the benefits of using computers. In the early days, they were seen as a way of saving money on people. Instead, the outcome was often to perform the more complex tasks at a quicker rate. After the computers came in, the wage bills would often be just as high (if differently distributed), but the ability to process things such as banking transactions or airline tickets was much faster and across a global network.

There was a rather different misguided expectation with personal computers. Many business PCs were bought with the idea that they would enable office workers to get things done faster. While it's true

The opportunity is there to give great customer service but the **HORROR STORIES that abound show that many companies haven't yet realised its importance**

that, for example, spreadsheets speeded up routine calculations, the benefits have often been more in quality than in speed. In case anyone doubts the quality claim, I keep within easy reach a report I produced for a large company in 1980. Typewritten, with only the occasional error, it is accompanied by hand-drawn graphs. It's amazing how quickly we forget how awful typewritten documents looked.

But I digress. It's often the case that bad predictions are a result of distraction. These exciting, shiny toys distract us from the fact that computer systems are actually computer/human systems. It's the people that make things go wrong. Or rather, it's the way system designers don't give enough consideration to people.

Right now, companies are eagerly jumping into using computers and telecommunications for customer handling like hyperactive lemmings. It's impossible to

watch the news these days without hearing about another call centre being set up, or another bank deciding to provide all of its services via the Web. I am inundated with press releases about ecommerce products and systems that will control your customer base over the Net. But there's a problem. The assumption these companies are making is that this is a way to save money. And if that is all they focus on, they are going to be in trouble.

The appeal of a product or service is generally based on price, content, customer service, convenience and brand loyalty. It's often difficult to distinguish between the products provided by call centres and across the Net on price or content or convenience. Brands remain important, but the marketplace is less clear – who would have thought a few years ago that we could open a savings account with the Standard Life Bank or even Tesco?

What remains is customer service. The opportunity is there to give great service, but the horror stories that abound about spending half an hour ploughing through a voice menu, and about emails that are never answered, show that many companies haven't yet realised its importance. Such is the concentration on the technology and cost saving that precious little thought is being given to levels of service for these invisible customers – customers who can't be won over with a smile. It's about time businesses with remote customers spent far less time on technology and a lot more on people.

Finally, I have to admit to joining the enemy. I've had lots of correspondence from readers who shared my poor modem performance when their second line was provided using a DACS box. Like them, I fought the BT suggestion that the obvious solution was to move to Highway (ISDN). I was one of the lucky ones who got a second physical line, experiencing a near twofold increase in connection speed despite BT's protestations that DACS doesn't make any difference.

Now, though, I've converted to Highway. The reason being that in my business I use email and the Web a lot; and the cost balance has finally swung across. The deciding factor was the recent thunderstorms that trashed my modem. Since I had to replace the equipment anyway, the expense didn't seem quite so extreme – and anyway, who am I to argue with an act of God?

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Paul Smith decides that if **ADSL won't come to Mohammed**, it's time to move to a better area.

Moving experience



We're finally moving. After about 12 months of house-hunting, gazumping and then last-minute haggling over price, we are finally ready to move. This Friday, in fact. For Del, it represents the culmination of a long-held desire to improve our

familial lot and escape the confines of a tiny flat, made, admittedly, somewhat tinier by the huge volume of PCs, monitors, printers, joysticks, speakers, software and peripherals necessary for any decent Half-Life setup.

For me, however – and I'd thank you to keep this to yourself – it represents something far more fundamental: we're moving to an Asymmetric Digital Subscriber Line (ADSL).

When BT's current West London ADSL trial was originally mooted, I was the first in line. With only the dear readers' interests at heart, I sought, and was promised, inclusion on this trial on the basis that I lived in West London, in W14. I was patient and waited while

every Internet user. It even sidesteps data-metering, where you are charged by how much data you transmit, ostensibly a pretty reasonable way of charging for network use.

So a flat fee is particularly chirpy news. Given the features of ADSL (quick primer – those in the know may skip to end bracket – means that ADSL transfers information at 2Mb downstream and 256Kb back again and it's always on), bandwidth should become one of the lesser problems of Internet access. Well, we'll see.

Now it turns out that the £30 price tag that was originally quoted is actually somewhere between £40 and £150. And that's a wholesale price to the ISPs, not to the consumer. BT apparently forgot that there are other ISPs besides BT Interactive and Oftel had to remind them. Whether that reminder was couched in the language of local-loop unbundling has not been confirmed by either side. However, it may explain the added delay in rolling out the service, giving the ISPs an extra 90 days to prepare.

By the way, that 256Kb upstream speed may seem fast, but actually it won't help me with my main upstream problem. It's the one thing they don't tell you about websites, when they go on about global narrowcasting and drag-and-drop, wizard-driven HTML development. And that is: websites are a lot of work. They need constant attention, like an infant, and the curious or merely bored

who have visited my site will know that attention is not what the site has been getting.

Actually, I don't know whether it is like raising an infant as that pleasure is still four weeks away. Those with a calendar to hand will note the close connection of our moving house and our having a baby. Clearly this is a plot by someone to avoid having to help move heavy items of furniture but, be assured, dear reader, that your vigilant columnist will not fall for such excuses. Everyone shall pull their weight.

Everyone except Edward, that is. Edward's constant search for new, hot places to sleep has been made easier recently with the hot weather. Now that it's raining, he has found the perfect feline spot, on top of a bank of router, hubs and switches that, laughably, I use to connect my one running PC to the ISDN line. I wonder if ADSL will prove as warm and comforting.

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the trial was delayed. I checked that it would still be going ahead and received assurances.

Then the day came and, lo – I was two blocks outside the trial zone. I was gutted. I went to find out what the zone was and have, since that dark March day, subtly ('But look at the parking and the schools! And look at all the butterflies and how sunny it is!') pushed for a new property in W12. Bizarrely, my scheming worked. She fell for it, and on Friday, we'll be in the zone.

This is good because it transpires that BT's trial isn't quite as over as we'd hoped. The unofficial roll-out of consumer ADSL seems to be slipping. First, it was scheduled for the end of summer. Then October, November, and now it looks like early spring before most ISPs will offer it.

At the same time, the pricing waters have become muddied. The trial is being conducted at a flat £30-a-month fee. This was fantastic news, as it meant the end of time-metered calls, which are the bane of

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