Home net kits

Zoom last month launched what it says is the first Euro-approved home networking kit to use standard phone cable.

Its £49.99 (inc VAT) Home LAN PCI can push 1Mbit/sec down a line, even when it is being used for the phone. It will be available at PC World and other stores.

Demand is set to explode next year as fast always-on access rolls out. Phone lines are seen as a cheap way to spread access through the home.

But Compaq, which has launched a wireless net kit, is one of several firms backing HomeRF wireless networks.

● *See also pages 36 and 114*

D-day for Win2K

Microsoft says Windows 2000, successor to NT4, will ship on 17 February. Meanwhile, it is under fire for ceasing to supply backup disks (*page 24*) – and it is talking of renting software instead of selling it (*page 49*).

● ***See Point of view, page 22***

ALSO INSIDE

SHARE DEAL
Own-it-yourself ISPs page 26

MODERN MOBILES
... at Telecoms99 page 28

WHEN I'M 64
AMD's 64bit plans page 33

MYSTERY KILLER
...chip to be unveiled page 48

BT under price pressure as Hull breaches ADSL costs

British Telecom has come under more pressure over its ADSL pricing with a phone company offering 256Kbit/sec always-on access for £14.99 a month.

The offer from Kingston Communications is available at first only in the Hull area, where the company ran the UK's sole privately-owned public phone service in the days of nationalisation.

Kingston is linking the offer with a variety of potentially profitable TV and video services, which BT is not yet free to offer. But BT does have the advantage of economies of scale. It is charging its ADSL triallists £49.99 a month for a 512Kbit/sec connection. Service providers are charged between £40 and £150 for links of between 512Kbit and 2Mbit/sec – charges they have to pass on to users *and* make a profit.

Rumours of splits within BT over the issue surfaced again with the resignation of John Swingewood, head of its web and multimedia services.

Swingewood predicted at the launch of BT's ADSL trials that access would become free, paid for by advertising and ecommerce revenues.

But he insisted in an email to *VNU Newswire* that his departure was amicable. 'I have left BT after a number of great years to pursue other challenges in the rapidly expanding and exciting media industry,' he said.

Meanwhile, there are indications that ADSL will undergo the kind of rapid ramp-ups in data rates that pushed audio modems from 300bit/sec to 56Kbit/sec in little over a decade.

Two European companies announced silicon which they say will allow speeds of up to 60Mbit/sec along copper wire. It is said to combine the best of ADSL and Very Fast DSL (VDSL), a compression technology that previously worked over comparatively short distances.

STMicroelectronics and Swedish telco Telia say their Zipper-VDSL chip will be 'economically priced'.

CLIVE AKASS

Fab gear at AMD

A worker shows off their protective gear in the clean room at AMD's new chip 'fab' in Dresden, which the company hopes will end chronic supply problems. The plant will make AMD's latest 700MHz Athlon chips.

Intel disdains to recognise any real competition from AMD – but it did launch 15 new fast chips as the AMD plant opened.

● *Full stories on pages 25 and 33*

Cable plans New Year's revolution

Telewest, one of the two big UK cable companies, has begun to roll out its Active Digital TV service using set-top boxes equipped with a cable modem. However, cable services will not start until early next year.

Active Digital will be available at half of Telewest's 4.3 million homes by Christmas, the company says. Internet access will also be available by standalone cable modem, but charges have yet to be announced.

Leigh Wood, chief operating officer at rival NTL, said at the ECC99 show that the company will begin a full-scale rollout of cable services next year, but she declined to be more specific. 'We want to be absolutely sure we get it right when we do it,' she said.

Broadcom, which provides silicon and reference designs for cable modems, showed off a number from different manufacturers interoperating with the same headend using the DOCSIS standard. DOCSIS is used by Telewest and C&W, but set-top-boxes produced for NTL support rival DVB-RC, the cable version of the DVB standard used by satellite TV.

New bid to push use of satellites

Eurosky is the latest company to try to exploit the still largely untapped capacity of satellites for mass data delivery.

It has launched an IP multi-cast service to enable content providers, advertisers and companies to offer multimedia data to PC users. Eutelsat and Easynet offer a similar service.

The difference in Eurosky's system, run with Europe Online, is that the data can be received on a standard Sky TV aerial pointing to 19.2 East.

The same aerials can receive Eutelsat signals if you add an extra Low Noise Block module.

Eutelsat says 9.4 million UK homes have both a satellite dish and a PC.

Moore's Law hits the buffers

Intel is reaching the limits of the miniaturisation of current technology, according to one of its researchers.

Moore's Law, which says computing power will double every 18 months, was thought to be good for another 10 to 15 years. But it may not last that long, Paul Packan said.

A major problem is with the dopants used to carry charges, he wrote in *Science* magazine. Transistor gates use dopant atoms with either three or five outer orbital electrons spread though a lattice of silicon atoms, each with four outer electrons.

The dopants provide positive or negative charge paths which can be switched on or off by the gate voltage, an effect which forms the basis of all digital computers.

The charge the gates have to carry is roughly the same, however small they get. The result is that dopant densities have increased a hundredfold in 20 years to about one per cent of the silicon lattice.

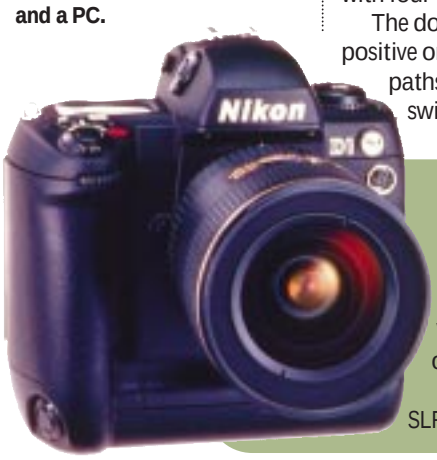
Above this level they have a tendency to clump, Packan said. 'Unfortunately the charge concentrations needed for current process technologies are at the solid solubility limit for the dopant atoms currently in use.

'New dopant atoms have been evaluated but none have yet been found to create higher concentrations of mobile charge. Thus, unless new methods are developed, future scaling of the transistor will result in a loss of total charge, an increase in resistance, and a potential decrease in performance,' said Packan.

Another problem is quantum tunnelling of electrons across insulating layers as they reach the depth of around five atoms.

Gordon Graylish, Intel's European marketing director, said Packan's paper had been published to make people aware of the limits. He added: 'We are still evaluating new materials and we can miniaturise in other ways – by increasing the number of layers in a processor, for instance.'

CLIVE AKASS



Nikon goes SLR

Here's a camera to drool over if you are one of the digital photographers who miss the WYSIWYG versatility of the humblest optical SLR.

The Nikon D1 is not the first digital SLR, but it is the first professional model to hit the market at a price less than that of a family car – though at a recommended £3,790 it is not cheap.It boasts a 2.7 megapixel sensor with the same aspect ratio as a 35mm film, but about two-thirds the size. So, although existing Nikon lenses will fit the camera, their field of view is reduced.

Details at *www.nikon.co.uk*

POINT OF VIEW

The Internet for all

A complaint you hear regularly about the Internet is that it is elitist: that poor people will be excluded because they can't afford it. I have never believed this, and especially not the implication that we should do nothing that cannot be done by all. By the same token we would still be living without radio or television, both of which were unimaginable luxuries at their birth and are now regarded as essentials.

They have probably cost us a certain sociability – we don't sit around and talk to the extent that our forefathers did. But these were the narrow conversations of closeted communities – radio and TV bring us the world and all its genius, they have enriched our lives immeasurably and the Internet will do so even further. It is a democratising force in that anyone can publish on it – you don't need the money of a Rupert Murdoch.

The problem of know-how is only temporary: children will learn how to use the Internet like they learn to go to the toilet; it is far easier than learning to talk, read or write.

Which brings me to the Government plan to let people rent an old PC for £5 a month. Laudable though it is, it misses the real barrier. The price of web-access devices is already getting close to that of a TV. And if you can afford a TV you can afford an old PC – what you may not be able to afford, even if you have a job, is today's extortionate line charges.

The Internet is simply not going to work until we get cheap, always-on links – the speed can come later. Poor people can walk the streets freely; they should have the same freedom on the Internet.

There is an air of desperation about Microsoft these days as it sees its hegemony beginning to slip away. What is it going to sell when no-one wants to upgrade any more? It is making noises about renting its software out (*see page 49*); one PC vendor told me he thought this was the real reason it is to stop giving us backup disks (*page 24*). Another explanation might be that these are the moves of Microsoft rebels trying to drive everyone to Linux.

Clive Akass on the real barrier to low-cost Internet use

Symbian link with Psion rival

Companies juggling for a chance to become the Microsoft of the emerging small-devices market are forming some surprising alliances.

The verdict is still out as to what form these devices will take, but no-one wants to lose out on what is likely to be a highly profitable area. The game is to form cross-licensing and development deals, to get a finger in as many pies as possible.

Hence last year's founding of Symbian, a joint venture between Psion and the big three mobile phone companies; Nokia, Ericsson and Motorola (Matsushita joined later).

Microsoft struck a deal with BT to produce 'Internet-enabled devices' in an effort to push Windows CE as the future standard for mobile data (*see page 28*).

Now Symbian and Psion's arch-rival Palm Computing (owned by 3Com) has announced its intention to co-operate in enlarging the wireless telephony market.

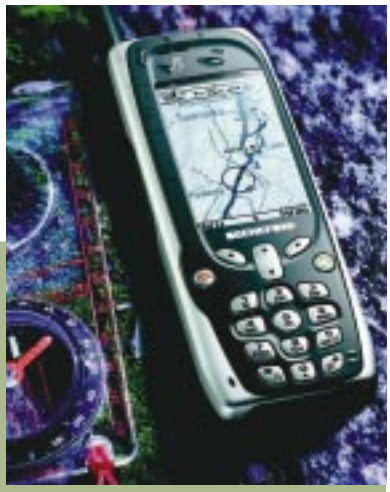
This cross-licensing deal could provide the best of both worlds: a device small enough for the pocket yet with a sophisticated operating system that can get you on the Internet and allow you to access email. But Palm has said nothing about using Symbian's Epoc OS.

In a further complication, Nokia and Palm announced an independent development and licensing deal, to create a new pen-based product using the Palm OS.

Then on 15 October Ericsson, IBM, Lotus, Oracle, Palm and Symbian announced that they are to foster mobile WAP applications.

The companies will push the introduction of General Packet Radio Service (GPRS) to allow faster mobile access. Quite how this all pans out, only time will tell.

WILL HEAD



All of Europe in your hand

Finnish vendor Benefon has introduced a device that combines electronic maps, a GPS navigator, a pen-driven personal organiser and a dual-band GSM phone.

The tiny 129x49x23mm Benefon Esc weighs only 150 grams and is water and shock resistant. Maps (including charts) from around Europe can be downloaded to it from any PC with a web browser.

It uses a 12-channel GPS receiver and an integral high-gain flip antenna. It even tracks Benefon Esc users and will guide you to them. An emergency button can also send an SOS and pinpoints your location.

The dual-band GSM 900/1800 phone's range can be extended with an optional high-gain cross-country antenna. Standby operating time is up to 10 days. UK price and shipping have yet to be announced, but around £100 more than a conventional phone is a sensible guess. Details are at *www.benefon.com*.

SIMON ROCKMAN

● *Telecoms99 report – page 28*

Aroma with a view

Digital smells are about to bring a new layer of realism to the web, says a California start-up.

A synthesiser called an iSmell will smell-enable web sites, movies, games, email and TV – henceforth to be known as Smellyvision. The iSmell will be sold as a PC peripheral and digital scents will be licensed to developers and designers.

Dexter Smith, president of developer DigiScents, says the idea opens up a new channel of communication. He foresees smelly sites called snortals and is offering early access to the technology to attract developers of smell-enabled products.

www.digiscents.com

It's the New York office. Seems they had beans for lunch.

short stories

PC WORLD LAUNCHES MOT FOR COMPUTERS

An 'MOT' scheme has been launched by PC World to help users streamline or upgrade their PCs.

The £39.99 Healthcheck service covers PCs from any vendor and includes anti-virus and Y2K checks.

PC World marketing director Martin Dalgleish said staff had been trained up for the purpose. Asked if it was a way of getting people to pay PC World to tell them what to buy in its stores, he said: 'This is all about creating good customer relationships.'

VISIONEER PLUGS EASE OF USE WITH SCANNERS

Visioneer, which was taken over by Primax, is back in Europe with a range of three new scanners.

The One Touch 600x1,200dpi flatbeds are said to offer the press-button simplicity of a fax machine. The £99 model 7600 will scan, copy or fax at the touch of a button; the £199 8600 adds buttons for OCR and email. Also launched is an improved £199 Paper Port platen scanner.

DAN RETAINS TITLE

For the second year running 4,000 readers of *Which?*, the Consumers' Association magazine, voted Dan the most reliable PC maker. Dan marketing executive Vijay Khattri put success down to 'careful attention to quality'.

FAST ALL-IN-ONE

Brother claims its MFC-9670 combined copier, fax, scanner, laser printer and PC fax system prints twice as fast at 12 pages per minute as its nearest rival. Street price will be about £800 inc VAT.

Brother 0845 6060626

This message will self-destruct

Have you ever sent an email that you wished could be destroyed after a specific period of time? Several firms are working on self-destructing email, so that companies and individuals can keep information on a short leash.

All of the companies selling the new tools acknowledge that their solutions are far from perfect, but they expect organisations to buy the tools despite the flaws.

They are trying to answer the concerns about casual office email messages that may be used against a company in litigation. There have been many instances in the anti-trust case against Microsoft; lawyers uncovered many flip and caustic emails in which staff used words like 'kill', 'pollute' and 'subvert' about competitors and their products. Microsoft countered with similar examples from rivals' email.

Maclen Marvit, chief executive of Disappearing Inc, is building tools that manage the lifetime of email. So is Jeff Mulligan, chief technical officer of QVTech. 'A telephone message is kind of ephemeral; it just goes away,' Mulligan said. 'We're trying to capture that effect.'

Infraworks is developing a tool called InTether, which provides the same long-term protection to all documents, not just email messages. This system is integrated with the Windows operating system to ensure that a document's creator can determine how many times a document is read or printed.

Intel, which sees ebusiness as a way to sell expensive processors for servers, is selling $1bn (£625m) worth of chips a month online to PC vendors. That's nearly half its annual sales of roughly $30bn – a proportion that is expected to approach 100 per cent within a year. Intel chief Craig Barrett has been touting the web's explosive potential at trade shows. The strongest growth in ebusiness is expected to be among companies linked to each other.

Cisco is pushing the same message. CEO John Chambers says its online sales are 70 per cent of total and will rise to 90 per cent by the end of 2001. Hewlett-Packard is gearing up to go the same way.

Tim Bajarin
letter from Silicon Valley

Microsoft fights piracy by witholding media

Massed ranks of PC vendors were so concerned at how much money Microsoft was losing to piracy that they begged for an end to the practice of bundling branded copies of Windows with PCs, the company claims.

Or in the wondrous prose of a Microsoft memo sent to UK vendors: 'We have received enthusiastic feedback for discontinuing media as part of our required deliverables.'

Microsoft would respond to these 'new piracy concerns' by ceasing to supply branded copies of Windows 2000, NT or 9x for bundling from 1 November, the memo said.

This gave vendors just days to get ready and their profound concern for Mr Gates' bank balance did not stop them from protesting. The deadline has now been put off until January.

But from then PC buyers will get either no backup disk, or a 'BIOS-locked recovery disk' – an unbranded CD which works only with a BIOS carrying the vendor's ID.

Alternatively the backup can be on a special partition on the hard drive – useless in the event of a disk failure. One furious vendor said: 'If a complete novice screws his system up, he does what... nip down to the pub to get his friend's pirated copy? Talk about being hoist with you own petard!'

Some vendors *are* concerned at being undercut by back-street operations assembling and selling systems with pirated software.

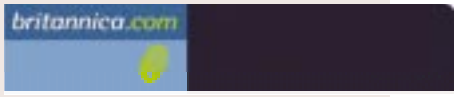
Ironically, these pirates will now be indistinguishable from legitimate dealers. And small vendors who do not buy direct from Microsoft will still be able to buy branded backups.

One big vendor said: 'This will do nothing to stop large-scale piracy. If someone wants a copy of Windows to copy and sell, all they have to do is go to the shop and buy one.'

A Microsoft spokesman said the change was 'for the benefit of users and vendors'. He claimed piracy costs jobs, puts up taxes, and finances the drug trade (drug barons not having enough money of their own).

Clive Akass

Britannica rules web



Encyclopedia Britannica's website was swamped for days after it scrapped the subscription fees for online visitors.

It received millions of hits and many users were unable to access it. Sales director Jorge Cauz said: 'We are a victim of our own success.'

He added that extra staff and computer hardware were being deployed to cope. Britannica hopes to generate revenue from advertising and trade – someone reading about telescopes, for instance, will be offered the chance to buy one. A UK Britannica site will go live next year.

Mapping finds cheap route

Prices of new mapping software from Directions have plummeted thanks to a fall in the price of the Ordnance Survey/ Navtech on which they are based.

InfoMap 7.0 comes in a £24.99 Street Finder version and a £49.99 Street Router version– which offers routing, a postcode locator and a GPS position tracker. A £99.99 Professional version includes import and statistical tools, which Directions says make it one of the best geographical information systems.

www.directions.ltd.uk

Intel shifts to 0.18microns

Intel officially launched 15 new processors based on a 0.18micron microstructure, which allows faster speeds and lower power drain.

They all use power-efficient copper interconnect and an advanced-transfer cache, giving a claimed 28 per cent speed boost over current chips at the same clock speed.

They include mobile Pentium III chips clocked at 400, 450 (as we reviewed last month in a Hi-Grade Notino) and 500MHz. The 400MHz version operates at just 1.35volts, a new low, and is targeted at mini-notebooks.

All three pack the ability to halve their clock speed when a mobile is running on batteries. Sadly this also cuts processing speed by 50 per cent.

The chips do not use Geyserville – a radical new way to cut power drain by dynamically switching a chip's operating voltage when running on a battery. This has led to speculation that Intel is having problems with the technology.

A tiny voltage drop can lead to a big increase in battery life, because drain is proportional to the voltage squared.

Also launched were desktop PIIIs at 533, 550, 600, 650, 667, 700 and 733MHz. The 500 and 550MHz versions also come in the tiny flip-chip package for smaller machines.

These chips can be used with the 810E, the 440BX and the 440ZX chipsets. The 820 chipset will also support them – when it ships. Intel has admitted it has had glitches in memory reads and has yet to announce a shipping date.

Motherboard makers say they expect 820 boards to ship first with only two RAMBUS memory slots, as the glitches appear to affect only three-slot implementations.

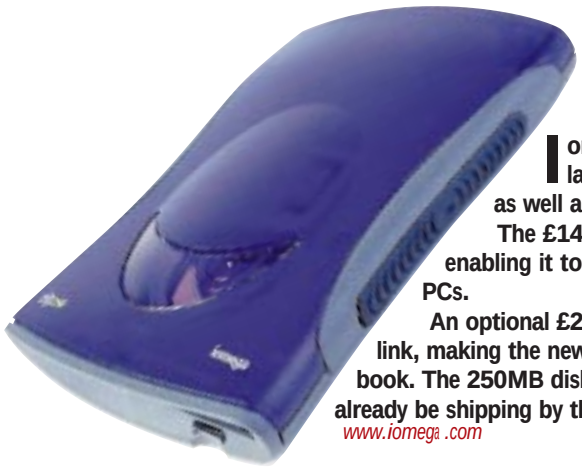
Three new PIII Xeons have also been launched, targeted at high-end servers. They use the 840 chipset, with support for the 133MHz bus, AGP4x, and 2GB of RDRAM.

short stories

NextPage has updated its XML-enabled LivePage suite of tools for simultaneous publication on intranets, websites and CD-ROM or DVD-ROM. Ecommerce facilities include the ability to sell data by subscription or pay-per-view. LivePublish Server 2.0 pricing begins at $4,995 for 10 users.
www.livepage.com/livepage

TRAILER TRASH
NCR has built a smart eco-friendly rubbish bin that uses bar codes to separate waste into bottle, can and food disposal areas. It also tracks your buying habits from the waste. NCR believes this may persuade supermarkets to sponsor the bins.

TWO INTO THREE GOES
AEA Technology is the latest company to offer software that translates 2D pictures into 3D. A standard edition costs £40 and a professional edition with optimised VRML costs £250. There's a free trial version at *www.geometra-3d.com*.



Zip zips 250MB

Iomega has produced a sleek new case for its latest Zip drive, which takes new 250MB disks as well as the older 100MB disks.

The £149.99 (inc VAT) device packs a USB link, enabling it to be used with Apple's latest Macs as well as PCs.

An optional £24.99 PC Card acts as both a power and data link, making the new-look Zip much easier to use with a notebook. The 250MB disks cost £14.99 (inc VAT). The devices should already be shipping by the time you read this.
www.iomega.com

PC vendors cleared of profiteering

Claims that PC prices are too high have been dismissed by the Office of Fair Trading (OFT) after a 10-month analysis of the UK market.

It also dismisses as unfounded, claims that British buyers pay more for PCs than other Europeans; it says UK PCs cost more because UK users want more. And it concludes that no single vendor has 'market power' in the home PC market.

OFT director general John Bridgeman said the UK's 'dynamic and innovative' market and continual improvements in quality were 'ensuring that prices are falling over the long term'.

Trade and Industry Secretary Stephen Byers said: 'If buyers shop around they can get deals that match the best prices in other countries, and they get better choice than computer buyers in France or Germany,' he said.

The findings were dismissed by the Consumers' Association, which said prices are driven by the vendors rather than users' specifications.

Andy Brown, analyst at IDC, said: 'The retail mark-up of PCs is still very high. If you are looking specifically at low-spec PCs perhaps it is competitive, but not when compared to the other large markets of France and Germany, which offer cheaper and a wider range of PCs.' He said the Dixons Group had a stranglehold on the retail market and there were not enough alternative sales channels.

Dixons chief executive John Clare welcomed the findings as offering reassurance to people buying PCs at Christmas.

He said: 'With Internet-ready PCs now available at £399, consumers can be reassured that they are getting excellent value.'

JAN HOWELLS

Free shares fail to entice UK sign-ups

Another 'own-it-yourself' Internet service provider has started up amid signs that British users are less than overwhelmed by free share offers.

MyISP, the fourth 1999 start-up to offer shares to sign-ups, seemed to be promoting itself as a get-rich-quick scheme as much as a service.

Chief operations manager Simeon Quarrie claimed preliminary marketing had been so effective that 50,000 people had signed up before it had even gone live.

Twenty thousand of these will get 10 thousand of a total 2.5 billion units, which will 'be converted into shares' on floatation, the company says. The next 500,000 will get 1,000; a million will get 500, and the next two million will get 200.

The company cites an estimate that one sign-up is worth £1,000, making MyISP worth £3.7bn if people really did sign up in these numbers.

Quarrie said other free-share ISPs had made the mistake of going public too early. 'We will only do so when we are satisfied we will get a good price.'

However, rivals Totalise, themutual.net and Blue Carrots have failed to attract big numbers. Blue Carrots

won't reveal figures, but it has taken to giving shares to people simply for using its site. Managing director David Dobson said: 'We are moving away from being purely an ISP to [being] a portal.'

Totalise, which has 30,000 users, is more frank. 'We would have liked six figures by now, but the market is a confusion of offers and so it is difficult to get the message across,' said chairman Peter Gregory.

He added that all the user numbers claimed by free ISPs would add up to three times the world's population.

Unlike its rivals, Totalise gives its users real shares that can be traded immediately – 250 for signing up and then an average of 3,500 more shares over two years.

'Free shares is an interesting concept,' said Nick Gibson, an analyst with Durlacher. 'But it's a complicated area and it all depends on how the shares are structured.'

Clive Akass and Angela Soane

Stray duck looks to cut bill

Telecoms provider Telinco – which pioneered the practice of cut-price Internet access – has launched a service that it claims offers the cheapest Internet access, with no strings. Stray Duck does not require users to sign up with another phone company and offers a free minute for every paid-for minute online. You get 0800 freephone access every third week, for a time equivalent to your average online usage for the previous two weeks.

Commercial director Murray Treece says that by registering the number as one of your most used with BT, you get a further 20 per cent discount. This works out cheaper than Freeserve or AOL if you use the Internet for five hours or more each month, he claims.

Telinco provided the pipes for *The Sun* newspaper's CurrantBun site and in an unrelated move, CurrantBun has been semi-detached from the paper and revamped as a portal. The aim is to attract a wider range of users. *The Sunday Times*, a *Sun* stablemate, gave away Bun access disks.

www.strayduck.com
www.bun.com

Virgin woos first time e-traders

Virgin has launched a service to help small businesses to set up online.

Virgin Biznet claims to offer everything a small business needs, including consultancy, registering a domain name, providing access, building the site and and creating a merchant account to enable credit card payments to be processed.

Only three in 100 of Britain's small businesses are estimated to be online. 'They know they should be on it, but they don't know where to start,' said Mylene Curtis, managing director of Biznet. 'This is where we come in.'

The full Biznet package costs £348.95, plus £89.95 a month to run the site. Businesses sign up for a 12-month contract. When that time is up, they are free to take the site and run it themselves.

A self-build package, which includes domain name registration, costs £149.95 plus £29.95 a month maintenance. Biznet takes 4.5 per cent of all credit card transactions. Curtis estimates that an average site would cost £6,000 from an outside consultancy.

Biznet will also provide a virtual management team, offering legal, financial, marketing and human resource advice.

Jan Howells

telecoms shorts

Third-generation mobiles may be three years away but concept designs are already with us. NEC showed a videophone consisting of a standard-sized handset with a plug-in 352x288 pixel display showing a crisp image at 20fps on a 64Kbit link.

PDA PHONE
Motorola's P1088 smartphone, which packs organiser features, ships here in early 2000. Motorola is a Symbian shareholder, but this uses a proprietary Java-enabled OS for which Motorola will be releasing a developer's kit. It supports both POP3 and SMTP email.

The 192x272 touchscreen shows 16 levels of grey and accepts text input using Lexica handwriting recognition. GSM is limited to 9.6Kbit/sec. The device links to a PC via a cable or infra-red and TrueSync synchronisation software from Motorola-owned Starfish.

Ericsson showed this prototype phone/MP3 player using a 32MB memory card capable of holding about eight tracks.

NET PHONE
Samsung announced a raft of handsets including the WAP-based SGH-810, the SCH-M100 Internet phone and the SPH-M2100 which packs an MP3 player.

Simon Rockman reports from Telecoms99 in Geneva

Microsoft misses the boat

Microsoft's micro-browser will help make the company a major force in mobile phones, says Bill Gates.

But no amount of giving software away free to emulate the Netscape/Explorer battle is going to change the fact that the industry has already opted for Wireless Application Protocol (WAP). Microsoft, in short, has missed the boat.

WAP is a cut-down HTML, taking out big-screen features such as colour and frames and coping with dropped mobile links.

Microsoft says WAP is restrictive because so much HTML content is available; but the fact is that just about all of this content would have to be redesigned to fit the four-line displays on the Sagem and Samsung phones which run its micro-browser.

Microsoft also claims that its software integrates better in a corporate environment with an exchange client; but third-party applications do this for handsets which will be available for WAP, like the Nokia 7110, the Ericsson R320 and the Motorola P1088 and P7389 – and these will offer much more than the Microsoft-run handsets.

Microsoft boasts of powerful allies such as Samsung, Sagem and BT but these are less than they seem. Sagem's market share is insignificant; Samsung has a good presence in the mainly US CDMA market, but its share of the majority GSM market is a tenth of that of major players.

And these are unlikely to cede control of crucial software for mobiles which is why Nokia, Ericsson and Motorola bought into Symbian. They wanted not just access to the operating system but to own it. The recent Nokia-inspired deal between Palm and Symbian pushes Windows CE far into third place in the mobile phone market.

Ericsson, Motorola and Nokia between them produce 70 per cent of the world's GSM handsets and their share of high-end corporate handset sales is higher still.

A lot has been made of the news that BT and Microsoft will co-operate on developing mobile products and services. The deal was actually with BT Mobility Solutions, a small division which develops custom solutions for corporates. BT's own mobile network, Cellnet, is doing nothing on this project. It's like Ford putting out a press release saying 'Texaco to sponsor Ford Motor Sport' about a single Texaco garage in Dagenham whose owner races a Fiesta at weekends.

WAP is immature, but the people who matter are dedicated to it, and the best Microsoft can hope for with its microbrowser is a 25 per cent market share

I'm not a Microsoft-hater, but neither do I think that everything it touches turns to gold. Sometimes Microsoft should give up early.

Global coverage for less

The new Globalstar satellite service, part-owned by Vodafone, has started rolling out. It uses the smallest-yet satellite phones: the Ericssson R290 and Telit Sat 550.

At 350g they are big compared with GSM phones and won't work indoors, but they will work in the vast majority of places around the world (except the poles).

The system combines the signals from 40 (rising to 48) satellites to maximise quality and coverage, reverting when possible to a local GSM net. Our initial tests showed the quality to be better than other satellite systems.

Globalstar reckons it will have up to a million users by late 2000, despite Iridium's failure to attract subscribers.

Calls will cost between 50p and £1 a minute – in line with the most expensive GSM calls; other satellite networks charge £6 a minute. Vodafone expects to start selling the phones next year.

Flying on Kite

Blue Kite claims its compression software gives mobile net links the performance of a fixed one. Service providers need to have a server running BlueKite. Some image quality is sacrificed but Blue Kite claims a fivefold boost in apparent speed.
www.bluekite.com

AMD Sledgehammers IA-64

AMD is to launch a 64bit rival to Intel's forthcoming Itanium chip, formerly known as Merced.

The processor, codenamed Sledgehammer, will run existing 32bit applications native and a 64bit mode will use an extension to the standard x86 instruction set.

Itanium, by contrast, uses an entirely new IA-64 architecture requiring applications to be recompiled and even rewritten for optimal performance.

Fred Weber, AMD's vice-president of engineering, gave details of the new chip at the Microprocessor Forum in San Jose. He said: 'No other 64bit solution has full x86 32bit and 64bit compatibility.'

Microsoft and other operating system vendors had been warned about the new chip to ensure that their code can take advantage of it, Weber said.

AMD will also introduce chip-level multiprocessing – putting two or more processors onto the same die. This will provide better performance than Itanium at clock speeds above 1GHz, Weber said.

AMD is evidently banking on the fact that IT managers will like the fact that they do not need to upgrade their 32bit apps to take advantage of Sledgehammer's 64bit processing, a major advantage of which is fast addressing of huge memory spaces.

But Intel's Gordon Graylish, product marketing director for Europe, said he did not think the sort of companies which needed 64bit addressing would be concerned with the AMD chip's 32bit facilities. 'They are the kind of people who need to keep the entire Chinese phone directory in memory,' he said.

The first Sledgehammer chips are expected to ship in 2001, at least six months after Itanium.

... and IBM puts in its 64 bits' worth

IBM also announced a 64bit processor, the Power4, which will be binary-compatible with its PowerPC chips.

The new processor will use 0.18micron technology and copper interconnect – and, like one version of AMD's Sledgehammer (*see left*), it will pack two 1GHz processor cores on one die.

The processor is expected to be used only in IBM's own computers. The first products to use it are expected to launch in 2001.

Intel gives ARM a shot in the arm

Intel is extending its licensing of ARM chip designs in a major boost for the UK developer.

ARM shares rose 15 per cent on news of the deal which gives Intel use of a wide range of current and future chips.

ARM, a spin-off from the old Acorn group, provides core designs around which licensees pack task-specific logic for a range of devices.

Most famous of these hybrids are the StrongARM chips developed by Digital; Intel gained rights to them when it bought Digital's chip manufacturing arm.

ARM licensing will allow Intel to compete more effectively in the market for digital appliances, which are widely expected to outsell computers using Intel's classic x86 chips.

ARM chips have the advantage of combining low power consumption with high performance, making them ideal for handheld devices and other mobiles. They also lack the legacy of backwards compatibility needed by x86 designs.

Ironically, NatSemi is bidding for a similar market with system-on-a-chip designs using x86 cores.

Current designs clock between 60MHz and 175MHz but prototypes are running at up to 300MHz. Thomas Franz, vice-president of Intel's computing enhancement group, said ARM architecture had proved a leading platform.

'The high-performance, low-power Strongarm microprocessor family is essential to Intel's success in the portable, handheld and applied computing market segments,' he said.

Athlons accelerated at AMD's Fab new factory

AMD took a little Hollywood magic to Dresden with the opening of a chip plant aimed at ending what it calls 'yield issues' – the kind of supply problems it had with the K6.

Fab 30, so called because it began production 30 years after the founding of the company, will produce Athlon processors using 0.18micron copper technology acquired as part of AMD's strategic alliance with Motorola.

Built with the aid of a DM800m subsidy from the German Government, the Fab will employ 1,800 workers, giving a boost to this depressed region.

AMD chairman Jerry Sanders III said he believes AMD can make significant headway against Intel.

He revealed that Fab 30 had already produced the first pre-production 900MHz Athlons but he gave no shipping date. It seems we will have to wait until well into next year for the first 1GHz processors.

AMD's fastest current chip is an Athlon 700MHz, but it has decided to hold off releasing its 750MHz for a while.

JASON JENKINS

3D ART bowls viewers over

Picture this: it's the Superbowl, highlight of the US football season. Pre-match animation shows Fox Sports' helicopters flying over the ocean to the Miami Stadium. Skudding waves catch the dying rays of the sun.

'Where did you get the ocean footage?' asked Fox Sports, which commissioned the sequence from Digital Dimensions. Easy – it used computer-generated pictures, utilising photorealistic 3D ray tracing from Advanced Rendering Technology (ART) – much cheaper than filming the real thing.

Daniel Hall, who co-founded ART in 1995 with fellow Cambridge PhD Adrian Wrigley, believes the standard of photorealism in that footage hasn't been matched elsewhere.

It is no small boast. In the 1980s the founders were doing research with the Rainbow Graphics Group at Cambridge University. Now their company, which shipped its first product in 1998, is valued at $24m (£15m). 'We are the first to adapt this technology to a hardware implementation,' said Hall. 'A number of companies have developed comparable technologies, but not whole product solutions.'

ART investors include venture capital groups Amadeus Capital Partners, 3i and Cambridge University. An early customer for its networked RenderDrive 2000 was San Francisco-based Xaos, which used it for TV commercials and, notably, for creating trailers for US TV studios, ZDTV.

ART's £20,000 19in rack-mounted unit does ray-traced rendering more than 25 times faster than software running on high-end microprocessors.

This obviously appealed to Diagrams, the UK graphics house, which has used the technology as an alternative to model-making and photography on product packaging for giants such as Beechams and (*pictured above right*) Boots.

'We are essentially the camera of the animation process,' said Hall. 'We want every application to drive that camera.' The interface is from 3D Studio MAX and other application interfaces will be released shortly for the diverse industries that will use it: film and TV animation, games productions, product visualisation and architecture.

Other applications include visualisation at the top end of the consumer market: high fashion, jewellery and silverware. Ray tracing will be used in the lucrative business of photographing top models in the next season's designs – not only dramatically reducing costs, says Hall, but taking the guessing out of the game and creating confidence in a future product.

The same goes for creating new buildings – only a true-to-life representation will stop it looking alien to the viewer. Hall sees his ray tracing as a big boost to customer acceptance.

'Our technology is key to bridging the gap between what people imagine the future might hold and what is technically possible. In computer games the realism of the graphics is quite limited and doesn't live up to the quality you look for in film special effects. In the future, technology based on our ray tracing process will allow you to navigate worlds that are truly realistic – even if fantastic,' he said.

ART offers animation studios rendering over the Internet. 'One of the problems is the bandwidth limitation of most Internet connections. We are the first able to do rendering to this quality. Scalability of the solution is a big issue. When you have big sites and lots of customers, you need a solution that will scale to that. Other current rendering solutions don't.'

www.art-render.com

Caroline Swift reports from **Silicon Fen**

Crowded sky for Apple's AirPort

Cheaper alternatives make a successful take-off difficult for AirPort and the 802.11 protocol.

The success of the AirPort wireless networking option on Apple's latest Macs (*see below*) is one of price and packaging rather than technology. Zoom offers PC implementations of the same 11Mbit/sec 802.11 protocol (essentially wireless Ethernet) used by AirPort; and Compaq is pushing similar technology as an option with its latest business models.

AirPort does have the advantage of being more or less plug and play, according to Apple (we have not had the chance to try it). Current PC implementations tend to be designed for installation by systems professionals at offices and corporates.

But 802.11 itself faces competition from the Shared Wireless Access Protocol (SWAP), developed by the HomeRF organisation. This supports both DECT voice traffic, as used in wireless phone handsets, and a simplified version of 802.11 offering, in the first instance, a data rate of 1.6Mbit/sec.

Crucially, SWAP is said to be cheaper than 802.11, which currently works out at about £200 a node, and £300 more for the base station; AirPort is cheaper, at £79 and £239 inc VAT for a node and base station.

SWAP is expected to start at around $100 a node (£62.50), which is still a lot more expensive than plain old Ethernet. Many companies, including Intel and Zoom, are pushing easier and potentially still cheaper networking, based on phone wires. All these companies are pitching for the home network market, which is certain to explode when always-on, broadband Internet access becomes widespread from next year. Wireless networking would clearly be a winner if it can be made cheap enough because it avoids cabling hassles.

Compaq is about to launch a home-networking product, according to business unit manager Antione Barre. He declined to give details, although they should have been announced by the time you read this. However, Compaq is a member of the HomeRF organisation; so is Proxim (*see page 114*), which also has SWAP products in the pipeline. Other SWAP backers include Intel, IBM and Motorola.

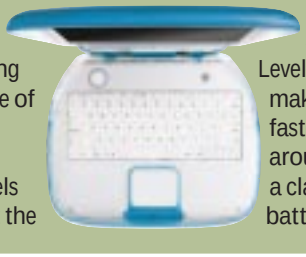
Products using a 10Mbit/sec version of SWAP called Wideband are set to launch late next year. But there are claims this will exceed its allotted bandwidth at 2.4GHz, and that it will interfere with other devices using the same frequencies. Zoom UK's Geoff Jackman said: 'Why allow interfering devices when there is another technology [ie 802.11] which offers all the benefits and far less significant negative effects?'

● *Wireless networking feature – page 114*

G4 hiccup as new Macs launch

Apple has launched a raft of new products, claiming that they outperform equivalent PCs – but got involved in an embarrassing kerfuffle about its flagship G4.

First, blaming low yields from chipmaker Motorola, it downgraded available clock speeds from 400, 450 and 500MHz to 350, 400 and 450MHz respectively. Then it was forced into a partial climbdown after declaring that, because of rising chip prices, the slower models would sell at the same price as their equivalents in the original range.



Interim CEO Steve Jobs then announced that existing orders would be fulfilled at the original prices. It was unclear if this covered UK orders.

Prominent among the new models is the iBook, arriving in Britain some weeks after its launch in the US. It uses a 300MHz G3 processor with 512KB backside Level 2 cache, making it one of the fastest notebooks around – and, with a claimed six-hour battery life, one of the most power-frugal, says Apple.

It is barely portable at a hefty 6.6lb, but Apple expects it to be bought by students and home users mainly for the desktop.

Launched with the iBook were three new iMacs at PC-level prices, clearly with an eye on the Christmas market. Two of them include video-editing features – see reviews on pages 66 and 67.

Initial shipments of the new Macs all use MacOS version 8.6, but buyers will be entitled to a free upgrade to MacOS 9.0, due to ship by the time you read this. New features include file encryption and an improved Sherlock search engine.

Apple fans who claim the Mac gets everything first should note that a few features are copied from Windows: support for multiple-user profiles, remembering log-on names and passwords for signing on to sites, automatic software updates – and, as a replacement for Chooser, something very similar to Network Neighbourhood.

www.apple.com/uk
0870 600610

Japanese culture spawns a hybrid

Tim Bajarin says you can see the future in Akihabra, where laptops are merging with desktops.

At an early stage in my career as an analyst, someone told me that if I wanted to view the trends in portables, I had to go to Japan every year or so and spend some time in the Akihabra district of Tokyo.

As you perhaps know, Tokyo is broken up into many distinct districts, with its most famous one being that of the Ginza area.

This is where all of the big department stores are located and it is a real shopper's paradise. However, if you are more interested in technology and consumer electronics, then the place to visit is Akihabra. So, every time I visit Tokyo, I make a beeline over to this techie wonderland and browse as many high-tech stores as I possibly can.

In Japan, desk space is very limited, so for years, PC makers have been working on models much smaller than traditional desktops.

They have also created laptops – especially ultra-sub-notebooks – specifically for use in Japan. The Sony Vaio 505, which has been such a big hit, was originally designed for the Japanese market.

Various Japanese vendors, such as Sharp and NEC have followed suit, and these ultra-lights are now the hottest-selling laptops in Japan. At the desktop level, the Japanese have also taken a leading role in design and created the first generation of desktops that use flat-panel displays.

Of course, both of these types of computers have found their way into the US and are just now starting to catch on. So, as I walked through the various electronics shops in Akihabra, I started to look closer at the newer models on the shelves, to try and get a feel for any coming trends.

It quickly became clear that there was a trend, led by two major Japanese companies. They are making what are called hybrids: the vendors take a laptop motherboard, put it into a small stylish casing and connect it to an LCD screen.

A good example of this is the new Sony Slimtop PCV L400. The design and features of this model are sure to catch the attention of business people and consumers who have limited desk space. This is especially appealing for use on counters in homes, small businesses and student dorm rooms.

This Sony system takes up less then two square feet of desk space. Its freestanding LCD panel features multiple hinge points, to help users achieve optimal viewing angles for the colour 14.1in LCD panels.

The other vendor pushing a hybrid model is NEC. It takes a different approach, an all-in-one design called the PowerMate 2000, which is aimed at businesses and IT departments. NEC plans to market it to the corporate sector in the US as an executive desktop.

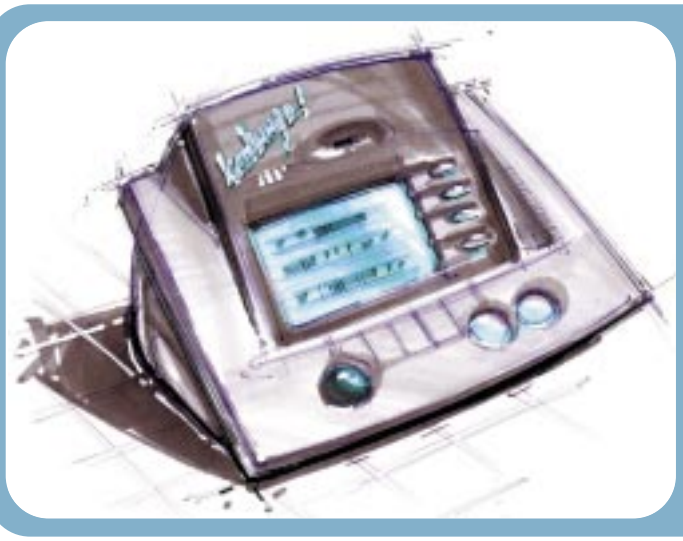
These two models are just starting to come into the US now and various portable vendors see this hybrid as the next major play for their portable divisions in the future.

The real play for these portable vendors is to create innovative mobile computers that are also modular. Of course, they also need to become more creative with their current laptop designs and although they may not want to create orange and blue models like Apple has done with the iBook, they do understand that industrial design in laptops will become another trend to which they must react soon.

But, the idea of using motherboards from the laptop divisions in desktops has a lot of promise. Although it probably ruffles the feathers of the desktop divisions of the big players, this inevitable trend towards hybrids is such a real opportunity that they are bound to find common ground for both groups to work together.

The only drawback to the hybrids of today is their relatively high cost. Because of the flat-panel screens, they average about $2,700-$3,000 (£1,630-£1,800).

But as competition heats up and the availability of flat-panel displays rises, I fully expect to see these hybrids selling in large quantities by mid-2000 and priced under $2,000 by then.



Internet start-up Kerbango plans to reinvent the radio. Its new website is a portal for Internet radio stations, but it plans to go a stage further by producing an appliance that can pick up web broadcasts.

It will have a 'tuning' knob just like a regular AM/radio – pictured is one of the company's concept designs.

Stations across the world will be grouped according to themes and accessed by preset buttons; the device may also be able to record shows.

Internet links will be via a modem, cable or DSl. The device will incorporate RealNetworks' G2 software for playing streaming media.

Kerbango president Jim Gable ran Apple's operating system division for years. He is a solid veteran and a great asset to a venture such as this.

www.kerbango.com

Apps builders look to Linux

Linux will soon be able to make a major assault on Microsoft's dominance of desktop software, judging by figures from development-tools specialist Inprise.

The open-source operating system lacks the applications to make much headway on on the desktop – although according to one survey it runs nearly one in three web servers.

But more than three in four of 24,000 Linux developers surveyed by Inprise planned to work on code for applications rather than for servers. Many were also Windows developers looking to transfer to Linux.

Inprise, parent of the better known Borland, has now launched a project called Kylix to produce a rapid development environment for native Linux applications.

Kylix will build on the strengths of Borland's successful Delphi and C++ Builder. 'People who have been used to using our components to build Windows applications will be able to use the same ones under Linux. There will only be slight differences due to differences between the operating systems,' said Michael Swindell, Inprise product manager.

Inprise has just released Visibroker for Linux for enterprise-level applications; a preview release of its J Builder just-in-time Java compiler for Linux is now available for download from *www.borland.com.* And Inprise has announced a strategic alliance with Corel to accelerate adoption of Linux applications.

Kylix could allow the company to get something of its own back on Microsoft, whose visual-programming products broke the dominance of Borland's early ground-breaking development tools.

Borland recouped a lot of ground with Delphi, which has just hit version 5.0; the joy of Kylix is that Microsoft can hardly bring out a rival without undermining its own flagship operating systems.

In June Microsoft paid Borland $100m to settle long-standing patents issues and for the continued use of its technology; it also agreed to take a $25m stake, giving it an oblique investment in Linux.

Swindell says that there has been no pressure from Microsoft over Borland's Linux strategy. 'We work very well together,' he said, diplomatically.

Clive Akass

www.inprise.com

Borland is not the only company seeing a future in providing development tools for Linux.

Omnis Studio for Linux, one of the first rapid application development environments for the open-source platform, is now available free.

The launch means Omnis can offer client-server and web tools on the Linux, Windows and Mac platforms. Studio offers native database support for leading database systems including IBM's DB2 Universal Database for Linux.

'We see Omnis Studio as the answer for Visual Basic programmers and customers looking to Linux to solve performance, stability and ease-of-use problems,' said Ransom Love, president of Caldera Systems.

You can download it from *www.caldera systems.com or www.omnis-software.com.*

Microsoft to fight back myth-makers

Microsoft has acknowledged that Linux has got too big for it to ignore – by posting a 'Linux myths' section on its website.

It cites figures putting NT4 ahead on performance, and says claims that Linux has better scalability and reliability are unproved.

Microsoft, which had several recent security scares, is careful to point out that no system is totally secure. But it claims Linux uses the same security model as the original Unix implementation, which was not built from the ground up to be secure.

It says Linux has far fewer desktop applications, and those that exist are 'less intuitive' than Microsoft equivalents.

Finally, even Linux's claim to be 'free' is untrue, says Microsoft. Publishers like Red Hat charge for services which 'are likely to be at a premium.' NT4 has a total cost of ownership 37 per cent lower than Unix.

● Red Hat is widening its UK sales operations by appointing Computer 2000 as its first distributor here. It will sell all RedHat products, including the latest Linux 6.0.

Bundles of value

Symantec is offering its flagship Norton utility products in a bumper bundle called SystemWorks 2000. It claims the deal is more than a marketing ploy because the suite has an unprecedented level of integration between the individual products.

The standard edition, costing £85.99 inc VAT, includes full and latest versions of Norton Anti-Virus, Norton Utilities, Norton CleanSweep, and Norton Crashguard, the LineAdvisor support pack and a free six-month subscription to Norton web services, including automatic updates of all installed drivers and other software.

A Professional Edition, at £20 more, includes the Norton Ghost disk cloner and Norton 2000, a Y2K debugger. Norton Anti-Virus 2000 is available alone for a recommended £35 inc VAT.

● Pictured is Norton's dashboard monitoring various system parameters; you can choose which ones appear.

www.symantec.com

short stories

PRIVATE INVADERS
The Home Office has won a Lifetime Menace award for its efforts to reduce corporate and personal data privacy – most recently with the proposed Interception of Communications legislation which would let police snoop on commercial networks.

The Home Secretary Jack Straw received a Worst Public Official award from campaigners Privacy International for his conversion to snooping following Labour's poll triumph in 1997.

Credit-checking giant Experian narrowly beat Racal and BT for the Most Invasive Company award for its long campaign to exempt electoral-roll information from data-protection law.

EURO-VISIONS
Reference works still dominate the kind of literature getting published on CD-ROM. The latest is a grand history of Europe by French academic Pascal Bonafoux. It is lavishly illustrated (*see above WW1 graphic*) and starts in 723AD – the year, it seems, when Europe was first mentioned as an entity. Centuries of Europe: A Chronology of our Times, for PCs or Macs, will cost £29.99.
www.learning.co.uk
01293 651300

YOUR NUMBER'S UP
Nine in 10 small businesses have yet to update their software to cope with phone number changes that come into effect on 22 April. Officials fear companies have been too preoccupied with Y2K.
www.numberchange.org

Pirates face a united front

Organisations from three major industries are pooling their efforts to fight piracy, which they fear will increase as rising bandwidths allow lengthy material to be downloaded.

They have set up a single hotline where copyright abuse of all kinds can be reported; it will also offer advice and provide a united front for law enforcement.

Behind the move are the Federation Against Software Theft (FAST), the Music Publishers Association (MPA) and the Federation Against Copyright Theft (FACT) which covers the video, TV and film industries.

COPYRIGHT ADVICE & ANTI-PIRACY HOTLINE 0845 6034567

FAST chief Geoff Webster said the alliance made sense because technological convergence had been mirrored by a convergence of piracy issues – a CD, for instance, might contain illegal copies of music, film and software.

FACT director Reg Dixon said legal pressure had drastically reduced videotape piracy but he was 'extremely concerned' about new recording media. He warned: 'Piracy has to be stopped, or we're finished. It's that simple.'

The alliance partners hope the UK move will be part of a worldwide trend allowing organisations in other countries to clamp down on local piracy.

Political pressure can also be applied. Consumer affairs minister Kim Howells, launching the scheme, cited Bulgaria, where a flourishing market in pirated videos was wiped out because the government wanted to open the way to EC membership.

How this can be applied to tiny remote states with few legitimate revenue sources remains unclear. 'We'll follow the ball of string wherever it goes and decide what to do about it then,' said Webster.

Hotline 0845 6034567
www.copyright-info.org

VAT's the problem? asks Kim

Governments across Europe are concerned about how they are going to gather tax on online purchases, consumer affairs minister Kim Howells said at the piracy hotline launch.

'I have had a lot of informal discussions with my European colleagues about it. We are not sure what to do. In fact we would welcome any suggestions,' he said. The topic came up after Howells described how he bought a CD from the Amazon.com site – and then found he would have had to pay $6 more on the UK site.

He said the Government had set up its price watch unit to flag this kind of disparity. But he declined to comment whether he had paid VAT on the CD.

Commodore dies (again)

Just over a year ago we brought news of the return of the Commodore 64, courtesy of the Netherlands company, Web Computers International (WCI).

The Web.it Commodore 64 was actually a simple keyboard-driven PC, designed to link to your TV. It ran C64 software on an emulator, but its antique Lotus office apps (running under ROM-based Windows 3.1 on a 386-based AMD Elan processor) failed to attract big UK sales despite a £299 price tag and the backing of PC World and the QVC Shopping Channel.

Now WCI has launched an improved Web.it Internet Station+, using the same processor but with memory up from 16MB to 32MB as standard and using Win CE 2.12 instead of Win3.1.

Also gone is the Commodore brand, licensed from Tulip. WPI's Hans G van Stuivenberg said it seemed PC World customers wanted more than a stripped-down PC, even for £299. Now WPI is targeting the market for 'free' PCs among financial institutions who want to provide customers with web access at the lowest cost: the Internet Station+ has a retail guide price of just over £200.

Owners of the original Commodore version will be offered an upgrade, but they should beware that, unlike Windows 3.1, Windows CE does not support colour printing and neither can you attach things such as a Zip drive to its parallel port any longer.

IAN BURLEY

www.webcomputers.net

short stories

PC IS DEAD SAYS COMPAQ
The PC, as we know and love it, is dead, according to a senior Compaq executive.

Mark Linesch, ecommerce solutions vice-president, said the PC was evolving from a fixed box on a desk into a true personal computer encompassing handhelds, thin clients and other devices.

The changes are linked to a revolution in wireless connectivity which 'will see its first flower in Europe,' he said.

...AS IT OFFERS CHEAP BOX
Compaq is producing a £499 (ex VAT) Win98 PC, targeted at students. The Presario 5410 PC boasts a 350MHz AMD K6-2 processor, a 4.3GB hard drive, a 56K modem, speakers, 15in monitor, and Word 2000.

Lisa Clarke, Compaq product marketing manager, said the low price was enabled by improved efficiencies in manufacturing.

It is only available through Dixons, Currys and PC World.

HARD DISK 'RECORD'
IBM claims a world record with the launch of a disk drive holding 73GB. The 10,000 RPM Ultrastar 72ZX is one of a range of fast drives designed for servers.

About the size of a paperback, it can hold the equivalent of a floor of books at the New York Public Library with room to spare.

NEW ACROBAT TOOLS
Adobe is to launch a set of tools to facilitate the use of Acrobat documents. Acrobat Business Tools, available in early 2000 costing about £50, will let you annotate and digitally sign Portable Document Format (PDF) files and email them at the click of a mouse.

It will also let you save web pages in PDF, preserving the hyperlinks.
www.adobe.com

Linux guru in Intel killer shock

Intel faces new competition from the highly secretive, Silicon Valley start-up Transmeta, according to US reports.

Patents granted to the company, which employs luminaries such as Sun UltraSparc co-designer David Ditzel and Linux guru Linus Torvalds, indicate that it plans to offer low-cost Intel clones.

It will avoid costly fees for licensing Intel technology by using designs which bypass the chip giant's patents, the CNET news service said.

Rumours about Transmeta's plans have been rife for months. Torvalds hinted recently that an announcement might be made at Fall Comdex; but there have been similar hints before, sparking speculation that the project has hit delays.

Patent consultant Richard Belgard, quoted by CNET, says Transmeta appears to be working on a combination of silicon and software which can act like an x86 chip – or, come to that, any other chip.

Instructions translated into Transmeta code are cached so that they can be recalled quickly; this means that the technology will be good at functions which use the same instructions many times over.

The Transmeta silicon appears to use Very Long Instruction Word (VLIW) architecture, which deals with large chunks of instructions.

Low-power links in view

This is Hitachi's latest optical link capable of delivering nearly 10Gbit/sec – that is 800Mbit/sec down each of 12 fibres. The single-chip transmitter/receiver, which converts electrical to optical signals and back, consumes 300 milliwatts per channel within a range of about 100 metres.
www.hitachi-eu.com

New chips take load off host

With PC processor speeds set to exceed 1GHz, software will increasingly replace hardware peripherals such as modems and multimedia devices.

This, at least, is the aim of host signal processing (HSP) – using the central processor to do heavy computation which has traditionally been carried out by digital signal processing (DSP) chips integrated into peripherals.

Many believe dedicated DSPs are the way forward. nVidia's latest GeForce 3D graphics card, with a DSP arguably as powerful as a Pentium, is a good example.

Texan-based Max Internet Communications (Maxic) has just introduced the most integrated DSP-based PC Card yet. The PCI-based MaxicLive card acts as a conventional data, fax and voice modem, sound card, DVD decoder and 3D graphics card. It has its own internal operating system which works in tandem with Windows and is fitted with 6MB of RAMBUS memory.

Intel has been promising HSP since 1995; it is finally starting to deliver with the introduction the 810 chipset which supports soft modems and soft 3D graphics.

The 810, based on Intel's budget-priced Celeron, allows vendors to build entry-level PCs without expensive graphics, sound and modem cards. They are replaced by cheap hardware links.

By contrast, Maxic promises cheaper PCs because its £370 DSP-based card needs only a barebones host motherboard and CPU.

In fact, both approaches are compromise products that don't necessarily benchmark well against the peripherals they replace.

Intel's delayed 820 chipset will be less compromised; but, for now, there's life left in the DSP.

IAN BURLEY

Maxic www.maxic.com
UK distributor Interpresence
01889 568601

It's upgrade or bust for Windows users!

From Jonathan Lambeth in Florida

Microsoft will slap a time limit on licences next year to coerce people to upgrade to the latest version of Windows, according to a leading analyst.

The Gartner Group's Thomas Bittman also claimed Microsoft will start charging for extra features instead of bundling them with upgrades. 'It will cost more to obtain added features that many will need or want,' he told a Gartner symposium in Orlando, Florida.

He said Microsoft was developing the new strategy because it increasingly found itself in competition with earlier versions of its own software. Companies will pay 50 per cent more per year by 2002 for Microsoft software as a result of the changes – even though the upfront price will stay the same, he predicted.

Bittman also said Windows 2000 would become fragmented into 64bit and 32bit, high- and low-end, consumer (codenamed Neptune), and embedded markets.

'By 2002 I believe there will be 15 different versions of Windows, eight with different code bases,' he said.

Three in four large companies will have to cope with testing and upgrades for four different NT packages, Bittman predicted.

Teamwork

Microsoft used this image to illustrate its UK team of companies training staff to deploy the new Windows 2000. The idea, judging from its blurb, was to promote the idea of a winning team at the time of the Rugby World Cup. Er ... didn't Britain's various teams lose that one?

Microsoft 'will hire out code'

Microsoft will turn itself into a software service provider within seven years, president Steve Ballmer told the Gartner Group symposium.

It will be part of a big industry shift towards renting out software and services online, he said.

'I don't rule out the role of partners, but we need to be an ASP [Application Service Provider] ourselves as, I would argue, does every other software company,' Ballmer said.

Gartner research director Michael Gartenberg told Ballmer: 'Your customers are tired of hearing that the answer to their problem is the next upgrade.'

This is why a software services model is needed, Ballmer said. 'The answer to all problems from all software vendors is to add more software. The problem is that there isn't an infrastructure that lets us stream out new bits and patches.'

ASPs would allow software to be updated easily without constant version changes for the end user.

Stac stages desktop comeback

Stac is pitching for a comeback to the desktop half a decade after humbling Microsoft over rights to its Stacker code.

Stacker in effect doubled the capacity of a disk by compressing data on the fly at a time when there were people who would sell their grandmother for a few extra megabytes.

Bill Gates did not go that far (so far as we know) but Microsoft did reverse engineer Stacker and shove it into its MS-DOS operating system (versions 6 and 6.2) as a feature it called DriveSpace.

Stac sued and won $120m (£75m) in damages; Microsoft, faced with having to withdraw its OS, bought the technology by taking a 15 per cent stake in its rival.

Stac retired to the narrower reaches of enterprise systems, where it applied its compression techniques to disaster-recovery systems. But friendlier installation features in its new Replica Network Data Manager (RDM) make it attractive for smaller businesses, Stac believes.

Replica RDM allows network managers to set up a regime that will allow remote home workers, mobiles users, and in-house workers to back their systems up to an NT server and recover them if necessary within 15 minutes. It stores everything down to desktop wallpaper but backs up only the differences between machines.

Replica RDM 2.0 is available for large systems now; a 50-user pack will be available early next year for 'less than $5,000 (£3,125)'. The company may consider smaller packs if there is a demand.

www.stac.com

Sun pushes Star

Sun, in a direct challenge to Microsoft's office products, is talking to up to 50 vendors about bundling its free web-based StarPortal office suite with PCs and web access devices.

Marco Boerries, head of Sun's application software group, said the days of the classic software business model will soon be over.

Web access devices will greatly outnumber PCs in a few years and users will be unwilling to pay high application licence fees.

'Software will become a service and the notion of an application will go away,' he predicted.