Comdex Special

The year's major IT event began in Las Vegas as we went to press, but you can read a Comdex special report on our web site at **www.pcw.co.uk**
And, of course, there'll be full coverage in next month's *PCW News*.

FALLING FLAT
The market is literally going flat for CRT monitor makers as desktop LCD displays become more affordable. Sony, Mitsubishi, Panasonic and Samsung have all offered CRT displays with flat screens which are said to cut out damaging glare from reflections. Iiyama, too, has launched a £449 (ex VAT) 19in model called the Visionmaster Pro 450, offering resolutions of up to 1800x1440 at a refresh rate of 80Hz — the company piled up its monitors (*left*) to make a point.
Iiyama
01438 314417

OPERATING SYSTEMS

Enter Windows 2000 as Gates fights trustbusters

Microsoft will start the new millennium with a single operating system called Windows 2000, although it will have workstation and server versions.

The decision amounts to no more than a renaming of NT 5.0. But it spells the end of the Win9x line, and defines a minimum PC spec of 64Mb of RAM and a 300MHz PII processor.

Microsoft announced the changes as it sought to limit damage from the continuing DoJ anti-trust case. Accusations include: that Microsoft put pressure on Apple to drop its QuickTime multimedia player; and that it asked service provider AOL "How much do you want from us to screw Netscape?" Microsoft's response has been confused, though it is still not clear whether the DoJ will prove its case.

The case has coincided with a series of "leaks" from within Microsoft about the threat from rival developers. First there was a memo depicting Psion and its Epoc 32 operating system (now owned by Symbian) as a potential problem. Then, two so-called Halloween memos named Linux as a threat.

Epoc 32 (*see p29*) and Linux do offer credible alternatives in some markets. Linux got more backing this month, with Corel offering free downloads of a Linux version of WordPerfect (at linux.corel.com).

Cynics pointed out, however, that the memos portray Microsoft as less than a monopoly at the very time it faces charges of monopoly abuse. Still, a feeling persists that Microsoft rivals are gaining ground.

Even at last month's NT Show, which was bigger and better than ever, there were dissenting voices. IBM, which has been hedging bets on Unix and Linux, was boasting of its skills using NT in "a mixed environment" and doubting NT's scalability. Eddie Bleasdale, of NetProjects, was telling all who would listen: "Linux is a megatrend. It is not going to go away." Nor, when all's said and done, is Microsoft.

CLIVE AKASS (AND VNU NEWSWIRE)

• *New NT architecture — p40*

IE 5 beta

An early beta of the new Explorer 5.0 is available at www.microsoft.com. New features include better searching and management of favourites.

ADSL

BT tiptoes into broadband for homes

There were confusing signs last month about pricing for ADSL (Asymmetric Digital Subscriber Line), which piggybacks a fast data stream onto BT's old copper lines. Four pilot rollouts, offering an always-on 2Mbit/sec link upstream and 256Kbit/sec down, are underway in London, by firms reselling BT capacity.

Service provider I-Way charges £350 a month for a minimum six months.

Virgin Net has only about a dozen experimental ADSL lines working, for which it currently charges nothing.

VideoNet, which offers an ADSL video-on-demand service, is charging just £5 a month plus up to £3.50 per movie. Eventually it expects to charge £249 for a hookup.

BT Interactive would not quote prices. A spokesperson said the variation in prices is not surprising at this stage.

What is certain is that ADSL is here to stay — and it will get cheaper. BT's Simon Brooks, marketing manager of the service, said: "We are investing millions in it. We are serious about deployment."

He insisted that demand will persist for BT Highway, which offers a maximum 64Kbit/sec per ISDN channel. He agreed that ADSL rollout and pricing will be affected by what cable companies do. "If they start rolling out cable modems, fine. The...competition will move the takeup of high-speed service forward and bring down prices."

A new world standard for a slower DSL Lite was agreed last month, but even though BT is on the standards body, it has no immediate plans to use it.

ADSL pricing is a thorny problem. There is nothing to stop people using ADSL for IP voice calls at no extra monthly cost. Said Brooks: "...we are going to have to come up with a viable pricing model."

www.isntrial.bt.com

DIGITAL TV

PC users get a look-in at last

The first add-on cards to allow PCs to receive digital TV have hit the market. They are currently limited to free channels because conditional access cards allowing paid-for viewing are not yet available.

Easat Antennas is selling a £249 (inc VAT) kit, called Kiss SkyVision, which includes a PCI-based Digital Video Broadcasting (DVB) card and a separate MPEG decoder ISA card. The software will automatically search and configure itself for channels available on your dish aerial. The kit will also provide access to DirecPC turbo internet services, providing a down channel of up to 400Kbit/sec.

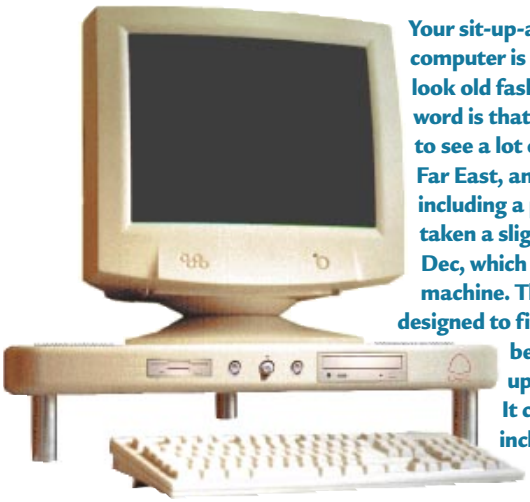
The kit also supports DVD and will be bundled with a DVD player for £389 (inc VAT).

MediaStar is offering its GlobalSat Vision DVB card with on-board hardware MPEG decoder for about £159. A Plus version, which should be on sale by the time you read this, includes a Common Interface Module allowing conditional access when available. This will also have output for standard or widescreen TVs.

Next year, the company plans a Gold Version with DVD support. Both the Plus and the Gold versions are also expected to cost around £160.

MediaStar 0181 814 2288; Easat 01782 208090 www.easat.co.uk

PC designs with a heart



Your sit-up-and-beg computer is starting to look old fashioned. The word is that we are going to see a lot of experimental designs coming out of the Far East, and Intel has been showing off a few novel PCs, including a pyramid. Cambridge IQ (01223 870817) has taken a slightly different approach with what it calls the Dec, which is a way of sprucing up the standard desktop machine. The heart-shaped platform (below and left) is designed to fit snugly in the corner, and the keyboard can be stashed underneath. It will take monitors up to 28in and the system box sits on the floor. It costs from £45 — options include a CD drive and an LS-120 superfloppy.

short stories

SYQUEST IN TROUBLE
Removable storage pioneer Syquest ceased trading shortly after announcing new versions of its 1Gb SparQ removable drive. There was speculation as we went to press that it might be bought by rival Iomega, although it could survive after a period of Chapter 11 protection.
• *New USB products, p36*
• *Superfloppy war, p42*

QUARTERDECK SOLD
Symantec has bought rival utility developer Quarterdeck in a deal worth $65m. The main reason for the move is to get around a legal dispute involving Symantec's Norton Uninstaller program. QuarterDeck offers a similar utility called CleanSweep.

TREAT IN STORE
Western Digital says its new, thin 18.3Gb SCSI drive will allow more storage to be packed into system boxes. The drive on the right (*above*) is its new 13Gb EIDE drive.
www.westerndigital.com

Geofox goes bust

Cambridge palmtop maker Geofox ceased trading on 2nd November after a failed bid to raise further funding. It launched its Geofox One palmtop last year using the same Epoc 32 operating system as Psion's Series 5.

The device was well received, but some felt Geofox would have done better to use Epoc 32 on a larger mobile rather than taking on the Series 5 in an increasingly competitive market.

A Geofox statement said that despite increasing sales, it could neither raise more funds nor find a buyer. "The directors have therefore had no choice but to place the company into receivership."

Geofox's sales and support line has ceased working, but a recorded message said there was the possibility that a third-party would take over support.

• *Boost for Psion OS — p29*
• *New mobiles — p31*

New AutoRoute goes streets ahead

The new AutoRoute Express, due out in February, will show all the streets in Britain. The £60 package (less a £10 cashback on registration) will not route street-to-street, but the new detail is sure to attract new classes of user.

Among them will be **Excel** and **Access** users who will be able to peg data to street maps, product manager Robert MacIntosh said.

● Microsoft is offering Christmas buyers £20 off its latest Encarta products (*Point of View* p28, and *review* p311).

● And, Microsoft was rumoured to be considering a bid for De La Rue, which prints banknotes for around 150 countries.

"I thought he was already minting money"

Processor prices fall for Christmas

Christmas price cuts have narrowed the gap between Intel's PII chips and low-end Celerons. The 350MHz PII price falls most: by 30 percent to $213. Prices of the 333MHz, 400MHz and 450MHz fall, to $181, $375 and $562 respectively.

The Celeron 333MHz 128Kb cache version falls 17 percent, to $159; the 300 MHz only 7 percent, to $138.

MIKE MAGEE

PROCESSORS

Intel lines up for chip wars

Intel, facing its toughest opposition since it scooped the contract to power the first IBM PC, has outlined its processor roadmap. Barely one in two PCs sold in US shops in August had Intel chips, a 30 percent fall in one year.

Its response is to refine its policy of tailoring chips for different markets. It gave more details of its plans for the launch of the 64-bit IA64 range in mid-2000. This will retain a 32-bit core for backward compatibility, and the 32-bit dynasty will survive well into the millennium.

The Celeron will remain Intel's main offering in the entry-level market, where PCs are being sold like soap in supermarkets. Tesco (*pictured*) is offering a £699 Seimens PC based on a 300MHz Celeron. But PCs using chips from the likes of AMD, Cyrix and IDT (*see box, above*) can be £200 or more cheaper. Christmas price cuts (*left*) may put the PII into this market. The high-end Xeon PII will lead the way into the future. The timetable is:

1999 Launch of PII, code-named Tanner, with Katmai-enhanced graphics.

2000 Tanner's 0.18 micron successor, Cascades, will boast on-chip L2 cache. Later, IA64 will début with Merced. Intel is playing this down, saying performance will be on a par with Cascades.

2001 The 32-bit Foster, with a new core, will clock 1GHz. Later, McKinley will lift IA64 performance beyond Merced and the 32-bit line.

Beyond 2001 The 64-bit dynasty will split into 0.13-micron high and low-end versions, codenamed Maddison and Deerfield respectively.

CLIVE AKASS

▲CHIP WARS AT THE SUPERMARKET

Rivals gear up

AMD is challenging Intel at the power PC level. Its Sharptooth K6 is pitched against the Katmai PII. In 1999, its K7 will aim higher, using the same 200MHz EV6 bus (maybe the same motherboard) as Digital's Alpha.

Cyrix says its M3 chip will have a new core called Jalapeno, with streamlined memory access and hard-wired 3D. It will launch at 600MHz in late 1999. Also due then is a Socket 7 500MHz WinChip 4 from IDT with a new architecture. **IDT** says yet another design will launch a year later. New Intel neighbour, **Rise**, has joined the cloner ranks with a low-end x86 design.

Brains of Britain

POINT OF VIEW

One of the brighter suggestions for Britain's millennium project was to digitise the entire contents of the British Library. The Dome won, but there are moves to shift more of the national knowledgebase online — and big US companies are getting involved.

Intel (which, as it happens, has set up a "virtual Dome" site at www.dome2000.co.uk) is giving £1.5m for a digital gallery at the Science Museum's new Wellcome Wing. The idea is to create exquisite visualisations of scientific themes, viewable online. These will be brought up to date, at no small cost, as new discoveries are made.

Also likely to get involved is Microsoft. Its chief technology officer, Nathan Myhrvold, sits on the board of trustees.

Microsoft's new Encarta reference suite is an excellent example of what can be done. London publisher Webster (which has no connection with the famous US dictionary) has no less than 60 people working full-time on the British version. Some of the work involves keeping the web links up to date and honing them to provide the best sources. As more resources come online, works like Encarta will look increasingly like a front-end to our collective memory banks.

Britain and the net both have a tradition of free access to knowledge, but commercial content is bound to increase. Bill Gates knows this well. His Corbis company has been buying digital rights to artworks and millions of photographs.

UK taxpayers, while unlikely to object to subsidising online resources for UK use, might balk at making access free to the world. Digital content could provide vital revenue for museums, galleries, and media archives. Intel's Sean Maloney clearly had this sensitive aspect in mind when he said of the £1.5m gift: "This is not a plot to steal the intellectual property of the Science Museum."

Indeed, British suspicions of sponsorship and commercialisation can go too far. The more money these resources get, the better they will be.

• *Encarta review — page 311*

▲ENCARTA — FRONTS GLOBAL MEMORY BANKS

Clive Akass on accessing our national knowledgebase

MEMORY

Out of sight... the new atomic RAM

Researchers in Denmark claim to have made a breakthrough in using a single hydrogen atom to store one bit of data, pointing the way to hypercompact IT devices.

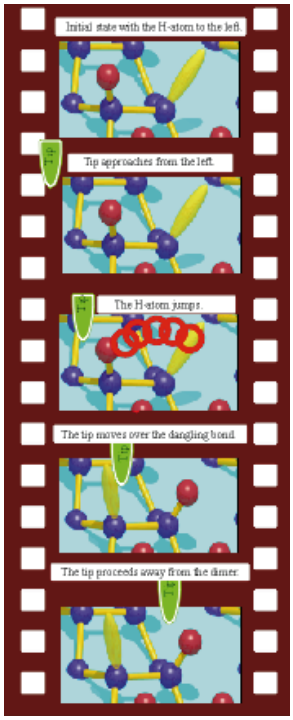
IBM performed a similar trick using Xenon atoms at a temperature near absolute zero. But researchers at the Technical University of Denmark's microelectronics centre have proved it can be done at room temperature with material in common use: silicon, in the form of a lattice of atom pairs called dimers, coated with hydrogen to prevent oxidation.

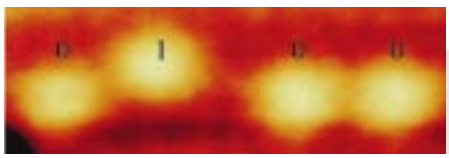
Each silicon atom at the lattice surface forms a strong bond with a hydrogen atom. The Danes used a scanning tunnelling microscope (STM) to knock out one hydrogen atom from a dimer, leaving a bond flailing with nothing to cling to (*top right*).

An STM uses an electrode with a sharp tip and exploits quantum effects, allowing individual atoms to be imaged and manipulated. By applying a voltage to the tip and moving it close, the remaining hydrogen atom can be switched from one silicon atom of the pair, to the other (*lower right*). "The voltage is large, so the switch is stable," said Kurt Stokbro, who developed computer simulations of the effect.

Devices using the idea are some years off. One is likely to be a storage medium which is scanned by an STM, much as today's disks are scanned. Even further off are solid state devices using a matrix of STM-style tips. "There is a lot of research going on in this area," said Stokbro.

www.mic.dtu.dk/mic





◀ HOW THE DATA APPEARS ON AN STM SCAN

Small comfort for Symbian

The Psion-developed Epoc 32 operating system got a new boost last month with news that it will run a version of the Oracle Lite database.

The OS was named as a major threat to Microsoft in the first of a series of internal memos leaked suspiciously close to that company's DoJ court case (*see p26*).

Epoc is now owned and developed by Symbian, a company set up by Psion, Nokia, Motorola and Ericsson. And, as *PCW News* pointed out after the Symbian launch, the Epoc challenge is real. Psion's Symbian partners own three quarters of the mobile-phone market and Epoc is considered better and more compact than WinCE.

Mobiles are a big opportunity for independent software developers because in the new, connected world the devices do not need Windows. The new Oracle Lite, for instance, will allow wireless access to major databases from handhelds.

Analysts say the range of devices the Symbian group makes would guarantee Epoc a huge market. Rob Hailstone, research director at Bloor Research, said: "Just because Microsoft owns the desktop market, it doesn't mean that by default it will own the mobile market. It is not a war yet, but the battlements have been put in place. The standard mobile device will not be a laptop computer. That is overkill."

ADDITIONAL REPORTING, LISA KELLY

Devices 'spark synchronisation crisis'

The proliferation of new information devices is a major challenge to IT managers, according to a report from Motorola. At least one in four workers uses a computer away from the office, and data from these diverse sources has to be synchronised into a single access point, it said.

short stories

PC SALES HOLD UP
The computer industry is not in as big a slump as expected, according to analysts IDC and Dataquest. They say PC sales in the US grew 20 percent in the last quarter, 6 percent above predictions. Latest figures show that while Asia stumbles, there is strong demand in Europe and the US, promising world growth of 18 percent for 1998. Barring any major downturn, demand will remain strong in the US as $699 and $499 PCs drive sales to new users.

TIM BAJARIN

CRYSTAL CLEAR ON NET
Seagate Software's new £309 (inc VAT) Crystal Reports 7.0 allows access to multiple databases over the web. Other new features include advanced mapping (*pictured, above*). An early version is bundled with Visual Basic, and users of this and rival products can upgrade for £149 (inc VAT).

Seagate 0181 566 2330

AUTOSKETCH 6.0
Autodesk has released its £99 (ex VAT) entry-level Autosketch 6.0, aimed at helping technicians without specialist CAD skills to draw concepts quickly and easily.

Autodesk 01483 303322

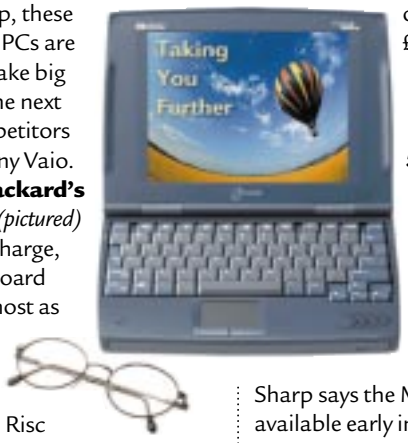
ANNUAL DATA
The 1999 edition of *The Computer Users Year Book*, the three-volume directory of IT sources, services and sites, is now available for £295 for the set. Individual volumes can be bought.

Learned Information
01865 388057

MOBILES ROUND-UP

The mini market

A new wave of mini-notebooks powered by the Handheld PC Professional version of Windows CE 2.0 is poised to steal away customers from the traditional handheld and notebook markets. Lighter and smaller than a notebook, yet more powerful and ergonomic than a palmtop, these so-called folio PCs are expected to make big gains during the next year over competitors such as the Sony Vaio.



Hewlett-Packard's Jornada 820 *(pictured)* is leading the charge, and has a keyboard and screen almost as large as a notebook. It is powered by the StrongArm Risc processor and uses far less battery power. Weighing in at only 1.8lb, it also comes with a 56K modem and 32Mb of RAM. The Jornada is expected to go on sale this month with an estimated street price of about £850. (*See also, Gadgets, p74.*)

Toshiba has released a 2.9lb mini-notebook with a magnesium case, the **Portégé 3010**. It has a 266MHz MMX processor and a 10.4in screen, and comes with a 4Gb hard drive and 32Mb of RAM. It costs £1,595 (ex VAT).

Sharp's upcoming folio PC, the **Mobilon Pro PV-5000**, also has a reasonably large keyboard and a large 8.2in colour touch-screen as well as a 33.6K modem. At about 2lb, it's also highly portable. Sharp says the Mobilon will be available early in the new year for around £80.

Toshiba 01932 828828 www.toshiba.co.uk; Hewlett Packard 01344 369369 www.hp.com; Sharp 0161 205 2333 www.sharp-usa.com

New CE, new mobiles

Several large form-factor mobiles running Handheld PC Professional, the latest version of Windows CE, were shown at the Microsoft's Professional Developer's Conference.

The Sharp Mobilon TriPad and the Vadem Clio, the same machine under different names, offer a 9.4in 640x480 256-colour screen, 16Mb RAM (upgradeable to 32Mb), software-based fax/modem and 12-hour battery life for $999. Sharp's demonstration TriPad was running full-screen Windows NT 4.0 applications thanks to the new Citrix ICA client for CE Pro. The Citrix ICA supports Windows CE running on MIPS, and Hitachi SH3, Intel x-86, PowerPC and StrongARM processors.

Meanwhile, Microsoft announced new developer services including MSDE, an SQL Server 7.0-compatible engine for Access 2000, and Agent 2.0 animated character technology, at the October 1998 Professional Developer Conference (PDC '98) in Denver. Agent 2.0 enables animated characters to be embedded into web pages that will be viewed on Windows PCs.

Microsoft Data Engine is an alternative to the Jet 4.0 Access 2000 storage engine. With MSDE installed, Access 2000 data, queries and reports can be shared transparently with, or migrated to, SQL Server 7.0. MSDE is also behind SQL Server 7.0 Desktop, the "lite" version of SQL Server for Windows 95, Windows 98 and Windows NT 4.0 Workstation announced at Comdex Fall on 16th November.

TERENCE GREEN

• *See also, News Analysis, p40.*

The new small notebooks

Toshiba's new 6.7lb Satellite 2515 CDS represents an aggressive expansion into the entry-level market. It looks like an Apple G3 PowerBook and sports a 266MHz MMX processor, 4Gb hard drive, 32Mb of DRAM, 56K modem, 24X CD-ROM drive and a 12.1in DSTN screen. At $1,399 it is $105 cheaper than IBM's ThinkPad series, thanks largely to the TFT screen IBM is now putting in all its laptops.

Toshiba's new mini notebook, the 2.9lb Portégé 3010, will give Sony's Vaio 505 a run for its money. It is almost identical in size and, in my estimation, with its sleek magnesium case, looks much better. It has a 10.4in TFT screen and uses a 266 MMX processor, a 4Gb drive and 32Mb of DRAM as standard.

Toshiba claims 3.5 hours of continual battery use. The suggested retail price is $1,995. The 505 has taken mobile vendors by surprise. For years, they resisted creating a product this small. I expect IBM, Compaq, Micron and even Dell to have competing products in this space by early 1999.

Another possible rival is HP's 1.8lb CE-based Jornada, which is about a fifth smaller than the Vaio and has a 9in DSTN screen and a 56K modem. Its 32Mb of DRAM serves as its storage medium but it boasts ten hours of battery life.

It has limitations, compared to a Windows 98 laptop, but costs well under $1,000. I've been using one for about two weeks and I'm quite impressed. My beta unit has some software glitches, but once it hits the market in early November, I'm sure it will be rock solid.

The new Sharp Actius 150 is also quite a product. It sports a 266MHz processor, a 4.3Gb drive, 64Mb DRAM, 2Mb video RAM and port replicator for about $2,500. Its main selling point is Sharp's new transflective screen, the brightest and sharpest screen of its kind. It will be in the UK by early 1999.

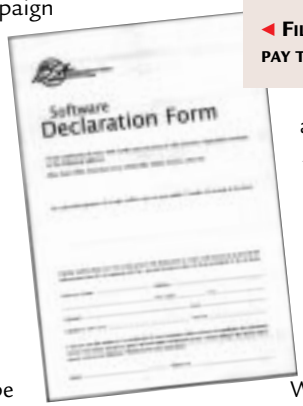
Tim Bajarin
letter from Silicon Valley

SOFTWARE

Anti-piracy moves set sail

An anti-software piracy campaign condemned last year for its heavy-handed approach to enforcement has garnered the support of The Federation of Small Business.

For Crackdown 98, the Business Software Association (BSA) is sending out a Software Declaration Form to over 20,000 medium-sized UK companies. If a business does not complete and return the form within three weeks, it will be placed in the BSA's Software Watch database and will likely come under investigation by the BSA for software piracy. If found guilty, businesses face fines of up to £10,000 and could be "shamed in the press".



◄ FILL IT IN, OR PAY THE PRICE

Ignorance of software piracy in your organisation isn't an excuse, the BSA says. "Companies have to make an active effort to find out what is on their computers," says Mike Newton, campaign relations manager. "There's no excuse for piracy. But in the case of small and medium businesses which are growing, it may not be at the top of their agendas." The BSA's aims are admirable, says Stephen Alambritis of the Federation of Small Business. However, the BSA should exercise a bit of patience when it comes to otherwise honest businesses. "There should be punishment, but not enough to bring down the business into bankruptcy. We estimate that most of the rogue software is in use by shadowy businesses, not honest ones."

The Business Software Association came in for criticism by many small businesses last year when it sent out what they said were "threatening" letters demanding they fill in its Crackdown 97 questionnaire. Many small businesses described the BSA's enforcement methods as high-handed.

Phone for The BSA's Guide to Software Management on 0800 510510 or see www.bsa.org/uk

Snappy printer

Lexmark's latest printer has been designed with the digital shutterbug in mind. The Photo Jetprinter 5770 is a two-in-one inkjet device that can handle photo printing as well as more ordinary printing tasks. The 5770 also allows users to store and edit their pictures before printing. The printer accepts both CompactFlash and SmartMedia cards, meaning that the PC can be bypassed altogether. It also supports the Iomega Zip drive. The 5770 should be available later this month and will cost £349 (297 ex VAT).

Lexmark 01628 481500
www.lexmark.co.uk

Company sees red at green PC initiative

A leading **computer recycling company** has criticised the latest draft of the EC Environmental Directive as "uneconomic, contradictory and unworkable". Technical Asset Management (TAM) says that the definitions of "recycling" and "waste" are unclear, and that there is confusion about who has responsibility for disposing of a PC if it is refurbished.

• On a similar note, the DTI has told businesses to stop throwing away their old computer equipment. It has produced a guide that helps businesses find a good home for their old PCs, called *Unwanted Computer Equipment: a Guide to Re-use*. By passing old hardware on, they could make a real practical contribution to people in the community, said Consumer Affairs Minister, Dr Kim Howells.

TAM 01707 333555
DTI 0171 215 5822

Digital diary

Why not get organised in the New Year with the digital version of the Economist Diary Companion 1999 for the Psion palmtop PC? The diary includes the usual reference data as well as a glossary of computing terms, and also automatically transfers important dates and holidays to your agenda file. It costs £17.95 including VAT (via download or mail order) or £19.95 if you buy it in the shops.

On-Board Info 0171 370 0307
www.on-board-info.com

Bright eyes

First it was the ergonomic keyboard, then the wrist rest: now there's a product designed to take the strain off the old peepers. PC Eyes is a combination of natural plant extracts, including guarana, bilberry, eye bright and feverfew, that helps combat dry, tired and strained eyes. Being bright-eyed and bushy-tailed, we haven't tried PC Eyes for ourselves, but it's available for £17.95 for 60 tablets.

Herbal Solutions 01483 204427

Fully booked

Makers of electronic books have agreed on open technical standards for the new technology. These new standards mean that devices from different manufacturers will be able to read the same electronic text without having to reformat it first. The new Open ebook specification will be based on HTML and XML web languages.

USB

Peripherals take the bus

The robust USB driver in Windows 98 has at last persuaded vendors to launch peripherals using the new, fast serial port. Another spur has been the introduction of Apple's new USB-equipped iMac, which lacks a floppy drive. Teac announced a USB floppy, which will get an iMac driver soon, but this is expensive at around £100. A better bet for both the PC and iMac platform is one of the superfloppy drives (*see News Analysis, page 42*), all of which have USB versions in the pipeline.

Saddest entry into the market was Syquest, which said it would ship a USB version of its SparQ drive this month for less than £200 — with 1Gb removable cartridges costing £49.99 each. A SCSI version was also announced, but shortly after, Syquest temporarily ceased trading, though both company and drives may survive (*see page 26*).

Pace introduced a colour video camera, designed to sit on your PC, for just £89. Roland, via its new company Edirol, announced three new USB devices: the Super MPU-64 64-channel MIDI interface, the MA-150U 30W stereo speakers, and the Audio Canvas UA-100 audio and MIDI unit.

Pace 0990 561001
Edirol 0181 956 2224

Why use USB?

The main advantages of USB, which is expected to oust the PC's traditional serial and parallel ports, are:

- **Speed.** Up to 12Mbit/sec, around 100 times faster than the current serial port.
- **Plug and Play.** No need to mess with interrupts and addresses.
- **Hot-plugging.** No need to switch off the computer when changing devices.
- **Fewer leads.** USB devices can be daisy-chained, avoiding a mass of wires at the rear of the PC.
- **Power supply.** Devices can draw up to 2.5W of power from the USB, and so may not need mains cables or adapters.

Businesses tap into telephony potential

Internet-initiated telephony, which sets up voice calls with web-site visitors, is yet another avenue of telecoms pushed out from Silicon Fen. NetCall has put hundreds of net traders in contact with thousands of customers at sites like Thomas Cook Holidays. It is also used by the *Electronic Telegraph*'s Kindred Spirits dating service.

NetCall introduced its webcall button back in 1995, and technical director and MD John Burnett believes it remains ahead of rivals. If you click a button to get a voice link and the service or trader you want to contact is not available, a fax (or email or SMS message) is sent instead. It works if you happen to be out of the country, or trying to access an 0800 number not normally possible from beyond these shores, because NetCall can initiate the call from within whichever country offers the cheapest rates.

The firm has a client base of some 1,400. But many traders do not yet understand its value, says Burnett. "There is a learning curve that has to take place out there. A potential customer can place calls without using telephone dialling, but you don't need a multimedia PC at either end for the voice part of the call."

You can also use voice over the internet between gateways for long-distance calls, using the NetCall HyperPhone link. At Askalex.com, where NetCall links up more than 1.8 million UK businesses with potential customers, 2,500 enquiries are made per hour. At the other end of the scale, NetCall connects a database of US bed-and-breakfasts (who don't all have a PC) with UK visitors.

NetCall's standard charge UK-to-UK is 6p per per minute, while to the US it is 11p. NetCall's service is also used for conference calls of up to eight parties. Burnett claims pricing is about one-fifth of the BT equivalent, with no setup charges: "We are looking to make our service pay by the sheer volume of people who are attracted by what our services offer, anywhere in the world." For a call anywhere in the US, NetCall charges $3 a month for a button/link plus $0.18 a minute.

www.netcall800.com or www.netcallplc.com

- **Cambridge astronomer** Peter Duffet-Smith has invented a way of using the cellular phone infrastructure to give people exact information on where they are. The technology originated in the Cavendish lab and Duffet-Smith joined Cambridge Positioning Systems last year to develop the system, called Cursor. It is due for a nationwide rollout next year.

Cursor involves only a minor software upgrade to any GSM mobile phone and is available for use with emergency services as well as business and consumer information needs. Future applications are boundless, says chief executive Geoff Morris. "People will be able to use their mobile phones to obtain local information which relates to their immediate locality such as the nearest bank, or how to get to the nearest hotel." A demonstration network is up and running in Cambridge in close collaboration with development partner Scientific Generics.

www.cursor-system.com

Caroline Swift *continues her reports from Silicon Fen*

INSURANCE

PCs fully covered

An insurance scheme launched last month provides a fallback for people who fear buying PCs from smaller dealers. Users pay from £50, depending on the price of their PC, for a guarantee that they will be able to get faulty machines repaired, even if the vendor goes bust.

The scheme, Insured Warranties, was launched by the Personal Computer Association, which represents some UK vendors. Executive Director Keith Warburton said that all too often, companies with little or no track record advertise PCs with a three- or five-year guarantee which is worth nothing if the supplier goes bust. "Even if the seller provides on-site service through a third-party maintenance company, the customer is unprotected if the maintenance company goes out of business too."

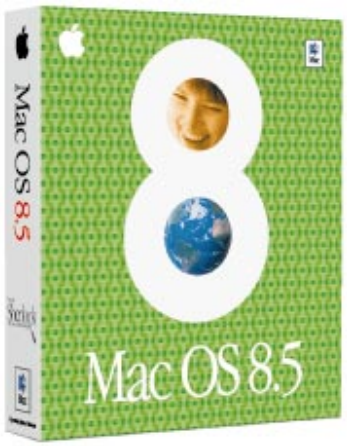
PCA 01763 262987

OPERATING SYSTEMS

New MacOS fights off NT

Apple, buoyed by news of its first profitable quarter in four years, has launched a major upgrade to its operating system with features clearly designed to stave off the threat from Windows NT in its traditional graphics markets.

The move to Mac OS 8.5 from the current version 8.1 represents a far greater jump than the previous move from version 7.5, according to product manager Jonathan Ferman.



Leading the new feature is an extended Finder module, called Sherlock, which operates both locally and across the internet. On the user's PC (if Apple's hype is to be believed) it operates as a powerful text retrieval tool, indexing every word in documents in your hard disk and responding to natural language queries. It will also summarise documents.

Sherlock will also put the same query to a series of search engines, ranking the responses in terms of relevance.

Yet, perhaps more important to Apple's future, are features designed to help professional users, many of whom have been drifting to the Wintel platform. Network performance has been improved and Applescript extended to enable automation of almost any routine operation, including cross-application tasks. This brings it into line with the kind of thing you can do with Visual Basic for Applications.

Off the record

A problem with most fax-modems is that your PC must be switched on for you to receive data and messages. Some models have got around this by including storage for voice and fax calls. Now Lucent has enhanced its Venus modem chipset to make these much easier to manufacture. Implementations from Kortex, Hayes and Paradise are available or are imminent.

Details are at www.lucent.com

▲ KORTEX USES THE NEW CHIPSET

Windows gets the network message

Terence Green looks at how Windows will survive the inevitable flood of non-Windows devices.

The internet and digital appliances have pushed Microsoft into adopting network computing, but only on its own terms. Its new applications architecture, Windows DNA, is prepared for the inevitability of a proliferation of devices which don't run Windows.

Given the number and variety of emerging models, from handhelds through screen phones to digital TVs and set-top boxes, not even Microsoft could come up with enough operating systems to cover the waterfront. Accordingly, at October's Microsoft Professional Developers' Conference (PDC 98) in Denver, Bill Gates entitled his keynote speech "Building Windows-based Applications for the Internet Age".

By this, he meant Windows applications for non-Windows devices. Your screen phone, say, may not run Windows, but Microsoft can still get it to front an application running on a remote Windows NT (or Windows 2000, as the next version is to be called) server. The enabling technology is Windows Distributed interNet Applications (DNA) architecture, which turns the presentation, execution and data access layers of Windows applications into distributed components.

The core technology of Windows DNA, COM+, is available only on Windows NT and likely to remain that way. However, because the presentation component can speak HTML, the *lingua franca* of the internet, it can display on any client. Windows DNA is a smart move as it protects Windows investments by redefining the Network Computer as NT-dependent.

An earlier attempt to co-opt the NC for Windows, the NetPC, entirely failed to excite interest. However, customer reaction to another network computing technology, Windows Terminal Server, really set the bells ringing at Microsoft. Windows Terminal Server is a Unix-like multi-user system for Windows NT, developed for Microsoft by Citrix. It is technically complex but simple in concept: run the application on Windows NT and transmit the screen display to the client, thus enabling any machine to "run" Windows applications.

▶ NON-WINDOWS DEVICES CAN BE MADE TO FRONT AN APPLICATION RUNNING ON A REMOTE NT SERVER

Terminal Server is the graphical-screen version of the old text-based dumb terminal. Gates called it "fantastic" but noted that it is aimed at users who "have worked with terminals in the past". Microsoft's real problem with Terminal Server is that it owns only the code that enables Windows clients to access the server. Citrix owns the code for all other clients: devices supported by its MetaFrame add-on include Macs, Unix clients, web browsers, Java-based clients and Windows CE handhelds. In fact, Citrix was at the conference displaying Windows NT 4.0 on a Sharp Mobilon TriPad, which was itself running the new Windows CE Professional Edition for larger-format handhelds and accessing Citrix MetaFrame over a high-speed Proxim wireless connection. If the thought of Microsoft Office running on a Windows CE handheld gives you a hot flush, call Citrix now. However, this is not Microsoft's preferred option. Its way of protecting its investment in the Windows API is to create an applications layer tied to the server. Enter the Windows DNA architecture, which it has evangelised for the past year.

It's hard to disagree with the value of network computing

PDC '98 was the call to action for developers to begin building Windows DNA applications. Gates described DNA is an n-tier model because you must be free to move the code tiers around in order to accommodate different clients with differing levels of support for the presentation level. You may even want to run all tiers on a single computer as in the case of a Windows PC. This would please Microsoft the most. As soon as you separate the tiers, Windows NT Server comes into play, as Gates demonstrated with a laptop running a sales order application. The user experience was the same whether or not the laptop was connected to the network. The application validated customer numbers and checked product details exactly as it did when network-connected.

Queued Components, the technology that makes this possible, enables disconnected asynchronous working thanks to the store and forward technology of Microsoft Message Queue Server which, together with Microsoft Transaction Server and Microsoft Common Object Model (COM), comprises COM+.

Since Microsoft Transaction Server and Message Queue Server only run on NT, Windows-based applications will be entirely NT-dependent. This is smart footwork by Microsoft because Windows programmers will flock to DNA and thereby ensure the future of NT. Some will criticise Windows DNA simply because it emerged from Microsoft, but it's hard to disagree with the value of network computing, as the emergence of Windows DNA acknowledges.

short stories

IBM GUIDES THE BLIND
IBM has created the equivalent of a guide dog for blind internet users. The IBM Home Page Reader, which uses Netscape Navigator 4.05 in Windows, reads

HTML text as well as links, frames and tables. It is the first product of its kind that is compatible with the latest plug-ins and also accepts voice commands through IBM's ViaVoice software. The browser reader goes on sale this month for US$149 and can be ordered from IBM's special needs systems page.
www.ibm.com/sns

VIRGIN KIOSKS
Virgin Megastore customers now have the chance to surf the web in-store after they pick up a CD or video. Virgin Net is installing internet kiosks in 40 stores across the country that will allow customers to watch music webcasts and celebrity visits, and take part in exclusive competitions. Virgin says that its filtering software should keep children from accessing inappropriate sites.
www.virgin.net

ART AUCTION
An art and antiques dealing company has launched an online-only service that lets collectors bid on lots from auction houses around the world. Interactive Collector is offering items as varied as Titanic memorabilia and photographs taken by film star Richard Gere, with prices ranging from $80 to $34,000.

www.icollector.com

TRAVEL

Sun rejoins the browser business

Sun is getting back into the browser business, announcing plans to revamp its Hot Java to ensure there is at least one browser on the market that is fully Java compatible. Prompting the action, to some extent, was Netscape's decision earlier this year to postpone development of its Javagator browser due to lack of resources [*see story, below*].

Scott Ryder, product manager for Sun's web product line, said the update will give corporations a worthy alternative to Microsoft's Internet Explorer. "Because the browser market continues to solidify around Microsoft, companies that are in the solutions business or the content business face a serious risk," Ryder said. He claimed that Microsoft is configuring its browser to drive traffic to its own sites.

He added that the current product from Sun, Hot Java 1.5, is not positioned to target the commercial browser market. Instead, Sun has targetted the Java browser for OEMs and developers to bundle with their own web-enabled devices and applications.

Early in 1999 Sun will reportedly roll out a revised version of the product, featuring support for cascading stylesheets, Dynamic HTML, email, newsgroups, and Real Audio and QuickTime. Today's Hot Java lacks these capabilities.

JOHN GERALDS, VNU NEWSWIRE

www.sun.com

Domain names

The internet domain name registry system will likely be run by an international, non-profit organisation when Network Solutions' contract expires next year. The Internet Corporation for Assigned Names and Numbers (ICANN) has elected an international team to lead the transition, appeasing the EU's fears that the US would dominate the process. ICANN hopes to agree on a system for creating new domain names as soon as possible.

By George, it's Bill

Don't be alarmed if you get Bill by mistake the next time you pop George's CD into the stereo. MSN is hoping to boost its audience numbers by embedding software links to its site in music CDs by major label artists such as George Michael. His greatest hits album, which was released in November, also has links to Hotmail.

Communicator and Explorer get a facelift

Netscape is steaming straight ahead with the launch of **the beta of Communicator 4.5**, seemingly undeterred by the failure of Javagator, the ill-fated Java browser it killed off last summer.

Communicator 4.5 features Smart Browsing, which lets users type only a few key words into the address bar (such as Manchester United FC) in order to be taken directly to the desired site. It also displays a list of related sites.

The new beta also has a new version of Netscape Messenger, its high-speed email product, and comes with pre-installed software such as Flash and RealPlayer.

• The first **public beta version of IE 5.0** has also been unveiled. Microsoft says the new browser's Intellisense features, such as automatically correcting common URL errors, will make it much easier to use. Content providers, such as the New York Times and Bloomberg Financial Markets, can now import content straight into a separate pane in the browser.

www.netscape.com/uk
www.microsoft.com/windows/ie

Sony aims Hi in the superfloppy stakes

Clive Akass looks at the latest contender in the race to provide a successor to the floppy disk.

Sony joins the long-running battle of the superfloppies this month with the launch of its HiFD drive, which reads new 200Mb disks as well as 1.44Mb floppies. The company hinted at a future multi-capacity drive that will read capacities from 1.44Mb to 600Mb.

The HiFD is bound to renew interest in a successor to the traditional floppy, although the first version is unlikely to shake the world. It's a sluggish £149 (inc VAT) parallel-port model aimed at people wishing to upgrade a PC, or to add storage to a notebook.

More interesting is a much faster (*see panel*) bootable HiFD, scheduled for early next year, which will probably use an EIDE bus daisy-chained from a hard disk. Sony will try to persuade PC makers to use this instead of a standard floppy. Iomega's 100Mb Zip and the 120Mb SuperDisk LS-120 (aka the A: drive) have been fighting for this market for more than three years. The slower LS-120 got off to a poor start with BIOS problems, but is being fitted in an increasing number of new PCs. It can read standard floppies and is made by three of the biggest names in the business — Imation, Mitsubishi and Panasonic, and so can match Sony's brand strength. PC makers can buy an LS-120 for as little as £32, and save £12 or so on the cost of a standard floppy, so it adds only £20 to a machine's total cost. The Zip costs little more but cannot read floppy disks.

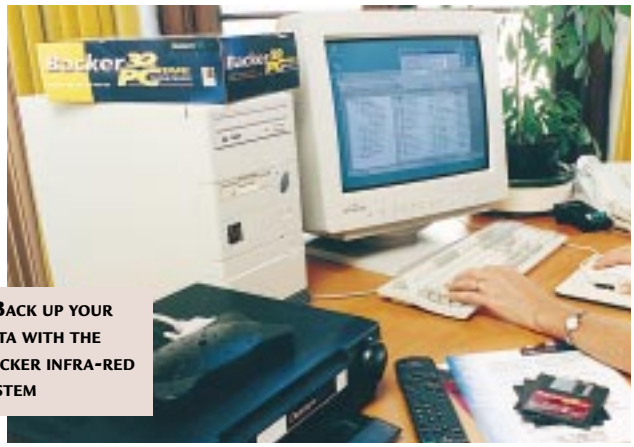
The HiFD drive reads 200Mb disks as well as 1.44Mb floppies

HiFD product manager Mari Oda said Sony "aimed to be competitive" with these prices with its internal model, which will also be made by ALPS and Teac. She also said a notebook-ready thin version is in the pipeline. "And this technology has a lot of headroom. We can double and even triple the capacity." The first HiFD models will not read these high-density disks.

Marcus Heap, Imation's European LS-120 business development manager, doubted if Sony could make a HiFD cheap enough to challenge the LS-120 because its two-speed step-motor made it inherently more expensive. "We can also produce drives with much higher capacities and we will do so if there appears to be a demand. But we have concentrated on bringing down costs because that is what PC makers want."

Iomega's Zip might seem to have won the battle for market share, despite its lack of backwards compatibility. It is a must-have in many offices because the cartridges have become a common exchange medium. Yet some believe the Zip has come close to saturating its natural market as an easy upgrade option. Heap quotes IDC figures indicating that Zip sales fell from 360,000 in the first quarter of this year to 309,000 in the second, while LS-120 sales rose from 118,000 to 177,000. Sales have since been further boosted by a new slim model that is being fitted to an increasing number of notebooks, Heap claims.

There is a warning for Iomega in its own history. It wiped the floor with Syquest with the Zip at a time when rival Syquest drives were seen as a *de facto* standard. One industry insider said: "Market share is no guarantee of success. It gives you a two-year edge. That is all."



▸ **Back up your data with the Backer infra-red system**

Incidentally...

At the other end of the storage scale, Danmere (016606 74330) has introduced a £25 infra-red add-on to its Backer back-up system (*left*) that uses a PC to control a home video-recorder as a backing-up device.

Rival 4 drives

Floppy drive

Slow (60Kb/sec). Cheap, about £12 each in bulk. Will survive until fast comms makes an easy task of swapping 1.44Mb.

Zip drive

Comes in IDE, SCSI and (soon) USB versions. Internal kits cost as little as £64 inc VAT. Cannot read floppies but are now an established exchange medium. Iomega 0800 973194

Sony HiFD

Parallel-port HiFD transferring 200Kb/sec launches this month. Bootable internal version, due in the new year, has a claimed transfer rate of 3.2Mb/sec. Disks cost £11 inc VAT. www.sony.com

SuperDisk LS 120

Internal kits from £57.57. Data transfer rates vary but generally slower than the Zip. 120Mb disks cost from £9 inc VAT. USB version imminent. Imation 01344 402200

short stories

SAVE THOSE CHILDREN
Demon Internet is offering a free guide for parents and teachers about how to navigate the internet efficiently and safely. The guide explains what the internet is, for what it can be used and how to protect children from its more unsavoury elements.
Demon Internet: 0800 027 0127, www.demon.net

AMAZON IN THE UK
Amazon opened the doors of its online bookstore here in October. The site features nearly 1.5 million titles, including all UK books in print, and offers savings of up to 40 percent off high-street prices. The site replaces the UK-owned Bookpages.
www.amazon.co.uk

E-COMMERCE

It's e-trade or bust, says report

E-commerce will spur economic changes as radical as those caused by the development of the printing press, a leading analyst has claimed.

Furthermore, he claims, businesses which do not seize potential ecommerce opportunities will be driven out of the market by their leaner, electronically-based competitors.

Robin Bloor, CEO of Bloor Research, made his comments at the launch of the report "*eRoad: Everything you always wanted to know about ecommerce but were afraid to ask!*" He says that businesses have to realise which way the economic tide is turning. "If your business is being undermined by the internet, you won't get a second chance," he said. "You'll be blown out of the water."

ROBIN BLOOR, CEO OF BLOOR RESEARCH

Bloor pointed out that virtually every business transaction can be made more cheaply over the internet. Whereas an airline ticket costs up to $8 to process through a ticket agent, it costs only $1 when it's booked on the web. Eventually, he predicts, the development of an electronically-based economy will drive the world toward one set of technical standards as well as one currency.

"Standards will prevail because the web cannot tolerate competing standards. XML will win, and at the end of the day, Microsoft and Netscape will collaborate on a browser," he said. "There will also be a battle for supremacy between the Euro and the dollar. The only thing that could stop it is the people with guns and cruise missiles. If it's up to the economy, it will be one world."

• **Analysts Frost & Sullivan** have also predicted that the European ecommerce market will experience "colossal growth" in the next six years. Not only will revenues skyrocket from US$36m in 1997 to $8bn by 2004, it claims, but consumer internet users will shoot from 9.9 million to 44.9 million in the same period.

Student action on the net

Sixth-form students can now get help choosing the best course and university from a web site designed by a first-year undergraduate. InfoYouth, which is aimed at 16-24-year-olds, provides electronic university prospectuses as well as information about various career and gap year opportunities from more than 40 organisations.

The site also features online discussion groups where students can chat to each other about university, career and gap year issues.

www.infoyouth.com

CompuServe into 2000

CompuServe's next-generation client software has entered beta testing and will be available early this year, claims the company. CompuServe 2000 will provide access to CompuServe's new service, featuring enhanced content including a PA newsfeed and the Instant Message online chat program.

CompuServe 2000 has a very similar look and feel to AOL 4.0. It will use HTML to display its online content for the first time. Users get five email addresses, enhanced email functionality and the Contact List, which tells users when their friends are online. There are still a few bugbears, though. There's no offline reader and no immediate plans to support CE or provide a Mac version.

CompuServe says it will continue to support any users who are unwilling or unable to upgrade.

Take IT from those in the know

Phoenix, Arizona is where the big IT honchos outline their future plans. Tim Bajarin was there.

The annual Agenda event at Phoenix, Arizona, brings together heads and other top executives of companies which are shaping the future of the IT industry and the internet. You can rub shoulders with Intel's Andy Grove, Oracle's Larry Ellison, Compaq's Eckhard Pfeiffer, Gateway's Ted Waitt, and Steve Forbes, chairman of *Forbes Magazine*. This is perhaps the only conference where such heavyweights not only speak, but also sit in the audience and take notes.

I spent some time with Andy Grove, who has turned his role as Intel's president and CEO over to Craig Barrett and now serves only as chairman. But he told me he is as busy as ever, putting all his energy into strategic planning and extending Intel's product reach beyond the traditional PC. He says he has fully recovered from prostate cancer, and supporting the search for a cure for this disease is the only non-Intel project he spends any time on. In his Agenda 99 speech he announced two key programmes that will impact Intel products. He showed a live demo via satellite of what he calls microsurgery, a technique for speeding up development times by drilling through multiple layers of silicon to fine-tune microcircuits. This, and Intel's 0.18 micron technology, will push 32-bit chip speeds up to 900MHz by mid-2000.

Grove hinted that the same technology would make 64-bit chips much more powerful. He also showed some of Intel's new multiple-processor configurations, such as a 16-way system running various operating systems including tBeOS, NT, Unix and Linux — emphasising the fact that Intel is expanding its horizons beyond Microsoft's visions.

◀ **London marketing agency Ranier reckons it has cut international call costs by 75 percent using Internet telephony; Cisco chairman John Chambers predicts such voice-call charges will fall to zero within five years**
Ranier 0171 470 8790
www.ranierco.co.uk

Cisco chairman John Chambers pointed out how the new networks will integrate voice and data, with voice calls making up 15 percent of internet traffic (*pictured here*). He predicted that within five years voice calls will be free. He also said education will never be the same again. The "knowledge worker" will have to learn five to ten new skills a working lifetime and will thus regard learning as a lifetime experience. He called for schools to put new emphasis on teaching how to learn. A programme he has established in one school could be widely adopted, he said. It seems schools who install networks find they cannot afford to run and maintain them. Chambers set up a course to teach pupils to do the work, which means the school gains and the kids can get work straight from school.

The Asian crisis heralded dangerous times ahead

Chambers also predicted a rapid globalisation of business over the net which will level the playing field for all companies in an online market worth between $1 and $2 trillion within seven years. By contrast, Steve Forbes said the Asian crisis heralded some dangerous times for world economies over the next few years. Bad bail-out deals which ignored fundamental problems meant various Asian economies will struggle for some years. He feared the potential collapse of Russia, and Asia's problems will soon spread to South America. But he, too, remained bullish about the net economy. Forbes ran for president in 1996 and his speech was so politically correct that I suspect that he plans to run again in 2000.

The other key Agenda 99 theme was information appliances. Many spoke about the development of these devices for use within the home and stated this is where the next standards war will take place. Bill Joy, co-founder of Sun and a key developer of Java and Jini, echoed this sentiment and showed how Jini is the proper control software layer for any information appliance.

Notably absent at this year's conference was Bill Gates. Gates normally attends, sitting at the back and taking it all in. He then serves as the final speaker where he talks about Microsoft's goals for the next year. The conference took place on the first two days of the Department of Justice trial and he probably stayed away from the media at the conference and its attendees who could ask him some very difficult questions.

Agenda continues to be the premiere event for the PC industry, and considering the high-level executives who attend each year, it appears to be the main place to set our industry agenda each year for a long time to come.

short stories

INTERNET TELEPHONY
A European internet telephony operator says it is unlikely to offer services in the UK because our telephone charges are too competitive. Teledirect is offering a phone-to-phone IP telephony service for corporate networks and consumers in Spain, Hungary, Switzerland and Italy which gives savings of up to 80 percent on international calls. But it says the UK's deregulated telecoms market would make it impossible for it to compete here.

ETI CONSORTIUM
Petrol pumps and vending machines could soon be hooked up to the internet if a new initiative takes off. The Embed the Internet (ETI) consortium, which includes Sybase and SAP, aims to connect non-PC devices to networks, allowing remote control and monitoring. A number of different companies have announced products for such devices, including Emware, whose Emit software can connect 8-bit and 16-bit machines while using as little as 1Kb of memory.

NET MUSIC

Dancing in e-street

An internet music player accused of promoting piracy has caused a storm of controversy in the US. Now it is set to be released over here.

Diamond Multimedia plans to launch the Rio PMP300 in the UK in November. It is a Walkman-like device which stores and plays music downloaded from other CDs or from the internet.

The Rio has been denied a smooth entry into the market, however. Recently, the Recording Industry of America (RIAA) sought an injunction against Diamond, saying that the device would lead to an increase in piracy and would cost them billions of dollars in lost sales. The suit was rejected by a US federal court and the RIAA is now appealing. The case is being watched closely because it will likely set an international precedent about the legality of such devices.

Diamond Multimedia has now teamed up with four other companies to push the MP3 format and educate consumers about music piracy.

Neil McGuinness, Diamond's PR manager for Northern Europe, said: "We're actively looking to promote legal MP3. But piracy is a problem no matter what medium you're using, whether it's cassettes or CD-writers."

The Rio uses the MP3 internet music format and can store up to 60 minutes of digital-quality music and up to 16 hours of voice-quality audio. Because it has no moving parts, music will not skip during playback. Add-on flash memory storage cards are also available. Diamond says it has already received a great deal of interest in the device, which will likely cost around £175 (inc VAT) retail.

• **Another firm, Empeg,** which is based in Somerset, also plans to release an internet music player in time for Christmas '98. Unlike the Rio, it is designed for car use only and can store 35 hours of music downloaded from the internet. The player will cost around £699 and is expected to be sold over the net only .

Samsung Electronics was expected to release a portable MP3 music player in the US before Christmas, despite the injunction against Diamond Multimedia.

SUSAN PEDERSON

Yell Top 10 web sites

1. Harper Collins www.fireandwater.com
2. Grooverider www.grooverider.com
3. Cluedo www.cluedo.com
4. Ninja Tune www.ninjatune.net
5. Boddingtons www.boddingtons.com
6. Egg www.egg.co.uk
7. Standard Life www.standardlife.co.uk
8. Selfridges www.selfridges.co.uk
9. Richer Sounds www.richersounds.com
10. ASH www.ash.org.uk

Will you be making any New Year resolutions in 1999? I'm planning to raise a glass of Boddingtons and waste my money downloading all those classic TV ads from www.boddingtons.com. By 'eck, you do smell gorgeous tonight, petal!

Take a closer look

AltaVista has revamped its search engine to make it easier for net users to find what they're looking for. The three main search techniques are now all combined on the starting page as AV Full View Searching. Users can make an index or directory search, or try a question-and-answer search where they can pose a question in plain English and get one or two most relevant answers. It also features the handy AV Photo Finder as well as the AV Family Finder, which, it claims, will filter out potentially offensive sites while you're making a search.

www.altavista.com or www.av.com

Top 10 products

Peripherals

			Last month
1	**3Com 56K V90 Voice/FX Ext**	**3Com**	**3**
2	UMAX Astra 610p	UMAX	1
3	UMAX Astra 1220p Scanner	UMAX	2
4	P75 To P200MMX Evergreen	Evergreen	4
5	MS Wheelmouse PS2/Serial	Microsoft	5
6	Tashika 56K Internal Modem	Tashika	-
7	SoundBlaster Live PCI	Creative	12
8	Mitsumi PS/2 Mouse	Mitsumi	8
9	Tashika 56K Flex External	Tashika	6
10	UMAX 1210p	UMAX	36

Windows software

1	**MS Encarta Ref Suite 99**	**Microsoft**	**-**
2	Masterclips 150,000 Clipart	IMSI	4
3	OfficePro+BookshelfU/G	Microsoft	5
4	Windows 98 UG CD	Microsoft	2
5	Partition Magic 4.0	POW	-
6	Norton Systemworks v1	Symantec	45
7	Office 97 STD C/VUP UG CD	Microsoft	6
8	MS Visual Studio Edu CD	Microsoft	12
9	Partition Magic 4.0 U/G	POW	-
10	MS Student Win98/NT U/G	Microsoft	14

DOS software

1	**Turbo Pascal v7.0**	**Borland**	**1**
2	Norton Commander V5	Symantec	27
3	Turbo Pascal v7 DOS Educ	Borland	2
4	MS DOS v6.22 Upgrade	Microsoft	3
5	Turbo C++ v3.0	Borland	-
6	FSFX Upgde For MS Flight Sim	Microsoft	4
7	Macro Assem V6.11 Win/DOS	Microsoft	32
8	NetWare v5 Server	Novell	-
9	TAS Books Payroll	Megatech	-
10	IBM PC DPS v7	IBM	-

CD-ROMs

1	Star Wars: Behind The Magic	Lucas Arts	-
2	Hip Hop eJay	Fast Trak	-
3	Dogz 2	Mindscape	-
4	Catz 2	Mindscape	-
5	You Don't Know Jack	Take 2	-
6	Rave eJay	Fast Trak	2
7	Dance eJay	Fast Trak	1
8	Anastasia	Fox Interact.	-
9	Geoff Hamilton's 3D Gdn Des.	GSP	-
10	Lie Detector	United Inter.	-

Games

1	Cannon Fodder	Sold Out	2
2	FA Premier League Mgr 99	Gremlin	1
3	Rainbow Six	Take 2	5
4	Star Trek: Klingon Honour Grd	Micropose	-
5	Championship Mgr 2 97/98	Eidos	9
6	Caesar 3	Sierra	-
7	Age Of Empires	Microsoft	-
8	Theme Hospital: Classic	Bullfrog	10
9	Titanic: Adventure Out of Time	Europress	-
10	Dune 2000	Elect. Arts	7

Games and CD-ROM figures supplied by HMV. Others from Software Warehouse.

Axis and Allied forces clash on your desktop

▲ **In Axis and Allies, Russian forces advance into Northern Europe, with the help of tanks, infantry and thin blue lines**

Hasbro Interactive is moving into strategy gaming. Its latest release, **Axis and Allies**, is a CD-ROM version of the classic WWII board game. Players enter the fray in 1942. As a world leader, you have the power to change the course of history as you wage a battle for supremacy and global domination. Plan strategic bombing raids, submarine attacks or a major invasion by land, sea and air, while protecting the economic status of your nation. Axis and Allies is out now, priced £39.99.

The latest release from Sierra has just hit the shops. **Viper Racing** is a driving simulation featuring one of America's fastest sports cars, the Dodge Viper. Players earn money during their driving "career" to upgrade their cars and can eventually drive the monstrous Viper GTS-R. By competing in more than 20 races, drivers work their way up through four different classes in the Viper Racing League, gradually earning more than 40 different Viper upgrades. Viper Racing costs £39.99.

Eidos Interactive is the producer of the new **Michael Owen's World League Soccer '99** game, and it looks set to be a hit among football lovers. The game features more than 190 teams from ten different leagues, covering major soccer territories worldwide. Owen's actual moves are incorporated, having been recorded by a motion-capture animation system, and commentary is provided by Peter Brackley and Ray Wilkins. Out in the shops now, it's priced at £39.99.

Continuing the Second World War theme, Microsoft is due to launch an addition to its Close Combat series. **Close Combat III: The Russian Front** puts you in command of either the Red Army or the Germans in the Eastern Front struggle of WWII. Players try to out-fight their opponent while keeping their troops alive. They begin as lowly commanders, managing unit upgrades and maintenance, and attempt to advance in rank and gain more troops and equipment. It will be available from the end of January.

ETELKA CLARK

Games featured in Screenplay (p306) this month: Lose Your Marbles, Reah, Lie Detector, Combat Flight Simulator, and Quake II and Age Of Empires expansion packs.