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news

edited by Clive Akass

contents

Gates fights back with new web platform and Java rival

Microsoft has come back fighting with a fresh assault on the web following the big anti-trust ruling that could force it to split into two companies.

It has announced a new platform called .Net designed to dominate the web as Windows has ruled the desktop. Bill Gates boasted that it will cost as much to develop as putting a man on the moon... £1.25b.

Components will roll out over the next three years, with some appearing this year.

Fundamental is the use of HTML's 'grown-up' sibling XML, which allows machines of any flavour to exchange structured information.

The strategy includes the launch of a new object-oriented language called C#, seen as a direct rival to Java. This will use Microsoft's Visual Studio development environment and is designed to allow C and C++ coders to use their existing skills.

There will be compilers for different hardware to give C# the 'write once, use anywhere' portability of Java. C#, which will be available this year in beta, will also talk XML.

Java is an increasing threat to Microsoft's development tools, despite resentment at Sun's tight rein on it (see page 36). Microsoft is trumpeting .Net's own use of open standards such as XML to allay fears that it is simply shifting the base of its hegemony.

Microsoft says non .Net devices will be able to interact with its systems, but the 'richest experience' will come from .Net clients. The platform will also require Microsoft development tools and third parties will be encouraged to create apps that work with Microsoft email, instant messaging, calendar, identity, storage and directory online services.

Microsoft is thus trying to hook users into services that could provide regular long-term revenues. Clearly, it also hopes to corner the emerging market in new appliances such as web TVs.

The craftiest aspect is what Microsoft calls the 'Universal Canvas', which makes a single working environment out of the operating system, browser and applications.

This has been the direction Microsoft has been pushing Office and Explorer for some time. Essentially, it means that the browser changes from being a largely read-only to a read-write environment.

It also sidesteps the break-up threat in a way that some believe will enable Microsoft to win whatever the outcome of its appeal – *see Tim Bajarin on page 44.*

WAP confusion

BT Cellnet countered claims that WAP services have flopped with figures showing it had sold 175,000 WAP phones in the three months up to July. But this does not show how many people are using WAP and it falls well short of a predicted 500,000 users, despite massive advertising and subsidies on handsets.

According to the *Financial Times*, the figure is further distorted by the fact that organised gangs have bought half a million subsidised phones from Cellnet and others for resale abroad.

Meanwhile watchdog Oftel criticised Cellnet for preventing some users from accessing rival WAP sites. User can now request an unblocking code.

Also on the WAP front, Microsoft has said Pocket Internet Explorer will not support WAP natively. Dilip Mistry, mobility solution marketing manager, told a TechEd conference in Europe: 'It is not a rich Internet experience for end users.' *More flak for WAP – page 38.*

Pentium 4 named

Intel's next-generation processor, codenamed Willamette, is to be called the Pentium 4, the company says. It will debut later this year at 1.4GHz and supports a 400MHz bus.

But the emphasis in the mainstream market seems to be shifting from processor speed to factors such as price and power consumption. *See Transmeta forces rethink – page 26.*

Samsung's 15in SM150MP and 17in SM170MP LCD panels, which include a TV tuner, let you watch TV while you work. They cost £999 and £1,819 ex VAT respectively. Telephone 0800 521652 for details

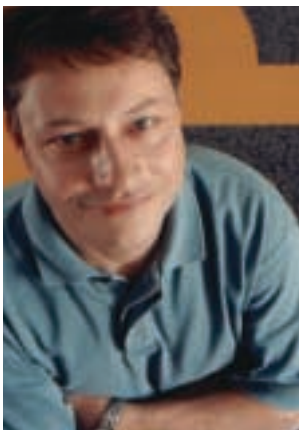
Short stories

ROAMING OFFER

A startup called Mint Telecom is offering global cards with no roaming deposits that allow you to use your mobile phone from anywhere in the world for a flat 85p per minute calling, or 42.5p receiving.

The service works with pre-pay phones that do not normally allow global roaming or require special deposits. But your phone has to be able to take a new SIM card – some operators lock them out – and, of course, must support the bandwidths in use in the area from which you call.

You pay £34 to sign up, but this includes 300 minutes of phone calls from anywhere.
www.mint-tele.com



DO ME A FAVOUR

Tim Ellis (above) has launched a site called Favourites Online where you can store your favourite web links for access from anywhere, effectively creating your own net portal. Also available at the site is a Java application that allows you to have the portal on your desktop, regardless of whether you are online.
www.onlinefavourites.com

FLIP TIP

A £48 utility called Flip Album enables you create photo albums on CD for distribution after events such as weddings.
www.printsbypost.com

PROCESSORS

Crusoe forces Intel rethink

Intel showed signs of being rattled about its chips' power consumption as several manufacturers demonstrated prototype laptops using Transmeta's low-drain Crusoes.

A couple of days before the Crusoe demonstrations at PC Expo in New York, it announced no fewer than five new mobile processors – including a 600MHz PIII, operating at 1.1v, which it said draws less than 1w 'on average' in low-power mode.

This claim was met with some scepticism, but the chip is sure to be considerably more frugal than the previous mobile 600MHz PIII which drew as much as 13w. Intel also launched a 750MHz mobile PIII and mobile 500MHz, 600MHz and 650MHz Celerons.

Intel's SpeedStep technique for limiting power has only two states, with clock rates and operating voltage switching down during battery operation.

AMD's rival PowerNow has 32 states, in theory allowing consumption to be tailored more precisely to changing needs. Crusoes can adjust their power drain by switching voltage and clock rates in 0.05v and 33MHz increments. They are said to draw as little as 10mw when 'ticking over' and average around 1w on typical tasks – a fraction of the consumption of Intel's recent mobile chips.

Crusoe-based DayTripper prototype webpad ...aiming for a day's work per charge

Screens account for more power drain than processors, but Transmeta's aim is to produce machines that run on one charge for a working day.

Gateway and AOL are jointly developing a Crusoe-based webpad and several vendors showed Crusoe models at Computex in Taiwan (see page 28), but the protoypes at PC Expo came from Fujitsu, Hitachi, IBM and NEC.

It is unclear if these will go into production. Leo Suarez, IBM's programme director for worldwide marketing, said: 'We need do some tuning of the power-management circuitry and talk to our customers to gauge their interest.'

Another contender in this market is National Semi-conductor with its integrated Geode chips. These have built-in graphics and other subsystems and are said to draw less than 1w.

Detlev Kunz, vice-president and general manager for Europe, said that power drain must be estimated on the basis of the whole system. 'A chip like the Crusoe will need more peripheral chips that also draw power,' he said.

Transmeta is working with S3 to integrate a graphics subsystem.

At issue is the importance of speed over price and power drain at a time when even entry-level PCs are more powerful than many need.

Battery drain will be critical in the market for webpads and untethered appliances. Even on desktops people may prefer to sacrifice speed for a chip that doesn't need a noisy fan. But it would not be hard for Intel to come up with competitive, low-power, lower-speed chips.

CLIVE AKASS
ADDITIONAL REPORTING BY JO TICEHURST AT PC EXPO

...as midfield chip battle hots up

Intel also launched three new Celerons to counter the threat from resurgent AMD in the high-sales desktop market where users are no longer willing to pay huge premiums to get the fastest and latest chips.

The 633MHz, 667MHz, and 700MHz Celerons, using 0.18micron technology, were announced only a week after AMD began shipping its well-received 600MHz, 650MHz, and 700MHz Durons, low-cost versions of the Athlon.

Volume prices for all six were virtually the same, adjusting for clock speeds: £86, £106, and £120 respectively for the Celerons; £70, £96, and £120 for the Durons.

Meanwhile, chipset maker VIA, already a thorn in Intel's side (see page 28), aimed for Intel's soft underbelly with the announcement of a Cyrix III chip running at between 500MHz and 600MHz for the value PC market.

VIA bought the Cyrix name and high-end x86 technology from NatSemi, but oddly the new processor is based on the old IDT WinChip. Prices for the chips, which use the old 370 socket, could be as low as £30.

Fast ADSL, slow rollout

A 'Love-Bug' type virus and continuing tests by BT have delayed the mass rollout of fast asymmetric digital subscriber line (ADSL), scheduled to start in July.

BT said service providers that will sell the high-speed connections had failed to provide sufficient triallists for high-volume tests to identify possible problems such as crosstalk, when signals in adjacent lines interfere with each other.

Installations were also disrupted when engineers imposed a two-week 'data freeze' after their files were hit by a virus. This effectively blocked all new installations, at least in the London area.

There were also signs that BT staff are still going through a learning process, with contradictory information being given to callers. One service provider was said to be 'incandescent' about BT delays.

But companies such as BT OpenWorld and Thus (parent of Demon Internet) are starting to install ADSL links for businesses – cheaper home connections will not be available until later this year.

ADSL piggy-backs an RF signal onto a standard phone line to provide always-on Internet access downstream at speeds of up to 2Mbits/sec – tests have reached as high as 8Mbits/sec. Initial services will offer 500Kbits/sec down and 256Kbits/sec up.

This is only one of several DSL technologies. US vendor Paradyne has accused watchdog Oftel of favouring BT by blocking Paradyne offering a high bit-rate digital subscriber line (HDSL) service providing a 2Mbits/sec link in both directions.

BT, which has a final say on what equipment can be installed on its network, claims this would affect its ADSL transmissions.

Lights, MiniDisc, action

Sony pioneered the use of the humble floppy for storage on its early Mavica cameras and it has used an MD (MiniDisc) drive on a video camera. Its 2.1megapixel Mavica MVC-1000 boasts a mini-CD writer providing 156MB of write-once storage on 3in CD-R discs (right). The model is due to ship in the US this August and prices are not yet known.

www.sony.com

Short stories

FLAT-RATE OFFER

A new 1p-per-minute 24 x 7 web access service provides better value than unmetered services, claims OneTel.Net. The company charges no connection or monthly fees and users do not need to switch phone companies.

OneTel.Net also claims that users will not suffer the slow and congested service that has been reported on some unmetered services. It says its service would cost the average home, spending between six and eight hours a month on the web, a maximum of £4 a month.

www.onetel.net.uk

0800 634 1954

HANDHELD RISK

Security experts have warned that virus writers could switch their attention from PCs to handhelds, which some believe will be the major web access device within a couple of years. Symantec has already prototyped an anti-virus product for the Palm Pilot. The company's chief technology officer Ron Moritz said ubiquitous new devices 'pose new risks and challenges'.

BT demands royalties from ISPs over hyperlink patent

BT claims to have invented and patented hyperlinks, which are fundamental to the World Wide Web, and is claiming millions of dollars in royalties.

The company is claiming the money from US service providers because, according to a BT spokesman: 'It is not practical to license every Internet user – it would be nonsensical.'

BT says the patent dates back to its early Viewdata online services that included Prestel. It applied for a US patent in 1976, but didn't receive it until 1989. Its hyperlink patents have expired in other countries.

The BT spokesman cited the high licence fees enjoyed by other technology companies. IBM alone receives in excess of £63m a year in fees for the use of its intellectual property. 'We only want what is fair,' the spokesman added.

Critics say the patent is invalid because others had the idea first. Some cite Ted Nelson's 1971 book *Dream Machines*, and its 1974 follow-up *Computer Lib*, which coined the word 'hypertext'.

Others trace the idea to a paper, entitled *As We May Think*, which was published by US academic Vannevar Bush in 1945.

Tim Pearson, a council member of Britain's ISP Association, said: 'It doesn't surprise me that this is crawling out of the woodwork because we've seen a general increase in the aggressive use of patents.'

He added: 'I don't think BT will win itself many friends.'

It's a counter claim from General Motors... they've filed a patent for the wheel

Riyad Emeran reports from Computex 2000 in Taipei and finds the future is twice as bright for VIA.

VIA unveils RAMBUS rival

Taking pride of place on VIA's stand was 266MHz double data rate (DDR) SDRAM memory. Existing PC SDRAM is either 100MHz or 133MHz, with only the hideously expensive RDRAM running faster.

This new memory will handle two processes per clock cycle and increase memory bandwidth to 2.1Gbytes/sec.

VIA has been working closely with industry leaders such as NEC, Samsung and Toshiba to ensure swift adoption of the new standard and should have a chipset that supports the new memory within a couple of months.

Both AMD and Intel are looking to support DDR SDRAM, so bus speeds and, consequently, overall system performance should see a significant increase in the near future.

See Gordon Laing – page 41

DVD+RW ready to roll

Philips was pushing its DVD+RW technology in Taipei. It's been over three years since Philips, Sony and HP broke away from the DVD forum to create a separate rewritable DVD standard, but we're yet to see any products.

One of the original arguments for DVD+RW was that it could store 3GB per side rather than the 2.6GB DVD-RAM standard. Unfortunately, it was decided that the 3GB version should not be released, instead waiting for the implementation of 4.7GB per side capacity.

The other advantage of DVD+RW is that the discs can be read in any DVD drive, whether consumer or ROM. Philips has shown many demonstrations of this compatibility, but we'll reserve judgement until we see a drive ourselves.

However, Philips had mock-ups of both a consumer video recorder and a ROM drive, based on DVD+RW technology.

Philips has assured us that the consumer video recorder will be available by the end of the year, with the ROM drive appearing in early 2001. We can't help feeling that we've heard it all before.

Palm pretender

Acer is a huge company that seems to be able to turn its hand to almost anything and now it's decided that Palm has had its own way for too long.

The Acer SlimMate is a PDA that, quite simply, looks just like the Palm V. Obviously there are a couple of cosmetic differences, but at a glance you would think that it was a Palm.

The SlimMate is powered by a 16bit RISC CPU running at 48MHz, backed up by 48MB of memory used for applications and storage. The operating system is designed by Acer and the monochrome screen looks every bit as good as Palm's.

What was most impressive, however, was that Acer already has several snap-on modules for the unit, turning it into a GPS tracker, or a GSM phone, or even a digital camera.

Unfortunately, Acer has no plans to release the SlimNote in Europe until some time next year, instead choosing to concentrate on the Chinese market. Consequently, there is currently no indication of price, but don't think about importing one unless you can read Chinese.

Crusoe handheld

Proving that it was more than just a groundbreaking news story, Transmeta put in an appearance at Computex 2000 (see page 26). Nestling on the FIC (First International Computing) stand was the Aqua 3200 WebPAD. This handheld web browser sports the Transmeta TM 3200 CPU, running at 400MHz, along with 64MB of onboard memory and a 16MB Compact Flash card. The device runs mobile Unix, displayed on its 7.4in, DSTN, 640 x 480, LCD touch screen.

Connectivity comes via the inbuilt, wireless LAN module, but it also sports USB and IrDA. It's doubtful that a device such as this will take off in Europe, since its functionality is limited. It does, however, prove that Transmeta has more than just good ideas up its sleeve .

Gentle PC leads from front

For a long time the desktop PC has shunned some great connection protocols seen in mobile devices. Although every motherboard since early 1996 has supported IrDA, we've never seen PCs with infra-red ports at the front. Likewise, the PC Card standard that's become a lifeline for notebook users never made an impact on the desktop, even though it would be a great feature. Add to this the fact that sound ports and USB connectors are always mounted at the rear of a PC chassis, making it a real pain to connect anything and you start to wonder if the PC was designed to specifically make our lives harder.

The Gentle PC – it all makes sense

Taiwanese company A-Standard Computer Systems has come up with the answer, the Gentle PC.

This slim PC system can be mounted flat or on its side, depending on your preference, but what's more impressive is the connectivity. At the front of the case you'll find an IrDA port for connecting to a notebook, PDA or mobile phone. Also, hidden behind a flap are a set of sound ports, a FireWire connector and a couple of USB ports. There's even a floppy/PC Card combo drive as an option.

Whether we see this box in the UK depends on whether a PC company decides to distribute it.

Short stories from Networks Telecom 2000

INTEL NETWORK
Intel launched a local network system for homes and small offices. The InBusiness product range centres around a server that incorporates LAN/Internet connectivity using ISDN or DSL – with a firewall, printer sharing and an eight-port 10-BaseT hub thrown in for good measure. However, the LAN support is for 10Mbits 10-BaseT only and there is no support for USB printers.
www.intel.com

SLEEPING GIANT
Digi International launched an ISDN adaptor card that accepts incoming fax, data or voice calls, even when the host PC is in sleep mode. The DataFire Micro takes an average seven seconds to wake up a PC, according to Digi. It costs £60 ex VAT.
www.digi.com

VOIP PHONE
Electronic Frontier launched a Voice over IP (VoIP) phone called the Ipico, manufactured by Lucid VON. It consists of a smart box that converts analog voice or fax audio from standard phones to VoIP data and routes it to similar boxes over a LAN or WAN. It can be connected directly to up to eight analog phone or fax ports, or connected to a small office switchboard.
www.elecfron.com

Ian Burley reports from Networks Telecom 2000 in Birmingham.

First GPRS handhelds

The spotlight was on emerging General Packet Radio System (GPRS) wireless links this year at Britain's big network show.

BT Cellnet, which has already launched a GPRS service for corporate customers, announced that later this year it will be trialling an adapted GPRS version of the stylish Blackberry email handheld that has been a success in the US.

The Blackberry, made by Canadian company Research in Motion (RIM), can work with Microsoft Exchange or Lotus Notes systems. It uses an i386 processor but lacks a web browser.

Vodafone, which is promising to launch its GPRS service by the end of the year, showed some pre-launch service demos, including WAP over GPRS.

RIM's Blackberry email platform. There is also a version with a larger screen and keyboard

Vodafone will be offering packages based around the Casio PocketPC and Psion handhelds.

GPRS has taken a bit of a back seat after the recent fuss about the third-generation Universal Mobile Telecommunications System (UMTS) broadband wireless licences. Early GPRS handsets are in short supply and delivering nothing like the promised 100Kbits/sec. Current systems deliver only 27Kbits/sec, about three times as fast as current GSM phones – although, unlike GSM, the GPRS service is always on.

A Cellnet spokesperson claimed the speed would increase to five times that of GSM in a few months, and to 100Kbits in less than a year.
www.rim.net

New boost for HomeRF

Bluetooth mania, after all the spring hype, was more subdued than expected, but there was a discernible increase in the profile of wireless LAN solutions. This is largely due to the widening adoption of the 11Mbits/sec 802.11 standard.

Nighthawk Electronics announced that it is adding Nokia 802.11 kit to its range and Elsa has introduced 802.11 products.

Wireless LAN specialist Proxim, of RangeLan fame, privately previewed its Harmony product line, aimed at enterprise and service provider deployments. Also highlighted was Proxim's proprietary OpenAir standard-based Symphony product range aimed at home and small-office customers.

In addition, Proxim is involved in the beleaguered HomeRF combined voice and data standard.

But HomeRF was recently given a boost with news that US federal restrictions will be relaxed to enable it to evolve into a higher performance standard – at the moment it is limited to a tenth of the maximum 802.11 data rate.

Proxim was basking in the afterglow of its finalised acquisition of rival Farallon. Farallon adds Apple Mac-compatible technologies to the Proxim armoury.

Proxim also let slip that it is working on wireless LAN products with integrated Bluetooth. However, Proxim dismisses suggestions that Bluetooth could be a wireless LAN platform in its own right.
www.proxim.com

PCs could pack 'data by mains' networking

German firm Polytrax was pushing its wireline networking, which uses a building's mains wiring for a local data network. The company is seeking trade and manufacturing partners to establish the technology in devices such as modems.

The technology, which is currently in prototype form only, is limited by European technical regulations to around 200Kbits/sec, but the unrestricted US market could push it to megabit levels.

Polytrax has more ambitious plans than wireline modems. A spokesman said its long-term goal is to persuade motherboard and PC manufacturers to integrate it into their hardware.

So maybe, one day, plugging your PC into the power socket will be rather more meaningful than part of simply powering up.
www.polytrax.com

Short stories

IBM THINKS LINUX
IBM has added support for Linux to two of its Thinkpad notebooks as part of its effort to push the open-source operating system further into the enterprise. Caldera's OpenLinux eDesktop 2.4 will come preconfigured on its A20m and T20. The company will also begin certifying other Linux distributors including SuSE, Red Hat and TurboLinux. Dell already offers Red Hat Linux 6.1 pre-installed on its Latitude CPx and Inspiron 7500 systems.

SMUT SURFERS
One in three UK web surfers, almost a third of them women, look at X-rated websites, claims a new survey. It also found that 40 per cent of the most visited sites contain porn. The number of UK Internet users grew by 15 per cent to 9.9 million in the six months to May, according to the research by Net Value. Of these 6.1 million were men and 500,000 were pensioners. The average time online also rose, by 84 minutes, to just over six hours a month – apparently as a result of free or low-cost unmetered access.

RAVEN DELAY
Lotus has postponed the release of its Raven knowledge management suite until the end of the year. The software, which aggregates Internet content and personal productivity files into a single portal, was originally expected to ship this summer.

HOME FIREWALL
A product from Symantec is designed for home users who fear that new always-on broadband connections will leave their machines vulnerable to intruders. Norton Personal Firewall 2000 costs £39.99 inc VAT.
www.symantecstore.com

Sun clings to Java reins

Sun faces increasing opposition to its tight rein over Java as the programming language celebrates its fifth birthday – and faces a new rival in the form of Microsoft's C# (see page 25).

But IDC analyst Rikki Kirzner said Java is challenging Microsoft's Visual Basic as the most popular means of developing applications.

However, Java has lost ground among the influential open-source community, where critics have accused Sun of turning its back on true standardisation efforts. Major vendors, especially Microsoft, are pushing for an independent standards body.

But Sun is committed to deciding on Java's technical future via its consultative Java Community Process (JCP). Pat Sueltz, software products and platforms group president, said Sun retained its tight hold to nurture the language and maintain innovation. Sueltz said: 'We did the same thing with the network file system with Solaris (Sun's version of Unix) and just turned that over to the standards body.'

Cambridge-based Tadpole's J-Slate handheld, which runs Java apps, was honoured with a nomination for Best Mobile Wireless Solution at the JavaOne developers' conference in San Francisco
www.tadpole.co.uk

But at the JavaOne conference in San Francisco, Sun appeared to be loosening its grip when it announced the creation of two executive committees to oversee the JCP, one handling desktop and server development, and the other dealing with embedded applications.

Gartner analyst Mark Driver said that, though this hardly constitutes democracy its does give JCP members, like IBM and Oracle, more input and control. He added that Java expects a number of vendors to release a range of devices using the revamped Java 2 Micro Edition.

However, if Sun's move does not satisfy critics there could be 'more aggressive efforts' to introduce compliant clones outside the company's control.

JOHN GERALDS, VNUNET.COM

Compaq iPAQs Linux in challenge to CE

In a blow to Microsoft, Compaq has ported Linux to its latest iPAQ H3600 handheld. The iPAQ was built around the latest PocketPC operating system, also known as Windows CE 3.0.

There is no question of Linux replacing the Microsoft operating system for the iPAQ but it could present a longer-term threat. The port is part of Compaq's Open Handheld programme, an initiative aimed at developing applications for mobile computers using open-source code.

PocketPC has been easily the best received version of Windows CE to date but the handheld market is dominated by Palms, especially in the US. Compaq was one of only five vendors at the PocketPC launch earlier this year to announce products based on the OS.

Linux for the iPAQ can be downloaded from a Compaq site: www.handhelds.com. However, the site warns: 'If this installation fails then your iPAQ could become unusable.'

Compaq is providing software components including drivers, X-Terminal emulation, handwriting recognition, touchscreen and multimedia support. It also provides hardware specifications for both the iPAQ and its Expansion Pack system.

See iPAQ review on page 89.

Additional reporting vnunet.com

Linux lovers get the bug

Linux fans were asking for trouble when they boasted of the open-source operating system's security in the wake of the Love Bug virus that struck Windows, only to be affected themselves. A bug in the kernel allows attackers to gain access to files through a variety of programs, including Sendmail. It affects versions 2.2.15 and earlier, and some 2.4.0 versions – code that exploits the flaw has been posted widely. Sendmail 8.10.2 has been released with a patch but users are advised to update their Linux kernel to version 2.2.16.

Psion is redefining portable radio in a way that could upset the 3G applecart, says Clive Akass.

Enter the DAB handers

Radio lovers are bound to feel ambivalent about Digital Audio Broadcasting (DAB). They will welcome the boost in quality and the fact that it does not trail off as you travel down the motorway. But a major attraction of radio is that it is sound only: it is an affable companion, not an attention-grabbing tyrant like TV. You can listen as you do other things. But will this be the case with DAB, which can carry non-audio data, including images?

The issue has been academic for most people until recently because DAB receivers have been prohibitively expensive. This hasn't prevented major radio stations offering DAB services – the BBC has invested millions in the technology over the past five years. The uptake is even higher in other European countries such as Germany.

Now, as we reported last month, Psion is about to launch an affordable (if not, at £299, cheap) DAB receiver called a Wavefinder (right) that links into a desktop PC via the USB port. More exciting is the fact that the company plans to marry the receiver to the handheld computer.

You might well ask what is the point: we have TV, so why not leave radio to the audio it does so well? In fact, at present, there is not enough bandwidth to deliver anything like a TV service. Regulations limit non-audio content to about 35Kbytes/sec per channel. This is around the data rate of a dialup modem but it is considerably higher than that available on GSM phones and even, in practice, emerging GPRS.

Currently, DAB data is used mainly to deliver scrolling text with information about music being played. The BBC has also experimented with sending pictures and 'carouselling', or repeatedly broadcasting, the top-level web pages of BBC Online.

Wavefinder should be an excellent way of experimenting with other uses before the system goes mobile. 'The point is that with the PC you get a back channel,' said Geoff Kell, commercial director of Psion Infomedia.

An obvious application here is for adverts or even music sales. 'You could hear a piece of music and buy it on the spot,' said Kell.

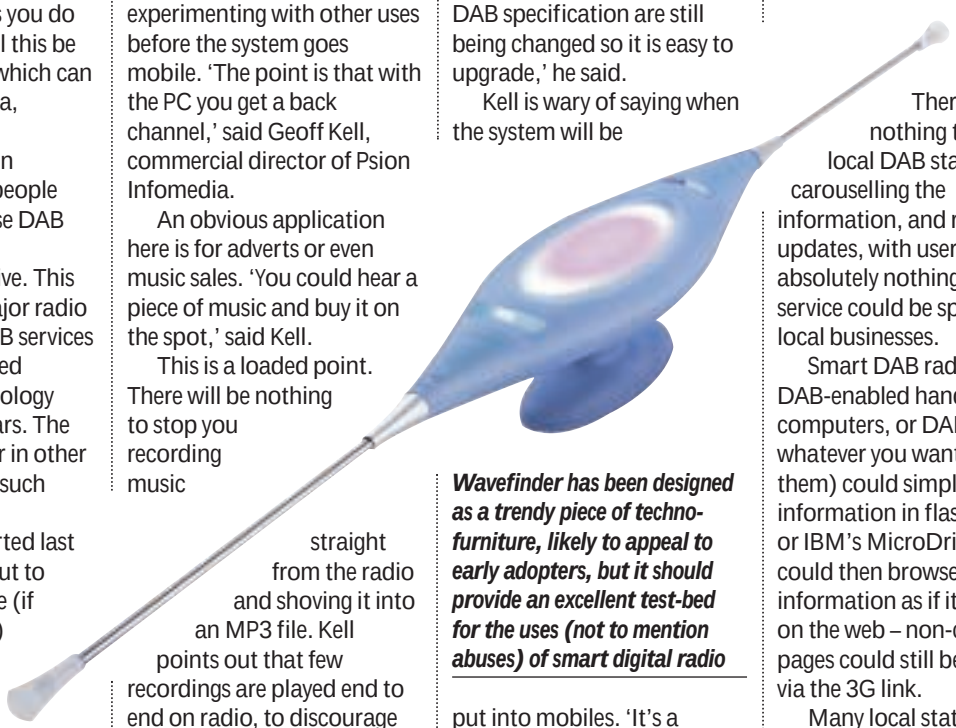
This is a loaded point. There will be nothing to stop you recording music straight from the radio and shoving it into an MP3 file. Kell points out that few recordings are played end to end on radio, to discourage piracy. However, with DAB the quality will be better than from analog broadcasts and the computer can make recording a simple drag-and-drop operation.

'We don't use the word copying. We say "time shifting",' said Kell ironically. Copying is illegal. Time shifting is a perfectly legitimate advantage of smart radio. You can choose what you want to listen to in advance and record it by simply clicking a listing. Then you can listen to it when it suits you.

At least you will be able to do this when the software is ready. Psion is still working on it. The version Kell showed me scans the airwaves to find available stations and lists them as icons on your desktop.

Psion has bought a 7.4 per cent stake in London-based DAB specialist RadioScape, its partner in the project. 'We are concentrating on a software-based solution because bits and pieces of the DAB specification are still being changed so it is easy to upgrade,' he said.

Kell is wary of saying when the system will be put into mobiles. 'It's a chipset issue,' he said. 'The chips used currently draw far too much power for something driven by a battery.'



Wavefinder has been designed as a trendy piece of techno-furniture, likely to appeal to early adopters, but it should provide an excellent test-bed for the uses (not to mention abuses) of smart digital radio

But of course mobiles too will have a back channel, either using GSM, GPRS or third-generation UMTS cellular links. Kell believes DAB will 'complement' the kind of services planned for 3G mobiles. However, if I owned one of the companies that invested billions in a 3G licence, I would look very hard indeed at DAB's ability to grab my potential revenues.

A big 3G money spinner is expected to be local information: you drive into a new area, prod your phone or mobile and get a list of nearby petrol stations, hotels, flower shops, traffic jams or whatever.

This is an extremely inefficient way to deliver the information because it is sent separately to each user, who has to pay a commensurately high premium. There would be nothing to stop local DAB stations carouselling the information, and regular updates, with users paying absolutely nothing. The service could be sponsored by local businesses.

Smart DAB radios (or DAB-enabled handheld computers, or DAB-hands, or whatever you want to call them) could simply cache the information in flash memory or IBM's MicroDrive. The user could then browse the information as if it were live on the web – non-cached pages could still be accessed via the 3G link.

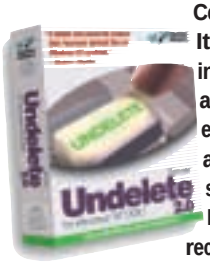
Many local stations already offer DAB and the rest are getting in on the act. They are not the only ones. ITN has done a deal with programme maker UBC to deliver DAB content. This will initially be targeted at Wavefinder users, but could clearly be extended to mobiles.

Kell agrees that, as with all these convergent technologies, nobody really knows how smart radio will be used. It is a technological canvas, awaiting the painter. But, when you can buy a good analog radio for a tenner, DAB prices will have to come down a lot more before the technology finds a mass market.

Short stories

UNDELETE 2K

Executive Software Europe claims its new Undelete 2.0 was only the second utility to be awarded Windows 2000 Certification.



It comes in network and server editions and also supports NT4. It can recover all deleted files, including those that bypass the Recycle Bin. A 30-day trialware version is on this month's cover disc or you can download it from www.undelete-europe.com

CELLPHONE CE

Microsoft and Samsung have launched a joint project to develop 'super cellphones' using Mobile Explorer and Windows CE 3.0. Their first GSM 'feature phones' capable of web browsing and accessing corporate intranets will ship later this year. Dilip Mistry, mobiles marketing director at Microsoft, said: 'These will be very inexpensive handsets.' Devices using the rival Symbian operating system are not expected to ship until next year.

HOT XML EDITOR

The latest version 2.0 of SoftQuad's XMetal offers a Word-like interface, supports validation, forms and script editing, and expanded customisation options. It is designed for people who need to re-publish the same information in different media. A sister product to HTML editor HotMetal Pro, it costs £300 per single-issue licence. www.softquad.com

NOTEBOOK ZIP

Iomega has launched an internal version of its 250MB Zip drive for use in notebooks. www.iomega-europe.com

WAP under more fire

WAP is coming under increasing fire even though online services are falling over themselves to open gateways for it.

A recent report from analyst Ovum warned that the technology, designed to deliver information for tiny mobile screens, was in danger of being overhyped. Foreign analysts have gone further, saying it is a dead duck.

Handheld market leader Palm has eschewed WAP for the new mobile portal it has launched in Europe. Meanwhile, arch-rival Symbian has licensed a non-WAP iMode from Japanese mobile provider NTT DoCoMo. This is based on a cut-down version of HTML and a packet-switched wireless protocol, which has a claimed 6.92 million subscribers in Japan and is adding 20,000 users a day.

David Potter, chairman of Symbian partner Psion, told business leaders at Europe's Seventh Annual CEO Summit in London: 'While WAP is very worthy, it is also a little boring.' He added: 'iMode is really interesting, offering entertainment, messaging, transactions, games and screensavers, and is inexpensive.'

Psion is also developing alternative delivery systems such as DAB (see page 37), which could cut into WAP revenues.

IT and customer service managers believe interactive TV will generate more sales than WAP and other mobile services, according to a survey by customer-service specialist Graham Technology.

Anti-wappers (this reporter included) argue that WAP is trying to do something that, for a mass market at least, will be practicable only when the cellphone is truly integrated into a mobile computer with a usable screen and input system.

Pro-wappers point to the huge, unexpected popularity of SMS messaging among young people despite the difficulty of keying text into mobile phones.

But WAP is far from dead. Michele Mackenzie, an analyst at Ovum, said it will improve when packet-switched GPRS services arrive in the UK. She added: 'There is a lot of industry backing for WAP and it is difficult to see it failing.'

CLIVE AKASS AND VNUNET.COM

IBM boosts MicroDrive to 1GB

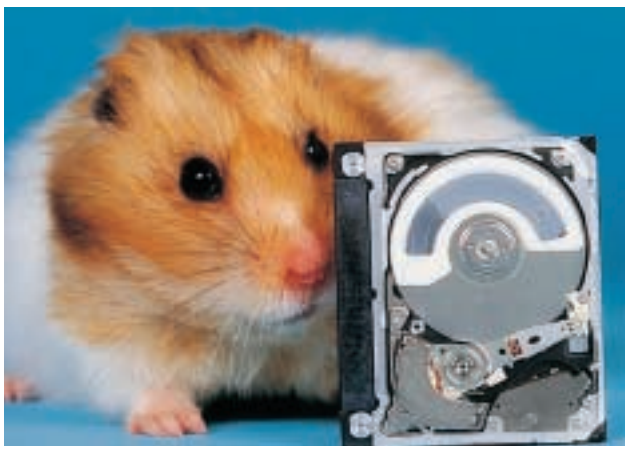
IBM has tripled the maximum capacity of its MicroDrive hard disk to 1GB – a density of 12.4Gbits/sq in and equivalent to 12 CDs.

IBM claims the drives, which fit into any Compact Flash II slot, support a maximum sustained data rate of 4Mbytes/sec – faster than flash memory.

Digital cameras are seen as a major market for the drives, which could store hundreds of high-resolution images. But cheap high-capacity storage could have a major affect on WAP services.

The more users have, the more easily they will be able to cache free-to-air music and programmes from DAB (Digital Audio Broadcasting – see page 37) or even TV satellite broadcasts.

Prices of the MicroDrive are nowhere near cheap enough, though the US price of the 340MB version will drop from around £312 to £186 when the new capacities ship this autumn. A 512MB one will cost about £250 and the 1GB around £310.



Small but cute – and the hamster's not bad either!

European product marketing manager John Fox said capacities will increase further and the cost per megabyte will drop. He said flash memory could not yet match MicroDrive capacities.

But those prices could come under pressure from solid-state memory if SanDisk president Eli Harari is to be believed. He predicted earlier this year that prices will drop by up to 30 per cent a year as capacities soar to the point where flash memory replaces all mechanical storage on mobile devices.

www.ibm.com/harddrives

NETWORKING

Intel is courting danger by backing RDRAM as rivals plug cheaper DDR, warns Gordon Laing.

Perils of fast memory syndrome

Most knowledgeable PC users could tell you that RAMBUS is the company behind RDRAM memory technology. Many will also have an opinion about RDRAM's price and performance compared to SDRAM. But few realise RAMBUS has been around for 10 years and owns patents for memory interfaces implemented in plain old SDRAM, not to mention Double Data Rate (DDR) SDRAM. In other words, RAMBUS owns intellectual property on virtually every computer system in the world.

Think about that for a moment: if RAMBUS exercises its patents, anyone who makes any kind of SDRAM memory owes it licensing fees. Indeed, the company has been chasing Hitachi through the courts claiming that SDRAM and DDR memory that the latter manufacturers infringes RAMBUS' patents. Hitachi has been pushing the anti-monopoly angle, hoping the other big memory manufacturers would support it.

Then on 15 June, memory giant Toshiba bit the bullet and signed a new licence agreement with RAMBUS for SDRAM, DDR SDRAM and the controllers that interface with them. Clearly on a high, RAMBUS unveiled the next day what it described as 'the world's fastest memory bus technology'. Combining DDR with multi-level signalling to transfer four bits per clock cycle, the new Quad RAMBUS Signalling Levels (QRSL) technology could deliver as much as 12.8GB per second from a 64bit bus. Toshiba liked the sound of this and agreed to license QRSL too.

Hitachi couldn't hold out any longer and on 22 June it agreed to pay RAMBUS a settlement fee and royalties. With the litigation out of the way, it could proceed with the much-rumoured sale of its memory division to NEC.

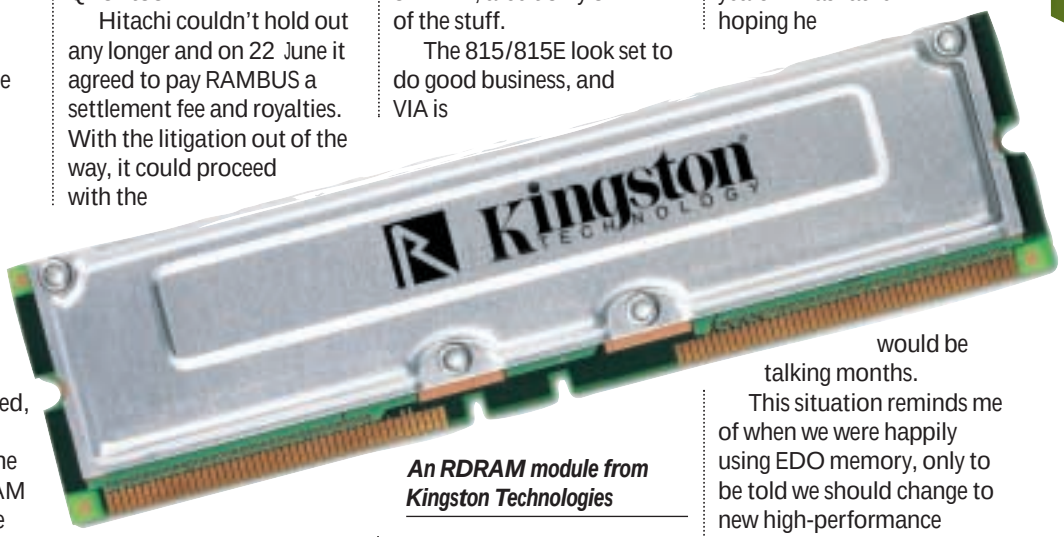
So good news all in all for RAMBUS, a company that doesn't get its hands dirty with any kind of manufacture and prefers to deal exclusively with its intellectual property. But where does this leave the memory technologies? Is RDRAM the future, or does SDRAM in plain DDR or even QRSL flavour stand a chance?

Intel remains committed to RDRAM but the company was hardly cock of the roost at June's Computex show in Taiwan, where confidence in non-Intel products was at an all-time high. The company is still recovering from the impact of its RDRAM-related MTH/820 chipset problems. It showed off its new 815 and 815E chipsets which have native support for PC133 SDRAM, albeit only 512MB of the stuff.

The 815/815E look set to do good business, and VIA is promising two new chipsets to support emerging 266MHz DDR SDRAM (see page 28). The new Pentium 4 (formerly known as Willamette) and its accompanying chipset are designed for RDRAM – but will Intel ever change its mind in favour of SDRAM?

I had the chance to ask its CEO Craig Barrett, at the opening of Intel's Wireless Competency Centre in Stockholm. He said: 'Intel's goal is to get RDRAM affordable and working with Willamette.' He admitted that RDRAM issues 'were more complicated than first anticipated', but stressed that Intel had 'no plans to abandon RDRAM'. On the recent QRSL announcement he said that it seemed like there was 'a new fastest memory technology every day.'

Yet RDRAM remains much more expensive than SDRAM today and, in our SYSmark tests, offers no compelling performance advantage. Rob Eckelmann, Intel's European general manager, admitted at the same event that RDRAM was too expensive. I asked him when it would become affordable, to which he replied: 'It won't be multiple years.' I was rather hoping he would be talking months.



An RDRAM module from Kingston Technologies

This situation reminds me of when we were happily using EDO memory, only to be told we should change to new high-performance SDRAM, which was incompatible with our old motherboards. SDRAM cost more but it wasn't three times the price and we didn't really have an alternative. RDRAM may be the long-term memory solution but with DDR SDRAM just around the corner it is not a compelling buy today.

The recently agreed RAMBUS royalties may push up the price of SDRAM, but it will still have a significant edge over RDRAM for some time. This a dangerous situation for Intel, which is effectively saying you must commit to uncompetitively priced memory if you want to use the Pentium 4, or most of its Pentium III solutions. With increasingly tempting offers from AMD and VIA, Intel will have to work very hard to retain desktop customers in the future.

NetFinity and beyond

IBM has developed a technology that it claims will double memory capacity without having to add extra physical memory.

The Memory eXpansion will be used initially in IBM's NetFinity servers but will migrate to other machines. It caches most used data and code close to the processor and uses hard-wired algorithms to compress other data on the fly.

John Geralds, vnunet.com

Esnooping Bill shows criminals the way to getting away with it on the web, warns Clive Akass.

The worldwide hiding place

Proposed legislation giving police and security services unprecedented access to your emails may have already proved to be counter-productive, as it highlights how easy it is to hide incriminating information on the web.

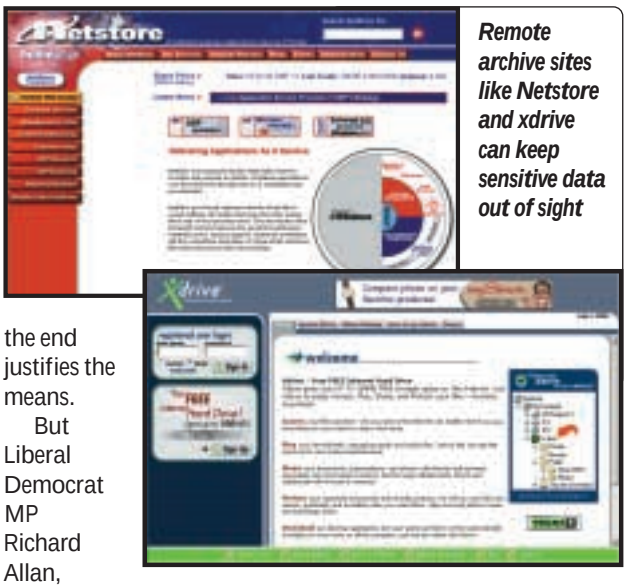
The Regulation of Investigatory Powers (RIP) Bill, due to be passed in October, has come under attack for other reasons and is almost certain to be watered down following a rough passage through the House of Lords.

It empowers police to obtain warrants to access specific files, in the same way that a warrant is required in order to search a house. However, you risk two years in jail if you refuse to reveal decrypt keys.

One amendment approved in the Lords overturns a requirement that it is up to you to 'prove' that you don't know or have forgotten the keys – contravening the principle that you are innocent until proved guilty, begging the question of whether it's possible to prove a negative.

Security services will monitor Internet traffic via 'black boxes' housed by service providers. Again they will need a warrant – in theory at least – to read the content of communications, but there is nothing to stop them tracking the sites you visit.

Critics claim that ecommerce firms, fearful of contravening confidentiality clauses, will migrate to places like Ireland, which have less draconian secrecy laws. Some firms may also fear Government-sponsored industrial espionage. Home Secretary Jack Straw argues that the threat of computer-aided crime is so great that the end justifies the means.



Remote archive sites like Netstore and xdrive can keep sensitive data out of sight

But Liberal Democrat MP Richard Allan, chairman of the cross-party information select committee, said the Bill makes sense only if it can be enforced – and he has launched an investigation into ways in which the measures could be evaded. 'I warned the minister in committee that... alternative technology would provide ways of working round it,' he said. Methods include:

- Direct links: Sensitive documents can be encrypted and sent by a direct modem-to-modem link, as was common before the Internet went mainstream. It can be done using Windows Hyperterminal or any 'old fashioned' comms program.
- Steganography: This is the hiding of messages within innocent looking files. Currently, its main use is to watermark digital images. The data is spread across pixels in such a way that the image is not affected. Alternatively, data can be hidden in inaudible frequencies within a music file – though care must be taken with compression, which may strip these frequencies out.

Police might still be able to insist that you tell them how to extract steganographic data – but they have to know that it is hidden in the first place. Caspar Bowden, director of the independent Foundation for Information Policy Research, said: 'By analogy, you are no longer talking about whether someone has the key to a safe, the question is whether they even have a safe.'

But perhaps the easiest way to hide data is to use remote archives. These are perfectly legitimate services but, like safe-deposit boxes, which are often used to stash stolen goods, they can be of as much use to criminals as to their potential victims. They range from companies such as Netstore (www.netstore.com), that offer industrial-strength backup solutions, to free US sites such as www.xdrive.com that act like an extra, password-protected hard drive – except that it can be accessed via a browser from anywhere in the world.

(A utility at the site claims to integrate the facility into Windows Explorer, so that it functions almost exactly like an extra drive. It would not work with the Windows Millennium beta I'm running but browser access is quick and easy.)

Netstore, which pioneered the idea in Britain, is horrified by the idea that it might be used by criminals. Co-founder and chief technology officer Jeff Maynard said: 'Netstore makes a lot of sense for all sorts of reasons but not as a way around any legislation – we would, of course, comply with any lawful request from a court or other authority.'

Nevertheless remote archives do offer two levels of protection. First, as with steganography, the investigating authorities would have to know about the hidden files. This could be the case if they have been monitoring a criminal's Internet use, or if a computer's browsing record was left intact on a hard disk. But criminals could easily use a service like xdrive from public access points like cybercafes or libraries.

Secondly, even if police did know about an archive it is far from clear whether RIP could enforce the release of decrypt keys to files resting, as in the case of xdrive, physically in the US.

It is also hard to see how the likes of former pop star Gary Glitter could have been prosecuted, as the law stands, for child-porn images held abroad. In practice many criminals are as careless as he was and are convicted on the basis of data that could have easily been hidden. The irony of the RIP Bill is that, by forcing criminals to look at simple workarounds, it may actually encourage their use of the Internet. After all, the web makes the whole world their hiding place.

Additional reporting by vnunet.com.

Gloat ye not over the anti-trust case, Bill Gates could be in a win-win situation says Tim Bajarin.

Microsoft at the Pearly Gates

Conversation over breakfast at a quaint resort in Maine, where I stayed recently, turned, for two days running, to the subject of the Microsoft anti-trust case. To my surprise almost everyone at these tables was pro Microsoft. In the US there is a growing sense that the Government is sticking its nose in too many businesses. Some analysts think the Microsoft case went too far and that a backlash is in the offing.

Microsoft clearly bungled its defence, but I have had a chance to read its full 39-page response to the ruling in which it states its case firmly and eloquently. It points out major legal inconsistencies and shares evidence in Microsoft's favour.

A friend who sat in court every day of the trial said after reading the document that he is now convinced Microsoft will get the case overturned. The twist is that the result is meaningless anyway.

When it was first filed two years ago, the case rested on the fact that Microsoft bundled its Internet Explorer browser with Windows.

Netscape called for an anti-trust investigation, claiming that this move would put it out of business. Many believed Netscape simply wanted to force Microsoft to bundle its Navigator browser as well; interestingly, that was not the real issue at all.

Netscape understood clearly that the next major development platform would be for the Internet, evolving not so much from Windows as from the next generation of browsers.

Once Microsoft started tying its Windows development platform to its browser platform, software developers began defecting to it in droves – eclipsing Netscape's own development platform, which had until then been highly successful.

Netscape's Jim Clark (pictured in his company's early days) has criticised the US Government's plans to split development of Microsoft's IE browser from the OS company

While the lawsuit has been extended to cover many other issues, Microsoft has clearly become the dominant player in browsers. Meanwhile, Netscape has lost its chance to become a prime Internet development platform.

So, when the US Government won the case and had to suggest a remedy, it was in a quandary. The PC and Internet markets have changed dramatically since this case started. More importantly, Microsoft has had to change direction in order to position itself for the next wave of development, which involves PDAs, WAP phones and other Internet appliances as much as PCs.

By splitting up Microsoft into two companies, one for applications and the other for operating systems, the US Government would give Microsoft a golden spoon. This is because it insists that the browser be developed by the applications company – thus giving Microsoft the ability to create the next web development platform, via its new .Net strategy, regardless of the outcome of the case.

This problem came into sharp focus when Jim Clark, co-founder and chairman of Netscape, blasted the Government move, saying the browser should be with the OS company. But the Government has no choice but to put the browser with the applications group in order to keep its case intact.

As I sat through Microsoft's recent presentation about its .Net strategy, I sat back and laughed at this whole situation. Microsoft has in essence split itself up already by starting to integrate the browser and applications into a new development platform that, in the end, can sit on top of any operating system, including Linux and Unix – although it will work best with Windows. The important issue is that Microsoft's browser and application tools form the heart of a next-generation Internet development platform and support all the major open standards such as XML and SOAP.

There is a gamble here for Microsoft. It assumes people will be willing to pay for using applications on the new browser-based development platform.

Sun Microsystems, Oracle and most major application vendors also believe that some day this is how software will be used.

But the main point is that even if Microsoft should somehow lose to the Government and is broken up, it will still be the big winner.

PC-based operating systems will become less important even though they will still have the lion's share of this market. And if Microsoft can create a browser/application-based development platform, which works better on devices that have some type of Microsoft OS on board, it will be well on its way towards extending its franchise beyond the PC.

It could actually become an even bigger and more successful company in the future. Put in this light, you can easily see why Bill Gates is doing commercials on TV stating that the 'best is yet to come!'